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Before the
COPYRIGHT ROYALTY BOARD
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of: DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords IV)	Docket No. 21–CRB–0001–PR (2023–2027)

WRITTEN DIRECT STATEMENT OF COPYRIGHT OWNERS

VOLUME V.B

PUBLIC VERSION

PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Library of Congress
Washington, D.C.

In re	)	
DETERMINATION OF ROYALTY RATES AND TERMS OF MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords III)	)	Docket No. 16-CRB-003-PR (2018-2022)

EXPERT REPORT OF JEFFREY A. EISENACH, PH.D.

Expert Witness for Copyright Owners

October 31, 2016

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ATTACHMENTS

I. INTRODUCTION AND SUMMARY OF FINDINGS

1. My name is Jeffrey A. Eisenach. I am a Managing Director and Co-Chair of the Communications, Media and Internet Practice at NERA Economic Consulting ("NERA").

A. Instructions

2. I have been engaged by the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together referred to as "Copyright Owners") to provide my expert economic opinion regarding the appropriate rates and terms for the compulsory licenses for Mechanical and Digital Phonorecords pursuant to Section 115 of the Copyright Act, which are at issue in this proceeding. Specifically, I have been asked to analyze the rates and terms for Interactive Streaming and Limited Downloads presently addressed in 37 C.F.R. Part 385 Subpart B and the rates and terms for Limited Offerings, Mixed Service Bundles, Music Bundles, Paid Locker Services and Purchased Content Locker Services presently addressed in 37 C.F.R. Part 385 Subpart C. In my testimony I sometimes refer to these rights collectively as the "Section 115 Rights," and to the main categories as "Subpart B rights" and "Subpart C rights."

3. I have been asked by the Copyright Owners to provide my independent expert opinion on economic issues in this proceeding, as detailed further below. I am being paid for my participation in this matter at my standard hourly rate, as are the NERA staff members who have assisted me in preparing this report. My compensation is not dependent upon my findings or on the outcome of this proceeding.

4. The analyses and conclusions contained herein are based on information available to me at the time this report was prepared. A list of documents which I reviewed in creating this report is attached as Attachment A. I understand that discovery in this matter is incomplete and

ongoing. Should additional information come to light through discovery or otherwise which causes me to modify my findings, I reserve the right to do so.

B. Qualifications

5. I am a Managing Director at NERA and Co-Chair of NERA's Communications, Media and Internet Practice. I also serve as an Adjunct Professor at George Mason University Law School and as a Visiting Scholar at the American Enterprise Institute. I have more than 25 years of experience performing economic analyses of competition, regulatory and public policy issues, and have served in senior policy positions at the U.S. Federal Trade Commission ("FTC") and the White House Office of Management and Budget ("OMB"). I have also served on the faculties of Harvard University's Kennedy School of Government and Virginia Polytechnic Institute and State University. Immediately prior to joining NERA, I served as a Managing Director at Navigant Economics.

6. I have authored or co-authored numerous expert reports in litigation matters as well as in regulatory proceedings before the Federal Communications Commission, the FTC, state public utility commissions, and other regulatory agencies. I have testified before Congress on multiple occasions, including on digital copyright issues. I have also testified before the Australian Copyright Tribunal as an expert witness on digital copyright issues. A list of legal proceedings in which I have testified is annexed as Attachment B. I am the author or co-author of eight books, including *The Digital Economy Fact Book* and *The Telecom Revolution: An American Opportunity.* In addition, I have edited or co-edited five books, including *Communications Deregulation and FCC Reform: What Comes Next?* and *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*. My articles have appeared in scholarly journals such as the *Review of Network Economics* and

Telecommunications Policy, as well as in such popular outlets as *Forbes*, *Investor's Business Daily*, *The Wall Street Journal*, *The Washington Post*, and *The Washington Times*. I also serve on the boards of directors of the Information Technology and Innovation Foundation and the Economic Club of Washington.

7. I hold a Ph.D. in economics from the University of Virginia and a B.A. in economics from Claremont McKenna College. My complete CV is at Attachment C.

C. Summary of Findings and Opinions

8. My primary findings include the following:

- It is important in assessing appropriate rates to evaluate relevant contextual information, such as information regarding market performance. I note that the music industry has undergone (and continues to undergo) transformational change, but that music continues to be highly valued by consumers and to generate substantial economic benefits for many participants in the music industry value chain. Yet, while there is evidence that music consumption is increasing, it does not appear that current royalty structures have produced commensurate gains for publishers and songwriters. Conversely, the rapid pace of entry into the interactive streaming business suggests that, under current royalty structures, interactive streaming is generating economic profits.

- One economically valid approach for assessing the value of intellectual property rights which are subject to compulsory licenses is to examine market-based valuations of reasonably comparable benchmark rights – that is, fair market valuations determined by voluntary negotiations. In doing so, it is important to take into account factors such as differences between the rights being valued and the rights being used as benchmarks and the possibility that the outcomes of negotiated bargains are affected by the "shadow" of regulatory intervention.

- In this matter, I adopt a straightforward and robust benchmarking approach that involves two main steps. The first step is to recognize that license terms for the sound recording rights utilized by the services at issue here are negotiated freely between record labels and the services. These licenses represent market-based benchmarks for rights which are directly comparable to the musical works rights at issue here in all respects but one: they are for sound recordings rather than for musical works.[1] Data on the royalties paid under these licenses is available and allows me to estimate the

[1] My analysis also takes into consideration the distinction between mechanical and performance rights.

rates actually being paid by the services to the labels for sound recordings on both a per-play and a per-user basis.

- The second step is to adjust the rates paid for sound recordings to reflect the relative value of the sound recordings and musical works. While the sound recording right and the musical works right are perfect complements from an economic perspective, royalty rates for sound recording rights have historically, in most cases, exceeded royalty rates for corresponding musical works rights. I examine a variety of markets in which sound recording and musical works rights are both required in order to ascertain the relative value of the two rights as actually reflected in the marketplace. Some of the benchmarks I examine, such as the ratios embodied in the current Section 115 licenses, are affected by the shadow of a statutory license, while others, such as direct licenses involving Pandora (for non-interactive services), YouTube (for user-posted content) and synch licenses, are negotiated in a partially or entirely free-market context.

- My examination of these benchmarks allows me to establish upper and lower bounds for the relative value of sound recording and musical works rights, which I estimate to be between 1:1 and 4:76:1, and also to determine that the most reliable evidence indicates that the ratio lies near the center of this range.

- Applying this range of ratios for the relative value of the sound recording and musical works rights to my estimate of the royalties actually paid for sound recordings for the services at issue here yields a range of reasonable rates for the Subpart B and Subpart C licenses. Copyright Owners' proposed mechanical rate of the greater of $0.0015 per play and $1.06 per user falls well within, and indeed towards the lower end, of that range. I therefore conclude that Copyright Owners' proposed terms for mechanical rights for interactive streaming and limited download services are reasonable and consistent with the requirements set forth in Section 801(b)(1) of the Copyright Act.

- The structure of the licenses at issue in this matter is such that the rates and terms established in this proceeding will serve as ceilings on the rates and terms that can be received by licensors, but not as floors. That is, if the rates and terms established in this proceeding provide for values above those that would result from market-based negotiations, the parties are both legally free and economically incentivized to negotiate a more economically efficient outcome, but the converse is not true: If the rates are set too low, there is no incentive for licensees to negotiate terms more favorable to licensors, and the resulting rates could serve to disrupt the industry. The result is that the risks associated with regulatory error – setting rates either too high or too low – are asymmetric: if rates are set too high, they are subject to correction in the marketplace; if they are set too low, they are not.

D. Structure of this Report

9. The remainder of this report is structured as follows. In Section II, I describe the institutional and legal context for my opinions, including the nature of the parties, the rights at issue, and the statutory criteria which I understand govern the Board's decision. In Section III, I explain the methodological approach I utilize to conduct my analysis. In Section IV, I discuss the structure and performance of the music business, focusing on the transformational changes that have occurred, and continue to occur, as a result of technological change and the Internet. In Section V, I present evidence on the relative values of sound recording rights and mechanical works, which forms the basis for part of my benchmarking analysis. In Section VI, I present my analysis of the appropriate rates and terms for interactive streaming and limited downloads and related configurations (Subparts B and C). Section VII presents a brief conclusion.

II. INSTITUTIONAL CONTEXT

10. This section describes the relevant institutional features of the market for Section 115 rights. First, it describes the parties, i.e., the licensors and licensees for Section 115 licenses. Second, it describes the mechanical right itself and places it in context among the various forms of musical copyrights. Third, it discusses the Section 801(b)(1) statutory criteria for setting rates and terms. Fourth, it describes how Section 115 licensing operates in practice and explains that licenses are often negotiated directly and contain rates and terms that deviate from the statutory rates and terms. Finally, it discusses why as a matter of economics the Section 115 license operates as a ceiling but not a floor on Section 115 royalties, and the implications of this fact for the statutory rate.

A. The Parties

11. NMPA is the trade association representing American music publishers and their songwriting partners. Its mission is to protect, promote, and advance the interests of music's creators on the legislative, litigation, and regulatory fronts. NSAI is a trade organization dedicated to serving songwriters of all genres of music. NSAI advocates for the legal and economic interests of songwriters, who derive income from licensing their copyrighted works. NSAI includes songwriter members who directly publish and license their own music.

12. The interactive streaming services (collectively, the "services") participating in this rate proceeding are Apple, Inc. ("Apple"), Google Inc. ("Google"), Amazon Digital Services LLC ("Amazon"), Spotify USA Inc. ("Spotify") and Pandora Media, Inc. ("Pandora").

B. The Rights at Issue

13. The "mechanical" rights at issue in this proceeding allow licensees to reproduce and distribute musical works, which are the various musical elements – lyrics, melody, harmony, rhythm, tempo, structure, and more – which comprise musical compositions. Musical works are distinct from sound recordings, which constitute the embodiment of a work in a particular performance which is fixed in a recording medium such as a digital file.[2]

14. Owners of copyrights in musical works have exclusive rights that include a reproduction right and a public performance right. The reproduction right (previously limited to sheet music) was expanded in the Copyright Act of 1909 to include products that create a

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[2] *See* U.S. Copyright Office, Copyright and the Music Marketplace, at 18 (Feb. 2015), *available at* http://www.copyright.gov/policy/musiclicensingstudy/copyright-and-the-music-marketplace.pdf (last accessed Oct. 24, 2016) ("CMM") ("[A] musical recording encompasses two distinct works of authorship: the musical work, which is the underlying composition created by the songwriter or composer along with any accompanying lyrics, and the sound recording, which is the particular performance of the musical work that has been fixed in a recording medium such as CD or digital file.").

"mechanical" reproduction of the musical work – originally via piano rolls used in player pianos, but more recently including such media as vinyl records, CDs and digital phonorecord deliveries ("DPDs").[3] Mechanical rights now constitute the right to reproduce and distribute copies of musical works in phonorecords, which rights belong exclusively to the copyright owners of the musical works. *See* Sections 106(1) and (3) and 102(a)(2) of the current Copyright Act.[4] Section 115 of the Copyright Act limits these exclusive rights by establishing a compulsory license for making and distributing phonorecords (including DPDs) embodying musical works.

15. In addition to mechanical (reproduction and distribution) rights, musical works copyright owners also have the exclusive right to publicly perform their musical works. *See* Section 106(4) of the Copyright Act. While the public performance right in musical works is not subject to a statutory compulsory license, the rates for most such licenses are nevertheless set under government oversight, as the majority of licenses are administered by the two main performing rights organizations (ASCAP and BMI), both of which are subject to consent decrees under which royalty rates are overseen by federal courts.

16. Sound recordings – which are the "fixed sounds that make up the recording" of a particular musical work[5] – are also protected under several sections of the Copyright Act: 17 U.S.C. § 102 (7) (copyright in sound recordings); 17 U.S.C. § 106 (6) (exclusive right to perform sound recordings publicly by means of digital audio transmission); 17 U.S.C. § 112 (ephemeral recordings); 17 U.S.C. § 114 (statutory right to perform sound recording publicly by non-

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[3] *See* CMM at 17-18.

[4] In 1995, Congress clarified that this right includes the making of digital phonorecord deliveries ("DPDs"). *See* Digital Performance Right in Sound Recordings Act of 1995, Pub. L. No. 104-39 § 4, 109 Stat. 336 and 344-348 ("DPRSRA"); *see also* 17 U.S.C. § 115(c)(3)(A).

[5] *See* CMM at 18.

interactive streaming services, among others). There is no compulsory license to reproduce a sound recording, so that right remains exclusive to the sound recording copyright owner, who can freely bargain for a fee to license such right. As discussed further below, there is, however, a compulsory license to perform the sound recording publicly by means of a non-interactive streaming transmission. *See* Section 114 of the Copyright Act.

17. The Section 115 mechanical right as currently structured covers three categories of uses, covered (as noted briefly above) by Subparts A, B, and C of 37 C.F.R. Part 385.

18. Subpart A covers the licensing of musical works embodied in permanent purchases of recorded music through physical or digital means. Subparts B and C cover the licensing of interactive streaming in its various incarnations, i.e., services which – like purchases of physical products or permanent digital downloads – provide consumers with the practical ability to listen to the songs of their choice at the time and place of their choosing.

19. The current statutory rates for interactive streaming are based on complicated formulas with multiple rate prongs and use greater-than and lesser-than comparisons. The current rate structures were the result of settlements between copyright owners and services in the last two rate proceedings. As I understand it, these settlements occurred when the music streaming industry was embryonic, and the parties agreed to set up various discounted rate structures, many customized to specific envisioned business models, in an acknowledged effort to "jump-start" these novel music business models.[6]

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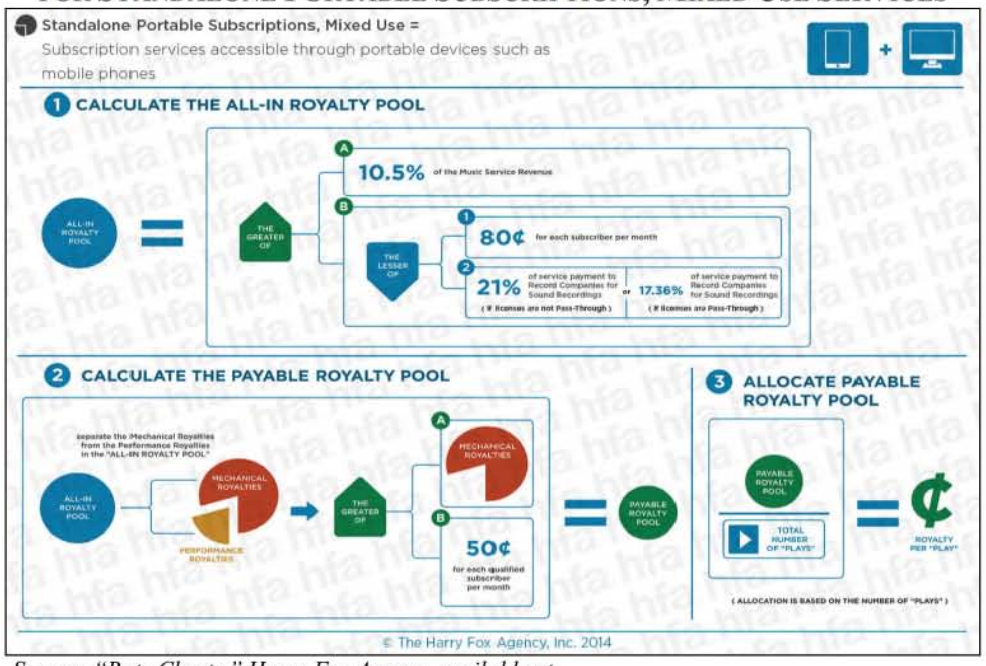
[6] Luiz Augusto Buff & Nicholas Spanos, *New Five-Year Standards for Mechanical Licenses*, 7 Berklee College Music Business Journal 14, 14 (July 2012), *available at* http://www.thembj.org/2012/07/a-bundle-of-mechanicals/ (last accessed Oct. 18, 2016).

20. Useful charts outlining the ten different Subparts B and C rate tests have been created by the Harry Fox Agency. Two particular categories have risen to be dominant. The first is termed "Standalone Portable Subscriptions, Mixed Use," and includes paid subscriptions to music streaming services which can be accessed via a variety of devices, including mobile devices. *See* Figure 1. Each of the five services in this case either offers this type of service, or has publicized an intention to offer one in the coming months.

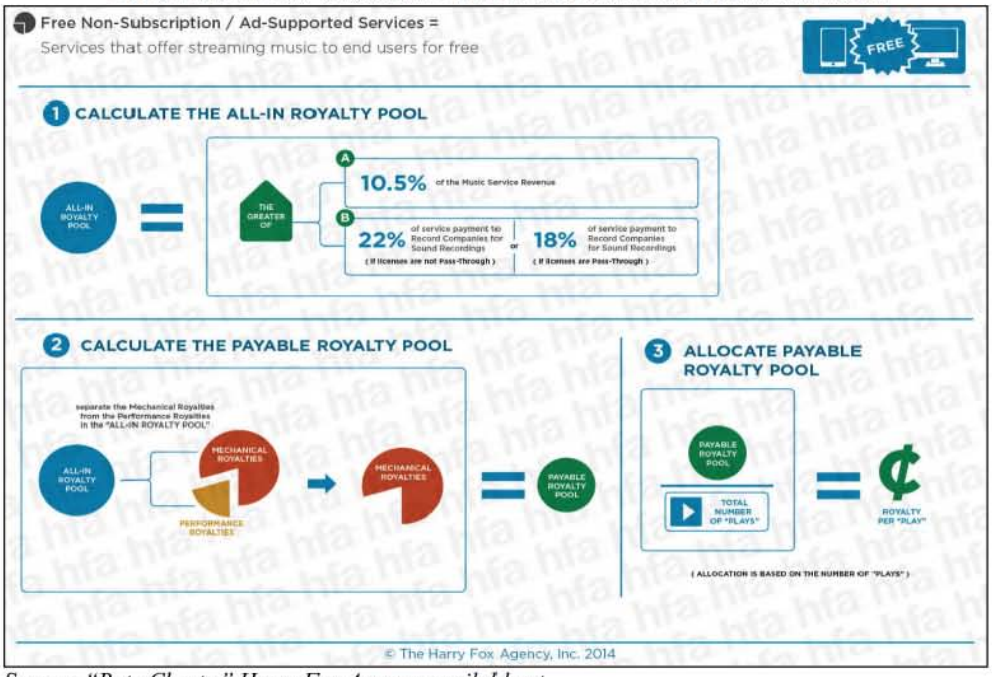
FIGURE 1:
MECHANICAL RIGHT RATE CALCULATION
FOR STANDALONE PORTABLE SUBSCRIPTIONS, MIXED USE SERVICES



Source: "Rate Charts," Harry Fox Agency, available at https://www.harryfox.com/documents/rate_charts/s_p_s_mu.pdf (last accessed Oct. 14, 2016).

21. The second category is termed "Free Non-Subscription/Ad-Supported Services," and includes the free interactive music streaming service offered by Spotify. *See* Figure 2.

FIGURE 2:
MECHANICAL RIGHT RATE CALCULATION
FOR FREE NON-SUBSCRIPTION / AD-SUPPORTED SERVICES



Source: "Rate Charts," Harry Fox Agency, available at https://www.harryfox.com/documents/rate_charts/f_ns_ad_s.pdf (last accessed Oct. 14, 2016).

C. The Statutory Criteria for the Section 115 License

22. Section 801(b)(1) of the Copyright Act requires that the rates and terms to be determined in this proceeding be calculated to achieve four objectives: (1) maximize the availability of creative works to the public; (2) provide copyright owners a fair return for their creative works and copyright users a fair income; (3) recognize the relative roles of the copyright owners and users; and (4) minimize any disruptive impact on the industries involved.[7]

23. Because rates themselves cannot be derived directly from the Section 801(b)(1) policy factors, determination of a reasonable mechanical rate should "begin with a consideration and analysis of the benchmarks and testimony submitted by the parties, and then measure the rate

[7] 17 U.S.C. §§ 801(b)(1)(A)-(D).

or rates yielded by that process against the statutory objectives [of Section 801(b)] to reach [a] decision."[8] The Judges have recognized in prior proceedings that a good starting point for the determination of the parameters of a reasonable range of rates encompassing the four policy factors is to focus on comparable marketplace royalty rates as "benchmarks."[9]

24. I note that the first three Section 801(b)(1) factors generally dovetail with the concept of fair market value, as a rate set at the fair market value by definition provides fair returns and incomes to both the licensee and licensor and does so in a way that corresponds to each party's contributions to the end product. Because such a rate reflects the value to which licensors and licensees would agree in the market, it also necessarily balances the long-run availability of creative works (by providing a "fair return" to the copyright holders) and the short-run availability of creative works (by allowing service providers to earn a "fair income").

25. As a matter of policy, the appropriateness of the fourth factor of the 801(b)(1) standard – the instruction to "minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices" – is somewhat controversial, as, to the extent that it might weigh in favor of a rate other than one that would emerge from voluntary negotiations in a free market, it necessarily conflicts with the other three factors, which counsel otherwise. However, I note that the Board has embraced a constrained interpretation of the "non-disruption" standard, finding that "'disruption' typically refers to an adverse impact that is substantial, immediate and irreversible in the short-run because there is insufficient time for the industry participants to adequately adapt to the changed circumstances and, as a consequence,

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[8] Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2006-1 CRB DSTRA ("SDARS I"), 73 Fed. Reg. 4080, 4084 (Jan. 24, 2008).

[9] *See* SDARS I at 4088.

such adverse impacts threaten the viability of the music delivery currently offered under the license in question."[10]

D. Section 115 Licensing in Practice

26. Mechanical licenses typically are issued by the Harry Fox Agency ("HFA"), which was established by NMPA in 1927 to act as an information source, clearinghouse, and monitoring service for licensing musical copyrights.[11] HFA currently has over 48,000 music publisher affiliates for which it collects mechanical royalties, and also allows non-affiliate publishers to register songs with HFA in order to receive mechanical royalties that are due as a result of sound recordings being distributed in the U.S.[12]

27. I understand that the licenses granted by HFA typically deviate slightly from the terms of the statutory license, generally adopting the statutory rates but including different payment terms. Also, with respect to Subpart B and C licenses, music publishers often grant direct licenses to streaming services, with terms relating to payment schedules and audit structures modified from the "compulsory" terms. For example, some of the direct licenses produced by parties to this proceeding [redacted]

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[10] *See* Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA ("Phonorecords I"), 74 Fed. Reg. 4510, 4516 (Jan. 26, 2009), citing SDARS I, 73 Fed. Reg. at 4097.

[11] *See, e.g.*, What does HFA Do?, Harry Fox Agency, *available at* https://www.harryfox.com/publishers/what_does_hfa_do.html (last accessed Oct. 12, 2016); *see also* Brian T. Yeh, Cong. Research Serv., RL33631, Copyright Licensing in Music Distribution, Reproduction, and Public Performance (Sept. 22, 2015), at 6, *available at* https://www.fas.org/sgp/crs/misc/RL33631.pdf (last accessed Oct. 12, 2016). In 2015, the NMPA sold HFA to the performing rights organization SESAC.

[12] *See* Why Affiliate with HFA?, Harry Fox Agency, *available at* https://www.harryfox.com/publishers/why_affiliate.html (last accessed Oct. 12, 2016); *see also* Song Registration, Harry Fox Agency, *available at* https://www.harryfox.com/publishers/song_registration.html (last accessed Oct. 12, 2016).

[redacted].[13] My understanding is that the use of licenses which deviate from the terms of the Section 115 statutory license – including as to terms for payment schedules, late fees, audit rights, etc. – has been common practice for some time.[14]

28. I further understand that at times the parties negotiate direct licenses which deviate from the statutory license with respect to rates as well as terms. For example, [redacted]

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[13] [redacted].

[14] *See* CMM at 31, 107-08; *see also* Al Kohn & Bob Kohn, *Kohn on Music Licensing*, 3rd Ed. (Aspen Publishers, 2000) at 683-84. (". . . [N]early all mechanical licenses are negotiated directly between the copyright owners and the licensees and do not strictly reflect the terms of the compulsory license provisions of the law.").

[15] [redacted]

[16] [redacted]

[17] [redacted]

[18] [redacted]

[19] [redacted]

[redacted]

E. The Statutory Rate Is a Ceiling, Not a Floor

29. Under the Section 115 compulsory license, rightsholders are not permitted to withhold a license from a licensee who is prepared to pay the statutory rates. Licensees, on the other hand, have the option of not taking a license. The practical effect of this aspect of the compulsory license is that, if the rates and terms in the statutory license establish a higher value for the license than licensees are willing to pay, licensees have the legal right to walk away from the statutory rate and force a renegotiation of terms. In this circumstance, both parties would have an incentive to agree to a lower but still mutually beneficial rate. By contrast, if the statutory rate is set "too low," licensors have an incentive to negotiate different terms, but they lack legal standing to force a renegotiation. As the Copyright Office puts it, "while copyright owners and users are free to negotiate voluntary licenses that depart from the statutory rates and terms, in practical effect the CRB-set rate acts as a ceiling for what the owner may charge."[21]

30. Further, the fact (discussed immediately above) that licensors and licensees already negotiate direct licenses for mechanical rights that make mutually-acceptable

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[20] [redacted]

[21] CMM at 29; *see also* at 31 (". . . [T]he terms of the statutory license act as a ghost in the attic, effectively establishing the maximum amount a copyright owner can seek under a negotiated mechanical license.").

adjustments to the statutory provisions demonstrates that, in the event a statutory rate proves unacceptable to licensees, re-negotiation is realistic in practice as well as in theory.

31. Thus, the risk of regulatory error – that is, of setting, either for lack of accurate information or as a result of unexpected market developments during the license term, rates that differ from 801(b)(1)-style rates meant to maximize the availability of works, provide a fair return, recognize the roles of rightsholders and licensees, and minimize disruptions – is not symmetric. Instead, if the statutory rate is set too low, there is no market recourse: the inevitable result is that rightsholders receive an uneconomically low return, reducing the incentive to develop new works and potentially causing serious disruption in the industry. If the statutory rate is set too high, the parties have both the incentive and the ability to establish economic rates through voluntary negotiation.

32. To be clear, I am not arguing that the statutory rate can or should be set arbitrarily high or that it should be set above the rate that would be obtained in the market absent a compulsory license regime. Instead, the goal should be to determine rates that are consistent with market rates and with the 801(b)(1) statutory standard, including the requirement to avoid disruption. Because no endeavor to fix prices for a five-year period can perfectly predict the future, especially in the rapidly evolving music marketplace, accomplishing this goal requires giving weight to the greater potential for disruption that could result from setting rates too low as opposed to too high.

III. METHODOLOGICAL APPROACH

33. From an economic perspective, the task of assessing the market value of copyrights subject to compulsory licenses, like the ones at issue in this proceeding, is a challenging one.[22] Economists have applied a variety of approaches, including benchmarking, various game theoretic models, and economic models borrowed from public utility regulation. In my opinion, the appropriate approach depends on the evidence available and other contextual factors, and it is often appropriate to apply multiple approaches. However, when the evidence is available to do so, in my opinion one useful approach is to analyze market-based benchmarks – that is, agreements for comparable rights reached in comparable circumstances through voluntary negotiations in an unconstrained market.[23] As I explain below, in this instance I have concluded that it is possible to arrive at a reasonable estimated range of the value of the rights at issue through a benchmark analysis, confirmed and supported by an assessment of contextual economic factors affecting the music business overall and the particular markets at issue. This is the approach I take in this report.

A. The Use of Benchmarks in Establishing Statutory Rates

34. The desirability of the benchmarking approach is that it is grounded in real market transactions between market participants, and thus reflects the value attached to the good by

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[22] *See generally* David Strickler, "Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis," *Review of Economic Research on Copyright Issues* 12(1/2) (2015) 1-15 ("Strickler (2015)").

[23] *See, e.g.*, Strickler (2015) at 9-10 ("The Judges have long held that an otherwise appropriate benchmark reflects the actual market behavior of rational actors . . . Further, an otherwise appropriate benchmark is also deemed to provide sufficient revenue for the licensor to recover at least a sufficient proportion of its costs and its normal profit while also requiring payment from the licensee that is not so large as to prevent the licensee from engaging in the webcasting business.") While these comments were made in the context of assessing analysis under Section 114's "willing buyer, willing seller" standard, I believe they are relevant in this Section 115 context as well, since the policy objectives here are generally best vindicated by market-consistent rates.

actual suppliers and users – i.e., the interplay between supply and demand which results in a market price or "fair market value" for the good in question. One authoritative text defines "fair market value" as follows:

> A widely used description of fair market value is the cash equivalent value at which a willing and unrelated buyer would agree to buy and a willing and unrelated seller would agree to sell . . . when neither party is compelled to act, and when both parties have reasonable knowledge of the relevant available information.[24]

When appropriate comparable bargains are available, the use of benchmarks – properly adjusted to account for differences between the benchmark rates and the target rates – can often provide direct evidence of fair market value. The use of benchmark agreements to assess the fair market value of rights at issue and determine appropriate royalty rates has been embraced in a number of section 801(b)(1) proceedings, dating back to 1980.[25] In general, the Board has assessed benchmark analyses based on a variety of criteria, with the overall proviso that "the key

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[24] Robert W. Holthausen & Mark E. Zmijewski, *Corporate Valuation: Theory, Evidence and Practice*, 1st Ed. (Cambridge Business Publishers, 2014) at 4.

[25] See 1980 Adjustment of the Royalty Rate for Coin-Operated Phonorecord Players, 46 Fed. Reg. 884, 888 (decided Jan. 5, 1981), appealed to the D.C. Circuit and decided in *Amusement and Music Operators Ass'n v. Copyright Royalty Tribunal*, 676 F.2d 1144 (D.C. Cir. 1982); Adjustment of Royalty Payable Under Compulsory License for Making and Distributing Phonorecords; Rates and Adjustment of Rates, 46 Fed. Reg. 10,466, 10,480 (decided Feb. 3, 1981), appealed to the D.C. Circuit and decided in *Recording Indus. Ass'n of America v. Copyright Royalty Tribunal*, 662 F.2d 1, 9 (D.C. Cir. 1981); Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings, 63 Fed. Reg. 25,394, 25,396-98, 25,400-05 (decided May 8, 1998), appealed to the D.C. Circuit and decided in *Recording Indus. Ass'n of America v. Librarian of Congress*, 176 F.3d 528 (D.C. Cir. 1999); SDARS I, 73 Fed. Reg. at 4,088-94, appealed to the D.C. Circuit and decided in *SoundExchange, Inc. v. Librarian of Congress*, 571 F.3d 1220 (D.C. Cir. 2009); Phonorecords I, 74 Fed. Reg. 4,517-22; appealed to the D.C. Circuit and decided in *Recording Indus. Ass'n of America v. Librarian of Congress*, 608 F.3d 861 (D.C. Cir. 2010); and Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, 78 Fed. Reg. 23,054, 23,055-58,23,061-66 (decided Apr. 17, 2013) ("SDARS II"), appealed to the D.C. Circuit and decided in *Music Choice v. Copyright Royalty Board*, 774 F.3d 1000 (D.C. Cir. 2014).

characteristic of a good benchmark" is the comparability of the proposed benchmark to the rights and participants at issue in the proceeding.[26]

35. More specifically, it is important when utilizing benchmarks to consider various factors that might make the licensed rights more or less valuable by comparison to the target rights, and thus require an adjustment to the rates paid for the benchmark rights. These factors may include: differences in the nature of the rights at issue; differences in underlying market factors (e.g., different geographic markets); differences in the term or time period covered by the agreements; differences in factors affecting the relative bargaining power of the parties (possibly including the presence of the shadow of compulsory licensing); and differences in the services being offered. The greater the differences between the markets represented by commercial benchmarks and the market at issue, the more complex the adjustments necessary to achieve "comparability."

36. In this matter, a straightforward and robust benchmarking approach, which relies on rights that are directly comparable to the target rights at issue, presents itself. It involves two steps.

37. First, the sound recording rights corresponding to the musical works rights at issue in this proceeding are not subject to a compulsory license or other formal rate regulation: they are freely negotiated in an unconstrained marketplace. Furthermore, the sound recording rights are perfect complements to the musical works rights: both licenses are required to engage the interactive streaming services covered in Subparts B and C. In all other significant respects – the relationships of the parties, the geographic coverage of the markets, etc. – the sound

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[26] SDARS I, 73 Fed. Reg. at 4,092; SDARS II, 78 Fed. Reg. at 23,058.

recording rights are well suited to serve as a benchmark for the corresponding musical works right. Accordingly, as explained in Section VI below, I have gathered and assessed available information – covering a substantial portion of the market – on the royalties paid by interactive services to record labels for sound recording rights.

38. Second, while the sound recording right and the musical works right are perfect complements from an economic perspective, royalty rates for sound recording rights have historically, in most cases, exceeded royalty rates for corresponding musical works rights. Thus, in order to use the sound recording benchmark to estimate the value of the corresponding musical works rights for interactive services, it is necessary to estimate the relative value of the two rights. This task can be accomplished by gathering and analyzing evidence about how the sound recording and musical works rights are valued in other instances in which both rights are required. As I explain in Section V below, such information is available for several markets, including markets for synchronization rights, non-interactive streaming services, ringtones and the YouTube service. My analysis of this data provides a robust estimate of the range of relative values of the sound recording and musical works rights. That range of ratios allows me to adjust the value of the sound recording right for interactive services to arrive at what in my opinion is a robust and reasonably precise estimate of the range of reasonable values of the Subpart B and Subpart C rights at issue here.

B. The Importance of Considering Contextual Evidence

39. To supplement the benchmarking exercise and to ensure it remains closely tied to the commercial and practical realities of the relevant markets, it is also important to assess various types of contextual information. Examples of such information include the potential influence of rate setting bodies or other regulatory activities on the relative bargaining power of

the parties (and resulting outcomes), economic or technological trends that affect supply and demand in relevant markets, institutional or transaction cost factors that may affect economic conduct and valuations, and the effects of customary and ordinary business practices – i.e., the way business is done.

40. I consider such evidence in this testimony in a number of ways. For example, I described relevant aspects of the institutional context in Section II above; in the section immediately below, I assess technological and market factors that are transforming the music business; I address other relevant contextual factors (e.g., the significance of the "partial withdrawal" issue associated with recent agreements involving non-interactive rights) as appropriate throughout my testimony.

IV. THE TRANSFORMATION OF THE MUSIC BUSINESS

41. In order to understand the appropriate value of the mechanical rights at issue in this proceeding – which were last set in a 2012 resolution which largely carried over rates set in 2008 – it is important to understand how the music industry has changed over the past several years. In particular, as I describe in more detail in the remainder of this section, the industry has moved away from the sales of physical media (sold generally as albums which bundled a number of tracks together) to the sales of digital media (sold increasingly as unbundled tracks) and, more recently, to the use of subscription and non-subscription based streaming and limited download services, which do not require listeners to purchase the music they wish to access on-demand. These changes have profoundly affected the ways in which music is distributed and consumed, disrupted traditional business models, and reduced overall revenues. While revenues have declined, however, there is no evidence that the demand for music has declined. Rather, the amount of time U.S. consumers spend listening to music has increased.

A. The Shift from Physical to Digital Distribution

42. The first major shift began in the 1990s with the shift from physical to digital formats as the primary mechanism for music distribution. Music industry revenues peaked in the late 1990s, with CD sales making up by far the largest source of retail sales revenues. However, with the growth of the personal computer and portable digital music players, consumption of music via computer files (MP3s and the like) grew. The lack of a well-developed retail market for music in digital file formats contributed to a significant decline in music industry revenues as listeners moved from physical to digital formats, aided by digital music piracy, which filled the digital retail vacuum with the availability of digital music files through peer-to-peer file sharing services such as Napster.[27] As shown in Figure 3, U.S. revenues from CD sales declined from $18.5 billion in 1999 to $1.5 billion in 2015.

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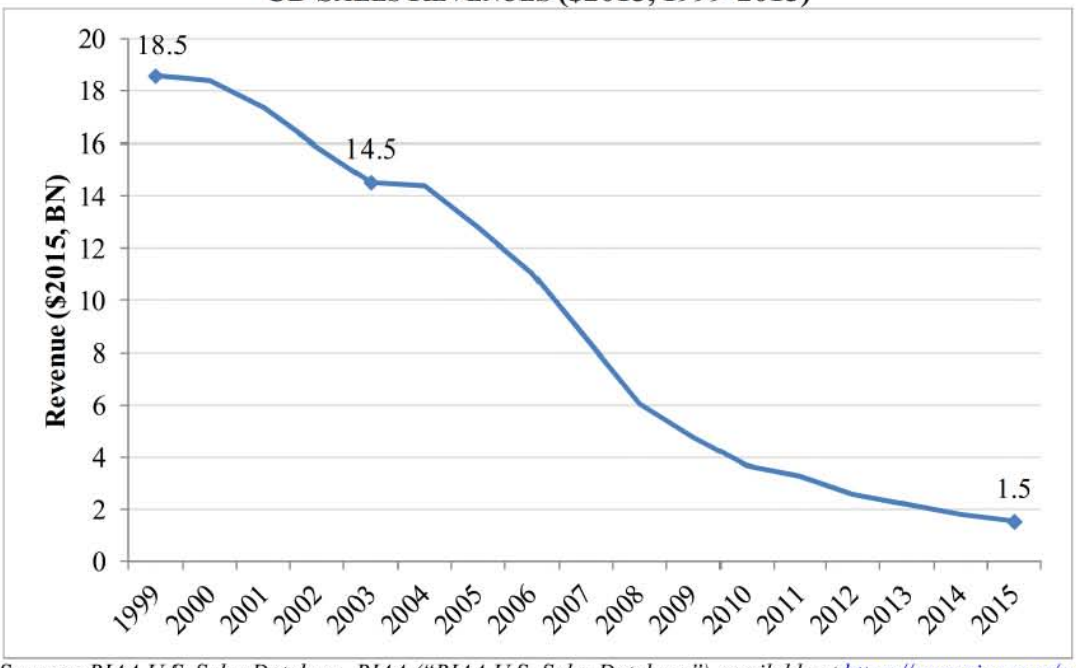
[27] *See* Richard Nieva, "Ashes to Ashes, Peer to Peer: An Oral History of Napster," Fortune (Sept. 5, 2013), *available at* http://fortune.com/2013/09/05/ashes-to-ashes-peer-to-peer-an-oral-history-of-napster/ (last accessed Oct. 12, 2016). For a contemporaneous assessment of the impact of online music distribution, *see also* William A. Adkinson and Jeffrey A. Eisenach, *The Debate Over Digital Online Content: Understanding the Issues* (The Progress & Freedom Foundation, Apr. 2002), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1260377 (last accessed Oct. 12, 2016).

FIGURE 3:
CD SALES REVENUES ($2015, 1999-2015)



Sources: RIAA U.S. Sales Database, RIAA ("RIAA U.S. Sales Database"), available at https://www.riaa.com/u-s-sales-database/ (last accessed Oct. 12, 2016). *Note: [1] CD sales include RIAA categories CD and CD Single. [2] Data show the retail value equivalent of wholesale sales.*

43. The music industry reacted to digital piracy by creating licensed outlets for digital music distribution. Most notable of the digital music stores was the Apple iTunes store, which launched in 2003 with the backing of the major music labels.[28] Digital downloads were paired with the Apple iPod, which facilitated a limited level of music portability and was a precursor to today's mobile music streaming over smartphones and other mobile electronics.[29] The creation of legitimate retail markets for digital music led to the gradual decline of digital music piracy. As I discuss below, digital music distribution also enabled the unbundling of the music album:

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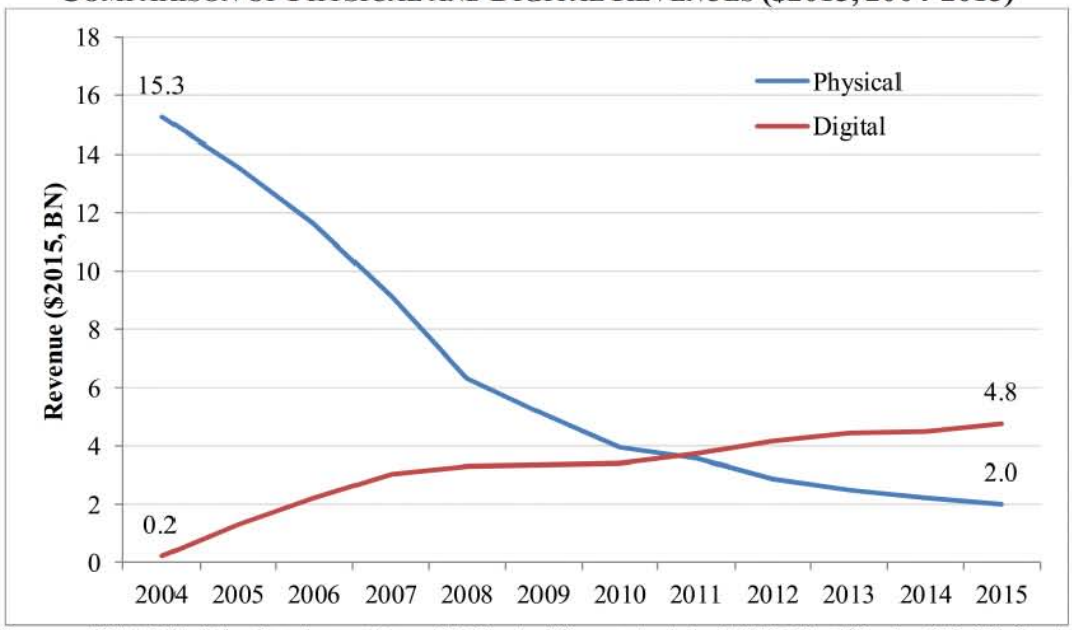
[28] *See* Nathan Ingraham, "iTunes Store at 10: How Apple Built a Digital Media Juggernaut," The Verge (Apr. 26, 2013), *available at* http://www.theverge.com/2013/4/26/4265172/itunes-store-at-10-how-apple-built-a-digital-media-juggernaut (last accessed Oct. 12, 2016).

[29] *Id.*

music consumers could for the first time more conveniently download singles from albums instead of the entire album.

44. The growing popularity of digital formats is illustrated in Figure 4, which shows that between 2004 (when the RIAA began tracking revenues for digital formats) and 2015, revenues from physical sales declined by 87 percent, from $15.3 billion to $2 billion. While digital revenues increased from $230 million to approximately $4.8 billion, a 19-fold increase, that increase was still far too small to offset the decline in physical sales. Note that these figures represent the revenues for the record labels, the owners of the sound recording copyrights, who negotiate licenses for their reproduction rights in the free market, not subject to compulsory licensing.

FIGURE 4:
COMPARISON OF PHYSICAL AND DIGITAL REVENUES ($2015, 2004-2015)



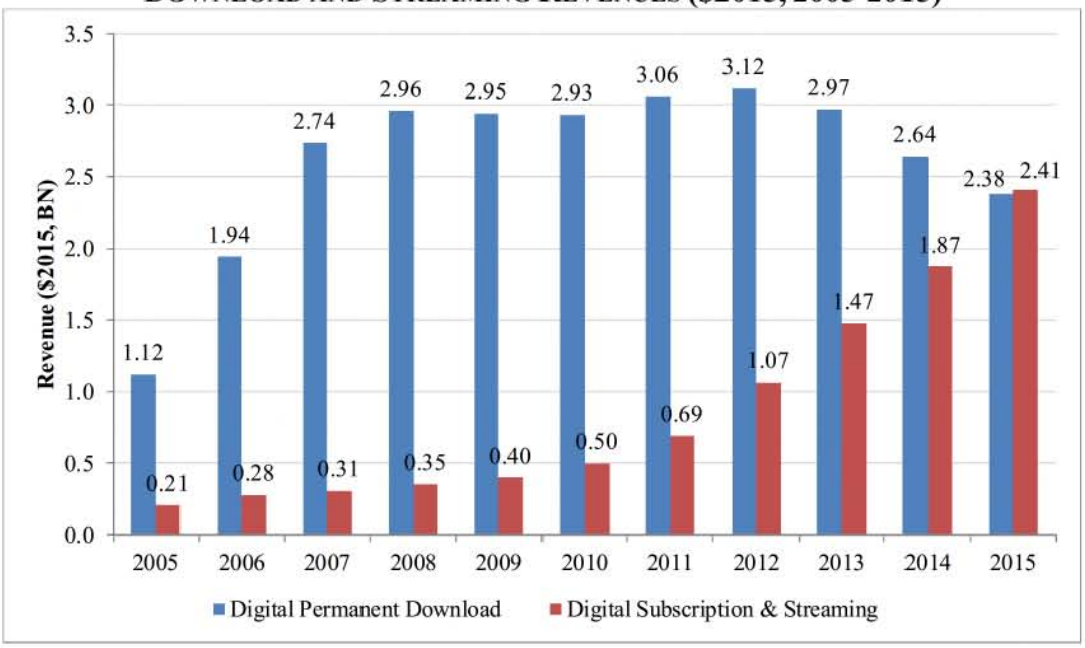
Sources: RIAA U.S. Sales Database. Note: [1] Physical formats include LP/EP, Vinyl Single, CD, CD Single, Music Video, DVD Audio and SACD. Digital formats include Download Single, Download Album, Kiosk, Download Music Video, Ringtones and Ringbacks, Paid Subscriptions, SoundExchange Royalties and Ad-Supported On-Demand Streaming. [2] 2004 was the first year that RIAA began tracking digital media. [3] Data show the retail value equivalent of wholesale sales. Services with no retail value equivalent are included at wholesale value.

45. The next major transformation of the music industry occurred with the shift from digital downloads to both interactive and non-interactive streaming services.[30] As shown in Figure 5, music streaming revenues have increased steadily since 2005, while download revenues began declining in 2012. In 2015, total revenues from streaming surpassed download revenues for the first time, with streaming revenues of approximately $2.41 billion compared to $2.38 billion for downloads. The figure also illustrates that the growth of streaming did not accelerate until after the 2012 settlement that established the current Section 115 rates. Again,

[30] *See, e.g.*, Micah Singleton, "Streaming Music Edged Out Digital Downloads for the First Time in 2015," *The Verge* (Mar. 22, 2016), *available at* http://www.theverge.com/2016/3/22/11284932/streaming-music-riaa-music-labels-youtube (last accessed Oct. 12, 2016).

note that these are figures for the record labels, whose reproduction rights are not subject to compulsory licensing.

FIGURE 5:
DOWNLOAD AND STREAMING REVENUES ($2015, 2005-2015)



Sources: RIAA U.S. Sales Database. Note: [1] Digital Permanent Download incudes Download Single, Download Album, Kiosk, Download Music Video, Ringtones and Ringbacks. Digital Subscription and Streaming includes Paid Subscriptions, SoundExchange Royalties and Ad-Supported On-Demand Streaming. [2] 2005 was the first year that RIAA began tracking streaming subscription revenue. [3] Note the total for digital in Figure 4 above (4.8) is rounded and does not match the total in this figure (2.38 + 2.41 = 4.79). [4] Data show the retail value equivalent of wholesale sales. Services with no retail value equivalent are included at wholesale value.

B. Music Streaming Services

46. The music streaming industry, especially the market for interactive or on-demand services, is highly dynamic, characterized by rapid innovation and the entry of new firms. There are two primary categories of music streaming services: *non-interactive streaming services* (like the one offered by Pandora), which do not allow listeners to listen to songs on-demand; and *interactive streaming services*, which allow on-demand streaming. As noted above, the Subpart B and Subpart C licenses at issue in this proceeding apply to interactive services.

47. Below, I briefly describe non-interactive streaming services, and then discuss the market for interactive streaming services.[31]

48. The non-interactive streaming category covers services which provide a spectrum of functionalities. On one end of the spectrum, some services provide a programmed stream of music that cannot be altered – in effect, digital radio. On the other end of the spectrum are services that have customizable streams and allow users to skip songs. Many broadcast radio stations provide streaming simulcasts that allow listeners to stream linear radio broadcasts over the Internet. Aggregation services like iHeartRadio[32] and TuneIn[33] aggregate simulcasts for radio stations, allowing listeners access to myriad stations all across the country. Other music streaming services allow for a customized music stream where listeners are able to choose a genre or influence the songs that are played on the stream by liking or disliking songs. Pandora's non-interactive music streaming service utilizes a music curation algorithm based on its Music Genome Project database that plays songs based on a listener's preference as determined by songs that were liked previously.[34]

49. Interactive streaming services such as Apple Music, Amazon, Google Play Music, Rhapsody and Spotify give listeners unlimited access to a library of music; that is, users are able to choose a specific sound recording and listen to it at the time of their choosing. These products

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[31] My references to interactive streaming services throughout this report include services offering interactive music streaming and/or limited downloads.

[32] *See* "Welcome to iHeartRadio," iHeart,, *available at* http://www.iheart.com/news/welcome-to-iheartradio-6906244/ (last accessed Oct. 12, 2016). Note that iHeartRadio has also recently announced its plans to launch an interactive streaming service in the coming months. *See* "Introducing iHeartRadio All Access," iHeart,, *available at* http://blog.iheart.com/Pages/introducing-iheartradio-all-access.aspx (last accessed Oct. 21, 2016).

[33] *See* "About TuneIn," TuneIn,, *available at* http://tunein.com/about/ (last accessed Oct. 12, 2016).

[34] *See* "About the Music Genome Project," Pandora, *available at* https://www.pandora.com/about/mgp (last accessed Oct. 12, 2016).

are differentiated by the size of the music library available to the users, the types of additional service options available, and other features. There is substantial variation in the size of these services' catalogs. Apple Music, Google Play, Rhapsody, and Spotify each have over 30 million songs available. Amazon's new Music Unlimited service touts "tens of millions" of songs, while Amazon's Prime Music service has a significantly smaller catalogue of over a million songs.[35] Along with catalog size, interactive services also differentiate themselves by exclusive audio content that is not available on other platforms, such as Tidal Music's exclusive streaming deals for Beyoncé's album "Lemonade" and Kanye West's album "The Life of Pablo."[36] These deals provide incentives for listeners to choose one service over another in order to hear content from popular artists before it is made available through wide release.

50. Interactive streaming companies primarily monetize their services using monthly subscriptions that allow unlimited streaming (sometimes referred to as "all you can eat" plans). Table 1 below summarizes monthly prices for subscription plans from select interactive services. Some services offer free versions of their service, although most of these free versions do not offer true on-demand access, but rather offer access to non-interactive streaming services such as internet radio stations of playlists (or, in the case of SoundCloud, a limited catalog of popular music). Spotify, which has become the dominant service provider in the industry in terms of

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[35] *See* Madi Alexander and Ben Sisario, "Apple Music, Spotify and a Guide to Music Streaming Services," *The New York Times* (Apr. 5, 2016), *available at* http://www.nytimes.com/interactive/2015/06/30/business/media/music-streaming-guide.html?_r=0 (last accessed Oct. 12, 2016); Dan Seifert, "Amazon's Full On-Demand Streaming Music Service Launches Today," The Verge (Oct. 12, 2016), *available at* http://www.theverge.com/2016/10/12/13244158/amazon-music-unlimited-launch-echo-availability-price (last accessed Oct. 17, 2016).

[36] Xiomara Blanco, "Drake's 'Views' to Exclusively Roll Out on Apple Music, iTunes," CNET (Apr. 28, 2016), *available at* https://www.cnet.com/news/drakes-views-from-the-six-exclusively-rolls-out-on-apple-music-itunes/ (last accessed Oct. 12, 2016)

user base, offers a fully-functional free, ad-supported desktop version of its service as well as a free, mobile version with restrictions. Spotify offers certain additional features for subscription members in addition to advertisement-free streaming, including full mobile device access. Most services charge $9.99 per month for their subscriptions, with a family plan available for $14.99 per month that provides access to up to six people.[37] Some services offer different variations on subscriptions. For example, Tidal offers a Tidal HiFi tier for $19.99 a month that provides lossless content in CD quality as well as a Premium tier for $9.99 that is restricted to "high quality" streaming.[38] Amazon historically bundled its Prime Music service, which has a very limited catalog, as a free feature of its Prime subscriptions. Amazon has also just launched an on-demand streaming pricing program taking aim at the standard industry models. Amazon Music Unlimited launched in October 2016, and offers a $3.99 per month service that only streams through Amazon's proprietary Echo device, as well as a discounted $7.99 per month (or $79 per year, which works out to $6.58 per month) service for subscribers to its Prime program (which has been estimated to have 60 to 80 million subscribers),[39] along with the standard $9.99 per month for other individuals and $14.99 per month for families.[40]

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[37] *See e.g.*, Membership, Apple Music, *available at* http://www.apple.com/apple-music/membership/ (last accessed Oct. 21, 2016).

[38] *See* "HiFi vs. Premium Subscriptions," Tidal, *available at* https://support.tidal.com/hc/en-us/articles/202722972-HiFi-vs-Premium-Subscriptions- (last accessed Oct. 12, 2016).

[39] *See* Tom DiChristopher, "Prime Will Grow Amazon Revenue Longer Than You Think: Analyst," CNBC (Sept. 11, 2015), *available at* http://www.cnbc.com/2015/09/11/prime-will-grow-amazon-revenue-longer-than-you-think-analyst.html (last accessed Oct. 18, 2016).

[40] *See* Dan Seifert, "Amazon's Full On-Demand Streaming Music Service Launches Today," The Verge (Oct. 12, 2016), *available at* http://www.theverge.com/2016/10/12/13244158/amazon-music-unlimited-launch-echo-availability-price (last accessed Oct. 17, 2016).

TABLE 1:
SELECT INTERACTIVE STREAMING SERVICES - SERVICE TIERS
(JUNE 2016)

Service	Free/ Ad-Supported Tier	Monthly Fee Range ($)
Amazon Music Unlimited		3.99/14.99
Apple Music		9.99/14.99
Deezer		9.99/14.99
Google Play Music		9.99/14.99
Microsoft Groove		9.99/14.99
Rhapsody		4.99/9.99
Spotify	X	9.99/14.99
Tidal		9.99/19.99

Sources: Economics of Mobile Music, SNL Kagan 2016 Edition (July 19, 2016) at 9 ("SNL Economics of Mobile Music"); Dan Seifert, "Amazon's Full On-Demand Streaming Music Service Launches Today," The Verge (Oct. 12, 2016), available at http://www.theverge.com/2016/10/12/13244158/amazon-music-unlimited-launch-echo-availability-price (last accessed Oct. 17, 2016). Note: Services with a range of monthly fees have multiple service tiers at varying prices.

51. It is significant that the interactive music business is experiencing rapid entry. Table 2 below shows examples of major entrants into the U.S. market from 2001 to the present.

TABLE 2:
SELECT ENTRANTS INTO INTERACTIVE MUSIC STREAMING
(U.S. MARKET; 2001-PRESENT)[41]

Service	Launch
Napster (Formerly Rhapsody)	December 2001
Slacker Premium Radio	May 2011
Spotify	July 2011
Groove Music (Formerly Xbox Music)	October 2012
Google Play All Access	May 2013
Amazon Prime Music	June 2014
Tidal Music	October 2014
Apple Music	June 2015
SoundCloud Go	March 2016
Deezer	July 2016
Amazon Unlimited Music	October 2016
Pandora Interactive Streaming	Q4 2016
iHeartRadio All Access	January 2017
Playster	TBD

[41] Napster (Formerly Rhapsody): Gwendolyn Mariano, "Listen.com Launches Rhapsody Service," ZDNet (Dec. 3, 2001), *available at* http://www.zdnet.com/article/listen-com-launches-rhapsody-service/ (last accessed Oct. 12, 2016); Slacker Premium Radio: "Slacker Launches Slacker Premium Radio with On-Demand Access to Music Library," Slacker (May 17, 2011), *available at* http://blog.slacker.com/press/31/ (last accessed Oct. 12, 2016); Spotify: Charlie Sorrel, "Spotify Launches in the U.S. at Last," Wired (July 14, 2011), *available at* http://www.wired.com/2011/07/spotify-launches-in-the-u-s-at-last/ (last accessed Oct. 12, 2016); Groove Music (Formerly Xbox Music): "Introducing Xbox Music: The Ultimate All-in-One Music Service Featuring Free Streaming on Windows 8 and Windows RT Tablets and PCs," Microsoft (Oct. 15, 2012), *available at* http://www.microsoft.com/en-us/news/press/2012/oct12/10-14xboxmusicpr.aspx (last accessed Oct. 12, 2016); Google Play All Access: Josh Constine, "Google Launches 'Google Play Music All Access' On-Demand $9.99 A Month Subscription Service," TechCrunch (May 15, 2013), *available at* http://techcrunch.com/2013/05/15/google-play-music-all-access/ (last accessed Oct. 12, 2016); Amazon Prime Music: Tom Warren, "Amazon Launches Streaming Music Service for Prime Members," The Verge (June 12, 2014), *available at* http://www.theverge.com/2014/6/12/5802898/amazon-prime-music-features-pricing (last accessed Oct. 12, 2016); Tidal Music: Matthew Sparkes, "Tidal launches lossless music streaming in UK and US," The Telegraph (Oct. 28, 2014), *available at* http://www.telegraph.co.uk/technology/news/11192375/Tidal-launches-lossless-music-streaming-in-UK-and-US.html (last accessed Oct. 25, 2016); Apple Music: "Introducing Apple Music - All the Ways You Love Music. All in One Place," Apple (June 8, 2015), *available at* http://www.apple.com/pr/library/2015/06/08Introducing-Apple-Music-All-The-Ways-You-Love-Music-All-in-One-Place-.html (last accessed Oct. 12, 2016); SoundCloud Go: "Introducing SoundCloud Go," SoundCloud, *available at* https://blog.soundcloud.com/2016/03/29/introducing-soundcloud-go/ (last accessed Oct. 12, 2016); Deezer: Ingrid Lunden, "Deezer Opens Its $9.99 On-Demand Music Service in the US to Everyone, No Free Tier Included," TechCrunch (July 19, 2016), *available at* https://techcrunch.com/2016/07/19/deezer-opens-its-9-99-on-demand-music-service-in-the-us-to-everyone-no-free-tier-included/ (last accessed Oct. 12, 2016); Amazon Unlimited Music: Dan Seifert, "Amazon's Full On-Demand Streaming Music Service Launches Today," The Verge (Oct. 12, 2016), *available at* http://www.theverge.com/2016/10/12/13244158/amazon-music-unlimited-launch-echo-availability-price (last accessed Oct. 18, 2016); Pandora Interactive Streaming Hannah Karp, "Pandora Nears Deals for On-Demand Streaming," The Wall Street Journal (Aug.19, 2016), *available at* http://www.wsj.com/articles/pandora-nears-deals-for-on-demand-streaming-1471599002 (last accessed Oct. 18, 2016); iHeartRadio All Access: Andrew Dalton, "iHeartRadio Plays Catch-up with On-Demand Music," Engadget (Sept. 23, 2016), *available at* https://www.engadget.com/2016/09/23/iheartradio-all-access-plus-on-demand-music/; (last accessed Oct. 24, 2016); Playster: Anna Washenko, "Playster Gets Label Deals for the Music Side of Its Streaming Subscription Bundle," RAIN News (Sept. 23, 2016), *available at* http://rainnews.com/playster-gets-label-deals-for-the-music-side-of-its-streaming-subscription-bundle/ (last accessed Oct. 24, 2016)

52. For example, as the chart shows, Pandora has announced the planned launch of its interactive streaming business later this year that will compete directly with Apple Music, Spotify and other interactive services.[42]

53. The continued entry of new services into the interactive streaming business demonstrates that investors and entrepreneurs expect to earn economic profits – i.e., returns in excess of the risk-adjusted return on capital – from their investments.[43] To be clear, this does not necessarily mean that: (a) these firms are earning *accounting profits,* which are different from economic profits;[44] (b) these firms are currently earning economic profits or expect to do so in the immediate future; or, (c) all of these firms will earn profits (of any kind). What it does mean is that many investors believe the risk-adjusted expected rate of return exceeds the cost of capital or, in economic terms, that at current and anticipated prices and market conditions – including the rates and terms for acquiring copyright licenses – the digital music streaming business is profitable.

C. The Economic Value of Musical Works

54. While the ways in which consumers interact with music have changed, and retail sales revenues have declined, demand for music and consumption of it have remained robust. As noted in a recent report from the Computer and Communications Industry Association (CCIA),

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[42] *See* "Introducing Pandora Plus, More Control and Great New Features at a Very Affordable price," Pandora (Sept. 15, 2016), *available at* http://press.pandora.com/file/4247784/Index?KeyFile=35892456 (last accessed Oct. 25, 2016); *see also* Micah Singleton, "Pandora is Almost Ready to Launch Its Music Subscription Service," The Verge (Sept. 13, 2016), *available at* http://www.theverge.com/2016/9/13/12901408/pandora-music-subscription-service-umg-sony (last accessed Oct. 12, 2016).

[43] *See, e.g.*, See Dennis Carlton and Jeffrey Perloff, *Modern Industrial Organization*, 4th ed. (Pearson/Addison-Wesley, 2005) at 61 ("In the short-run equilibrium . . . a typical firm may earn a profit, which provides an incentive for firms to enter the market.").

[44] *See, e.g.*, Franklin Fisher and John McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *The American Economic Review* 73;1 (Mar. 1983) 82-97.

"Although the prominent business models for music are changing, the consumption of music has never been higher."[45]

55. Various industry experts, industry participants and news outlets also note that overall music consumption has never been higher despite rapid changes in music technology and declining revenues. Music industry consultant Vickie Naumon, Principal and Founder of CrossBorderWorks consulting, notes in an article for Rethink Music:

> Music consumption is at an all time high, great music is being produced by artists all over the world, and connectivity has reached 40% of the global population. By far the biggest opportunity now and in the future is to enable innovative, licensed music products to reach consumers through an ever-evolving mix of connected speakers, cell phones, wearables, devices, platforms, and applications, and to efficiently collect and distribute revenue back to creators from all of this usage.[46]

56. Music industry executives also support the claim that music consumption is expanding. For example, Barak Moffitt, the recently promoted Executive Vice President of Content Strategy at Universal Music Group, states, "Music consumption is at an all-time high and music fans have more choices than ever to engage with artists and their music."[47] Similarly, Cary Sherman, Chairman and CEO of RIAA, notes in an article concerning industry consumption and revenues, "[w]hile today's data is encouraging, the challenges facing us are

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[45] Michael Masnick, Michael Ho, Joyce Hung, and Leigh Beadon, "The Sky is Rising 2014 Edition," CCIA (Oct. 2014) at 9, *available at* https://www.ccianet.org/wp-content/uploads/2014/10/Sky-Is-Rising-2014.pdf (last accessed Oct. 12, 2016).

[46] Vickie Nauman, "Reimagining the Music Business," Rethink Music (Jan. 26, 2016), *available at* http://www.rethink-music.com/news/reimagining-the-music-business (last accessed Oct. 12, 2016).

[47] "Universal Music Promotes Barak Moffitt to Executive Vice President of Content Strategy and Operations," Universal Music Group (Apr. 21, 2016), *available at* http://www.universalmusic.com/universal-music-promotes-barak-moffitt-to-executive-vice-president-of-content-strategy-and-operations/ (last accessed Oct. 12, 2016).

significant. The consumption of music is skyrocketing, but revenues for creators have not kept pace."[48]

57. Data on time spent listening to music and music platform across various mediums indicate that consumption of music has increased in recent years. Figure 6 below shows the weekly audience of radio and music streaming over the period of 2008 to 2016. As the figure shows, the weekly audience for music streaming quadrupled from 33 million to 136 million over this period, while the weekly audience for broadcast radio also grew by approximately five percent from 234 million to 247 million from 2008 to 2016.

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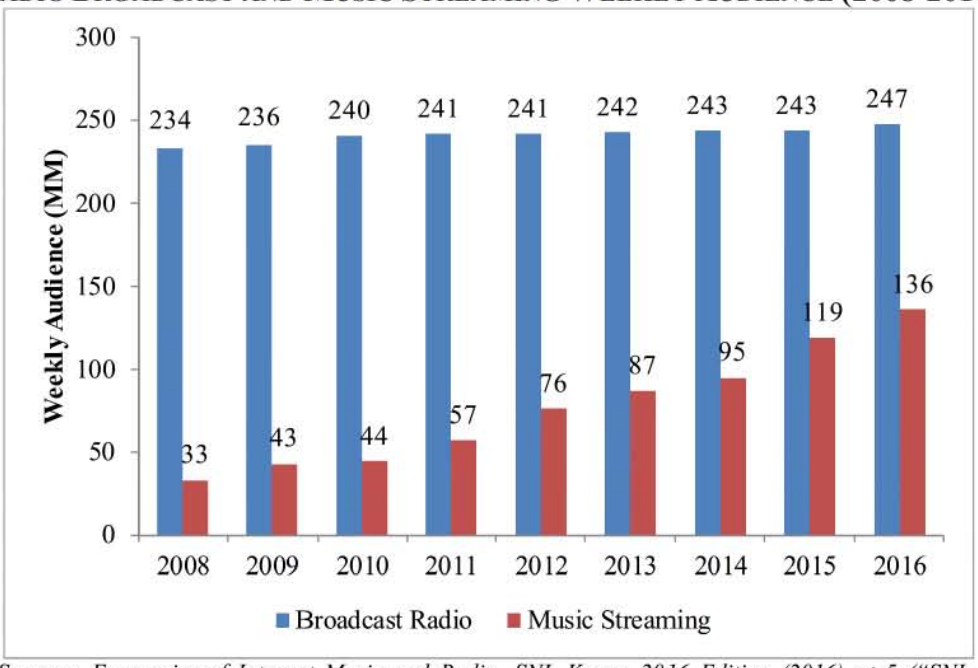
[48] Cary Sherman, "State of the Music Business: What the Numbers Tell Us," Medium (Mar. 22, 2016), *available at* https://medium.com/@RIAA/state-of-the-music-business-what-the-numbers-tell-us-63ce1524b30#.2hxurbjnr (last accessed Oct. 12, 2016).

FIGURE 6:
RADIO BROADCAST AND MUSIC STREAMING WEEKLY AUDIENCE (2008-2016)

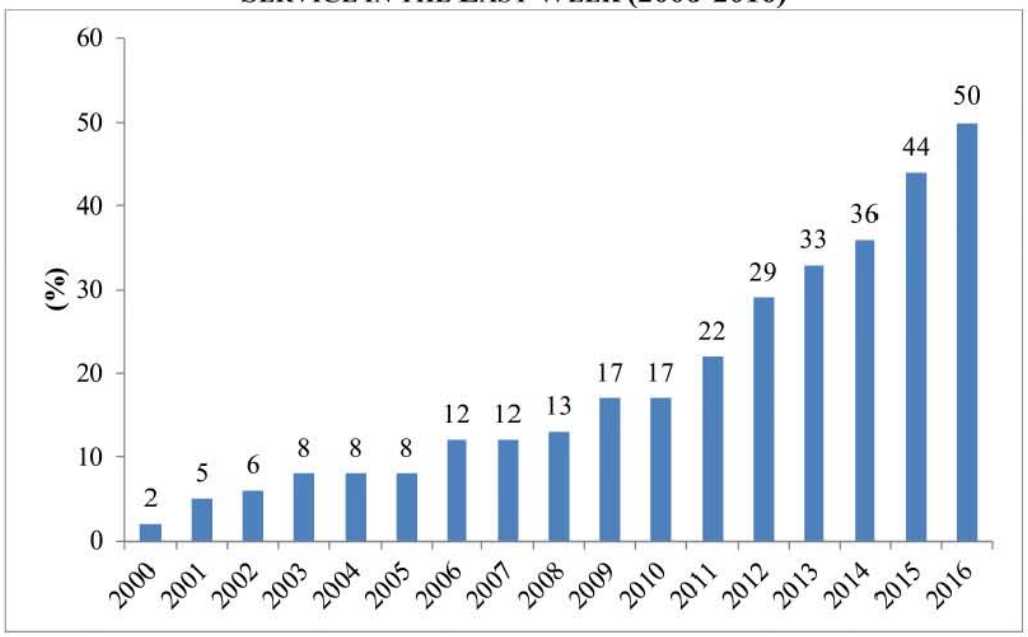


Sources: Economics of Internet Music and Radio, SNL Kagan 2016 Edition (2016) at 5 ("SNL Economics of Internet Music and Radio"). Note: Music Streaming is defined as "[l]istening to AM/FM radio stations online and/or listening to streamed audio content available only on the Internet" for persons 12 and older.

58. Figure 7 below shows the percentage of the population 12 years and older that listened to an online streaming service in the last week from a survey conducted by Edison Research and Triton Digital (Edison and Triton).[49] As the figure shows, the percentage of the population that listened to a music streaming service increased from 13 percent in 2008 to 50 percent in 2016. Listening audience metrics across various mediums also show growth.

[49] *The Infinite Dial 2016*, Edison Research and Triton Digital (Mar. 10, 2016) ("The Infinite Dial 2016"), *available at* http://www.edisonresearch.com/wp-content/uploads/2016/03/The-Infinite-Dial-2016.pdf (last accessed Oct. 12, 2016).

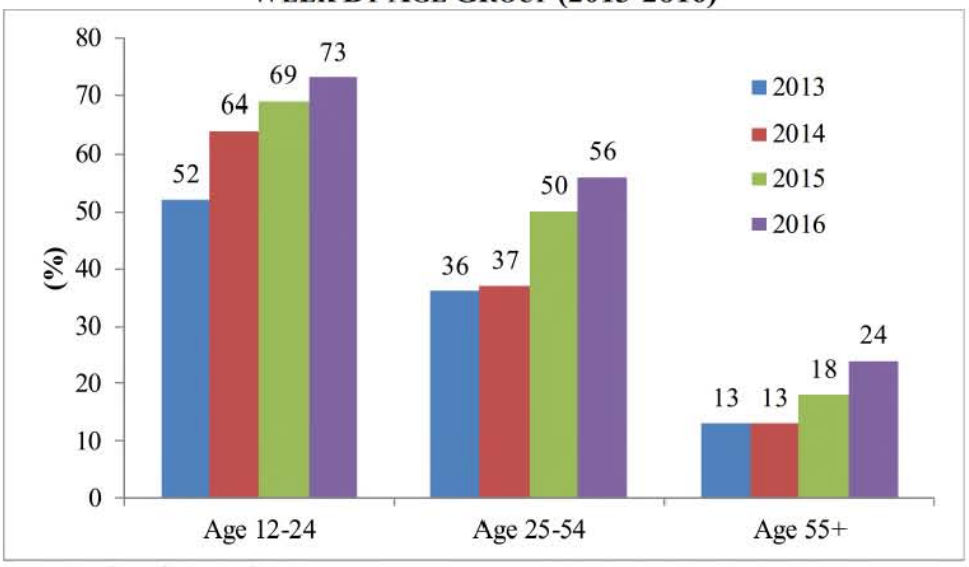
FIGURE 7:
PERCENTAGE OF POPULATION 12 AND OLDER THAT LISTENED TO A MUSIC STREAMING SERVICE IN THE LAST WEEK (2000-2016)



Sources: The Infinite Dial 2016 at 18. Note: Music Streaming is defined as "[l]istening to AM/FM radio stations online and/or listening to streamed audio content available only on the Internet." 2016 figure is estimated.

59. Audience penetration data broken out by age group show that music streaming is gaining traction in all age groups and is especially popular among the younger population. As shown in Figure 8, the percentage of the population that listened to a music streaming service in the last week increased from 2013 to 2016 for each of the three age groups. In the age group of 12 to 24, the percentage of the population listening in 2016 was 73 percent compared to 56 percent and 24 percent for the age groups 25 to 54 and 55 and older, respectively.

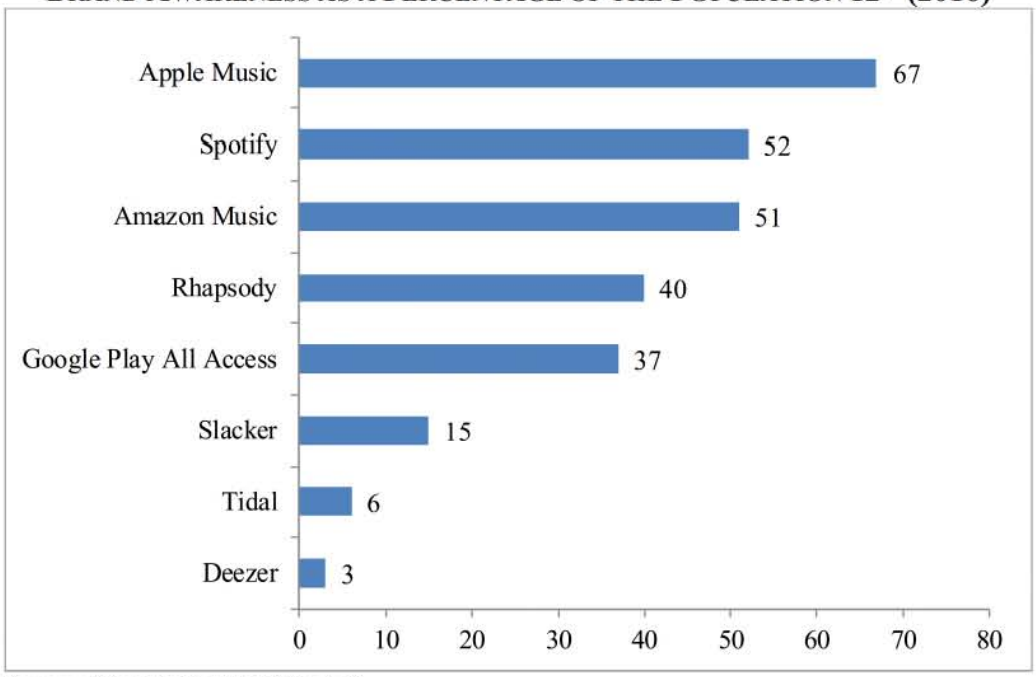
FIGURE 8:
PERCENTAGE OF POPULATION THAT LISTENED TO A MUSIC STREAMING SERVICE IN THE LAST WEEK BY AGE GROUP (2013-2016)



Sources: The Infinite Dial 2016 at 19.

60. Data also show that brand awareness for interactive music streaming services is high. Figure 9 below shows the percentage of the population ages 12 and older that are aware of several interactive streaming brands. Apple Music benefits from strong name recognition that comes from the Apple brand with 67 percent of the population aware of the streaming service. Spotify has the second largest brand recognition followed by Amazon Music.

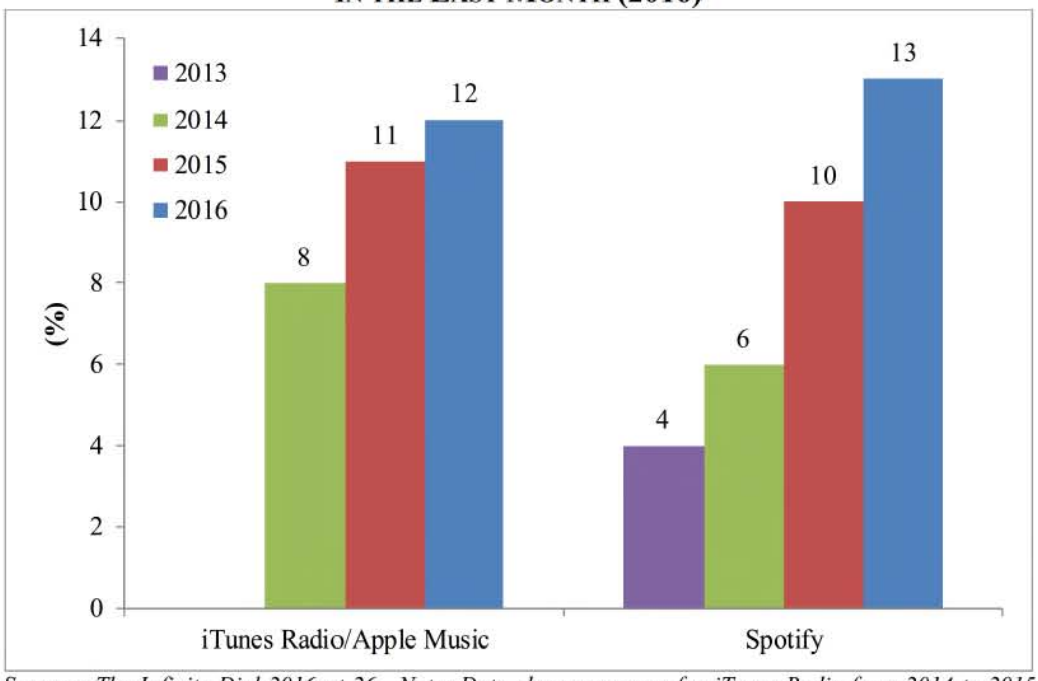
FIGURE 9:
BRAND AWARENESS AS A PERCENTAGE OF THE POPULATION 12+ (2016)



Sources: The Infinite Dial 2016 at 24.

61. Higher levels of brand awareness have in turn led to higher numbers of active users for these interactive streaming services. Figure 10 shows the percentage of the population that used Spotify or Apple Music in the last month. As shown, the percentage for Spotify increased from four percent to 13 percent between 2013 and 2016; the percentage listening to iTunes Radio/Apple Music rose from eight percent to 12 percent between 2014 and 2016.

FIGURE 10:
PERCENTAGE OF THE POPULATION LISTENING TO A MUSIC STREAMING SERVICE IN THE LAST MONTH (2016)



Sources: The Infinite Dial 2016 at 26. Note: Data show responses for iTunes Radio from 2014 to 2015 and Apple Music for 2016.

62. Data from Nielsen on total audio streams show that in recent years interactive streaming has increased substantially. Nielsen's year-end 2015 report showed that on-demand music streams increased from 79.1 billion to 144.9 billion from 2014 to 2015 or by approximately 83 percent.[50] Mid-year reports from 2016 show a similar trend, with total audio streams of 113.6 billion compared to 57.5 billion for the first half of 2015, representing an increase of 97 percent.[51] The first half of 2016 also marked the first time the number of audio streams was greater than video streams. Nielsen notes, "Audio has surpassed Video as the

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[50] *See 2015 Nielsen Music U.S. Report*, Nielsen (Jan. 6, 2016) at 8, *available at* http://www.nielsen.com/us/en/insights/reports/2016/2015-music-us-year-end-report.html (last accessed Oct. 13, 2016).

[51] *See 2016 Nielsen Music U.S. Mid-Year Report*, Nielsen (July 7, 2016) at 2 ("Nielsen Mid-Year Report 2016"), *available at* http://www.nielsen.com/us/en/insights/reports/2016/2016-us-music-mid-year-report.html (last accessed Oct. 13, 2016).

leading Streaming format in 2016. Audio share of streaming is 54% in 2016, growing from 44% through the first six months of 2015."[52]

63. Music streaming in Internet connected automotive vehicles is also increasing. As noted by SNL Kagan, cars with in-vehicle infotainment systems increased from 900,000 to approximately 13.2 million over the period of 2013 to 2015.[53] Table 3 below shows interactive streaming services that eight automobile manufacturers have embedded in their Internet connected-vehicles:

TABLE 3:
INTERACTIVE STREAMING SERVICES EMBEDDED IN MAJOR CONNECTED CAR MODELS (MARCH 2016)

Manufacturer (OEM)	Amazon Music	Deezer	Rhapsody/Napster	Slacker Radio	Spotify
BMW (Mini Cooper)	X	X	X		X
Chrysler Fiat				X	
Ford (Lincoln)		X	X	X	X
General Motors (Chevrolet, Buick, Cadillac)		X		X	
Honda (Acura)				X	
Jaguar (Land Rover)		X			
Mazda		X			
Volvo					X

Sources: SNL Economics of Internet Music and Radio at 38. Note: Data consist of partnerships announced on or before March 1, 2016.

64. Both Apple and Android have released in-vehicle infotainment systems that connect vehicles to smartphones and have access to many vehicle friendly apps, including music

[52] Nielsen Mid-Year Report 2016 at 2.

[53] *See* SNL Economics of Internet Music and Radio at 35.

streaming apps.[54] Apple's Apple CarPlay includes access to Apple Music as well as Spotify and Slacker Radio. Android Auto includes a free 90-day subscription to Google Play Music. Apple and Android have both negotiated partnerships with many car manufacturers, with Apple having partnerships with 34 car manufacturers as of March 2016 and Android having partnerships with 31.[55]

D. Changes in the Industry Have Limited Publisher and Songwriter Royalties

65. The changes that have taken place in the music industry have limited compensation to rightsholders by transforming the quantity and means by which consumers access music. The transition from physical to digital formats has shifted sales from albums to singles, meaning that rather than paying 91 cents for a 10-song album containing one or two very popular songs and eight or nine less popular ones, consumers often purchase just the few popular songs. More recently, the transition from downloads to streaming has further inhibited royalty payments.[56]

66. First, the growth of digital music distribution that began with the iTunes Music Store has resulted in an increase in sales of individual tracks relative to albums.[57] Albums (in whatever form) bundle together a number of individual tracks that the music consumer purchases

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[54] *See* "Apple CarPlay," Apple, *available at* http://www.apple.com/ios/carplay/ (last accessed Oct. 12, 2016); see also "Android Auto," Android, *available at* https://www.android.com/auto/ (last accessed Oct. 12, 2016).

[55] *See* SNL Economics of Internet Music and Radio at 37.

[56] As noted by the Copyright Office, even Spotify agrees that the "rapid decline [in industry revenue] is not due to a fall in music consumption but to a shift in music listening behavior towards formats that do not generate significant income for artists") (See CMM at 74, *citing* "Spotify Explained – How is Spotify contributing to the music business?," Spotify Artists, https://www.spotifyartists.com/spotify-explained/#how-is-spotify-contributing-to-the-music-business).

[57] *See, e.g.*, Alex Pham & Glenn Peoples, "Seven Ways iTunes Changed the Music Industry," BillboardBiz (Apr. 25, 2013), *available at* http://www.billboard.com/biz/articles/news/1559622/seven-ways-itunes-changed-the-music-industry (last accessed Oct. 12, 2016).

as a set; as anyone who has ever listened to an album is well aware, not all tracks on an album are of equal quality or value to the consumer. That is, at a single price, the consumer receives a bundle of tracks on the album, some of which may be considered "higher quality."

67. As shown in Table 4 below, in 2008 approximately 435 million albums were sold in the U.S., both physical and digital. By 2015, that number had fallen to about 249 million albums. At the same time, sales of singles were about 1.04 billion tracks in 2008 (almost all of which were digital tracks) and remained relatively constant in 2015 at about 1.02 billion, peaking at about 1.4 billion in 2012. Thus, while consumers are buying approximately the same number of singles in 2015 as they did in 2008, sales of albums have fallen by nearly half. While there have been fewer sales of physical and digital music over this time period, among the music that has been sold, an increasing share of that music has been sold as a single.[58]

[58] This trend is even more astounding if one goes back to the period prior to the launch of the iTunes Music Store, when virtually all music was sold as albums.

TABLE 4:
COMPARISON OF ALBUM AND SINGLE VOLUME SALES (2008-2015)

	Album (Units MM)				Singles (Units MM)			
Year	**Vinyl**	**CD**	**Download**	**Total**	**Vinyl**	**CD**	**Download**	**Total**
2008	2.9	368.4	63.6	434.9	0.4	0.7	1,042.7	1,043.8
2009	3.5	296.6	74.5	374.6	0.3	0.9	1,124.4	1,125.6
2010	4.2	253.0	85.8	343.0	0.3	1.0	1,177.4	1,178.7
2011	5.5	240.8	103.9	350.2	0.4	1.3	1,332.3	1,334.0
2012	6.9	198.2	116.7	321.8	0.4	1.1	1,392.2	1,393.7
2013	9.4	173.8	118.0	301.2	0.3	0.6	1,327.9	1,328.8
2014	13.2	142.8	117.6	273.6	0.5	1.0	1,199.1	1,200.6
2015	16.9	122.9	109.4	249.2	0.5	0.4	1,021.0	1,021.9

Sources: RIAA U.S. Sales Database. Note: [1] "Vinyl Albums" corresponds with the RIAA music format category "LP/EP." [2] Data show wholesale sales volume.

68. While the recent shift to singles relative to 2011 is not as dramatic, the same general pattern holds – sales of singles have fallen from about 1.134 billion in 2011 to about 1.022 billion in 2015, a decline of about 9.9 percent, while sales of albums have fallen from 350.2 million to about 249.2 million, a decline of about 28.9 percent. Thus, again, while total unit purchases of music have fallen since 2011, a greater share of the music purchased is being purchased as singles rather than albums.

69. Second, more recently, the transition from downloads to streaming appears to have further limited royalty payments, and dissatisfaction regarding compensation to publishers and songwriters is a widely recognized phenomenon. As author and music industry observer John Seabrook recently wrote in *The New Yorker*:

> The steep decline in album sales – the result of a shift from brick-and-mortar distribution to digital retail, and now to streaming – has dealt a blow to songwriters' mechanical-royalty income . . . [T]he performance-royalty rates that songwriters command from streaming services such as Pandora, Spotify, YouTube, Amazon Prime, and Apple Music are in most cases far lower than the ones they get for terrestrial-radio plays.[59]

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[59] John Seabrook, "Will Streaming Music Kill Songwriting," *The New Yorker* (Feb. 8, 2016), *available at* http://www.newyorker.com/business/currency/will-streaming-music-kill-songwriting (last accessed Oct. 12, 2016).

70. To some extent, artists have been able to compensate for falling royalties through larger touring fees and other revenue sources, but these sources generally are not shared with songwriters. As one prominent songwriter explained:

> At some point, they (music streaming services) sold the acts some idea like, "We're promoting your music so you can go out and tour and make money with merchandise and ticket sales and stuff"… But a lot of those artists co-wrote with people like me. I don't get a piece of the touring. I don't get a piece of the merchandise.[60]

71. Some popular artists have responded to low streaming royalties by negotiating exclusive deals. However, as the Copyright Office notes, this option is not available to songwriters who are not also artists as a result of the compulsory license:

> Notably, songwriters who are not also recording artists with some measure of control over their recordings typically do not have the option to withdraw their works from low-paying services, because – due to the combination of the section 115 compulsory license and the ASCAP and BMI consent decrees – they have no choice other than to permit the exploitation of their musical works by such providers.[61]

72. Thus, the office concludes:

> While all creators have been affected by the shift from full-album sales to digital streaming models, songwriters who are not also performing artists appear to have been especially hard hit. Unlike songwriter-artists, "pure" songwriters who write works for others to perform do not have the potential to make up for lost income through touring or merchandise sales.[62]

73. In summary, the available evidence suggests that music consumption in the U.S. is growing, but that current royalty structures are not producing commensurate gains for songwriters and publishers.

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[60] Doug Gross, "Songwriters: Spotify Doesn't Pay Off… Unless You're a Taylor Swift," CNN (Nov. 13, 2014), *available at* http://www.cnn.com/2014/11/12/tech/web/spotify-pay-musicians/ (last accessed Oct. 12, 2016).

[61] CMM at 76.

[62] CMM at 78.

V. ASSESSING THE RELATIVE VALUE OF SOUND RECORDING RIGHTS AND MUSICAL WORKS RIGHTS FOR INTERACTIVE STREAMING

74. In this section and the sections that follow, I report on my analysis of how market-based benchmarks inform the appropriate rate for the Section 115 licenses. As explained above, my benchmarking analysis involves estimating the value of the Section 115 rights by assessing the value of the sound recording right for the same services, which is determined in the marketplace through direct negotiations, and then adjusting that value to reflect the relative value of the musical works right, which can also be estimated based on market rates. This section presents my analysis of the relative value of the two rights for interactive streaming.[63]

75. In the first section below, I discuss in general terms the relationship between the economic value of sound recording rights and musical works rights. Second, I present evidence from a variety of direct licenses, including licenses for synchronization rights conducted without a regulatory overhang as well as ringtone licenses and a number of other licenses obtained under the shadow of a compulsory license. In my opinion, these licenses, taken together, establish that the upper and lower bounds for the ratio of market valuations of sound recording to market valuations of musical works is between 1:1 and 4.76:1. Third, I present my analysis of YouTube's licensing arrangements with record labels and publishers. Fourth, I analyze recent agreements between Pandora and music publishers for musical works rights for Pandora's interactive services (the "Pandora Opt-Out Deals") and explain how those agreements inform the relative value of the sound recording and musical works rights. In my opinion, the YouTube and Pandora agreements provide strong evidence that relative market valuation of sound recordings

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[63] By "relative value" I mean the market valuations of the two types of rights in the current marketplace.

and musical works lies [redacted]. I conclude this section by presenting my overall assessment of the evidence with regard to the relative valuation of the sound recording and musical works rights for interactive streaming.

A. The Economic Relationship between the Sound Recording and Musical Works Rights

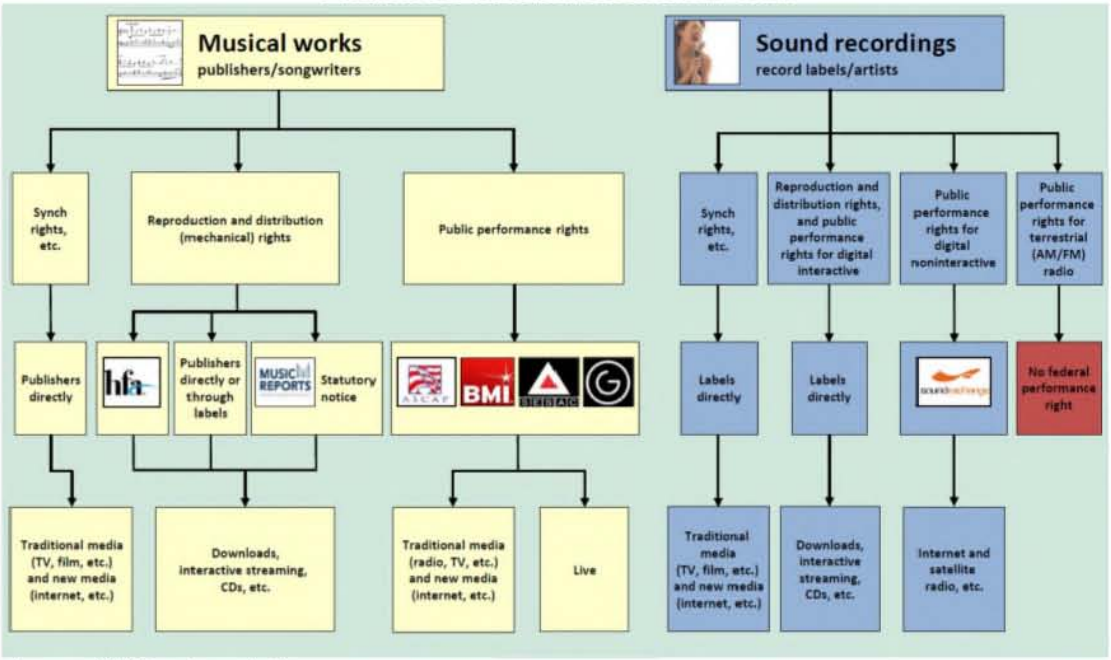
76. For music users that require both sound recording rights and musical works rights, the two sets of rights can be thought of in economic terms as perfect complements in production: Without both inputs, output is zero. In practical terms, this means that virtually all distributors of music – with the singular exception of terrestrial radio stations – are required to enter into at least one sound recording license and at least one musical works license for each performance/musical work utilized. Additionally, as discussed in Section II above, for interactive streaming services, the two categories of rights are further divided into a reproduction license and a performance license, with the former corresponding broadly to a right to duplicate (or the equivalent) and the latter applying only to a right to publicly perform.

77. Thus, any given use of a copyrighted musical performance may implicate up to four categories of rights: the musical works rights, split into a public performance right and a mechanical right; and the sound recording right, which can similarly be thought of as being split between performance and reproduction rights, even if it is not explicitly differentiated.[64] For sound recordings, there is a statutory compulsory license for the use of sound recordings in non-interactive streaming, but no such right for use in interactive services. Similarly, for musical works, a public performance license is required for both types of streaming services, but only

[64] Although they typically are not compensated separately, sound recording rights include both reproduction and, in the case of digital audio transmissions, performance rights. *See* 17 U.S.C. §§ 106, 114; *see also* "Sound Recording Performance Right," Digital Media Association *available at* http://www.digmedia.org/copyright-and-royalties/modernization/94-sound-recording-performance-right (last accessed Oct. 26, 2016).

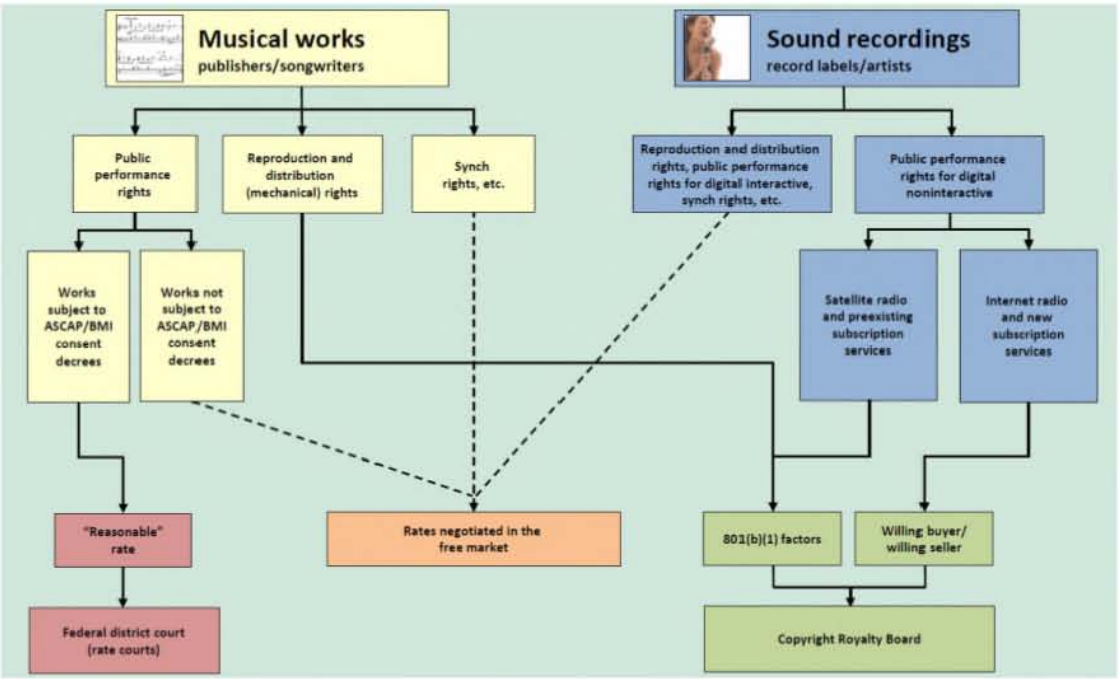
interactive services require a mechanical license as well. Thus, the interactive streaming services covered by Section 115 require all four categories of rights, whereas non-interactive services require only the statutory public performance right for sound recordings and the public performance right for musical works. The legal and regulatory relationships between these rights are depicted in Figures 11 and 12.

FIGURE 11:
EXISTING LICENSING FRAMEWORK



Source: CMM at Appendix D.

FIGURE 12:
EXISTING RATESETTING FRAMEWORK



Source: CMM at Appendix D.

78. The relative value of sound recording and musical works licenses may depend on a variety of factors, and traditionally the relationship has differed across different types of services and situations. For example, the sound recording right and the musical works right have often been accorded equal value in the case of synchronization rights, which are privately negotiated. In other contexts, particularly in circumstances where the value of both rights (and therefore the relationship between the two values) has been fixed by different governmental rate-setting bodies rather than by private negotiation, the sound recording right has often been accorded a higher value than the musical works right.[65] As I describe in more detail below, the

[65] For example, with respect to Pandora, the rate court reported in 2014 that "Pandora pays over half of its revenue to record companies for their sound recording rights, and only approximately four percent to the PROs for the public performance rights to their songs" – implying a ratio of more than 10:1 between the rate for sound recordings and for musical works. *See In re Petition of Pandora Media, Inc.*, Nos. 12 Civ. 8035(DLC), 41 Civ. 1395(DLC), 6 F.Supp.3d 317, 333 (S.D.N.Y. 2014) ("Cote Opinion").

long history of statutory mechanical rates means that, as it relates to the types of music usage at issue in this proceeding, none of these relative values are completely free of the shadow of compulsory licensing. With respect to sound recording rights, there has been more freedom from compulsory licensing, as no compulsory licensing has ever existed for the sale of physical and digital media (including ringtones) or for the licensing of sound recordings for use with interactive streaming services.

79. It is not necessary for my purposes to put forward a general theory of relative valuation. In fact, the ability to avoid the assumptions, complexities and uncertainties associated with theoretical debates, and to rely instead on empirical observation of market-based outcomes, is the strength of the benchmarking approach relied upon here. For my purposes, it is sufficient simply to assume that the relative values of the two rights should be stable across similar or identical market contexts.

80. As noted above, the comparability of a potential benchmark depends on several key characteristics, including: the nature of the rights at issue; underlying market factors (e.g., different geographic markets); the term or time period covered by the agreements; factors affecting the relative bargaining power of the parties; and, differences in the services being offered. For each of the benchmarks that I discuss in the remainder of this section, the markets at issue implicate rights for both sound recordings and musical works. Similarly, all of the benchmarks discussed below are either current benchmarks or are from the recent past, and involve licenses for use in the U.S.[66] The parties to these agreements are parties that either are participants in this proceeding or are similarly situated, and the rights in these benchmarks are in

[66] The oldest benchmarks I discuss below relate to Pandora's agreements for musical work royalties (starting in 2012) and, in that case, I explicitly account for how those rates have changed over time.

general licensed for use in providing music delivery (either interactively or non-interactively) to end users. To the extent there are material differences between the benchmarks and the target licenses, they are discussed in the relevant sections.

B. Benchmarks Establishing Upper and Lower Bounds on the Relative Valuation of Sound Recordings and Musical Works

81. In this section I discuss my analysis of a variety of agreements which in my opinion collectively establish upper and lower bounds on the relative market valuations of sound recordings and musical works. These agreements include valuation ratios embodied in the current Section 115 statutory rate structure, direct licenses for Section 115 rights for direct downloads and for rights related to a locker service and for ringtones, and agreements involving synchronization rights, including synch licenses and "micro-sync" licenses. Some of these agreements (such as the Section 115 rights agreements) are negotiated in the full shadow of compulsory licensing; others involve a mix of free and regulated rates; and some, as in the case of synchronization rights, are altogether free from any compulsory licensing shadow.

1. The Section 115 Statutory Rates and Direct Licenses Under the Section 115 Shadow

82. The current statutory rate structures contain numerous rate tests that are explicitly calculated as a percentage of payments made for sound recording rights. These tests are often referred to as the "TCC" or "total content cost" rate prongs. For example, for the two Subpart B categories described in detail above, the rate tests based on sound recording payments use 22 percent (for ad-supported) and 21 percent (for portable subscriptions)[67] of royalties paid for

[67] The rule provides for approximately 18 percent of sound recording payments if the rights were passed through from record labels, but my understanding is that record labels have generally not passed through such rights (and the data I have seen confirms this), so the operative ratio has been at 22 percent.

sound recordings. These percentages correspond to ratios of sound recording and musical work royalties of 4.55:1 and 4.76:1, respectively. Equivalent or similar terms can be found in the rate structure for mechanical royalties for most of the other Subpart B and Subpart C services.[68]

83. In assessing the relevance of these rates as benchmarks, it is important to note three characteristics. First, as noted above, they were established (in 2008) and renewed (in 2012) prior to the marketplace success of interactive streaming services like Spotify. Second, they were negotiated under the full shadow of the compulsory license,[69] which creates an asymmetric effect on the bargaining power of the two parties. Third, while the ratios represent an upper bound on actual royalties in the case of subscription services, in the sense that they are part of "lesser than" structures,[70] the ratios for non-subscription services are not capped in this way.

84. Not surprisingly, direct agreements negotiated under the shadow of the existing compulsory rates often reflect similar terms. For example, I have examined a 2011 agreement in which [redacted]

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[68] "Rate Charts," Harry Fox Agency, *available at* https://www.harryfox.com/find_out/rate_charts.html (last accessed Oct. 13, 2016).

[69] As noted above, the compulsory mechanical license for digital interactive services was created in the Digital Performance Right in Sound Recordings Act of 1995, Pub. L. 104-39, § 4, 109 Stat. 336, 344-48.

[70] For example, the 21 percent for portable subscriptions is capped by virtue of it being subject to the "lesser of" 21 percent or $0.80 per subscriber per month. As noted, numerous direct deals utilize the 22 percent test without any cap.

[71] [redacted]

[72] Thus, this agreement embodies a relative valuation of the two rights essentially equal to the lower range of the ratios in the regulations: 22 percent of sound recordings payments, corresponding to a 4.56:1 ratio of relative values.

85. Similarly, I examined an August 2014 license agreement between [75] Thus, the agreement – for a subscription-based ringtone and ringback tone service – calls for musical compositions to be paid at least 21 percent of what is paid for the sound recordings, or a ratio of not greater than 4.76:1.

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[72]

[73]

[74]

[75]

86. A third example is the 2010 agreement between [redacted], or a ratio of not greater than 4.55:1.[76]

87. Another benchmark can be found in the [redacted] The ratio between these two negotiated deals – for the same service at issue in this proceeding – is 4.3:1.[79]

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[76] [redacted]

[77] [redacted]

[78] [redacted]

[79] [redacted]

88. As I noted above, all of these agreements reflect the full shadow of compulsory rates and terms, which were negotiated in 2008 and extended in 2012, in both cases under the shadow of the statutory license which constrains the value of musical works while leaving the value of sound recordings to market negotiations. The impact of the shadow on the rates can be directly observed in a different way in an agreement between [redacted] which establishes a relative value for musical works and sound recordings for ringtones in a context in which the compulsory rate did not strictly govern.

89. Specifically, under an agreement originally signed in 2006,[80] subsequently amended to include ringtones, [redacted]

[redacted]

[80] [redacted]

[81] [redacted]

[82] [redacted]

[83] [redacted] (last accessed Oct. 11, 2016).

90. In this case, [redacted][84] [redacted], a ratio of sound recording rights royalties to musical works mechanical royalties of 4.2:1.[85]

91. [redacted] provides a benchmark of the relative values of the sound recording and musical works rights as negotiated between a record label and a service, in which the musical works component was established through compulsory license, but the *relative* value of the musical works and sound recording rights was the result of voluntary negotiation.

92. In my opinion, the evidence presented above indicates that the relative valuation ratios implied by the current Section 115 compulsory license and related negotiations under its shadow – ranging from 4.2:1 to 4.76:1 – represent an upper bound on the relative market valuations of the sound recording and musical works rights.

2. Synch and Micro-Sync Agreements for Limited Use Applications

93. This section reviews the ratios implied by synch and micro-sync licenses for markets, applications and parties for limited use applications. While these licenses do not apply to music streaming services as such, in my opinion they provide relevant benchmarks because

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[84] [redacted]

[85] The fact that the current retail price has fallen to $1.29 suggests it is possible that [redacted] though I do not have evidence to this effect. If the actual rate is [redacted] the ratio would be lower than [redacted].

they are negotiated completely outside the shadow of a compulsory license, and thus serve to establish a market-based lower bound on the ratio of sound recording valuations to musical works valuations. (I discuss the licenses involving YouTube, which do apply to music streaming, in the following section.)

94. Synchronization (or "synch") licenses – licenses to synchronize a musical composition to audio-video images on, for example, film and television[86] – are negotiated freely between buyers and sellers without the shadow of a compulsory license. They are often licensed at terms that grant the musical composition equal royalty payments as the corresponding sound recording receives.[87]

95. Synch rights for both the musical work and the sound recording are required to include a pre-recorded song within an audio-video work such as a film, a television episode, or a commercial. Neither synch right is covered by any compulsory licensing regime, and thus the rates paid for both represent the result of market forces outside the shadow of statutory licensing. In particular, the owners of musical composition copyrights and the owners of the sound recording are free to refuse to license, in which case the producers of the audio-video work would not be able to use the recording they wish to license. In these circumstances, I understand that the musical works generally receive the same amount as the sound recordings, or a ratio of 1:1.[88]

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[86] *See* CMM at 55-58.

[87] *See, e.g.*, the Witness Statement of David Kokakis submitted in connection with the Copyright Owners' Written Direct Statement in this proceeding.

[88] *See* CMM at 56; *see also* Donald S. Passman, *All You Need to Know About the Music Business*, 9th Ed. (Simon & Schuster, 2015) at 265.

96. The 1:1 ratio also holds for some "micro-sync" agreements, which are essentially "blanket" synch licenses, in that the license grants the right to synchronize not just one particular song – as would be the case where a publisher licenses a popular song for use in a film or commercial – but any song in the publisher's catalog (or a significant portion thereof), such as in licenses for mobile applications that "synch" sound recordings to short video clips or slide shows, other games that use sound recordings, and other micro-sync agreements for small-scale projects.[89]

97. For example, in micro-sync deals [redacted]

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[89] [redacted]

[90] [redacted]

[91] [redacted]

98. The synch and micro-sync examples confirm that in circumstances in which licensees require both sound recording and musical composition copyrights in order to offer their service, *and* where that service is not entitled to a compulsory license for either right, the sound recording rights and the musical composition rights are in many cases equally valued, that is, the ratio of the two values is 1:1.

3. Summary of Upper and Lower Bounds

99. To summarize, while the markets and rights at issue in the agreements discussed above differ in some respects from the interactive streaming services at issue in this proceeding, and many of them reflect the shadow of the compulsory license, they nevertheless establish a range of relative rates actually charged for sound recording and musical works rights throughout the music marketplace. Specifically, these benchmarks indicate that, in a wide range of markets involving a variety of services, rights and regulatory contexts, the ratio of sound recording to musical works royalties ranges from 1:1 to 4.76:1.

C. The YouTube Agreements

100. Licenses between YouTube and the labels and publishers provide further insight into the relative value of sound recordings and musical works. Because they include . Moreover, the parties (i.e. Google, the labels and the publishers), the market (the

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[92]

U.S.), and the time period all correspond to the parties, market and time period involved here. Hence, for purposes of assessing the relative value of the sound recording and musical works rights, the YouTube agreements represent reasonably comparable benchmarks for the purpose of assessing the relative value of sound recordings and musical works rights.

101. I have reviewed a number of licensing agreements between publishers and YouTube. While the terms of these deals [redacted][93]

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[93] [redacted]

102. While I understand that the labels' agreements with YouTube have not yet been produced in this matter,[94] it has been widely and publicly reported that YouTube generally pays content providers a total of 55 percent of ad revenue,[95] implying that [redacted]. A video with a commercial sound recording would thus have a [redacted] split between the sound recording and musical work, yielding a ratio of [redacted] for sound recording rights to musical works rights.[96] In my opinion, this ratio reflects the relative valuations of sound recording and musical works rights arrived at in free market negotiations in a context which is directly comparable to the markets implicated by Section 115.

D. The Pandora Opt-Out Deals

103. Pandora is by far the largest non-interactive music service. Beginning in 2012, Pandora negotiated a series of direct agreements with major publishers for the musical works

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[94] If, at a later time, they become available to me for review, I reserve the right to amend this analysis in order to rely on the information taken directly from the agreements.

[95] [redacted]

[96] [redacted]

right. These agreements (which I refer to as "opt-out" agreements) were negotiated after publishers withdrew their digital music performance rights from the PROs and asserted the right to negotiate directly with Pandora. While their right to do so was in question throughout most of the ensuing five years, the agreements nevertheless were negotiated with at least some expectation that they would not be subject to rate court review. Moreover, the markets and parties involved in the Pandora agreements are comparable to the markets and parties involved in the Section 115 licenses at issue here. Thus, these agreements provide significant insight into the relative value of the sound recording and musical works rights in this proceeding.

104. As I detail below, even the potential for musical works rights to be negotiated in the marketplace led to a rapid adjustment in relative valuations. As the BMI court put it, "[o]nce the rate negotiations were freed from the overhanging control of the rate courts, the free-market licenses reflect sharply increased rates."[97] As a result, the ratio of the royalties paid for two rights – the labels' and publishers' performance rights on non-interactive services – went from [redacted] in 2012 to [redacted] in 2018. Projecting this trend forward (and assuming the parties were permitted to freely negotiate outside of the control of the rate courts), I estimate that the average ratio over the term of the rate period under consideration here (2018-2022) would be [redacted]. The Pandora opt-out deals are further evidence that the relative value of the sound recording and musical works rights lies near the middle of the range discussed immediately above.

105. In what follows, I (1) briefly describe the context in which the opt-out agreements were negotiated, (2) describe the agreements themselves, and (3) explain the basis for my

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[97] *Broadcast Music, Inc. v. Pandora Media, Inc.*, Nos. 13 Civ. 4037(LLS), 64 Civ. 3787(LLS), 140 F.Supp.3d 267, 289 (S.D.N.Y 2015) ("Stanton Opinion").

opinion about their implications for the relative value of the sound recording and musical works rights.

1. The Context: Publishers, PROs, Rate Courts and Partial Withdrawals

106. The efforts by major publishers to withdraw their digital performance rights from the rate court-regulated PROs were driven by the low royalties being received from streaming services.[98] That those efforts resulted in significant increases in royalty rates indicates on its face that the royalties being received by the PROs were below market rates. There are several underlying reasons, beyond simple regulatory error, why the royalties being paid to the PROs were below market levels.

107. First, the rate courts are prohibited by statute from considering the level of sound recording royalties in determining the value of the musical works performance rights.[99] While this provision was originally supported by songwriters, its effect in practice has been to prevent the rate courts from using the relatively high value of sound recording rates as a benchmark for musical works. As the Copyright Office stated, this provision was "[o]riginally designed as a

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[98] There does not appear to be any disagreement on this issue. For example, while the two rate courts disagree on several issues, they agree that the opt-outs were motivated by low royalties. *See* Stanton Opinion at 284. ("There is an unambiguous body of evidence that the prevailing BMI and ASCAP rates were believed to be too low. The publishers made their unprecedented withdrawals from the PROs because of their convictions that what those PROs were obtaining was well below what could be obtained through free market negotiations.") *See also* Cote Opinion at 332-33. ("The modification of the Compendium came in response to pressure from ASCAP's largest music publishers. These publishers were focused principally on the disparity between the enormous fees paid by Pandora to record companies for sound recording rights and the significantly lower amount it paid to the PROs for public performance rights to compositions.").

[99] *See* 17 U.S.C. § 114(i) ("License fees payable for the public performance of sound recordings . . . shall not be taken into account in any . . . proceeding to set or adjust the royalties payable to copyright owners of musical works for the public performance of their works.").

protective measure to benefit songwriters and publishers, [but] it appears to be having the opposite effect."[100]

108. Second, the provisions of the consent decrees providing for interim licenses also cause the ASCAP and BMI rates to fall below market rates. Under the two decrees, any licensee who applies for a license receives one and is immediately permitted to perform the subject works until completion of a negotiation or a rate court proceeding setting an interim or final fee, with no requirement for immediate payment. As the Copyright Office explains:

> Since the consent decrees do not provide for immediate and concurrent payment for uses made during these periods – and do not establish a timeframe for the commencement of a rate court proceeding – an applicant is able to publicly perform a PRO's catalog of works for an indefinite period without paying.
>
> . . . The problem is exacerbated by the substantial burden and expense of litigating a rate in federal court – a contingency both sides seek to avoid. Licensees may pay nothing or greatly reduced fees for years as negotiations drag on, while still enjoying all of the benefits of a license. The Office agrees with those commenters who have suggested that this system – under which services may launch and continue to operate without an agreed rate – significantly increases the leverage of licensees at the expense of the PROs and their members. Because the licensee already has access to the works it needs, there is no urgency to agree to a rate.[101]

109. The effect of the interim license provisions is to reduce the costs borne by the licensee of failure to reach an agreement and increase the costs borne by the licensor, increasing the licensees' bargaining power and thus biasing the resulting rates in their favor.[102]

110. As a result of these and other factors, the Copyright Office concluded in 2015 that:

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[100] CMM at 157.

[101] CMM at 157-58.

[102] *See generally* John Nash, "The Bargaining Problem," *Econometrica* 18:2 (1950) at 155–162; *see also* Ken Binmore, Ariel Rubinstein, and Asher Wolinsky, "The Nash Bargaining Solution in Economic Modeling," *The RAND Journal of Economics* 17(2) (1986) 176-188.

> There is substantial evidence to support the view that government-regulated licensing processes imposed on publishers and songwriters have resulted in depressed rates, at least in comparison to noncompulsory rates for the same uses on the sound recording side.[103]

111. Faced with this situation, it is not surprising that the publishers and songwriters sought to achieve a better bargain by withdrawing their digital rights from rate-regulated licensing through the PROs and seeking direct licenses with Pandora. The first such withdrawal occurred in March 2011, with the withdrawal of EMI from ASCAP. BMG, Sony and UMPG all followed EMI's lead within a year.

112. The partial withdrawals led to litigation before the ASCAP and BMI rate courts, as well as regulatory activity by the Department of Justice. In an ASCAP rate proceeding filed by Pandora, Judge Cote ruled in September 2013 that that the partial withdraw of digital rights from the PROs violated the ASCAP consent decree.[104] The BMI court issued a similar ruling in December 2013.[105]

113. However, shortly after the BMI court's decision, in June 2014, the Department of Justice – acting at the request of ASCAP and BMI – initiated an investigation into the consent decrees, including specifically whether partial withdrawals should be permitted.[106]

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[103] CMM at 159.

[104] *In re Petition of Pandora Media, Inc., United States of America v. American Society of Composers, Authors, and Publishers*, Nos. 12 Civ. 8035(DLC), 41 Civ. 1395(DLC), 2013 WL 5211927 (S.D.N.Y. Sept. 17, 2013). Note that this is an earlier ruling than the "Cote Opinion."

[105] *Broadcast Music, Inc. v. Pandora Media, Inc.*, Nos. 13 Civ. 4037(LLS), 64 Civ. 3787(LLS), 2013 WL 6697788 (S.D.N.Y. Dec. 19, 2013).

[106] *See* Antitrust Division Review of ASCAP and BMI Consent Decrees 2014, U.S. Department of Justice (Dec. 16, 2015), *available at* https://www.justice.gov/atr/ascap-bmi-decree-review (last accessed Oct. 18, 2016). *See also* CMM at 37; Renata Hesse, "Remarks Regarding the Antitrust Division's Closing of its Review of the ASCAP and BMI Consent Decrees," Remarks as Prepared for the Delivery in Washington, D.C. (Aug. 4, 2016), at 3 ("We opened the current investigation in 2014 after ASCAP and BMI requested that we consider various proposals to modify the consent decrees, including, most prominently, that they be permitted to allow large music publishers to

Concurrently, the Register of Copyrights announced its own investigation into music licensing which also promised to address the partial withdrawals issue.[107] In February 2015, the Copyright Office issued a report endorsing partial withdrawals, and many market participants believed the Department was seriously considering allowing them. For example, in April 2015, a trade press article reported:

> After an extensive review of the music publishing industry as a whole, the U.S. Dept. of Justice is considering amending its longstanding consent decree to allow music publishers partial withdrawals from the blanket licenses of the performance rights societies, according to multiple sources who are familiar with recent private talks the agency held with industry representatives.[108]

114. It was not until August 2016 that the Department issued a concluding statement announcing that partial withdrawals would not be permitted.[109] The PROs immediately began challenging that conclusion, with ASCAP leading efforts to obtain consent decree reform in Congress.[110] Songwriters have also sued the Department of Justice over the issue.[111]

'partially withdraw' their songs from ASCAP and BMI for purposes of licensing to digital music services such as Pandora or Spotify.")

[107] *See* Library of Congress, Copyright Office, *Music Licensing Study: Notice and Request for Public Comment*, 79 Fed. Reg. 14,739 (Mar. 17, 2014).

[108] Ed Christman, "Dept. of Justice Considering Major Overhauls on Consent Decrees, Sources Say," Billboard (Apr. 7, 2015), *available at* http://www.billboard.com/articles/business/6524359/dept-of-justice-consent-decrees-overhaul-publishing-ascap-bmi (last accessed Oct. 13, 2016).

[109] *See* Statement of the Department of Justice on the Closing of the Antitrust Division's Review of the ASCAP and BMI Consent Decrees, Department of Justice (Aug. 4, 2016), *available at* https://www.justice.gov/opa/file/882111/download (last accessed Oct. 13, 2016).

[110] *See* Ed Christman, "ASCAP, BMI Announce Plans for Bilateral Fight Against Dept. of Justice Decision," *Billboard* (Aug. 4, 2016), *available at* http://www.billboard.com/articles/business/7461628/ascap-bmi-announce-plans-for-bilateral-fight-against-dept-of-justice (last accessed Oct. 13, 2016).

[111] *See* Ben Sisario, "Songwriters Sue Justice Department Over Licensing Rules," The New York Times (Sept. 13, 2016), *available at* http://www.nytimes.com/2016/09/14/business/media/songwriters-sue-justice-department-over-licensing-rules.html?_r=0 (last accessed Oct. 13, 2016).

115. Regardless of how the issue plays out, the behavior of the market participants indicates that for much of the period from early 2011 through August 2016 they believed there was a reasonable probability that the licenses for digital sound recording rights could be negotiated directly between Pandora and publishers, outside the purview of the rate courts. The agreements negotiated during this period are thus useful as benchmarks (albeit still under the shadow of *potential* rate regulation) for the value of musical works rights which can be compared to the value for non-interactive sound recording rights established by the CRB under Section 114.

2. The Opt-Out Agreements

116. The opt-out deals between the publishers and Pandora were negotiated beginning in 2011 and cover the period beginning January 1, 2012 to the present. While the negotiations took place at various times during this period, it is useful to group them into three rounds: (1) the "Round One" agreements covering 2012 and 2013; (2) "Round Two" agreements covering 2014; and, (3) "Round Three" agreements reached in 2015 and early 2016 covering 2016-2018. Altogether, as shown in Table 5, there are [redacted].[112]

[112] I note that Pandora argued before the BMI Court that a July 2014 agreement with BMG constituted a reasonable benchmark. The BMI Court found that "[t]he Pandora-BMG July 2014 agreement is not an appropriate benchmark." Stanton Opinion at 292. Among the reasons noted by the court was that "At the time BMG negotiated the agreement it was a BMI affiliate, and Pandora could perform its catalog through BMI at the rate court rate." *Id.* I do not include the July 2014 agreement among the benchmarks here.

[redacted]

117. The Round One and Round Two agreements, and the circumstances leading up to them, have been addressed in detail by both rate courts in the course of rate setting proceedings conducted in the wake of their decisions to prohibit partial withdrawals. (The ASCAP court issued its decision in March 2014, and the BMI Court more than a year later in May 2015.) The ASCAP Court concluded that the agreements reached up until that point were not appropriate benchmarks because they resulted from the exercise of market power by the PROs. The BMI Court – based in part on evidence not available to the ASCAP Court – reached the opposite conclusion.

118. I have reviewed both decisions, as well as subsequent evidence, and concluded that all of these agreements are useful as benchmarks, subject to the (important) caveat that all were negotiated under the threat of potential regulatory intervention.

119. I base my conclusion in this regard on the following facts. First, as noted previously, the rate courts are prohibited from explicitly considering the most obvious explanation for the withdrawal decisions, the disparity between sound recording and musical works rights that had resulted from combination of CRB and rate court decisions. Second, as the BMI court noted, the ASCAP court did not have the benefit of observing the round two negotiations and resulting agreements.[113] Third, the ASCAP court based its decision heavily on a finding that one of the key witnesses lacked credibility, a finding not shared by the BMI court.[114]

120. I have also taken into consideration the Copyright Office's assessment of the ASCAP court decisions:

> [The ASCAP court] opinion is notable for its focus on the behavior of a handful of actors instead of an empirically based economic analysis of the proper rate for Pandora. For example, rejecting ASCAP's arguments that the court should consider Pandora's commercial success as part of its inquiry, the court opined that "market share or revenue metrics are poor foundations on which to construct a reasonable fee." Yet it seems that these factors might well be considered by parties in an actual market negotiation.[115]

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[113] A central distinction between the round one and round two negotiations was the availability of information regarding the publishers' repertories. *See* Stanton Opinion at 290. ("The record in this case includes transactions in later years than those in the ASCAP case, and allows the argument that BMI's benchmarks were distorted by the specter of massive copyright infringement (due to ignorance of which works to take down) to be appraised over a longer time period with more transactions. In light of the full record in this case, it appears that the list argument was primarily generated by lawyers.")

[114] *See* Stanton Opinion at 278.

[115] CMM at 154-55.

121. Accordingly, I conclude that the Round One and Round Two agreements, as well as the Round Three agreements concluded in late 2015, evidence results of market negotiations, but ones conducted in the shadow of potential intervention by the rate courts should the partial withdrawal rights asserted by the publishers be denied.

122. The headline rates contained in the Round One and Round Two agreements are summarized in Table 5 above.[116] As the table shows, the headline rates in the Round One agreements ranged [redacted], while the headline rates in the Round Two agreements ranged from [redacted].

123. As noted above, the most recent direct agreements were negotiated in late 2015 and early 2016 – that is, during the period when it appeared that DOJ was seriously considering permitting partial withdrawals. They involve [redacted] In addition, in December 2015, Pandora signed separate agreements with [redacted] Each agreement provides for Pandora to pay musical works royalties equal to [redacted]

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[116] The headline rate is the implied industry-wide rate expressed as a percentage of Pandora's revenues.

[117] [redacted]

[118] [redacted]

[119] [redacted]

[120] [redacted]

[121] [redacted]

3. Implications of the Opt-Out Deals for the Relative Value of Musical Works Rights and Sound Recording Rights

124. The direct transactions between the publishers and Pandora constitute evidence of relative values of musical works and sound recording rights in the area of music streaming services based on voluntary market agreements. These agreements were conducted in the shadow of the rate courts, in the sense that there was uncertainty throughout this period about whether partial withdrawals ultimately would be permitted. However, the natural experiment provided by the potential ability of publishers to withdraw their works and negotiate direct agreements allowed for a period of partial market-based price discovery and, at a minimum, it confirmed the direction in which fair market rates had been skewed by regulation. Prior to the withdrawals, publishers were receiving a headline rate of [redacted] of the amount being paid to the record labels. By the end of the process, that figure had [redacted].

125. Table 6 below shows the ratio of payments for the sound recording right to payments for the musical works right by Pandora from 2012 to 2018. To calculate the ratio for years 2012 to 2015, I find the midpoint (Column C) of the minimum (Column A) and maximum (Column B) "headline" rates of the ASCAP and BMI agreements for 2012 and the Pandora opt-out agreements for 2013 to 2015, which is equivalent to musical works right payments as a percentage of Pandora total revenue. I assume that Pandora's content costs consist entirely of payments for the sound recording and musical works rights. To calculate the sound recording right payments as a percentage of revenue (Column E), I subtract the midpoint of the "headline" rates (Column C) from Pandora content acquisition costs as a percentage of revenue (Column D), as reported in its 10-K reports. Finally, to calculate musical works right payments as a

percentage of sound recording payments (Column F), I divide the "headline" rate midpoint (Column C) by sound recording right payments as a percentage of revenue (Column F). [redacted]. The ratio of sound recording right payments to musical works payments (Column G) is then derived from Column F. As the table shows, the ratio of sound recording royalties to musical works royalties was [redacted] in 2012 under Pandora's agreements with ASCAP and BMI. The ratio has steadily decreased, in favor of musical works, since 2012, and under the most recent agreements the ratio is [redacted].

[redacted]

126. While the window for completely free negotiations outside of rate court influence never fully opened (and for the time being now appears closed), the effect of allowing even a

reasonable expectation of market-based rates was to initiate a rebalancing of rates away from the regulated level towards market equilibrium. That trend began in 2011 when EMI withdrew its digital rights from BMI and was still underway five years later when the Department of Justice announced it would not agree to partial withdrawals. Had DOJ decided otherwise – i.e., if the shadow of the compulsory license had been lifted permanently and completely – it is reasonable to expect that the adjustment towards equilibrium, market-based rates would have continued.

127. In this context, I performed a simple linear regression to forecast how musical work payments as a share of sound recording payments would have progressed if the potential for re-imposition of the compulsory license that affected negotiated rates from 2012-2018 had been removed entirely. Table 7 below shows a summary of the regression statistics. Of note, the "R-squared" statistic reported in the table shows the proportion of the variation in the dependent variable that is explained by the independent variable. Thus, more than 87 percent of the variation in Pandora musical works right payments as a percentage of sound recording right payments is explained by the time trend variable. The one-tail test "P-value" for the time trend variable shows that the variable is statistically significant at the 0.1 percent level.[122]

[122] This statistic can be interpreted as indicating that, if the "true" underlying trend was flat, a random sampling of actual observed changes would produce an upward trend like the one we see in the data only one time out of a thousand.

TABLE 7:
FORECASTED RATIO OF ROYALTIES PAID FOR THE SOUND RECORDING RIGHT TO THE MUSICAL WORK RIGHT FOR PANDORA – REGRESSION SUMMARY STATISTICS

Regression Results							
Variable	**Coefficients**	**Standard Error**	**t Stat**	**P-value (Two-Tail Test)**	**P-value (One-Tail Test)**	**Confidence Interval (Lower 95%)**	**Confidence Interval (Upper 95%)**
Intercept	7.23	1.72	4.20	0.009	0.004	2.80	11.65
Time Trend (Base Year (2012) = 1)	2.23	0.38	5.79	0.002	0.001	1.24	3.22
Observations: 7 R-squared: 0.8701 Adj. R-Squared: 0.8441							

128. Table 8 and Figure 13 show the results of the regression analysis and a forecast of the ratio of Pandora musical works payments to sound recording payments using the regression results. As shown in the table and figure below, that forecast shows that the ratio of the value of sound recordings to musical works would have fallen to [redacted] by 2022, with an average over the 2018-2022 period of [redacted].

[redacted]

[redacted]

129. In my opinion, the [redacted] ratio represents a robust but conservative estimate of the relative value of sound recording and musical works rights over this period in the non-interactive services market, if market forces had been allowed to prevail. It is robust because it represents a continuation of a steady trend, and conservative because the negotiated rates continued to reflect the shadow of the rate courts, without which rates would likely have risen even further and more rapidly. Indeed, the ratio of [redacted] is still less favorable for musical works than the ratio found in [redacted].

E. Summary of Benchmarks for the Relative Rates Paid for Sound Recording and Musical Works Rights

130. The evidence and analysis above demonstrate a range of relative rates paid for sound recording and musical work rights in a variety of market settings. Table 9 below presents

a summary of upper and lower bound ratios, which I established in subsection B above, and of the ratios implied by the YouTube and Pandora agreements, as discussed in subsections C and D. In my opinion, the YouTube and Pandora agreements represent the most comparable and reliable benchmarks, implying ratios of 2.67:1 and 3.7:1, respectively, with a mid-point of 3.2:1.

TABLE 9:
SUMMARY OF RELATIVE VALUATION BENCHMARKS

Service	Ratio of Rates Paid for Sound Recordings to Musical Works
Section 115 Deals (various)	Up to 4.76:1
Pandora Publisher Opt-Out Agreements (2020, estimated)	3.7:1
YouTube - Pandora Midpoint	3.2:1
YouTube (current, assuming 15% to musical works)	2.67:1
Synchronization Licenses (various)	1:1

VI. ANALYSIS OF INTERACTIVE STREAMING AND LIMITED DOWNLOADS (SUBPARTS B AND C)

131. As I demonstrated in Section IV above, the use of streaming in general and interactive streaming in particular has grown rapidly in recent years. Spotify, the largest interactive streaming service in the United States, launched in the United States in July 2011, just shortly before the current rates were adopted. That is, at the time the current rates were adopted, interactive streaming services were new and their future and impact on the industry were unclear.

132. Since that time, however, interactive streaming has become one of the primary modalities for music distribution and consumption. As I describe in the remainder of this section, an analysis of the value of interactive streaming – based on the existing licensing deals and resulting payments made for sound recordings – demonstrates that the value of the mechanical right for interactive streaming is greater than the current rates imply. To the extent that the earlier settlement rates reflected some uncertainty as to the future of streaming, as well

as uncertainty regarding the value of interactive streaming rights for musical works, the growth of interactive streaming over the past several years should have laid such doubts to rest.

133. While the current rates for musical works have been frozen by the compulsory license (and the uncertainty of the rate court process), the rates paid for sound performance rights have been free to adjust to market realities, and thus represent fair market value as determined outside the shadow of regulation. Accordingly, the analysis I present below uses the actual payments for interactive sound recording rights in 2015 – which reflect both the results of free market negotiations for access to these rights as well as contemporaneous beliefs about the value and future of interactive streaming. By focusing on these free-market rates – and by accounting directly for the difference in the value of sound recordings between non-interactive streaming settings and interactive streaming settings – I am able to identify the corresponding value for mechanical rights for musical works in interactive streaming.

134. In what follows, I discuss the value of these rights in terms that are commonly used in the industry – on a per-play basis and on a per-user/month basis. As I demonstrate below, the Copyright Owner's proposed royalty rates for mechanical rights for interactive streaming or limited downloads, the greater of $0.0015 per play or $1.06 per user per month, are below the middle of the range of reasonable royalty rates based on my analysis.

A. Sound Recording Agreements Provide Direct Insight into the Value of Interactive Streaming

135. In Section V, I demonstrated, based on a wide range of privately negotiated agreements, that the relative value of sound recording rights and musical works rights lies between 1:1 and 4.76:1, with the most compelling evidence suggesting the ratio lies near the middle of this range.

136. Because the sound recording right for interactive services is not subject to the compulsory license, the royalties paid for that right are negotiated in the marketplace without the shadow of a compulsory license. Therefore, in order to value the mechanical copyright for musical works in interactive streaming, we can look at what is paid in the free market deals negotiated between willing licensors (the record labels) and willing licensees (the interactive streaming services) for sound recording rights. While there is no statutory license available for sound recordings in interactive streaming, there is a statutory license available for non-interactive streaming (webcasting) for the same sound recordings. While the precise level of sound recording royalties for non-interactive services in 2015 varied by service, I conservatively estimate the average rate at approximately 20 cents per 100 plays.[123]

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[123] In 2015, the per-play rate varied by the type of service: 24 cents per 100 plays for "commercial webcasters," 25 cents per 100 plays for "broadcasters" and "small broadcasters," 25 cents per 100 plays for subscription transmissions and 14 cents per 100 for non-subscription transmissions for "pureplay webcasters" (such as Pandora), a percentage of revenue for "small webcasters," and a flat fee of $500 for "microcasters." Although it is not possible to know the average amount paid by non-interactive webcasters, an assumption of 20 cents per 100 plays is reasonable given that (a) Pandora paid a total of about $610 million in content costs in 2015, of which approximately $56 million was paid to publishers (based on a rate of 2.5 percent for BMI, 1.85 percent for ASCAP and an estimated 0.56 percent for SESAC (based on scaling the 2.5 percent rate to its estimated share of the market relative to BMI, or 10% relative to 45%), out of revenues of approximately $1.15 billion), leaving approximately $554 million for sound recordings, approximately 69 percent of the total of about $803 million in statutory webcasting royalties reported by SoundExchange for 2015 and (b) the vast majority of Pandora's webcasting is done via non-subscription users (and therefore costs only 14 cents per 100 stream) as Pandora reported a total of 21.11 billion listener hours in 2015, of which 18.47 billion (87.5 percent) were by non-subscribers. *See* Form 10-K for the fiscal year ended December 31, 2015, Pandora Media, Inc. (Feb. 18, 2016) at 46, 68, *available at* https://www.sec.gov/Archives/edgar/data/1230276/000123027616000057/p-12312015x10k.htm (last accessed Oct. 12, 2016); "SoundExchange Ends Record-Setting Year with More Than $800 Million in Total Distributions to Recording Artists and Record Labels," SoundExchange Press Release (Feb. 2, 2016), *available at* http://www.soundexchange.com/pr/soundexchange-ends-record-setting-year-with-more-than-800-million-in-total-distributions-to-recording-artists-and-record-labels/ (last accessed Oct. 12, 2016). If, for example, 87.5 percent of Pandora's plays were at the 14 cent rate and 12.5 percent were at the 25 cent rate, then Pandora's average payment rate would be about 15.4 cents per 100 plays. Even if the remaining services all paid the 25 cent per 100 stream rate, given the predominance of Pandora in the segment, it is clear that using a rate of 20 cents per 100 plays as the average statutory rate for public would, if anything, overstate the actual average statutory rate paid per stream and, therefore, understate the incremental payment associated with the "mechanical" right for sound recordings that I discuss in the remainder of this section.

137. However, to operate an *interactive* streaming service, the service would need a free market, direct license with the record labels. The difference between these two rates – the free market rate for interactive rights for sound recordings and the statutory rate for non-interactive rights – provides direct evidence of the incremental value of being able to stream the sound recordings interactively. That is, the difference between these two rights is akin to a "mechanical" right for sound recordings, directly paralleling the mechanical right for musical works at issue in this proceeding.

138. Given these implied values of the "mechanical" sound recording right, we can then turn to the evidence regarding the reasonable range of relative values of sound recording and musical work rights in order to calculate the implied value of the mechanical right for musical works at issue.

139. Given that labels and publishers are due royalties from both reproduction and public performance rights in the interactive streaming context, we need to identify the public performance value in order to calculate a mechanical-only royalty rate for publishers. I do so using two different methods.

140. Method 1 is to identify the implicit value of the mechanical works right for sound recordings in interactive services by subtracting the statutory performance right value for non-

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I note as well that the current terms for commercial statutory webcasting (recently set in the *Web IV* proceeding) have been simplified – 17 cents per 100 plays for non-subscription transmissions and 22 cents per 100 stream for subscription transmissions, with a minimum payment of $500 per station or channel, up to a maximum of $50,000 per service for 2016. (See "Commercial Webcaster 2016 Rates," SoundExchange, *available at* http://www.soundexchange.com/service-provider/rates/commercial-webcaster/ (last accessed Oct. 12, 2016.) Following the same analysis as above, 20 cents per 100 plays would appear to be a conservative assumption under the new rates as well.

interactive services from the all-in sound recording right for interactive services, and then adjust for the relative value of sound recordings and musical works. The algebraic expression for this approach is shown in Equation 1:

(1) $MR_{MW} = (SR_{IS} - SR_{NIS}) / RV_{SR/MW}$,

where

MR_{MW} = Mechanical Rate for Musical Works

SR_{IS} = Sound Recording Rate for Interactive Streaming (All In)

SR_{NIS} = Sound Recording Rate for Non-Interactive Streaming (Performance Only)

$RV_{SR/MW}$ = Relative Value of Sound Recording to Musical Works Rights.

141. For clarity: the term "(SR_{IS} - SR_{NIS})" is the difference between the all-in sound recording royalty for interactive services and the performance-only sound recording royalty (i.e. 20 cents/hundred streams), which is the implicit mechanical rate for sound recordings; the term "$RV_{SR/MW}$" is the ratio of the value of sound recordings to the value of musical works (e.g., 3:1); and MR_{MW} is the estimated mechanical royalty for musical works (e.g., 15 cents per 100 plays). So, hypothetically, if the sound recording rate for interactive streaming is 75 cents/100, the statutory sound recording rate for non-interactive streaming is 20 cents/100, then the implied mechanical rate for sound recording is 55/cents per 100; and, if the relative value of sound recordings to musical works is 3:1, then the resulting mechanical rate for musical works would be 55/3 = 18.33 cents/100.

142. Method 2 is to derive an all-in musical works value based on the relative value of sound recordings to musical works and then remove the amount of public performance rights paid for musical works, leaving just the mechanical-only rate. The algebraic expression for this second approach is shown in Equation 2:

(2) $MR_{MW} = (SR_{IS} / RV_{SR/MW}) - PR_{MW}$,

where PR_{MW} is the public performance royalty rate for musical works, and the other variables are as defined described above.

143. For clarity, the term "SR_{IS} / $RV_{SR/MW}$" in Equation (2) is the all in royalty for sound recordings in interactive services (e.g., 75 cents/100 plays) divided by the relative value of sound recordings and musical works (e.g., 3:1) (yielding an implied all-in rate for musical works), while the PR_{MW} is the performance royalty for musical works (e.g., 10 cents/100). So, based on these hypothetical values, the mechanical rate for musical works would be 75/3 – 10 = 15 cents/100.

144. In the following sections I explain how I apply these two methods to estimate the appropriate mechanical royalty rate for interactive services.

1. The Value of Sound Recording Rights for Interactive Services

145. The first step in my analysis is to estimate the value of the interactive streaming right for sound recordings, SR_{IS}. Two approaches present themselves: (a) examining the rates and terms contained in license agreements between the labels and the services; and, (b) calculating the actual amounts paid by the services for sound recording rights. I considered both approaches, starting with examining the terms contained in the license agreements, and found the feasibility and robustness of this approach limited by the complexity of the agreements, which frequently involve multiple prongs, "best of" terms, guaranteed minimums, upfront payments, and other considerations. Furthermore, from an economic perspective, the most relevant and reliable information is not the schedule of prices that may have been agreed to but rather the price actually paid. Because I have information that allows me to calculate the actual amounts – that is, the amount paid and the number of units, with the ratio being the price per unit – I assess

the value of the interactive streaming right for sound recordings using data on the actual royalty payments of the interactive services.[124]

146. Data on what is paid to the owners of sound recording rights is available from a variety of sources, depending on the service at issue, mainly because the current structure for calculating mechanical royalties for interactive streaming relies in part on what is paid for the sound recordings. I was thus able to include data on the royalties paid for sound recordings in 2015 (from a combination of royalty statements and HFA data) for the following interactive streaming services: Amazon; Google Play; Tidal, Deezer S.A.; 7digital Inc; Da Capo Music, LLC; Neurotic Media; Nokia, Inc.; Rhapsody International Inc.; Rithm Messaging; Spotify USA, Inc.; Steinway, Inc.; and Tidal. All of these data sources provide sufficient information to determine the total number of interactive streams, the number of user months, and the total sound recording royalties paid for the service in the period.[125]

147. While these services do not account for all interactive streaming services, they cover a substantial majority of the interactive streaming industry. One way to assess the extent to which these data sources provide coverage for the entire interactive streaming segment is to look at what these sources have paid historically in total *mechanical* royalties and compare that figure to NMPA's estimate of total mechanical royalties paid, based on reporting by member publishers.[126] Table 10 displays this information for 2015. As the table shows, the data sources I

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[124] Further, while data are available for the totality of payments made to all labels, access to the full set of licenses agreements with all labels is not available. This raises the question of what is missing in those unseen agreements, without any way to verify if the missing agreements are or are not generally consistent with the agreements to which we do have access. As such, relying on what was actually paid for the sound recording rights is the most direct and most accurate way to assess the value of the interactive streaming right for sound recordings.

[125] For services that track service revenue, that information is also generally available.

[126] *See* NMPA Data.

use to calculate sound recording royalties for interactive services report [redacted] in mechanical works royalties in 2015, about [redacted] than the [redacted] NMPA estimates was paid in total royalties paid for the same period. Given that my data includes results from all of the major services (and in particular from Spotify and Rhapsody, which account for the vast majority of interactive streams), the information in Table 10 indicates that: (a) my data covers nearly all interactive streaming; and, (b) NMPA's estimates based on industry self-reporting slightly understate the actual totals.

[redacted]

148. Calculating the value of the interactive streaming right for sound recordings on a per-play basis is straightforward. For each service, I tally the total payments for sound recordings and divide by the total number of interactive streams the service reports. The results for 2015 are reported in Table 11 below.[127]

[127] The free service from Spotify is not included in these figures. The data indicate that the rate Spotify pays to record labels for sound recording rights for its ad-supported tier is [redacted] In 2015, Spotify paid about [redacted] in sound recording rights for about [redacted] for its ad-supported interactive service. This rate is [redacted] the ad-supported rate paid by statutory webcasters for non-subscription uses (which was $0.14 per 100 plays for pureplay webcasters such as Pandora in 2015 and was set to $0.17 per 100 plays starting in 2016). [redacted]. In my opinion, this low rate reflects (a) the fact that the record labels own approximately 17% equity in Spotify (as discussed below), and (b) that the ad-supported tier is designed to draw users to Spotify in hopes of growing market share and promoting the subscription service, thereby enhancing Spotify's company valuation and long-run profitability. As noted below, Spotify is planning a 2017 IPO from which the record labels could receive over $1 billion. Accordingly, the rates by Spotify for its free service do not help to inform the value of interactivity (and thus the value of mechanical rights). Further, in my opinion it would not be appropriate to base a rate on an average that included non-subscription services. Using a lower, blended rate would risk causing the sort of disruption I have discussed above – a rate that is too low for subscription services could lead to disruptive and distortionary changes in the interactive service segment, but a rate that may be too high for non-subscription services would not, simply because of the asymmetric nature of those risks.

149. As shown in the table, the lowest per stream royalties among the major services is .

150. [redacted] several record companies have equity in Spotify, totaling about 16 percent, as public reports indicate.[128] Spotify is planning an IPO in 2017 valued as high as $8 billion (of which the record labels would receive approximately $1.4 billion), and that in their current rate negotiations, "the labels argue that Spotify is already paying less than market rates."[129] Because the bargains between Spotify and the labels are not between "unrelated parties,"[130] in my opinion they do not constitute reliable benchmarks and I do not include them in the calculations below.[131]

2. The Appropriate Value for the Mechanical Royalty (Method 1)

151. In this section I discuss my estimate of the appropriate value of the mechanical royalty rate based on Method 1.

152. The value of the interactive streaming right for sound recordings can be used to determine the corresponding mechanical right for musical works. Using 20 cents per 100 plays as the value of the statutory webcasting right for sound recordings as I have described above, and based on the weighted average value of the all-in sound recordings right of [redacted], that value is [redacted] per 100 plays at the weighted average (excluding Spotify). Table 12 below presents the resulting calculations of the value of the mechanical right for musical works implied by these sound recording deals, at various points between the 1:1 and 4.76:1 ratios of value for sound recordings and musical works.

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[128] Michael Arrington, "This Is Quite Possibly the Spotify Cap Table," TechCrunch (Aug. 7, 2009), *available at* https://techcrunch.com/2009/08/07/this-is-quite-possibly-the-spotify-cap-table/ (last accessed Oct. 12, 2016).

[129] *See* Lucas Shaw and Alex Barinka, "Will a Spotify IPO Live Up to Its $8 Billion Valuation?," BloombergBusinessweek (July 20, 2016) *available at* http://www.bloomberg.com/news/articles/2016-07-20/will-a-spotify-ipo-live-up-to-its-8-billion-valuation (last accessed Oct. 26, 2016).

[130] *See* n. 24 *infra*.

[131] Including Spotify would not qualitatively alter my opinion regarding the reasonableness of the proposed rates.

153. The resulting rate of between per 100 plays reflects the range of relative values for sound recordings and musical works, from a variety of sources. A rate in the lower end of this range would reflect a belief that the more accurate estimates of the relative value of musical works would be found in deals negotiated in the shadow of compulsory licensing (or in the compulsory licensing rates themselves), whereas a rate in the upper end of this range would reflect a belief that the relative value of musical works would be found in free market transactions outside the shadow of compulsory licensing. Notably, at the ratio established by the YouTube benchmark, the corresponding per-play mechanical royalty would be per 100 plays; at the Pandora ratio of it would be per 100 plays; and, at the midpoint of the two, it would be per 100 plays.

3. The Appropriate Value for the Mechanical Royalty (Method 2)

154. This section describes my estimate of the appropriate mechanical royalty rate using Method 2. As will be recalled, Method 2 begins by estimating the all-in sound recording royalty for interactive services and then subtracting the performance rate, leaving just the mechanical rate.

155. As explained above, I have estimated the all-in sound recording rate at [redacted], which implies an all-in rate for musical works of between [redacted] per 100 plays if the relative value is 1:1, [redacted] per 100 plays if the relative value is 3.2:1, and [redacted] per 100 plays if the relative value is 4.76:1.

156. The next step is to subtract public performance royalties, which I first calculate from the same data sources used above to calculate the all-in rates. The results are shown in Table 13, which shows that the range of musical works performance rates ranges from [redacted] per 100 plays to [redacted] per 100 plays with an average, [redacted].

[redacted]

157. Deducting the average public performance royalty per 100 plays for interactive streaming services of [redacted] results in the mechanical-only royalty per-play rates shown in Table 14 below:

[redacted]

158. The resulting range of between [redacted] per 100 plays reflects the range of relative values for sound recordings and musical works. At the ratio established by the YouTube benchmarks, the per-play mechanical royalty would be [redacted] per 100 plays; at the Pandora ratio of [redacted] it would [redacted] and, at the midpoint of the two, it would be [redacted] per 100 plays.

4. The Appropriate Per-User Value for the Mechanical Right

159. The Copyright Owners have also proposed a per-user rate. While Method 1 cannot be used to estimate such a rate, because it is not possible to isolate a per-user statutory webcasting rate, which is a necessary input, a per-user rate can be estimated using Method 2. As I explain in this section, this is accomplished by calculating all-in publisher royalties on a per-user basis and subtracting the average effective per-user performance royalties to publishers, leaving an appropriate rate for mechanical royalties. That is, I implement Method 2, except that the magnitudes are expressed on a per-user basis rather than a per play basis.

160. To begin, Table 15 presents the all-in rates paid on a per-user basis for interactive sound recording licenses, excluding free services, services that do not track users, and services with limited, bundled or other niche products.[132]

[redacted]

161. As shown in the table, the weighted average of sound recording payments per user in 2015 was [redacted].

162. The corresponding all-in musical works rate can be established by applying the range of relative values of sound recordings and musical works, as shown in Table 16 below.

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[132] Amazon's Prime Music service is excluded, as it is a bundled service with a very limited catalog, and so has not been subjected to per-user royalty tests. Amazon reported [redacted]. Amazon's Music Unlimited service would be included, but for the fact that it just launched and has no data.

[redacted]

163. The resulting rate of between [redacted] per user, *all in*, reflects the range of relative values for sound recordings and musical works, from a variety of sources. Using the same approach as above, I calculated the musical works performance royalties paid by these same services during this time period, but this time on a per-user instead of per-play basis. The results are shown in Table 17.

[redacted]

164. As the table shows, the average (excluding Spotify) performance royalty per user was [redacted] Deducting this amount from the all-in figures shown in Table 17 results in the mechanical-only royalty per-user rates shown in Table 18:

[redacted]

165. The resulting mechanical rate of between [redacted] per user reflects the range of relative values for sound recordings and musical works, from a variety of sources. At the 3.2:1 ratio which is the midpoint of the YouTube and Pandora benchmarks, the mechanical only rate would be [redacted] per user.

B. Mechanical Rights Values Implied by Standard Industry Practices Confirm the Reasonability of the Proposed Rates

166. The above analysis uses actual payments made by interactive streaming services for access to sound recording rights combined with the benchmarked relative value of sound recording and musical work rights to value the mechanical streaming right. We can test and confirm the results of this analysis by looking at standard licensing terms and metrics in the industry. In the remainder of this subsection, I demonstrate that this alternative method also supports the proposed rates, showing that the proposed rates are directly in line with industry custom and practice and current market activity and expectations.

167. This analysis begins with three facts about the streaming industry:

168. First, I note that it is accepted, and indeed publicly proclaimed by some services, that services pay approximately 70 percent of revenue to rightsholders – which in the case of

interactive streaming means simply two groups: publishers/songwriters and labels.[133] At the time of the launch of Apple Music, Apple stated that it will pay 71.5 percent of its streaming revenues to rightsholders in the United States.[134] Spotify has repeatedly stated that it pays 70 percent of revenues to rightsholders.[135]

169. Second, a review of license agreements for sound recordings between labels and interactive services demonstrate that, while there is variability in the payment terms across services and labels, it is standard for label licenses to include a royalty prong of approximately [redacted] of service revenue for the sound recording license.[136] This standard term is borne out by actual payments. In practice, as shown in Table 19 below, interactive streaming services (excluding Spotify) in fact pay about [redacted] of their revenue for rights to sound recordings.[137]

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[133] This ratio extends beyond music streaming. For example, Apple retains 30 percent of revenue from sales of MP3s while paying 70 percent of the revenue to rightsholders. *See* John Seabrook, "Revenue Streams: Is Spotify the music industry's friend or its foe?," *The New Yorker* (Nov. 24, 2014), *available at* http://www.newyorker.com/magazine/2014/11/24/revenue-streams (last accessed Oct. 18, 2016). Hulu, another online video streaming site, paid over 70 percent of its revenue for content costs in 2012. *See* Jennifer Van Grove, "Embrace the Mushy Mush! Hulu's 2012 Numbers Are a Mixed Bag," Venture Beat (Dec. 17, 2012), *available at* http://venturebeat.com/2012/12/17/hulu-2012/ (last accessed Oct. 12, 2016).

[134] Paul Resnikoff, "Apple Responds: 'We Pay 71.5 Percent of Streaming Revenue Back to Artists…'," Digital Music News (June 15, 2015), *available at* http://www.digitalmusicnews.com/2015/06/15/apple-responds-we-pay-71-5-percent-of-streaming-revenue-back-to-artists/ (last accessed Oct. 12, 2016); Sai Saichin R, "Apple to Pay 70 Percent of Music Subscription Revenue to Labels, Publishers," Reuters (June 15, 2015), *available at* http://www.reuters.com/article/us-apple-music-idUSKBN0OV1VX20150615 (last accessed Oct. 12, 2016).

[135] "Spotify Explained – How We Pay Royalties: An Overview," Spotify Artists, *available at* https://www.spotifyartists.com/spotify-explained/ (last accessed Oct. 18, 2016).

[136] In each of these instances, the [redacted] of revenue is pro-rated among labels according to their percentage of total streams.

[137] [redacted]

[redacted]

170. Third, one particular royalty rate ratio is standard in the interactive streaming market – that is the ratio between [redacted]

171. These industry practices align closely with the proposed rates. Following the industry standard that approximately 70 percent of service revenue is allocated to rightsholders, if is allocated to sound recordings, then it follows that approximately is available for allocation to music publishers.[139] Given the established ratio between revenue prongs and per-user prongs, of revenue would be matched with a per-user month rate, with both calculated "all in," *i.e.*, including performance royalties. Public performance royalty rates in 2015 were approximately .[140] Subtracting

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[138]

[139] The only rightsholders for interactive music streaming are the sound recording copyright owners (labels) and the musical works copyright owners (publishers/songwriters). The Copyright Office noted that services see a royalty cost pool and are agnostic as to how it gets allocated between rightsholders. "From the services' perspective, total content costs are the relevant consideration. They assert that they are 'agnostic' as to how that total is divided among various rightsholders." CMM at 77.

[140] Based on total 2015 public performance royalties of and service revenue of . These numbers are for the services included in the calculation of label payments as a percentage of service revenues as in

this from [redacted] for mechanical only rights, which would match with a per-user rate of [redacted], higher than the proposed rate of $1.06 and fully consistent with the benchmark analysis rates above.

172. It is also possible to determine the matching per-play rate to this per-user rate at current average streams per user. In 2015, there are a total of [redacted]

173. These rates ([redacted] per user month and [redacted] per 100 plays for mechanical only) provide support for my conclusion that the rates I described above based on a benchmark analysis are consistent with customary costs and margins and industry business practices. The services' public statements that they set aside 70 percent of revenues for rightsholders lead to the conclusion that the proposed rates fit with market practices and reasonable expectations. Accordingly, these industry business practices value the mechanical right similarly and provide further support for the rates I have calculated above.

C. Summary of Analysis and Findings for Interactive Streaming and Limited Downloads

174. As my benchmark analysis above indicates, confirmed by standard industry customs and practices, the rates proposed by the Copyright Owners are consistent with a

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Table 19, with the exception [redacted], as the royalty statements reviewed did not have performance royalty data, and [redacted].

reasonable range of rates based on the policy objectives of Section 115. Indeed, they fall near the low end of the range, and there is benchmark evidence that supports significantly higher rates than those proposed by the Copyright Owners. Accordingly, the proposed rates of the greater of $0.0015 per play or $1.06 per user are reasonable terms for mechanical royalties for interactive streaming and limited download services.

VII. SUMMARY OF OPINIONS

175. As the music industry has undergone (and continues to undergo) substantial changes in recent years, the statutory rates which define payments for the rights to musical works have failed to keep up. In order to properly determine the value of mechanical rights for musical works, it is instructive to turn to market-based valuations of reasonably comparable benchmark rights – that is, to turn to licenses for similar musical rights to understand that value of the mechanical rights at issue.

176. In particular, information from a variety of agreements demonstrates that the relative value of sound recording rights and musical rights lies between 1:1 and 4.76:1. I apply this ratio to the actual payments made by interactive services for sound recording rights corresponding to the musical works rights at issue here, using two different methods. The first method demonstrates that the value of mechanical rights to musical works for interactive streaming and limited downloads is likely between [redacted] per play, with the most compelling benchmarks indicating per-play rates of between [redacted]. The second method results in a similar range of [redacted] per play, with the most compelling benchmarks indicating per-play rates of between [redacted]. Using a similar approach, I estimate the value of musical works rights for interactive streaming and limited downloads likely is between [redacted] per user per month, with the most compelling

benchmarks indicating per-user rates of between [redacted] per user per month and [redacted] per user per month. Similar values of the mechanical right to musical works for streaming and limited downloads can be found by analyzing industry standards for the division of value among services and copyright holders, around [redacted] per play and [redacted] per user month, for mechanical rights only, corroborating the results of my benchmark analysis.

177. Copyright Owners' proposed rates of the greater of $0.0015 per play and $1.06 per user are at the low ends of these ranges, and hence constitute reasonable terms for mechanical rights for interactive streaming and limited download services, and are consistent with the requirements set forth in Section 801(b)(1) of the Copyright Act.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: October 28, 2016

Jeffrey Eisenach

APPENDIX A

Materials Relied Upon by Jeffrey A. Eisenach, Ph.D.

Academic Books and Journal Articles

Dennis Carlton and Jeffrey Perloff, *Modern Industrial Organization*, 4th ed. (Pearson/Addison-Wesley, 2005).

Al Kohn & Bob Kohn, *Kohn on Music Licensing*, 3rd Ed. (Aspen Publishers, 2000).

Robert W. Holthausen & Mark E. Zmijewski, *Corporate Valuation: Theory, Evidence and Practice*, 1st Ed. (Cambridge Business Publishers, 2014).

Donald S. Passman, *All You Need to Know About the Music Business*, 9th Ed. (Simon & Schuster, 2015).

Restricted Documents

[redacted] (SONY-ATV00001242 – SONY-ATV00001253)

[redacted] (SONY-ATV00001603 – SONY-ATV00001614)

[redacted] (BMG00000133 - BMG00000144)

[redacted] (UMPG00000937 - UMPG00001006)

[redacted] (UMPG00001371 - UMPG00001385)

[redacted] (SONY-ATV00000196 - SONY-ATV00000206)

[redacted] (SONY-ATV00000222 - SONY-ATV00000233)

[redacted] (BMG00000087 - BMG00000092)

[redacted] (UMPG00001323 - UMPG00001330)

[redacted]
(UMPG00000912 - UMPG00000921)

[redacted]
(BMG00000093 - BMG00000095)

[redacted]
(KOBALT00000011 - KOBALT00000014)

[redacted]
(WC00000090 - WC00000095)

[redacted]
(SONY-ATV00000302 - SONY-ATV00000308)

[redacted] (SONY-ATV00000234 - SONY-ATV00000241)

[redacted]
(GOOG-PHONOIII-00002412 - GOOG-PHONOIII-00002537)

[redacted] (BMG00000463 - BMG00000473)

[redacted] (UMPG00000169 - UMPG00000181)

[redacted]
(WC00000550 WC00000567)

[redacted]
(SONY-ATV00001806 - SONY-ATV00001819)

[redacted]
(SONY-ATV00001792 - SONY-ATV00001805)

[redacted] (UMPG00000854 - UMPG00000879)

[redacted] (APL-PHONO_00009021 - APL-PHONO_00009079)

[redacted] (APL-PHONO_00008928 - APL-PHONO_00008975)

[redacted] (APL-PHONO_00008976 - APL-PHONO_00009020)

[redacted] (APL-PHONO_00004388 - APL-PHONO_00004430)

[redacted] (APL-PHONO_00004518 - APL-PHONO_00004523)

[redacted] (UMPG00000408 - UMPG00000429)

[redacted] (UMPG00000232 - UMPG00000244)

[redacted] (BMG00000001 - BMG00000021)

[redacted] (BMG00000022 - BMG00000043)

[redacted] (NMPA00000851 - NMPA00000867)

[redacted] (SONY-ATV00001820 - SONY-ATV00001839)

[redacted] (GOOG-PHONOIII-00002538 - GOOG-PHONOIII-00002558)

[redacted] (KOBALT00000076 - KOBALT0000090)

[redacted] (UMPG00001007 – UMPG00001052)

[redacted] (GOOG-PHONOIII-00001818 - GOOG-PHONOIII-00001848)

[redacted] (SPOTCRB0005221 - SPOTCRB0005409)

[redacted]
(SPOTCRB0005548 - SPOTCRB0005627)

[redacted]
(GOOG-PHONOIII-00000346 - GOOG-PHONOIII-00000377)

[redacted] (SME_PH3_00005402 - SME_PH3_00005574)

[redacted] (SME_PH3_00008098 - SME_PH3_00008316)

[redacted]
(SME_PH3_00006518 - SME_PH3_00006586)

[redacted] (PAN_CRB115_00093953 - PAN_CRB115_00094048)

[redacted] (PAN_CRB115_00094049 - PAN_CRB115_00094091)

[redacted] (PAN_CRB115_00094098 - PAN_CRB115_00094146)

[redacted] (PAN_CRB115_00094163 - PAN_CRB115_00094206)

[redacted] (SONY-ATV00001488 – SONY-ATV00001501)

[redacted]
(UMPG00000150 – UMPG00000168)

[redacted] (UMPG00002225 – UMPG00002245)

[redacted] (UMPG00000403 - UMPG00000407)

[redacted] (UMPG00000210 - UMPG00000216)

[redacted] (SONY-ATV00000863 - SONY-ATV00000870)

[redacted] (SONY-ATV00000855 - SONY-ATV00000862)

[redacted] (SONY-ATV00001116 - SONY-ATV00001124)

[redacted] (SONY-ATV00001946 - SONY-ATV00001951)

[redacted] (SONY-ATV00000656 SONY-ATV00000673)

[redacted] (WC00000353 - WC00000376)

[redacted] (SONY-ATV00001764 - SONY-ATV00001780)

[redacted] (BMG00000272 - BMG00000285)

[redacted] (DR00000001 - DR00000013)

[redacted] (PAN_CRB115_00088930 - PAN_CRB115_00088944)

[redacted] (KOBALT00000741 – KOBALT00000742)

[redacted] (KOBALT00000743 – KOBALT00000744)

[redacted] (KOBALT00000745 – KOBALT00000746)

[redacted] (KOBALT00000747 – KOBALT00000748)

Restricted Data

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KOBALT00001230	[redacted]
KOBALT00001231	[redacted]
KOBALT00001232	[redacted]
KOBALT00001235	[redacted]
KOBALT00001265	[redacted]
KOBALT00001268	[redacted]
KOBALT00001269	[redacted]
KOBALT00001270	[redacted]
KOBALT00001271	[redacted]
KOBALT00001274	[redacted]
KOBALT00001302	[redacted]
KOBALT00001306	[redacted]
KOBALT00001307	[redacted]
KOBALT00001308	[redacted]
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KOBALT00001347	[redacted]
KOBALT00001348	[redacted]
KOBALT00001349	[redacted]
KOBALT00001350	[redacted]
KOBALT00001386	[redacted]
KOBALT00001394	[redacted]
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KOBALT00001434	[redacted]
KOBALT00001435	[redacted]
KOBALT00001436	[redacted]
KOBALT00001437	[redacted]
KOBALT00001440	[redacted]

Bates Number	Filename
KOBALT00001468	[redacted]
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KOBALT00001472	[redacted]
KOBALT00001473	[redacted]
KOBALT00001474	[redacted]
KOBALT00001477	[redacted]
KOBALT00001505	[redacted]
KOBALT00001509	[redacted]
KOBALT00001510	[redacted]
KOBALT00001511	[redacted]
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KOBALT00001556	[redacted]
KOBALT00001559	[redacted]
KOBALT00001586	[redacted]
KOBALT00001590	[redacted]
KOBALT00001591	[redacted]
KOBALT00001592	[redacted]
KOBALT00001593	[redacted]
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KOBALT00001630	[redacted]
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KOBALT00001636	[redacted]
KOBALT00001637	[redacted]
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KOBALT00001673	[redacted]
KOBALT00001677	[redacted]
KOBALT00001678	[redacted]
KOBALT00001679	[redacted]
KOBALT00001680	[redacted]
KOBALT00001683	[redacted]
NMPA00001424	[redacted]
HFA00000001	[redacted]
SONY-ATV00005247	[redacted]

Public Data

RIAA U.S. Sales Database, RIAA ("RIAA U.S. Sales Database"), *accessible at* https://www.riaa.com/u-s-sales-database/ (last accessed Oct. 12, 2016).

Legal

17 U.S.C. § 114(i)

17 U.S.C. § 115(c)(3)(A).

17 U.S.C. §§ 801(b)(1)(A)-(D)

37 C.F.R. § 385

Recording Indus. Ass'n of America v. Copyright Royalty Tribunal, 662 F.2d 1, 9 (D.C. Cir. 1981).

1980 Adjustment of the Royalty Rate for Coin-Operated Phonorecord Players, 46 Fed. Reg. 884 (decided Jan. 5, 1981).

Adjustment of Royalty Payable Under Compulsory License for Making and Distributing Phonorecords, 46 Fed. Reg. 891 (Jan. 5, 1981).

Rates and Adjustment of Rates, 46 Fed. Reg. 10,466 (decided Feb. 3, 1981).

Amusement and Music Operators Ass'n v. Copyright Royalty Tribunal, 676 F.2d 1144 (D.C. Cir. 1982).

Digital Performance Right in Sound Recordings Act of 1995, Pub. L. No. 104-39 § 4, 109 Stat. 336 and 344-348.

Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings, 63 Fed. Reg. 25,394 (decided May 8, 1998).

Recording Indus. Ass'n of America v. Librarian of Congress, 176 F.3d 528 (D.C. Cir. 1999).

Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2006-1 CRB DSTRA, 73 Fed. Reg. 4080, 4084 (Jan. 24, 2008).

Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA, 74 Fed. Reg. 4510, 4516 (Jan. 26, 2009).

SoundExchange, Inc. v. Librarian of Congress, 571 F.3d 1220 (D.C. Cir. 2009).

Recording Indus. Ass'n of America v. Librarian of Congress, 608 F.3d 861 (D.C. Cir. 2010).

Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, 78 Fed. Reg. 23,054 (decided Apr. 17, 2013).

Opinion and Order, *In re Petition of Pandora Media, Inc.*, *United States of America v. American Society of Composers, Authors, and Publishers*, No. 1:12-cv-08035-DLC (S.D.N.Y., Sept. 17, 2013).

Opinion and Order, Broadcast Music, Inc. v. Pandora Media, Inc., No. 1:13-cv-04037 (S.D.N.Y., Dec. 18, 2013).

Music Choice v. Copyright Royalty Board, 774 F.3d 1000 (D.C. Cir. 2014).

See Library of Congress, Copyright Office, Music Licensing Study: Notice and Request for Public Comment, Federal Register 78;51 (Mar. 17, 2014) at 14739-14743.

Opinion and Order, *United States of America, v. American Society of Composers, Authors, and Publishers*, Case 1:12-cv-08035-DLC (S.D.N.Y. Mar. 18, 2014).

Opinion and Order, *Broadcast Music, Inc., v. Pandora Media, Inc.*, Case 1:13-cv-04037-LLS (S.D.N.Y. May 28, 2015).

Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings, Docket No. 14-CRB-0001-WR (2016-2020) ("WebIV") (Mar. 4, 2016), *accessible at* https://www.loc.gov/crb/web-iv/web-iv-determination-final.pdf (last accessed Oct. 26, 2016).

Department of Justice, Antitrust Division, *Statement of the Department of Justice on the Closing of the Antitrust Division's Review of the ASCAP and BMI Consent Decrees*, (Aug. 4, 2016), *accessible at* https://www.justice.gov/opa/file/882111/download (last accessed Oct. 13, 2016).

Industry Reports

The Infinite Dial 2016, Edison Research and Triton Digital (Mar. 10, 2016) ("The Infinite Dial 2016"), *accessible at* http://www.edisonresearch.com/wp-content/uploads/2016/03/The-Infinite-Dial-2016.pdf (last accessed Oct. 12, 2016).

2015 Nielsen Music U.S. Report, Nielsen (Jan. 6, 2016) at 8, *accessible at* http://www.nielsen.com/us/en/insights/reports/2016/2015-music-us-year-end-report.html (last accessed Oct. 13, 2016).

2016 Nielsen Music U.S. Mid-Year Report, Nielsen (July 7, 2016) at 2, *accessible at* http://www.nielsen.com/us/en/insights/reports/2016/2016-us-music-mid-year-report.html (last accessed Oct. 13, 2016).

Economics of Mobile Music, SNL Kagan 2016 Edition (July 19, 2016), *accessible at* https://www.snl.com/Interactivex/NewslettersDetails.aspx?ID=37138291&FID=35137293&RID=&PRName=&KeyDocID=1&KeyOnlineService=187 (subscription required).

Economics of Internet Music and Radio, SNL Kagan 2016 Edition (2016), *accessible at* https://www.snl.com/Interactivex/Newsletters.aspx?ID=36197564&FID=33936753&RID=&PRName=&KeyDocID=0&KeyOnlineService=217&Format=3 (subscription required).

News and Journal Articles

William A. Adkinson and Jeffrey A. Eisenach, *The Debate Over Digital Online Content: Understanding the Issues* (The Progress & Freedom Foundation, Apr. 2002), *accessible at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1260377 (last accessed Oct. 12, 2016).

Madi Alexander and Ben Sisario, "Apple Music, Spotify and a Guide to Music Streaming Services," *The New York Times* (Apr. 5, 2016), *accessible at* http://www.nytimes.com/interactive/2015/06/30/business/media/music-streaming-guide.html?_r=0 (last accessed Oct. 12, 2016).

Michael Arrington, "This Is Quite Possibly the Spotify Cap Table," TechCrunch (Aug. 7, 2009), *accessible at* https://techcrunch.com/2009/08/07/this-is-quite-possibly-the-spotify-cap-table/ (last accessed Oct. 12, 2016).

Ken Binmore, Ariel Rubinstein, and Asher Wolinsky, "The Nash Bargaining Solution in Economic Modeling," *The RAND Journal of Economics* 17(2) (1986) 176-188.

Xiomara Blanco, "Drake's 'Views' to Exclusively Roll Out on Apple Music, iTunes," CNET (Apr. 28, 2016), *accessible at* https://www.cnet.com/news/drakes-views-from-the-six-exclusively-rolls-out-on-apple-music-itunes/ (last accessed Oct. 12, 2016).

Luiz Augusto Buff & Nicholas Spanos, *New Five-Year Standards for Mechanical Licenses*, 7 Berklee College Music Business Journal 14, 14 (July 2012),, *accessible at* http://www.thembj.org/2012/07/a-bundle-of-mechanicals/ (last accessed Oct. 18, 2016).

Tim Carmody, "It's Not TV, It's the Web: YouTube Partners Complain About Google Ads, Revenue Sharing," The Verge (Mar. 4, 2013), *accessible at* http://www.theverge.com/2013/3/4/4062810/youtube-partners-complain-revenue-sharing-google-ads (last accessed Oct. 24, 2016).

Ed Christman, "YouTube, NMPA Reach 'Unprecedented' Deal to Pay Independent Music Publishers," BillboardBiz (Nov. 17, 2011), *accessible at*

http://www.billboard.com/biz/articles/news/publishing/1160146/youtube-nmpa-reach-unprecedented-deal-to-pay-independent-music (last accessed Oct. 25, 2016).

Ed Christman, "Dept. of Justice Considering Major Overhauls on Consent Decrees, Sources Say," Billboard (Apr. 7, 2015), *accessible at* http://www.billboard.com/articles/business/6524359/dept-of-justice-consent-decrees-overhaul-publishing-ascap-bmi (last accessed Oct. 13, 2016).

Ed Christman, "A Deep Dive Into Pandora's Payments to Publishers," Billboard (June 25, 2015), *accessible at* http://www.billboard.com/articles/business/6612620/a-deep-dive-into-pandoras-payments-to-publishers (last accessed Oct. 13, 2016).

Ed Christman, "Pandora Signs Mutually Beneficial Licensing Deals With ASCAP, BMI," Billboard (Dec. 22, 2015), *accessible at* http://www.billboard.com/articles/business/6820722/pandora-licensing-deals-ascap-bmi (last accessed Oct. 13, 2016).

Ed Christman, "ASCAP, BMI Announce Plans for Bilateral Fight Against Dept. of Justice Decision," Billboard (Aug. 4, 2016), *accessible at* http://www.billboard.com/articles/business/7461628/ascap-bmi-announce-plans-for-bilateral-fight-against-dept-of-justice (last accessed Oct. 13, 2016).

Josh Constine, "Google Launches 'Google Play Music All Access' On-Demand $9.99 A Month Subscription Service," TechCrunch (May 15, 2013), accessible at http://techcrunch.com/2013/05/15/google-play-music-all-access/ (last accessed Oct. 12, 2016).

Andrew Dalton, "iHeartRadio Plays Catch-up with On-Demand Music," Engadget (Sept. 23, 2016), accessible at https://www.engadget.com/2016/09/23/iheartradio-all-access-plus-on-demand-music/ (last accessed Oct. 24, 2016).

Tom DiChristopher, "Prime Will Grow Amazon Revenue Longer Than You Think: Analyst," CNBC (Sept. 11, 2015), *accessible at* http://www.cnbc.com/2015/09/11/prime-will-grow-amazon-revenue-longer-than-you-think-analyst.html (last accessed Oct. 18, 2016).

Franklin Fisher and John McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *The American Economic Review* 73;1 (Mar. 1983) 82-97.

Danny Fratella, "YouTube Updates Partner Program Terms – Explained," Social Blade (Apr. 9, 2015), *accessible at* https://socialblade.com/blog/2015/youtube-updates-partner-program-terms-explained-1812 (last accessed Oct. 24, 2016).

Doug Gross, "Songwriters: Spotify Doesn't Pay Off… Unless You're a Taylor Swift," CNN (Nov. 13, 2014), *accessible at* http://www.cnn.com/2014/11/12/tech/web/spotify-pay-musicians/ (last accessed Oct. 12, 2016).

"Introducing iHeartRadio All Access," iHeart, *accessible at* http://blog.iheart.com/Pages/introducing-iheartradio-all-access.aspx (last accessed Oct. 21, 2016).

Nathan Ingraham, "iTunes Store at 10: How Apple Built a Digital Media Juggernaut," The Verge (Apr. 26, 2013), *accessible at* http://www.theverge.com/2013/4/26/4265172/itunes-store-at-10-how-apple-built-a-digital-media-juggernaut (last accessed Oct. 12, 2016).

Hannah Karp, "Pandora Nears Deals for On-Demand Streaming," The Wall Street Journal (Aug.19, 2016), accessible at http://www.wsj.com/articles/pandora-nears-deals-for-on-demand-streaming-1471599002 (last accessed Oct. 18, 2016).

Ingrid Lunden, "Deezer Opens Its $9.99 On-Demand Music Service in the US to Everyone, No Free Tier Included," TechCrunch (July 19, 2016), accessible at https://techcrunch.com/2016/07/19/deezer-opens-its-9-99-on-demand-music-service-in-the-us-to-everyone-no-free-tier-included/ (last accessed Oct. 12, 2016).

Gwendolyn Mariano, "Listen.com Launches Rhapsody Service," ZDNet (Dec. 3, 2001), *accessible at* http://www.zdnet.com/article/listen-com-launches-rhapsody-service/ (last accessed Oct. 12, 2016).

Michael Masnick, Michael Ho, Joyce Hung and Leigh Beadon, "The Sky is Rising 2014 Edition," CCIA (Oct. 2014) at 9, *accessible at* https://www.ccianet.org/wp-content/uploads/2014/10/Sky-Is-Rising-2014.pdf (last accessed Oct. 12, 2016).

John Nash, "The Bargaining Problem," Econometrica 18:2 (1950) at 155–162.

Vickie Nauman, "Reimagining the Music Business," Rethink Music (Jan. 26, 2016), *accessible at* http://www.rethink-music.com/news/reimagining-the-music-business (last accessed Oct. 12, 2016).

Richard Nieva, "Ashes to Ashes, Peer to Peer: An Oral History of Napster," Fortune (Sept. 5, 2013), *accessible at* http://fortune.com/2013/09/05/ashes-to-ashes-peer-to-peer-an-oral-history-of-napster/ (last accessed Oct. 12, 2016).

Alex Pham & Glenn Peoples, "Seven Ways iTunes Changed the Music Industry," BillboardBiz (Apr. 25, 2013), *accessible at* http://www.billboard.com/biz/articles/news/1559622/seven-ways-itunes-changed-the-music-industry (last accessed Oct. 12, 2016).

Paul Resnikoff, "Apple Responds: 'We Pay 71.5 Percent of Streaming Revenue Back to Artists…'," Digital Music News (June 15, 2015), *accessible at* http://www.digitalmusicnews.com/2015/06/15/apple-responds-we-pay-71-5-percent-of-streaming-revenue-back-to-artists/ (last accessed Oct. 12, 2016).

Eric Rosenberg, "How YouTube Ad Revenue Works, Investopedia (Mar. 26, 2015), *accessible at* http://www.investopedia.com/articles/personal-finance/032615/how-youtube-ad-revenue-works.asp (last accessed Oct. 24, 2016).

Sai Saichin R, "Apple to Pay 70 Percent of Music Subscription Revenue to Labels, Publishers," Reuters (June 15, 2015), *accessible at* http://www.reuters.com/article/us-apple-music-idUSKBN0OV1VX20150615 (last accessed Oct. 12, 2016).

John Seabrook, "Revenue Streams: Is Spotify the music industry's friend or its foe?," The New Yorker (Nov. 24, 2014), *accessible at* http://www.newyorker.com/magazine/2014/11/24/revenue-streams (last accessed Oct. 18, 2016).

John Seabrook, "Will Streaming Music Kill Songwriting," *The New Yorker* (Feb. 8, 2016), *accessible at* http://www.newyorker.com/business/currency/will-streaming-music-kill-songwriting (last accessed Oct. 12, 2016).

Dan Seifert, "Amazon's Full On-Demand Streaming Music Service Launches Today," The Verge (Oct. 12, 2016), *accessible at* http://www.theverge.com/2016/10/12/13244158/amazon-music-unlimited-launch-echo-availability-price (last accessed Oct. 17, 2016).

Lucas Shaw and Alex Barinka, "Will a Spotify IPO Live Up to Its $8 Billion Valuation?," Bloomberg (July 20, 2016), *accessible at* http://www.bloomberg.com/news/articles/2016-07-20/will-a-spotify-ipo-live-up-to-its-8-billion-valuation (last accessed Oct. 25, 2016).

Cary Sherman, "State of the Music Business: What the Numbers Tell Us," Medium (Mar. 22, 2016), *accessible at* https://medium.com/@RIAA/state-of-the-music-business-what-the-numbers-tell-us-63ce1524b30#.2hxurbjnr (last accessed Oct. 12, 2016).

Michael Singleton, "Streaming Music Edged Out Digital Downloads for the First Time in 2015," *The Verge* (Mar. 22, 2016), *accessible at* http://www.theverge.com/2016/3/22/11284932/streaming-music-riaa-music-labels-youtube (last accessed Oct. 12, 2016).

Michael Singleton, "Pandora is Almost Ready to Launch Its Music Subscription Service," The Verge (Sept. 16, 2016), *accessible at* http://www.theverge.com/2016/9/13/12901408/pandora-music-subscription-service-umg-sony (last accessed Oct. 12, 2016).

Ben Sisario, "Songwriters Sue Justice Department Over Licensing Rules," The New York Times (Sept. 13, 2016), *accessible at* http://www.nytimes.com/2016/09/14/business/media/songwriters-sue-justice-department-over-licensing-rules.html?_r=0 (last accessed Oct. 13, 2016).

Todd Spangler, "YouTube Standardizes Ad-Revenue Split for All Partners, but Offers Upside Potential," Variety (Nov. 1, 2013), *accessible at*

http://variety.com/2013/digital/news/youtube-standardizes-ad-revenue-split-for-all-partners-but-offers-upside-potential-1200786223/ (last accessed Oct. 24, 2016).

Matthew Sparkes, "Tidal Launches Lossless Music Streaming in UK and US," The Telegraph (Oct. 28, 2014), *accessible at* http://www.telegraph.co.uk/technology/news/11192375/Tidal-launches-lossless-music-streaming-in-UK-and-US.html (last accessed Oct. 25, 2016).

Charlie Sorrel, "Spotify Launches in the U.S. at Last," Wired (July 14, 2011), accessible at http://www.wired.com/2011/07/spotify-launches-in-the-u-s-at-last/ (last accessed Oct. 12, 2016).

David Strickler, "Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis," *Review of Economic Research on Copyright Issues* 12(1/2) (2015) 1-15.

Jennifer Van Grove, "Embrace the Mushy Mush! Hulu's 2012 Numbers Are a Mixed Bag," Venture Beat (Dec. 17, 2012), *accessible at* http://venturebeat.com/2012/12/17/hulu-2012/ (last accessed Oct. 12, 2016).

Tom Warren, "Amazon Launches Streaming Music Service for Prime Members," The Verge (June 12, 2014), accessible at http://www.theverge.com/2014/6/12/5802898/amazon-prime-music-features-pricing (last accessed Oct. 12, 2016).

Anna Washenko, "Playster Gets Label Deals for the Music Side of Its Streaming Subscription Bundle," RAIN News (Sept. 23, 2016), accessible at http://rainnews.com/playster-gets-label-deals-for-the-music-side-of-its-streaming-subscription-bundle/ (last accessed Oct. 24, 2016).

Brian T. Yeh, Cong. Research Serv., RL33631, Copyright Licensing in Music Distribution, Reproduction, and Public Performance (Sept. 22, 2015), *accessible at* https://www.fas.org/sgp/crs/misc/RL33631.pdf (last accessed Oct. 12, 2016)

Financial

Form 10-K for the fiscal year ended January 31, 2013, Pandora Media, Inc. (Mar. 18, 2013).

Form 10-K for the fiscal year ended December 31, 2015, Pandora Media, Inc. (Feb. 18, 2016).

Press Releases

"Introducing Apple Music - All the Ways You Love Music. All in One Place," Apple (June 8, 2015), accessible at http://www.apple.com/pr/library/2015/06/08Introducing-Apple-Music-All-The-Ways-You-Love-Music-All-in-One-Place-.html (last accessed Oct. 12, 2016)

"Introducing Xbox Music: The Ultimate All-in-One Music Service Featuring Free Streaming on Windows 8 and Windows RT Tablets and PCs," Microsoft (Oct. 14, 2012), accessible at

http://www.microsoft.com/en-us/news/press/2012/oct12/10-14xboxmusicpr.aspx (last accessed Oct. 12, 2016).

"Introducing Pandora Plus, More Control and Great New Features at a Very Affordable price," Pandora (Sept. 15, 2016), *accessible at* http://press.pandora.com/phoenix.zhtml?c=251764&p=irol-newsArticle&ID=2202064 (last accessed Oct. 12, 2016).

"Slacker Launches Slacker Premium Radio with On-Demand Access to Music Library," Slacker (May 17, 2011), *accessible at* http://blog.slacker.com/press/31/ (last accessed Oct. 12, 2016).

"Introducing SoundCloud Go," SoundCloud, accessible at https://blog.soundcloud.com/2016/03/29/introducing-soundcloud-go/ (last accessed Oct. 12, 2016).

"SoundExchange Ends Record-Setting Year with More Than $800 Million in Total Distributions to Recording Artists and Record Labels," SoundExchange Press Release (Feb. 2, 2016), *accessible at* http://www.soundexchange.com/pr/soundexchange-ends-record-setting-year-with-more-than-800-million-in-total-distributions-to-recording-artists-and-record-labels/ (last accessed Oct. 12, 2016).

"Universal Music Promotes Barak Moffitt to Executive Vice President of Content Strategy and Operations," Universal Music Group (Apr. 21, 2016), *accessible at* http://www.universalmusic.com/universal-music-promotes-barak-moffitt-to-executive-vice-president-of-content-strategy-and-operations/ (last accessed Oct. 12, 2016).

Websites

"Android Auto," Android, *accessible at* https://www.android.com/auto/ (last accessed Oct. 12, 2016).

"Apple CarPlay," Apple, *accessible at* http://www.apple.com/ios/carplay/ (last accessed Oct. 12, 2016).

Membership, Apple Music, *accessible at* http://www.apple.com/apple-music/membership/ (last accessed Oct. 21, 2016).

Antitrust Division Review of ASCAP and BMI Consent Decrees 2014, U.S. Department of Justice (Dec. 16, 2015), *accessible at* https://www.justice.gov/atr/ascap-bmi-decree-review (last accessed Oct. 18, 2016).

"Rate Charts," Harry Fox Agency, *accessible at* https://www.harryfox.com/find_out/rate_charts.html (last accessed Oct. 13, 2016).

"Rate Charts," Harry Fox Agency, *accessible at* https://www.harryfox.com/documents/rate_charts/s_p_s_mu.pdf (last accessed Oct. 14, 2016).

"Rate Charts," Harry Fox Agency, *accessible at* https://www.harryfox.com/documents/rate_charts/f_ns_ad_s.pdf (last accessed Oct. 14, 2016).

Song Registration, Harry Fox Agency, *accessible at* https://www.harryfox.com/publishers/song_registration.html (last accessed Oct. 12, 2016).

What does HFA Do?, Harry Fox Agency, *accessible at* https://www.harryfox.com/publishers/what_does_hfa_do.html (last accessed Oct. 12, 2016).

Why Affiliate with HFA?, Harry Fox Agency, *accessible at* https://www.harryfox.com/publishers/why_affiliate.html (last accessed Oct. 12, 2016).

Welcome to iHeartRadio," iHeart, *accessible at* http://www.iheart.com/news/welcome-to-iheartradio-6906244/ (last accessed Oct. 12, 2016).

iTunes Music Store (last accessed Oct. 11, 2016).

"About the Music Genome Project," Pandora, *accessible at* https://www.pandora.com/about/mgp (last accessed Oct. 12, 2016).

"Commercial Webcaster 2016 Rates," SoundExchange, *accessible at* http://www.soundexchange.com/service-provider/rates/commercial-webcaster/ (last accessed Oct. 12, 2016).

"Spotify Explained – How is Spotify contributing to the music business?," Spotify Artists, *accessible at* http://www.spotifyartists.com/ spotify-explained/#how-is-spotify-contributing-to-the-music-business).

"Spotify Explained – How We Pay Royalties: An Overview," Spotify Artists, *accessible at* https://www.spotifyartists.com/spotify-explained/#how-we-pay-royalties-overview (last accessed Oct. 18, 2016).

"HiFi vs. Premium Subscriptions," Tidal, *accessible at* https://support.tidal.com/hc/en-us/articles/202722972-HiFi-vs-Premium-Subscriptions- (last accessed Oct. 12, 2016).

"About TuneIn," TuneIn,, *accessible at* http://tunein.com/about/ (last accessed Oct. 12, 2016).

Other

U.S. Copyright Office, Copyright and the Music Marketplace (Feb. 2015), *accessible at* http://www.copyright.gov/policy/musiclicensingstudy/copyright-and-the-music-marketplace.pdf (last accessed Oct. 24, 2016).

Renata Hesse, "Remarks Regarding the Antitrust Division's Closing of its Review of the ASCAP and BMI Consent Decrees," Remarks as Prepared for the Delivery in Washington, D.C. (Aug. 4, 2016).

NMPA/HFA/YOUTUBE LICENSING OFFER, Licensing Offer Overview, *accessible at* https://web.archive.org/web/20140310222613/http://www.youtubelicenseoffer.com/docs/notice.pdf (last visited Oct. 25, 2016).

APPENDIX B

Prior Testimony of Jeffrey A. Eisenach, Ph.D.

In the Matter of Howard Ferrer et al vs. Puerto Rico Telephone Company, Before the Telecommunications Regulatory Board of Puerto Rico, Case No. JRT: 2009-Q-0014, Expert Declaration of Jeffrey A. Eisenach on Behalf of the Puerto Rico Telephone Company (December 1, 2011)

In the Matter of an Application by Way of a Reference to the Federal Court of Appeal Pursuant to Sections 18.3(1) and 28(2) of the Federal Courts Act, R.S.C. 1985, C.F-7, Between: Cogeco Cable Inc. et al Applicants and Bell Canada et al Respondents, In the Supreme Court of Canada (on appeal from the Federal Court of Appeal), Affidavit and Expert Report on Behalf of Bell Media Inc. and V Interactions Inc. (May 27, 2011)

In the Matter of Section 36 of the Public Utilities Commission Act, Proposal to Establish a New Interconnection Agreement Between Digicel and GT&T, Expert Oral Testimony on Behalf of Guyana Telephone and Telegraph Company, Guyana Public Utilities Commission (July 13, 2010)

In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the Application for Redress Under Article 153 for the Contravention of the Applicant's Fundamental Rights Guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, "International Exclusivity and the Guyanese Telecommunications Market: A Further Response to DotEcon," Expert Report on Behalf of Guyana Telephone and Telegraph Company (March 9, 2010)

In re: Investigation of Rates of Virgin Islands Telephone Corporation d/b/a Innovative Communications, PSC Docket 578, Rebuttal Testimony on Behalf of Virgin Islands Telephone Corporation (October 31, 2008)

Evidence Relating to the ACCC's Draft Decision Denying Telstra's Exemption Application for the Optus HFC Footprint, Australian Consumer and Competition Commission, Expert Report on Behalf of Telstra Corporation Ltd. (October 13, 2008)

In re: Complaint and Request for Emergency Relief against Verizon Florida, LLC for Anticompetitive Behavior in Violation of Sections 364.01(4), 364.3381, and 364.10, F.S., and for Failure to Facilitate Transfer of Customers' Numbers to Bright House Networks Information Services (Florida), LLC, and its Affiliate, Bright House Networks, LLC, Florida Public Service Commission, Docket No. 070691-TP, Rebuttal Testimony on Behalf of Verizon Florida LLC (July 25, 2008)

In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the application for redress under Article 153 for the contravention of the Applicant's fundamental rights guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, Expert Report on Behalf of Guyana Telephone and Telegraph Company (June 19, 2008)

In the Matter of Bright House Networks LLC et al v. Verizon California et al, Federal Communications Commission File No. EB-08-MD-002, Expert Declaration on Behalf of Verizon Communications (February 29, 2008)

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit, Pacific Bell Telephone Company d/b/a AT&T California, et al., Petitioners, v. Linkline Communications, Inc., et al., Respondents, Brief of Amici Curiae Professors and Scholars in Law and Economics in Support of the Petitioners (with R. Bork, G. Sidak, et al) (November 16, 2007)

In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Rebuttal Report on Behalf of the U.S. Department of Justice (July 6, 2006)

In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Expert Report on Behalf of the U.S. Department of Justice (May 8, 2006)

In re: Emerging Communications Shareholder Litigation, "The Valuation of Emerging Communications: An Independent Assessment" (with J. Mrozek and L. Robinson), Court of Chancery for the State of Delaware (August 2, 2004)

In the Matter of United States v. Microsoft Corp. and New York State v. Microsoft Corp., Proposed Final Judgment and Competitive Impact Statement (with T. Lenard), U.S. Department of Justice, Civil Action No. 98-1232 and 98-1233 (January 28, 2002)

APPENDIX C

Curriculum Vitae

JEFFREY A. EISENACH, PH.D.
Managing Director
Co-Chair Communications, Media and Internet Practice

Dr. Eisenach is a Managing Director and Co-Chair of NERA's Communications, Media, and Internet Practice. He is also an Adjunct Professor at George Mason University Law School, where he teaches Regulated Industries, and a Visiting Scholar at the American Enterprise Institute, where he directs the Center for Internet, Communications, and Technology Policy. Previously, Dr. Eisenach has served in senior policy positions at the US Federal Trade Commission and the White House Office of Management and Budget, and on the faculties of Harvard University's Kennedy School of Government and Virginia Polytechnic Institute and State University.

Dr. Eisenach's consulting practice focuses on economic analysis of competition, regulatory, intellectual property and consumer protection issues. He has submitted expert reports and testified in US federal court as well before the Federal Communications Commission, the Federal Trade Commission, several state public utility commissions, and courts and regulatory bodies in Australia, Canada, the Caribbean, and South America. He has also advised clients in some of the world's largest information technology sector mergers.

He has written or edited 19 books and monographs, including *Broadband Competition in the Internet Ecosystem* and *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace*. His writings have also appeared in scholarly journals such as *The Review of Network Economics*, as well as in popular outlets like *Forbes*, *The New York Times*, and *The Wall Street Journal*.

Prior to joining NERA, Dr. Eisenach was a managing director and principal at Navigant Economics, and before that he served as Chairman of Empiris LLC, Criterion Economics, and CapAnalysis, LLC. Among his other previous affiliations, Dr. Eisenach has served as President and Senior Fellow at The Progress & Freedom Foundation; as a scholar at the American Enterprise Institute, the Heritage Foundation, and the Hudson Institute; as a consultant to the US Sentencing Commission (on corporate sentencing guidelines); and as a member of the 1980-81 Reagan-Bush Transition Team on the Federal Trade Commission, the 2000-2001 Bush-Cheney Transition Team on the Federal Communications Commission, the Virginia Governor's Commission on E-Communities, and the Virginia Attorney General's Task Force on Identity Theft.

Dr. Eisenach received his PhD in economics from the University of Virginia and his BA in economics from Claremont McKenna College.

Education

1985	Ph.D. in Economics, University of Virginia
1979	B.A. in Economics, Claremont McKenna College

Professional Experience

Jan 2014-present	Senior Vice President/Managing Director, NERA Economic Consulting
Jan 2010-Jan 2014	Managing Director and Principal, Navigant Economics
Sept 2008-Jan 2010	Chairman and Managing Partner, Empiris LLC
June 2006-Sept 2008	Chairman, Criterion Economics, LLC
July 2005-May 2006	Chairman, The CapAnalysis Group, LLC
Feb 2003-July 2005	Executive Vice Chairman, The CapAnalysis Group, LLC
June 1993-Jan 2003	President, The Progress & Freedom Foundation
July 1991-May 1993	Executive Director, GOPAC
Mar 1988-June 1991	President, Washington Policy Group, Inc.
Sept 1986-Feb 1988	Director of Research, Pete du Pont for President, Inc.
1985-1986	Executive Assistant to the Director, Office of Management and Budget
1984-1985	Special Advisor for Economic Policy and Operations, Office of the Chairman, Federal Trade Commission
1983-1984	Economist, Bureau of Economics, Federal Trade Commission
1981	Special Assistant to James C. Miller III, Office of Management and Budget/Presidential Task Force on Regulatory Relief
1979-1981	Research Associate, American Enterprise Institute
1980	Consultant, Economic Impact Analysts, Inc.
1978	Research Assistant, Potomac International Corporation

Teaching Experience

2000-present	Adjunct Professor, George Mason University School of Law, (Courses Taught: Regulated Industries; Perspectives on Government Regulation; The Law and Economics of the Digital Revolution)
1995-1999	Adjunct Lecturer, Harvard University, John F. Kennedy School of Government, (Course Taught: The Role of Government in the 21st Century)
1989	Adjunct Professor, George Mason University, (Course Taught: Principles of Economics)

1985, 1988	Adjunct Professor, Virginia Polytechnic Institute and State University, (Courses Taught: Graduate Industrial Organization, Principles of Economics)
1983-1984	Instructor, University of Virginia, (Courses Taught: Value Theory, Antitrust Policy)
1982-1983	Teaching Assistant, University of Virginia, (Courses Taught: Graduate Microeconomics, Undergraduate Macroeconomics)

Honors & Professional Activities

2012-present	Visiting Scholar, American Enterprise Institute
2011-present	Member, Board of Directors, Information Technology & Innovation Foundation
2011-present	Vice President (Education) and Member of Audit Committee, Economic Club of Washington
2010-2011	Member, World Bank ICT Broadband Strategies Toolkit Advisory Group
2009-present	Member, Economic Club of Washington
2008-2009	Member, Board of Directors, PowerGrid Communications
2008-2012	Member, Board of Advisors, Washington Mutual Investors Fund
2002-2014	Member, Board of Advisors, Pew Project on the Internet and American Life
1993-2009	Member, Board of Directors, The Progress & Freedom Foundation
2002	Member, Attorney General's Identity Theft Task Force, Virginia
2002-2003	Member of the Board of Directors, Privacilla.com
2001-2004	Member, Executive Board of Advisors, George Mason University Tech Center
2001-2002	Contributing Editor, *American Spectator*
2001	Member, Bush-Cheney Transition Advisory Committee on the FCC
2000-2001	Member, Governor's Task Force on E-Communities, State of Virginia
1999-2001	Member, 2000-2001 Networked Economy Summit Advisory Committee
1998-2003	Member, Board of Directors, Internet Education Foundation
1998-2003	Member, Internet Caucus Advisory Committee
1996-2002	Member, American Assembly Leadership Advisory Committee
1995-2000	Member, Commission on America's National Interests
1988-1991	Adjunct Scholar, Hudson Institute
1988-1991	Visiting Fellow, Heritage Foundation

1981-1984	President's Fellowship, University of Virginia
1981-1983	Earhart Foundation Fellowship, University of Virginia
1981	Member, Reagan-Bush Transition Team on the Federal Trade Commission
1979	Henry Salvatori Award, Claremont Men's College
1978	Frank W. Taussig Award, Omicron Delta Epsilon

Testimony, Declarations and Expert Reports

Examination of Differential Pricing Practices Related to Internet Data Plans, Canadian Radio-Television and Telecommunications Commission CRTC 2016-192, Supplemental Expert Report on Behalf of TELUS Communications Company (September 21, 2016)

Balancing Efficient Pricing and Investment Incentives in the Migration from Copper to Fibre Networks: Assessing the Feasibility of a Temporary Copper Wedge, Expert Report on Behalf of Vodaphone (July 13, 2016)

Examination of Differential Pricing Practices Related to Internet Data Plans, Canadian Radio-Television and Telecommunications Commission, CRTC 2016-192, Expert Report on Behalf of TELUS Communications Company (June 28, 2016)

The Canadian Market for Wireless: Understanding the Bell-MTS Transaction, Expert Report on Behalf of Bell Canada (June 2, 2016)

Analysis of Online Music Copyright Issues; Copyright Tribunal of Australia CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Limited (ACN 000 680 704) Under section 154 (1) of the Copyright Act of 1968, Fifth Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (March 9, 2016)

Analysis of Online Music Copyright Issues; Copyright Tribunal of Australia CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Limited (ACN 000 680 704) Under section 154 (1) of the Copyright Act of 1968, Fourth Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (February 8, 2016)

Review of the Consultation Paper on Differential Pricing for Data Services (Consultation Paper No. 8/2015), Telecom Regulatory Authority of India, Expert Declaration on Behalf of Facebook, Inc. (December 30, 2015)

In the Matter of the Joint Application of Frontier Communications Corporation, Verizon California Inc. (U 1002 C), Verizon Long Distance, LLC (U 5732 C), and Newco West Holdings LLC for Approval of Transfer of Control Over Verizon California Inc. and Related Approval of Transfer of Assets and Certifications, *California Public Service Commission*, Expert Declaration on Behalf of Verizon Communications (August 24, 2015)

Broadband Market Performance in Canada: Implications for Policy, Canadian Radio-Television and Telecommunications Commission Notice of Consultation 15-134, Expert Report on Behalf of Bell Canada (July 2015)

Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968, Third Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (February 26, 2015)

Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968, Second Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (December 9, 2014)

Testimony on Open Internet Rules, Before the Committee on the Judiciary, United States Senate (September 17, 2014)

Review of Wholesale Mobile Wireless Services, Canadian Radio-Television and Telecommunications Commission Notice of Consultation CRTC 2014-76, Supplemental Expert Report on Behalf of TELUS Communications Company (August 20, 2014)

Analysis of Online Music Copyright Issues; Copyright Tribunal Proceeding CT 3 of 2013 – Reference by Phonographic Performance Company of Australia Ltd. Under s 154 of the Copyright Act of 1968, Expert Report on Behalf of Phonographic Performance Company of Australia Ltd. (August 5, 2014)

The Economics of Pick-and-Pay, Canadian Radio-Television and Telecommunications Commission Broadcasting Notice of Consultation CRTC 2014-190, Expert Report on Behalf of Bell Canada (June 27, 2014)

Review of Wholesale Mobile Wireless Services, Canadian Radio-Television and Telecommunications Commission Notice of Consultation CRTC 2014-76, Expert Report of Jeffrey A. Eisenach on Behalf of TELUS Communications Company (May 15, 2014)

In the Matter of Special Access for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, Federal Communications Commission, WC Docket No. 05-25, RM-10593 Expert Declaration (with Kevin W. Caves) on Behalf of Verizon Communications and Verizon Wireless (March 12, 2013)

In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Federal Communications Commission, Docket No. 12-268, Expert Reply Declaration on Behalf of the Expanding Opportunities for Broadcasters Coalition (March 10, 2013)

In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Federal Communications Commission, Docket No. 12-268, Expert Declaration on Behalf of the Expanding Opportunities for Broadcasters Coalition (January 24, 2013)

Testimony on the Digital Sound Performance Right, Before the Subcommittee on Intellectual Property, Competition and the Internet, Committee on the Judiciary, United States House of Representatives (November 28, 2012)

Response to Pre-Consultation Document PC12/03: Comments on Market Review Process (Part B), Before the Bermuda Telecommunications Regulatory Authority, Expert Report of Jeffrey A. Eisenach on Behalf of Bermuda Digital Communications Ltd. (November 21, 2012)

Order Instituting Rulemaking to Evaluate Telecommunications Corporations Service Quality Performance and Consider Modification to Service Quality Rules, Before the California Public Service Commission, Rulemaking 11-12-001, Reply Declaration of Jeffrey A. Eisenach on Behalf of Verizon Communications (March 1, 2012)

Order Instituting Rulemaking to Evaluate Telecommunications Corporations Service Quality Performance and Consider Modification to Service Quality Rules, Before the California Public Service Commission, Rulemaking 11-12-001, Expert Declaration of Jeffrey A. Eisenach on Behalf of Verizon Communications (January 31, 2012)

In the Matter of Howard Ferrer et al vs. Puerto Rico Telephone Company, Before the Telecommunications Regulatory Board of Puerto Rico, Case No. JRT: 2009-Q-0014, Expert Declaration of Jeffrey A. Eisenach on Behalf of the Puerto Rico Telephone Company (December 1, 2011)

Joint Declaration of Jeffrey A. Eisenach and Wayne A. Leighton before the Tribunal de Defensa de la Libre Competencia, Santiago, Chile, on behalf of Telefónica Chile S.A. (July 22, 2011)

In the Matter of Amendment of the Commission's Rules Related to Retransmission Consent, Federal Communications Commission, MB Docket No. 10-71, Expert Reply Declaration (with Kevin W. Caves) on Behalf of the National Association of Broadcasters (June 27, 2011)

In the Matter of an Application by Way of a Reference to the Federal Court of Appeal Pursuant to Sections 18.3(1) and 28(2) of the Federal Courts Act, R.S.C. 1985, C.F-7, Between: Cogeco Cable Inc. et al Applicants and Bell Canada et al Respondents, In the Supreme Court of Canada (on appeal from the Federal Court of Appeal), Affidavit and Expert Report on Behalf of Bell Media Inc. and V Interactions Inc. (May 27, 2011)

In the Matter of Amendment of the Commission's Rules Related to Retransmission Consent, Federal Communications Commission, MB Docket No. 10-71, Expert Declaration (with Kevin W. Caves) on Behalf of the National Association of Broadcasters (May 27, 2011)

In the Matter of Section 36 of the Public Utilities Commission Act, Proposal to Establish a New Interconnection Agreement Between Digicel and GT&T, Expert Oral Testimony on Behalf of Guyana Telephone and Telegraph Company, Guyana Public Utilities Commission (July 13, 2010)

In the Matter of International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act, Federal Communications Commission GN Docket No. 09-47, Supplemental Declaration Regarding the Berkman Center Study (NBP Public Notice 13) (with R. Crandall, E. Ehrlich and A. Ingraham), on Behalf of Verizon Communications (May 10, 2010)

Testimony on Deployment of Broadband Communications Networks, Before the Subcommittee on Communications, Technology and the Internet, Committee on Energy and Commerce, United States House of Representatives (April 21, 2010)

Net Neutrality: The Economic Evidence, Expert Declaration in the Matters of Preserving the Open Internet and Broadband Industry Practices, GN Docket No. 09-191 and WC Docket No. 07-52 (with Brito et al) (April 12, 2010)

In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the Application for Redress Under Article 153 for the Contravention of the Applicant's Fundamental Rights Guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, "International Exclusivity and the Guyanese Telecommunications Market: A Further Response to DotEcon," Expert Report on Behalf of Guyana Telephone and Telegraph Company (March 9, 2010)

Universal Service Subsidies to Areas Served by Cable Telephony: Supplemental Report, Expert Report Submitted to the Federal Communications Commission, on Behalf of the National Cable and Telecommunications Association (January 2010)

Policy Proceeding on a Group-Based Approach to the Licensing of Television Services and on Certain Issues Relating to Conventional Television, Canadian Radio-Television and Telecommunications Commission, Broadcasting Notice of Consultation CRTC 2009-411, Oral Testimony on Behalf of CTVgm (November 16, 2009)

In the Matter of International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act, Federal Communications Commission GN Docket No. 09-47, Declaration Regarding the Berkman Center Study (NBP Public Notice 13) (with R. Crandall and E. Ehrlich) on behalf of the National Cable and Telecommunications Association and the United States Telecom Association (November 16, 2009)

Universal Service Subsidies to Areas Served by Cable Telephony, Expert Report Submitted to the Federal Communications Commission, on behalf of the National Cable and Telecommunications Association (November 2009)

Policy Proceeding on a Group-based Approach to the Licensing of Television Services and on Certain Issues relating to Conventional Television, Canadian Radio-Television and Telecommunications Commission Broadcasting Notice of Consultation CRTC 2009-411, Expert Report on the Economics of Retransmission Consent Negotiations in the U.S. and Canada, (with S. Armstrong) on Behalf of CTVgm (September 19, 2009)

Virginia State Corporation Commission, Second Order for Notice and Hearing In Re: Revisions of Rules for Local Exchange Telecommunications Company Service Quality Standards, Comments on Behalf of Verizon Virginia (March 13, 2009)

In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Supplemental Report on Behalf of the Walt Disney Company (December 11, 2008)

In re: Investigation of Rates of Virgin Islands Telephone Corporation d/b/a Innovative Communications, PSC Docket 578, Rebuttal Testimony on Behalf of Virgin Islands Telephone Corporation (October 31, 2008)

Evidence Relating to the ACCC's Draft Decision Denying Telstra's Exemption Application for the Optus HFC Footprint, Australian Consumer and Competition Commission, Expert Report on Behalf of Telstra Corporation Ltd. (October 13, 2008)

In re: Investigation of Rates of Virgin Islands Telephone Corporation d/b/a Innovative Communications, PSC Docket 578, Direct Testimony on Behalf of Virgin Islands Telephone Corporation (September 26, 2008)

In the Matter of the Appropriate Forms of Regulating Telephone Companies, Maryland Public Service Commission, Case No. 9133, Rebuttal Testimony on Behalf of Verizon Maryland (September 24, 2008)

Virginia State Corporation Commission, Proposed Service Quality Rules for Traditional Landline Telecommunications, Comments on Behalf of Verizon Virginia (August 21, 2008)

In re: Complaint and Request for Emergency Relief against Verizon Florida, LLC for Anticompetitive Behavior in Violation of Sections 364.01(4), 364.3381, and 364.10, F.S., and for Failure to Facilitate Transfer of Customers' Numbers to Bright House Networks Information Services (Florida), LLC, and its Affiliate, Bright House Networks, LLC, Florida Public Service Commission, Docket No. 070691-TP, Rebuttal Testimony on Behalf of Verizon Florida LLC (July 25, 2008)

In the Matter of the Appropriate Forms of Regulating Telephone Companies, Maryland Public Service Commission, Case No. 9133, Direct Testimony on Behalf of Verizon Maryland (July 8, 2008)

Comparative Analysis of Communications Markets as it Relates to the Economic Viability of Optus' HFC Network and Telstra's Proposed HFC Exemption, Australian Consumer and Competition Commission, Expert Report on Behalf of Telstra Corporation Ltd. (June 23, 2008)

In the Matter of the Constitution of the Co-Operative Republic of Guyana and In the Matter of the application for redress under Article 153 for the contravention of the Applicant's fundamental rights guaranteed by Articles 20, 146, and 149D of the Constitution of the Republic of Guyana and In the Matter of the Telecommunications Act No. 27 of 1990, U-Mobile (Cellular) Inc., v. The Attorney General of Guyana, Expert Report on Behalf of Guyana Telephone and Telegraph Company (June 19, 2008)

In the Matter of Bright House Networks LLC et al v. Verizon California et al, Federal Communications Commission File No. EB-08-MD-002, Expert Declaration on Behalf of Verizon Communications (February 29, 2008)

In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Reply Report on Behalf of the Walt Disney Company (February 12, 2008)

In the Matter of Verizon's 2007 Price Cap Plan for the Provision of Local Telecommunications Services in the District Of Columbia, District of Columbia Public Service Commission, Formal Case No. 1057, Rebuttal Testimony on Behalf of Verizon (January 31, 2008)

In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, Federal Communications Commission Docket MB 07-198, Expert Report on Behalf of the Walt Disney Company (January 4, 2008)

In the Matter of Verizon's 2007 Price Cap Plan for the Provision of Local Telecommunications Services in the District Of Columbia, District of Columbia Public Service Commission, Formal Case No. 1057, Direct Testimony on Behalf of Verizon (December 7, 2007)

In the Matter of the Commission's Investigation Into Verizon Maryland, Inc.'s Affiliate Relationships, Maryland Public Service Commission, Case No. 9120, Rebuttal Testimony on Behalf of Verizon (November 19, 2007)

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit, Pacific Bell Telephone Company d/b/a AT&T California, et al., Petitioners, v. Linkline Communications, Inc., et al., Respondents, Brief of Amici Curiae Professors and Scholars in Law and Economics in Support of the Petitioners (with R. Bork, G. Sidak, et al) (November 16, 2007)

In the Matter of the Commission's Investigation Into Verizon Maryland, Inc.'s Affiliate Relationships, Maryland Public Service Commission, Case No. 9120, Direct Testimony on Behalf of Verizon (October 29, 2007)

Application of Verizon Virginia, Inc. and Verizon South for a Determination that Retail Services Are Competitive and Deregulating and Detariffing of the Same, State Corporation Commission of Virginia, Case No. PUC-2007-00008, Rebuttal Report on Behalf of Verizon (July 16, 2007)

Testimony on Single Firm Conduct, "Understanding Single-Firm Behavior: Conduct as Related to Competition," United States Department of Justice and United States Federal Trade Commission, Sherman Act Section 2 Joint Hearing (May 8, 2007)

Testimony on Communications, Broadband and U.S. Competitiveness, Before the Committee on Commerce, Science and Transportation, United State Senate (April 24, 2007)

Application of Verizon Virginia, Inc. and Verizon South for a Determination that Retail Services Are Competitive and Deregulating and Detariffing of the Same, State Corporation Commission of Virginia, Case No. PUC-2007-00008, Expert Testimony and Report on Behalf of Verizon (January 17, 2007)

In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Rebuttal Report on Behalf of the U.S. Department of Justice (July 6, 2006)

In re: ACLU v. Gonzales, Civil Action No. 98-CV-5591, E.D. Pa., Expert Report on Behalf of the U.S. Department of Justice (May 8, 2006)

In re: Emerging Communications Shareholder Litigation, "The Valuation of Emerging Communications: An Independent Assessment" (with J. Mrozek and L. Robinson), Court of Chancery for the State of Delaware (August 2, 2004)

In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, WC Docket No. 03-173, Declaration of Jeffrey A. Eisenach and Janusz R. Mrozek, Federal Communications Commission (December 2003)

In the Matter of Disposition of Down Payments and Pending Applications Won During Auction No. 35 for Spectrum Formerly Licensed to NextWave Personal Communications, Inc., NextWave Power Partners, Inc. and Urban Comm – North Carolina, Inc., Federal Communications Commission, (October 11, 2002)

In the Matter of Echostar Communications Corporation, General Motors Corporation, and Hughes Electronics Corporation, Federal Communications Commission (February 4, 2002)

In the Matter of United States v. Microsoft Corp. and New York State v. Microsoft Corp., Proposed Final Judgment and Competitive Impact Statement (with T. Lenard), U.S. Department of Justice, Civil Action No. 98-1232 and 98-1233 (January 28, 2002)

In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992 (with R. May), Federal Communications Commission (January 4, 2002)

In the Matter of Request for Comments on Deployment of Broadband Networks and Advanced Telecommunications (with R. May), National Telecommunications and Information Administration (December 19, 2001)

In the Matter of Implementation of the Telecommunications Act of 1996, Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Consumer Information; Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, As Amended (with T. Lenard and J. Harper), Federal Communications Commission (November 16, 2001)

In the Matter of Flexibility for Delivery of Communications by Mobile Satellite Service Providers (with W. Adkinson), Federal Communications Commission (October 22, 2001)

In the Matter of Deployment of Advanced Telecommunications Capability (with R. May), Federal Communications Commission (October 5, 2001)

In the Matter of Deployment of Advanced Telecommunications Capability (with R. May), Federal Communications Commission (September 24, 2001)

In the Matter of Nondiscrimination in Distribution of Interactive Television Services Over Cable (with R. May), Federal Communications Commission (March 19, 2001)

In the Matter of High-Speed Access to the Internet Over Cable and Other Facilities, Reply Comments (with R. May), Federal Communications Commission (December 1, 2000)

Testimony on Federal Communications Commission Reform, Before the Committee on Government Reform, Subcommittee on Government Management, Information and Technology, United States House of Representatives (October 6, 2000)

In the Matter of Public Interest Obligations of TV Broadcast Licensees (with R. May), Federal Communications Commission (March 27, 2000)

Testimony on Truth in Billing Legislation, Before the Subcommittee on Telecommunications, Trade and Consumer Protection, Committee on Commerce, United States House of Representatives (March 9, 2000)

In the Matter of GTE Corporation, Transferor and Bell Atlantic, Transferee for Consent to Transfer of Control, (with R. May), Federal Communications Commission (February 15, 2000)

Testimony on Reforming Telecommunications Taxes in Virginia, Governor's Commission on Information Technology (October 26, 1999)

Testimony on Telecommunications Taxes, Advisory Commission on Electronic Commerce (September 14, 1999)

In the Matter of GTE Corporation, Transferor and Bell Atlantic, Transferee for Consent to Transfer of Control, Federal Communications Commission (December 23, 1998)

In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996 (with C. Eldering), Federal Communications Commission (September 14, 1998)

Testimony on Section 706 of the Telecommunications Act of 1996 and Related Bandwidth Issues, Before the Subcommittee on Communications Committee on Commerce, Science, and Transportation, United States Senate (April 22, 1998)

Testimony on the Impact of the Information Revolution on the Legislative Process and the Structure of Congress, Before the Subcommittee on Rules and Organization of the House of the Committee on Rules, United States House of Representatives (May 24, 1996)

Testimony on Efforts to Restructure the Federal Government, Before the Committee on Governmental Affairs, United States Senate (May 18, 1995)

Testimony on the Role of the Department of Housing and Urban Development and the Crisis in America's Cities, Before the Committee on Banking and Financial Services, United States House of Representatives (April 6, 1995)

Academic Publications and White Papers

"US Merger Enforcement in the Information Technology Sector," *Handbook of Antitrust, Intellectual Property and High Tech* (Roger Blair and Daniel Sokol, eds.) Cambridge University Press, forthcoming 2017

"The Economics of Zero Rating," in *Net Neutrality Reloaded: Zero Rating, Specialised Service, Ad Blocking and Traffic Management* (L. Belli, ed.) Annual Report of the UN IGF Dynamic Coalition on Net Neutrality, forthcoming 2016

The Long-Run Effects of Employment Regulation on California's Economy, U.S. Chamber of Commerce, July 2016

A New Regulatory Framework for the Digital Ecosystem (with B. Soria), GSMA and NERA Economic Consulting, February 10, 2016

Broadband Market Performance in Canada: Implications for Policy, NERA Economic Consulting, October 2015

"Looking Ahead: The FTC's Role in Information Technology Markets" (with I.K. Gotts), *George Washington University Law Review* 83;6, November 2015

Right-to-Work Laws: The Economic Evidence, NERA Economic Consulting, June 18, 2015

The Economics of Zero Rating, NERA Economic Consulting, March 2015

"In Search of a Competition Doctrine for Information Technology Markets: Recent Antitrust Developments in the Online Sector" (with I. K. Gotts), in *Competition and Communications Law: Key Issues in the Telecoms, Media and Technology Sectors*, Kluwer Law International, 2014.

Economic Effects of Imposing Third-Party Liability on Payment Processors, NERA Economic Consulting, July 2014

Delivering for Television Viewers: Retransmission Consent and the U.S. Market for Video Content, NERA Economic Consulting, July 2014

The ABCs of "Pick-and-Pay," NERA Economic Consulting, June 2014

"Mobile Wireless Performance in the EU and the US: Implications for Policy" (with E. Bohlin and C. Caves), *Communications and Strategies* 93, 2014

"The Sound Recording Performance Right at a Crossroads: Will Market Rates Prevail?" *Commlaw Conspectus* 22, 2013–2014

An Empirical Analysis of the Value of Information Sharing in the Market for Online Content (with H. Beales), Navigant Economics, February 2014

The Equities and Economics of Property Interests in TV Spectrum Licenses, Navigant Economics, January 2014

Mobile Wireless Market Performance in Canada: Lessons from the EU and the US (with E. Bohlin and C. Caves), Navigant Economics, September 2013

"Avoiding Rent-Seeking in Secondary Market Spectrum Transactions," (with H. Singer), *Federal Communications Law Journal* 65;3, June 2013

Understanding Webcaster Royalties, Navigant Economics, June 2013

Mobile Wireless Performance in the EU and the US (with E. Bohlin and C. Caves), GSMA and Navigant Economics, May 2013

"The Long-Run Effects of Copper-Loop Unbundling and the Implications for Fiber" (with R. Crandall and A. Ingraham), *Telecommunications Policy* 37, 2013

Putting Consumers First: A Functionality-Based Approach to Online Privacy (with H. Beales), Navigant Economics, January 2013

"What Happens When Local Phone Service is Deregulated?" (with K. Caves), *Regulation*, September 2012

"Economic and Legal Aspects of FLSA Exemptions: A Case Study of Companion Care" (with K. Caves), *Labor Law Journal*, September 2012

The Long-Run Impact of Copper Unbundling and the Implications for Fiber (with R. Crandall and A. Ingraham), Navigant Economics, March 2012

Estimating the Economic Impact of Repealing the FLSA Companion Care Exemption (with K. Caves), Navigant Economics, March 2012

The Impact of Liberalizing Price Controls on Local Telephone Service: An Empirical Analysis (with K. Caves), Navigant Economics, February 2012

"Spectrum Reallocation and the National Broadband Plan," *Federal Communications Law Journal* 64;1, December 2011

The Rural Utilities Service Should Reassess its Reliance on Universal Service High-Cost Support to Leverage Broadband Loans, Navigant Economics, September 2011

The Effects of Regulation on Economies of Scale and Scope in TV Broadcasting, Navigant Economics, June 2011

Evaluating the Cost-Effectiveness of RUS Broadband Subsidies: Three Case Studies, Navigant Economics, April 2011

Revenues from a Possible Spectrum Incentive Auction: Why the CTIA/CEA Estimate is Not Reliable, Navigant Economics, April 2011

Competition in the New Jersey Communications Market: Implications for Reform, Navigant Economics, March 2011

The Role of Independent Contractors in the U.S. Economy, Navigant Economics, December 2010

"Vertical Separation of Telecommunications Networks: Evidence from Five Countries" (with R. Crandall and R. Litan), *Federal Communications Law Journal* 62;3, June 2010

Video Programming Costs and Cable TV Prices: A Reply to CRA, (with K. Caves), Navigant Economics, June 2010

Video Programming Costs and Cable TV Prices, Navigant Economics, April 2010

Retransmission Consent and Economic Welfare: A Reply to Compass Lexecon, Navigant Economics, April 2010

The Benefits and Costs of Implementing 'Return-Free' Tax Filing In the U.S. (with R. Litan and C. Caves), Navigant Economics, March 2010

"The Impact of Regulation on Innovation and Choice in Wireless Communications" (with E. Ehrlich and W. Leighton), *Review of Network Economics* 9;1, 2010

Uncollected Sales Taxes on Electronic Commerce (with R. Litan), Empiris LLC, February 2010

The Economics of ESPN360.com, Empiris LLC, November 2009

"Net Neutrality versus Consumer Welfare," in *The Consequences of Net Neutrality Regulations on Broadband Investment and Consumer Welfare: A Collection of Essays,* American Consumer Institute, November 2009

The Economics of Retransmission Consent, Empiris LLC, March 2009

Economic Effects of Tax Incentives for Broadband Infrastructure Deployment (with H. Singer and J. West), Empiris LLC, January 5, 2009

"An Event Analysis Study of the Economic Implications of the FCC's UNE Decision: Backdrop For Current Network Sharing Proposals," (with P. Lowengrub and J.C. Miller III), *Commlaw Conspectus* 17;1, 2008

"Broadband Policy: Does the U.S. Have It Right After All?" in *Telecommunications Policy & Regulation*, Practicing Law Institute, December 2008

"Broadband in the U.S. – Myths and Facts," in *Australia's Broadband Future: Four Doors to Greater Competition,* Committee for Economic Development of Australia, 2008

The Benefits and Costs of I-File, (with R. Litan and K. Caves), Criterion Economics, LLC, April 14, 2008

"Irrational Expectations: Can a Regulator Credibly Commit to Removing an Unbundling Obligation?" (with Hal J. Singer), *AEI-Brookings Joint Center Related Publication 07-28*, December 2007

Due Diligence: Risk Factors in the Frontline Proposal, Criterion Economics, LLC, June 28, 2007

The Effects of Providing Universal Service Subsidies to Wireless Carriers (with K. Caves), Criterion Economics, LLC, June 13, 2007

Assessing the Costs of the Family and Medical Leave Act, Criterion Economics, LLC, February 16, 2007

Improving Public Safety Communications: An Analysis of Alternative Approaches (with P. Cramton, T. Dombrowsky, A. Ingraham, H. Singer) Criterion Economics, LLC, February 6, 2007

Economic and Regulatory Implications of Unregulated Entry in the Canadian Mortgage Insurance Market, Criterion Economics, LLC, June 20, 2006

The FCC's Further Report on A La Carte Pricing of Cable Television (with R. Ludwick) The CapAnalysis Group, LLC, March 6, 2006

The EX-IM Bank's Proposal to Subsidize the Sale of Semiconductor Manufacturing Equipment to China: Updated Economic Impact Analysis (with J.C. Miller III, R. Ludwick), The CapAnalysis Group, LLC, November 2005

Retransmission Consent and Cable Television Prices (with D. Trueheart), The CapAnalysis Group, LLC, March 2005

The EX-IM Bank's Proposal to Subsidize the Sale of Semiconductor Manufacturing Equipment to China: An Economic Impact Analysis (with J.C. Miller III, R. Ludwick, O. Grawe), The CapAnalysis Group, LLC, January 2005.

Peer-to-Peer Software Providers' Liability under Section 5 of the FTC Act (with J.C. Miller III, L. Fales, C. Webb), The CapAnalysis Group, LLC and Howrey LLP, April 2004

Mandatory Unbundling: Bad Policy for Prison Payphones (with D. Trueheart, J. Mrozek), The CapAnalysis Group, LLC, March 2004

UNE Rates Do Not Reflect Underlying Costs: A Rebuttal to Ekelund and Ford (with J. Mrozek), The CapAnalysis Group, LLC, January 30, 2004

Do UNE Rates Reflect Underlying Costs? (with J. Mrozek), The CapAnalysis Group, LLC, December 2003

Rising Cable TV Rates: Are Programming Costs the Villain? (with D. Trueheart), The CapAnalysis Group, LLC, October 2003

Economic Implications of the FCC's UNE Decision: An Event Analysis Study (with J.C. Miller III, P. Lowengrub, The CapAnalysis Group, LLC, April 2003

"Telecom Deregulation and the Economy: The Impact of 'UNE-P' on Jobs, Investment and Growth" (with T. Lenard), *Progress on Point 10.3,* The Progress & Freedom Foundation, January 2003.

"The CLEC Experiment: Anatomy of a Meltdown" (with L. Darby and J. Kraemer) *Progress on Point 9.23,* The Progress & Freedom Foundation, September 2002

"The Debate Over Digital Online Content: Understanding the Issues" (with W. Adkinson, Jr.) *Progress on Point 9.14,* The Progress & Freedom Foundation, April 2002

"Electricity Deregulation after Enron," *Progress on Point 9.11,* The Progress & Freedom Foundation, April 2002

"Political Privacy: Is Less Information Really Better?" *Progress on Point 9.2,* The Progress & Freedom Foundation, January 2002

"Communications Deregulation and FCC Reform: Finishing the Job" (with R. May), in *Communications Deregulation and FCC Reform: What Comes Next?* (ed., with R. May) Kluwer Academic Publishers, 2001

"Does Government Belong in the Telecom Business?" *Progress on Point 8.1,* The Progress & Freedom Foundation, January 2001

"Critics Fear Surveillance of Web Surfers Compromising Personal Privacy," *Progress on Point 7.11,* The Progress & Freedom Foundation, July 2000

"Access Charges and The Internet: A Primer," *Progress on Point 7.9*, The Progress & Freedom Foundation, June 2000

"The Need for a Practical Theory of Modern Governance," *Progress on Point 7.7*, The Progress & Freedom Foundation, May 2000

"The Microsoft Monopoly: The Facts, the Law and the Remedy" (with T. Lenard) *Progress on Point 7.4*, The Progress & Freedom Foundation, April 2000

"Regulatory Overkill: Pennsylvania's Proposal to Breakup Bell Atlantic" (with C. Eldering, R. May) *Progress on Point 6.13,* The Progress & Freedom Foundation, December 1999

"Is There a Moore's Law for Bandwidth?" (with C. Eldering, M. Sylla), *IEEE Communications Magazine,* October 1999

"The High Cost of Taxing Telecom," *Progress on Point 6.6,* The Progress & Freedom Foundation, September 1999

"Creating the Digital State: A Four Point Program," *Progress on Point 6.4,* The Progress & Freedom Foundation, August 1999

"How to Recognize a Regulatory Wolf in Free Market Clothing: An Electricity Deregulation Scorecard," (with T. Lenard) *Progress on Point 6.3,* The Progress & Freedom Foundation, July 1999

"Into the Fray: The Computer Industry Flexes Its Muscle on Bandwidth," *Progress on Point 5.9,* The Progress & Freedom Foundation, December 1998

"Surprise: Even in Electricity, the Market Works," The Progress & Freedom Foundation, Nov. 1998

"Finally! An 'Electricity Deregulation' Bill That Deregulates," *Progress on Point 5.7,* The Progress & Freedom Foundation, October 1998

"Time to Walk the Walk on Telecom Policy," *Progress on Point 4.3,* The Progress & Freedom Foundation, July 1997

"The FCC and the Telecommunications Act of 1996: Putting Competition on Hold?" (with G. Keyworth), *Progress on Point 2.1,* The Progress & Freedom Foundation, October 1996

"Forebearance, Self-Certification and Privatization" (with J. Gattuso, et al) *Future Insight No. 3.2,* The Progress & Freedom Foundation, May 1996

"Privatizing the Electromagnetic Spectrum" (with R. Crandall, et al) *Future Insight No. 3.1,* The Progress & Freedom Foundation, April 1996

"Broadcast Spectrum: Putting Principles First" (with R. Crandall et al) *Progress on Point 1.9,* The Progress & Freedom Foundation, January 1996

"How (Not) to Solve the Liability Crisis," in P. McGuigan, ed., *Law, Economics & Civil Justice Reform: A Reform Agenda for the 1990's,* Free Congress Foundation, 1995

"The Future of Progress," *Future Insight 2.3,* The Progress & Freedom Foundation, May 1995

"American Civilization and the Idea of Progress," in D. Eberly, ed., *Building a Community of Citizens: Civil Society in the 21st Century,* University Press of America, 1994

"Fighting Drugs in Four Countries: Lessons for America?" *Backgrounder* 790, The Heritage Foundation, Washington, DC, September 24, 1990

"Drug Legalization: Myths vs. Reality," *Heritage Backgrounder 122*, The Heritage Foundation, January 1990

"How to Ensure A Drug-Free Congressional Office," The Heritage Foundation, January 1990

"A White House Strategy for Deregulation," in *Mandate for Leadership III,* The Heritage Foundation, 1989

"From George Bush, A Convincing Declaration of War on Drugs," *Executive Memorandum* No. 250, The Heritage Foundation, September 14, 1989

"Winning the Drug War: What the States Can Do," *Heritage Backgrounder* 715/S, July 7, 1989

"Why America is Losing the Drug War," *Heritage Backgrounder* 656, June 9, 1988

"Selectivity Bias and the Determinants of SAT Scores," (with A. Behrendt and W. Johnson) *Economics of Education Review* 5;4, 1986

"Review of Banking Deregulation and the New Competition in the Financial Services Industry," *Southern Economic Journal* 52;3, January 1986

"Warranties, Tie-ins, and Efficient Insurance Contracts: A Theory and Three Case Studies," (with R. Higgins and W. Shughart II), *Research in Law and Economics* 6, 1984

"Regulatory Relief under Ronald Reagan," (with James C. Miller III), in Wayne Valis, ed., *The Future Under President Reagan*, Arlington House, 1981

Books and Monographs

An American Strategy for Cyberspace: Advancing Freedom, Security, and Prosperity, (with C. Barfield, et al) American Enterprise Institute for Public Policy Research, June 2016

Broadband Competition in the Internet Ecosystem, AEI Economic Studies, American Enterprise Institute for Public Policy Research, October 2012

The Impact of State Employment Policies on Job Growth: A 50-State Review (with David S. Baffa, et al), U.S. Chamber of Commerce, March 2011

The Digital Economy Fact Book 2002, (with W. Adkinson Jr. and T. Lenard) The Progress & Freedom Foundation, August 2002

Privacy Online: A Report on the Information Practices and Policies of Commercial Web Sites, (with W. Adkinson, Jr., T. Lenard) The Progress & Freedom Foundation, March 2002

The Digital Economy Fact Book 2001, (with T. Lenard, S. McGonegal) The Progress & Freedom Foundation, August 2001

Communications Deregulation and FCC Reform: What Comes Next? (ed., with R. May) Kluwer Academic Publishers, 2001

The Digital Economy Fact Book 2000, (with T. Lenard, S. McGonegal) The Progress & Freedom Foundation, August 2000

Digital New Hampshire: An Economic Factbook, (with R. Frommer, T. Lenard) The Progress & Freedom Foundation, December 1999

The Digital Economy Fact Book, (with A. Carmel and T. Lenard), The Progress & Freedom Foundation, August 1999

Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace, (ed., with T. Lenard), Kluwer Academic Publishers, 1999

The People's Budget, (with E. Dale, et al), Regnery Publishing, 1995

The Telecom Revolution: An American Opportunity, (with G. Keyworth, et al) The Progress & Freedom Foundation, 1995

Readings in Renewing American Civilization, (ed. with S. Hanser) McGraw-Hill, Inc., 1993

America's Fiscal Future 1991: The Federal Budget's Brave New World, Hudson Institute, 1991

Winning the Drug War: New Challenges for the 1990's, (ed.) The Heritage Foundation, Washington, DC, 1991

Drug-Free Workplace Policies for Congressional Offices, (ed.) The Heritage Foundation, Washington, DC, 1991

America's Fiscal Future: Controlling the Federal Deficit in the 1990's, Hudson Institute, 1990

The Five-Year Budget Outlook, Hudson Institute, 1988

The Role of Collective Pricing in Auto Insurance, Federal Trade Commission, Bureau of Economics Staff Study, 1985

Selected Short Articles and Op-Eds

"Spectrum Favoritism is Bad Economics," *Forbes*, April 28, 2015

"Competition is the Only Way to Preserve an Open Internet," *Real Clear Markets*, December 18, 2014

"End the Internet Blackout on Airplanes," *The Hill*, December 12, 2013

"Trolling for a Patent Policy Fix," *Roll Call*, September 19, 2013

"A Good News Story: The Internet," *AEIdeas*, May 31, 2013

"Should You Let the IRS Do Your Taxes for You?" *The Daily Caller*, May 1, 2013

"Net Neutrality as 'Crony Capitalism,'" *AEIdeas*, November 2, 2012

"Broadband Competition in the Internet Ecosystem: A Conflict of Visions," *AEIdeas*, October 18, 2012

"The Internet Doesn't Need More Regulation," *The American: The Journal of the American Enterprise Institute*, September 25, 2012

"Follow Obama's Lead on Wireless," *The Australian*, February 7, 2011

"The Radicalism of Net Neutrality," *The Hill*, September 2, 2010

"Net Neutrality Rules Threaten Telecom Détente," *Law360.com*, August 10, 2010

"Don't Drag Broadband Into the Net Neutrality Morass," *The Daily Caller,* July 13, 2010

"Coase vs. the Neo-Progressives," (with A. Thierer), *The American: The Journal of the American Enterprise Institute* (October 28, 2009)

"The U.S. Abandons the Internet," (with J. Rabkin), *The Wall Street Journal*, October 3, 2009

"A La Carte Regulation of Pay TV: Good Intentions vs. Bad Economics," (with A. Thierer) *Engage,* June 2008

"A New Takings Challenge to Access Regulation," American Bar Association, Section on Antitrust Law, *Communications Industry Committee Newsletter*, Spring 2007

"Reagan's Economic Policy Legacy," (with J.C. Miller III), *The Washington Times*, August 8, 2004

"Do Right by Minority Farmers," *The Washington Times*, July 17, 2003

"Pruning the Telecom Deadwood," *The Washington Times*, November 1, 2002

"The Real Telecom Scandal," *The Wall Street Journal*, September 30, 2002

"Ensuring Privacy's Post-Attack Survival," (with Peter P. Swire) *CNET News.com*, September 11, 2002

"One Step Closer to 3G Nirvana," *CNET News.com*, August 6, 2002

"Reviving the Tech Sector," *The Washington Times*, July 10, 2002

"Broadband Chickens in Age of the Internet," *The Washington Times*, March 11, 2002

"Watching the Detectives," *The American Spectator,* January/February 2002

"Can Civil Liberties Survive in a Society Under Surveillance?" *Norfolk Virginian-Pilot*, November 18, 2001

"Microsoft Case: There Are Still Antitrust Laws," *Newport News Daily Press,* July 6, 2001

"Dear Diary: There's Still an Antitrust Law," *Los Angeles Times*, June 29, 2001

"Lost in Cyberspace? Does the Bush Administration Get the New Economy?" *The American Spectator,* June 2001

"Local Loop: NASDAQ Noose, Al Gore's Internet Socialism is Choking the Technology Sector," *The American Spectator*, April 2001

"Local Loop, High-Tech Noose," *The American Spectator,* March 2001

"Rescue Opportunity at the FCC," *The Washington Times,* February 4, 2001

"Economic Anxieties in High-Tech Sector," *The Washington Times*, December 12, 2000

"Nation's Conservatives Should Support a Breakup of Microsoft," *The Union Leader & New Hampshire Sunday News*, February 22, 2000

"Benefits Riding on a Breakup," *The Washington Times*, November 14, 1999

"Still Wondering What Cyberspace is All About?" *Insight on the News*, Vol. 15, No. 11, March 22, 1999

"Computer Industry Flexes Its Muscle," *Intellectual Capital.com*, January 28, 1999

"Ira Magaziner Targets the Internet," *The Washington Times,* March 26, 1997

"Revolution – or Kakumei" *Forbes ASAP,* December 1996

"Digital Charity," *Intellectual Capital.com*, November 28, 1996

"Time to Junk the Telecom Act," *Investor's Business Daily,* July 23, 1998

"Consumers Win in Mergers," *Denver Post,* July 5, 1998

"Microsoft's Morality Play," *News.com,* March 11, 1998

"California Will Soon Be Eating Dust," *Forbes Magazine*, August 1997

"Watch Out for Internet Regulation," *The Washington Times*, July 9, 1997

"Those GOP Blockheads Just Don't Get It; Block Grants are Merely another Bogus Solution," *The Washington Post*, September 3, 1995

"Replace, Don't Reinvent, HUD," *The Wall Street Journal,* May 11, 1995

"Poor Substitute," (with P. du Pont), *National Review,* December 31, 1994

"Just Say No to More Drug Clinics," *St. Louis Post-Dispatch*, June 14, 1991

"Drug Rehab Funding is No Panacea," *Chicago Tribune*, June 7, 1991

"The Vision Thing, Conservatives Take Aim at the '90's," *Policy Review* 52, Spring 1990

"What States Can Do To Fight the Drug War," *The Washington Times*, September 4, 1989

"Congress: Reform or Transform," (with P. McGuigan), *Washington Times,* June 12, 1989

"How to Win the War on Drugs: Target the Users," *USA Today*, January 1989

"Invest Social Security Surplus in Local Project Bonds," *Wall Street Journal,* January 4, 1989

"The Government Juggernaut Rolls On," *Wall Street Journal,* May 23, 1988

"Is Regulatory Relief Enough?" (with M. Kosters), *Regulation* 6, March/April 1982

"Price Competition on the NYSE," (with J.C. Miller III), *Regulation* 4, Jan./Feb. 1981

Selected Presentations

"A New Regulatory Framework for the Internet Ecosystem," GSMA Mobile World Congress, Ministerial Program, February 22, 2016

"Regulatory Benefit-Cost Analysis: Applications Under Dodd/Frank," Second Annual Attorney General Public Policy Institute Conference on Financial Services Regulation, Law & Economics Center, George Mason University School of Law, June 4, 2012

"Exploring Developments in the Communications Sector," National Regulatory Conference, May 17, 2012

"Platform Competition in the Internet Ecosystem: Implications for Regulation," Mercatus Institute, November 8, 2011

"Competition in the Internet Ecosystem," American Consumer Institute, June 30, 2011

"The Future of Mobile Broadband: Platform Competition in the Internet Ecosystem," Informa Telecoms and Media North America Broadband Traffic Management Conference, June 21, 2011

"The Communications Sector and Economic Growth," Innovation Policy Institute, March 2, 2011

"The Benefits and Costs of I-File," Council for Electronic Revenue Communications Advancement, May 2008

"Sell Globally, Sue Locally: The Growing Perils of Global 'Dominance,'" Antitrust Section, Ohio State Bar Association, October 27, 2006

"The Growing Global Perils of 'Dominance,'" Aspen Summit Conference, August 21, 2006

"Telecoms in Turmoil: What We Know and (Mostly) Don't Know About the Telecom Marketplace in 2006," National Regulatory Conference, May 11, 2006

"Mandatory Unbundling in the U.S.: Lessons Learned the Hard Way," Telstra Corporation, November 25, 2005

"The Fourth 'S': Digital Content and the Future of the IT Sector," Federal Communications Bar Association, May 2, 2003

"Restoring IT Sector Growth: The Role of Spectrum Policy in Re-Invigorating 'The Virtuous Circle,'" National Telecommunications and Information Administration Spectrum Summit, April 2, 2002

"Restoring IT Sector Growth-Why Broadband, Intellectual Property and Other E-Commerce Issues Are Key to a Robust Economy," August 2001

"Remarks at the 2000 *Global Internet Summit*," March 14, 2000

"The Digital State: Remarks on Telecommunications Taxes," Address Before the Winter Meeting of the National Governors Association, February 21, 1999

"The Digital Economy," Address at the George Mason University Conference on *The Old Dominion and the New Economy,* November 1998

"A Convergence Strategy for Telecommunications Deregulation," Remarks at the United States Telephone Association's *Large Company Meeting*, September 1998

PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Library of Congress
Washington, D.C.

In re	)	
DETERMINATION OF ROYALTY RATES AND TERMS OF MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords III)	)	Docket No. 16-CRB-003-PR (2018-2022)

WRITTEN REBUTTAL TESTIMONY OF JEFFREY A. EISENACH, PH.D.

Expert Witness for Copyright Owners

February 13, 2017

CONTENTS

I. INTRODUCTION AND SUMMARY OF FINDINGS

1. My name is Jeffrey A. Eisenach. I am a Managing Director and Co-Chair of the Communications, Media and Internet Practice at NERA Economic Consulting ("NERA"). I submitted a Direct Report in this matter ("Direct Report") on behalf of the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together referred to as "Copyright Owners") on October 31, 2016. My qualifications were listed in, and my CV was attached to, my Direct Report.

A. Instructions

2. I have been asked by Copyright Owners to review the testimony and reports submitted by the opposing participants (collectively, the "Services") and their expert witnesses (collectively, the "Service Experts") in this matter and to provide my expert economic opinion in response, including on the benchmarking analyses contained in the Service Experts' reports and their testimony as it relates to the fourth prong of the 801(b) standard (concerning industry disruption). This Rebuttal Report presents the results of my review.

3. I understand from counsel that certain Services have recently been ordered by the Copyright Royalty Board to produce various documents to the Copyright Owners that may bear on my opinions. To the extent that these productions by the Services affect my analysis or conclusions, I may seek to amend or supplement my report.

B. Summary of Findings and Opinions

4. My primary findings are as follows:

- The testimony and reports put forward by the Services with respect to appropriate benchmarks are faulty and unreliable. The Service Experts rely primarily on three sets of benchmarks: (1) the 2008 and 2012 settlements of Phonorecords I and II for the statutory Section 115 license for Subpart B and Subpart C service offerings (individually, the "2008 Settlement" and the "2012 Settlement," and together the "Prior Settlements"); (2) the 9.1 cent per track penny rate for Subpart A licenses to distribute physical phonorecords and permanent digital downloads, with a "conversion" factor;

and (3) direct deals between music publishers and the Services for Section 115 licenses ("Section 115 Direct Licenses") that were negotiated under the shadow of the statutory license.

- The Prior Settlements are not reasonable benchmarks for two primary reasons. First, there have been significant changes in the digital music marketplace since 2012. Second, the Prior Settlements were negotiated under the shadow of the statutory license and, therefore, do not reflect what would happen in a free market negotiation. Two of the Service Expert reports (the Katz Report and the Marx Report) seek to make lemonade from lemons on this front, claiming that the Prior Settlements are desirable benchmarks precisely because they were negotiated under the shadow of the statutory license and, therefore, necessarily satisfy the 801(b) factors. Their reasoning is flawed and their conclusions are unjustified.

- The Section 115 Direct Licenses also are not comparable benchmarks because they were negotiated in the shadow of the statutory license. In virtually every instance, the Section 115 Direct Licenses simply reflect the statutory rates (as expected when the statutory rates are below fair market value), and in the rare instance that a Section 115 Direct License includes a higher rate, it is because additional rights or benefits were conveyed to the Service.

- The Service Experts' reliance on the Subpart A penny rate is flawed, both because it is the result of regulatory, as opposed to market-based, forces and because the Service Experts present no reliable methodology for adjusting the penny rate to take into account the difference in value between ownership (as with CDs and permanent digital downloads or "PDDs") and access (as with Subpart B and Subpart C service offerings).

- Amazon's Prime Music and Music Unlimited agreements with the [redacted] further demonstrate that the benchmarks relied upon by the Services Experts are faulty. In these agreements, Amazon has agreed to terms that [redacted]

- The testimony and reports put forward by the Services and the Service Experts with respect to the state of the market for digital music distribution and, in particular, their assessment of how the rates and terms proposed by the Copyright Owners would affect ("disrupt") that market are contrary to both empirical evidence and economic theory. In particular, Service Experts' contentions that interactive services are [redacted]. Economic profits, not accounting profits, are the appropriate metric for assessing industry performance.

- One reason entry is occurring is that the value of interactive streaming is increasing as a result of technological and market changes which are making it easier for services to monetize content and creating synergies between Subpart B and C services, on the one

hand, and complementary products and services such as non-interactive services, video services, communications services and devices on the other.

- Contrary to the contentions of Service Experts, the Copyright Owners' proposal for a rate structure based on performances and subscribers would not be inherently disruptive. The revenue model of the Services already accounts for per-play rates [redacted]. The [redacted] per-play and per-subscriber rates proposed by the Copyright Owners would not disrupt the Services' business models.

- The Services' proposals to move to an "all-in" rate covering both the mechanical license and the public performance license (whether by (a) retaining the current rate structure but eliminating the Mechanical Per-Subscriber Prong or (b) instituting an all-in per-play rate) is unjustified as a matter of economic theory and would result in a substantial decrease in total royalties. The fact that two inputs (mechanical rights and performance rights) are required for each stream has no bearing on the relative market values of the two rights. In other words, there is no economic principle that says a producer that needs two inputs to make its product should pay for them based on a single bundled price.

- Nothing I have reviewed in the testimony and reports submitted by other participants in this proceeding has caused me to change the opinion that I expressed in my Direct Report that Copyright Owners' proposed terms for mechanical rights for interactive streaming and limited download services are reasonable and consistent with the requirements set forth in Section 801(b)(1) of the Copyright Act.

C. Structure of this Report

5. The remainder of this report is structured as follows. Section II describes the Services' proposed rates and terms and presents an overview of the benchmark analyses put forward by the Service Experts. Section III explains why in my opinion the Service Experts' benchmark analyses are faulty. Section IV addresses the Section 801(b)(1) policy factor concerning industry disruption, and explains why the Service Experts' contentions that the Copyright Owners proposal would disrupt the structure of the interactive streaming industry and generally prevailing industry practices are incorrect. Section V presents a brief summary of my conclusions.

II. THE SERVICES' PROPOSALS AND BENCHMARK ANALYSES

6. In this section, I briefly summarize the rate proposals put forward by the Services and the benchmarking analyses undertaken by their respective experts. The Services' proposals are summarized in Table 1. As the table shows, four of the five Services – all but Apple – propose to continue the current "top line" percentage-of-revenue rate structure (at 10.5 percent), but to modify other aspects of the existing statutory structure, including eliminating the Mechanical Per-Subscriber Prong (thus effectively moving to an "all-in" rate structure)[1] and deducting certain costs from the current definition of "Service Revenue." Apple, by contrast, proposes an "all in" per-play royalty of $0.00091 for all Subpart B and C service offerings, other than locker services.[2]

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[1] Per-subscriber charges come into play in the current rate structure in two ways. First, for standalone non-portable streaming only, standalone non-portable mixed use, and standalone portable mixed use, they are part of a "lesser than" prong for calculating the all-in royalty pool. I refer to these per-subscriber rate prongs as "All-In Per-Subscriber Prongs." Second, for standalone non-portable, standalone non-portable mixed use, standalone portable mixed use, and bundled plans, they constitute a "greater than" prong for the calculation of mechanical royalties (as distinct from the "all-in" royalty pool). I refer to this per-subscriber rate prong as the "Mechanical Per-Subscriber Prong."

[2] In addition, each of the Services (except Apple), proposes amending the definitions of Service Revenue in 37 C.F.R. 385.11 and Subpart C Service Revenue in 37 C.F.R. 385.21 to allow for deduction of certain costs, such as credit card transaction fees, carrier billing fees, and app store commissions, up to a maximum of 15 percent. Google Inc.'s Proposed Terms at 6; Proposed Rates and Terms of Spotify USA Inc. at 8; Proposed Rates and Terms of Pandora Media, Inc. at 7; Amazon Digital Services LLC's Proposed Rates and Terms at 2.

TABLE 1:
SUMMARY OF SELECTED SIGNIFICANT TERMS FROM SERVICE PROPOSALS FOR SUBPART B AND SUBPART C SERVICES

	Service Proposal				
Proposal	**Amazon**	**Apple**	**Google**	**Pandora**	**Spotify**
Percentage of Service Revenue	10.5%	Eliminate	10.5%	10.5%	10.5%
All-in Per-Subscriber Prong	Discount student subscriptions 50% and annual subscriptions 16.67%	$0.17 "all-in" for paid locker services	No Change	No Change	Treat student accounts as 0.50 subscribers per month
Percentage of Label Payments	No Change	Eliminate	13.5% if not pass-through, 11.9% if pass-through	No Change	No Change
Mechanical Per-Subscriber Prong	Discount student subscriptions 50% and annual subscriptions 16.67%	Eliminate	Eliminate	Eliminate	Eliminate
Per Play	N/A	$0.00091 "all-in" for non-fraudulent plays over 30 seconds long	N/A	N/A	N/A
Family Account	All-in Per-Subscriber Prong and Mechanical Per-Subscriber Prong equal to 150% of individual account	N/A	All-in Per-Subscriber Prong adjusted by ratio of family plan price to individual subscription price	Treat as 1.5 subs per month for All-in Per-Subscriber Prong	Treat as 1.5 subs per month for All-in Per-Subscriber Prong
Service Revenue	Royalty deductions for app store and carrier billing fees up to 15%		Service revenue deductions for app store commissions, carrier billing fees, credit card commissions, and similar charges up to 15%	Service revenue deductions for app store commissions, credit card commissions, and similar charges up to 15%	Service revenue deductions for app store, carrier billing, and credit card transaction fees up to 15%

Sources: Amazon Digital Services LLC's Proposed Rates and Terms at 1-13; Apple Inc. Proposed Rates and Terms at 1-3; Google Inc.'s Proposed Terms at 1-34; Proposed Rates and Terms of Pandora Media, Inc. at 1-2, 7; Proposed Rates and Terms of Spotify USA Inc. at 1-2, 8.

7. All of the Services oppose the Copyright Owners' proposed mechanical rate of the greater of $0.0015 per play and $1.06 per user per month for all Subpart B and Subpart C service offerings.

8. The Service Experts rely on three primary sets of benchmarks as support for the Services' proposed rates and terms: (1) the Prior Settlements for the compulsory Section 115 license for Subpart B and C service offerings; (2) the Subpart A penny rate, adjusted to reflect the difference in value between ownership and access; and (3) the Section 115 Direct Licenses, which were negotiated under the shadow of the compulsory license. (The Katz Report also briefly considers certain Pandora agreements that cover [redacted]

[redacted][3]) Table 2 below summarizes the benchmarking approaches utilized by each of the Service Experts.

TABLE 2:
SUMMARY OF SERVICE EXPERT BENCHMARK METHODOLOGIES

Service	Expert	2012 Settlement	Subpart A Penny Rate	Section 115 Direct Licenses	Pandora Direct
Amazon	**Hubbard**	X			
Apple	**Ramaprasad**		X		
Google	**Leonard**	X	X	X	
Pandora	**Katz**	X	X		X
Spotify	**Marx**	X	X		

Sources: Hubbard Direct Report ¶¶4.4-4.7; Ramaprasad Direct Report ¶¶86-95; Leonard Direct Report ¶¶12-13, 38-83; Katz Direct Report ¶¶67-73, 98-113; Marx Direct Report ¶¶101-115.

9. In the sections below, I briefly describe the particulars of each of the Services' proposals and the benchmarking approaches taken by their respective experts.

A. Amazon

10. Amazon describes its proposal as: "the existing service categories and rate structures should be largely preserved" with only "a few minor changes to Subparts B and C."[4] Amazon's proposal is supported by the expert report of Dr. Glenn Hubbard.[5] The Hubbard Report

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[3] Expert Report of Michael Katz, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (November 1, 2016) at ¶¶98-105 (hereafter, the "Katz Report"). Dr. Katz looks at agreements that include [redacted].

[4] Introductory Memorandum to the Written Direct Statement of Amazon Digital Services LLC, In the Matter of: Determination of the Rates and Terms for Making and Distributing Phonorecords (Phonorecords III) at 1. Those changes include: (i) establishing family plans that would allow the service to provide music to up to 6 users but calculate per-subscriber prong royalties as if there were only 1.5 users; (ii) specifying discount percentages for student plans (50%) and annual plans (16.67%); and allowing reduction of "Service Revenue" by up to 15% for certain claimed costs. See Table 1 above.

[5] *See* Expert Report of Glenn Hubbard, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (November 1, 2016) (hereafter, the "Hubbard Report").

presents a general, wide-ranging discussion of the benefits of the current statutory rate and structure. It does not, however, present a benchmark analysis, and thus is not part of my benchmarking assessment below.

B. Apple

11. Apple proposes a per-play rate of $0.00091, and presents in support of this proposal an expert report by Dr. Jui Ramaprasad. [6]

12. In contrast with other Service Expert reports, the Ramaprasad Report concludes that dramatic changes in the digital music marketplace since the 2012 Settlement require the adoption of a new rate structure.[7] Although several other Service Experts note the same dramatic changes as an historical matter, they ignore them for purposes of their respective benchmark analyses. As I discuss further below, I generally agree with the Ramaprasad Report's conclusions in this regard. However, for reasons also discussed below, the "benchmarking" approach taken by the Ramaprasad Report – which proposes an "all-in" per-play rate of $.00091 (for both mechanical rights and the separate performance rights) based on the Subpart A penny rate and the ungrounded assumption that a 100-to-1 ratio should apply – is not economically sound.

C. Google

13. For Subpart B service offerings, Google proposes a rate equal to the greater of (i) 10.5% of service revenue and (ii) the lesser of (a) 13.5 percent of the total amount expensed by the service provider for sound recording rights and (b) the existing per-subscriber rates. For Subpart C offerings, Google proposes a rate that is the greater of (i) the existing Subpart C topline rates

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[6] *See* Expert Report of Jui Ramaprasad, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (November 1, 2016) (hereafter, the "Ramaprasad Report").

[7] *See, e.g.*, Ramaprasad Report ¶¶ 5, 50-53.

(which range from 10.5 percent to 12 percent of service revenue) and (ii) 13.5 percent of the total amount expensed by the service provider for sound recording rights. Like the other Services, Google proposes that its proffered rates be "all-in" rates that cover both the statutory mechanical license and the public performance license, which is not a statutory license and I understand to be outside the purview of this proceeding. While Google's proposal preserves the existing Subpart C per-subscriber rates, it eliminates the Mechanical Per-Subscriber Prongs. Additionally, like all Services other than Apple, Google also seeks a reduction of the "Service Revenue" for up to 15 percent for certain claimed costs.

14. Google's proposal is supported by the expert report of Dr. Gregory K. Leonard.[8] The Leonard Report presents as benchmarks: (a) the Subpart A penny rate (adjusted to 9.3 cents per track to account for overlong songs and converted to a percent of revenue based on an estimate of the average retail price of a permanent digital download or "PDD"); (b) Google's Section 115 Direct Licenses with music publishers for the Google Play Music Subscription service; (c) the 2012 Settlement; and (d) other Section 115 Direct Licenses. Each of these benchmarks is fundamentally flawed, and the Leonard Report's findings with respect to the reasonableness of Google's proposal are erroneous.

D. Pandora

15. Pandora proposes that the current rates and rate structure carry over to the 2018-2022 statutory licensing period, with the important exception that the Mechanical Per-Subscriber

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[8] *See* Amended Expert Report of Gregory Leonard, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (January 25, 2017) (hereafter, the "Leonard Report").

Prong in Subpart B would be eliminated.[9] Pandora too includes an allowance for services to deduct 15% from "Service Revenue" for certain claimed costs. In support of this proposal it proffers the expert report of Dr. Michael Katz.[10]

16. The Katz Report presents a benchmarking analysis which relies primarily on the 2012 Settlement, which it argues represents a voluntary agreement for identical rights among similar parties. The Katz Report's embrace of the 2012 Settlement is based, at least in part, on the contention that the bargaining process can be relied upon to arrive at rates which reflect the 801(b) statutory criteria.[11] It argues further that the 2012 Settlement remains a reasonable benchmark despite the significant changes that have taken place in the industry (such as the explosive growth of interactive streaming since 2012 and the entry into the market of very large, diversified businesses with multiple other sources of revenue).[12] I explain below why each of these arguments is fatally flawed and why, as a result, the 2012 Settlement is not a valid benchmark. I also explain why the Katz Report's attempts to use Pandora's recent Section 115 Direct Licenses with music publishers and the Subpart A penny rate to support the current rates and terms are faulty.[13]

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[9] Introductory Memorandum to the Written Direct Statement of Pandora Media, Inc., In the Matter of: Determination of the Rates and Terms for Making and Distributing Phonorecords (Phonorecords III) at 4.

[10] Expert Report of Michael Katz, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (November 1, 2016) (hereafter, the "Katz Report")

[11] Katz Report ¶10 ("The economics of bargaining indicates that, so long as there are not significant asymmetries in their ability to pursue litigation, private parties negotiating a settlement in the shadow of an 801(b)(1) proceeding will agree to terms and conditions that meet the 801(b)(1) objectives.") In his deposition, Dr. Katz appeared to [redacted]. *See* **CO EX. R-186,** Restricted Videotaped Deposition of Michael Katz, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (January 12, 2017), at 135-136 (hereafter, the "Katz Deposition").

[12] As discussed below, the Katz Report does single out certain changes which, it argues, justify Pandora's proposal to eliminate the Mechanical Per-Subscriber Prong. See Katz Report ¶10.

[13] Katz Report ¶¶98-113.

E. Spotify

17. Spotify also advocates maintaining the current rates and rate structure with certain modifications, including the removal of the Mechanical Per-Subscriber Prong in Subpart B, the addition of discounts for family plans and student plans, as well as discounts and credits for distribution and billing costs (largely identical to the deductions sought by all Services other than Apple), and some administrative changes.[14]

18. Spotify's proposals are supported by the expert report of Dr. Leslie Marx.[15] The Marx Report contends that agreements negotiated in the shadow of the 2012 Settlement constitute the only valid benchmark because they uniquely reflect the shadow of the 801(b) statutory criteria.[16] While Dr. Katz appeared in his deposition [redacted],[17] my reading of Dr. Marx' deposition indicates that [redacted]. As I explain below, in my opinion, this approach is inherently uneconomic as a matter of methodology as well as inconsistent with the available evidence on the digital music marketplace.

III. THE SERVICE EXPERTS' BENCHMARK ANALYSES ARE FLAWED AND UNRELIABLE

19. As I discussed in my Direct Report, benchmarks have long been used to establish statutory rates, but their value is contingent on the extent to which the benchmarks match the

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[14] Introductory Memorandum to the Written Direct Statement of Spotify USA Inc., In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III) at 1-2.

[15] Expert Report of Leslie Marx, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (November 1, 2016) (hereafter, the "Marx Report").

[16] *See* Marx Report ¶¶92-93.

[17] Katz Deposition at 135:7 – 136:24.

"target rights" being valued.[18] Differences between the benchmarks and the target rights being valued must be properly addressed. These differences may include differences in the nature of the rights at issue, differences in underlying market factors (*e.g.*, different geographic markets), differences in the term or time period covered by the agreements, differences in factors affecting the relative bargaining power of the parties (possibly including the presence of the shadow of compulsory licensing) and differences in the services being offered.[19]

20. Each of the three primary sets of benchmark agreements relied upon by the Service Experts – the 2012 Settlement, the Subpart A penny rate and the Section 115 Direct Licenses – fails one or more of these tests. The 2012 Settlement was negotiated under the shadow of a compulsory license and in a marketplace that bears little resemblance to the contemporary marketplace – that is, in a streaming market that was still dominated by iTunes and Pandora's non-interactive streaming service, and in which interactive streaming services had a much smaller presence than they do today. The Section 115 Direct Agreements put forward by the Service Experts suffer from the same problems. The Subpart A penny rate was also negotiated in the shadow of the compulsory license, and is further (and fatally) disqualified as a benchmark by the Service Experts' failure to present an economically sound approach for converting the value of physical and digital track sales into an "equivalent" number of interactive streams, given the

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[18] *See* Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2006-1 CRB DSTRA (hereafter SDARS I), 73 Fed. Reg. 4,092 (Jan. 24, 2008). See also Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, 78 Fed. Reg. 23,058 (decided Apr. 17, 2013) (hereafter "SDARS II"); David R. Strickler, *Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis*, Review of Economic Research on Copyright Issues 12(1/2) (2015) 1-15 at 9 (hereafter "Strickler (2015)") ("The Judges have long held that an otherwise appropriate benchmark reflects the actual market behavior of rational actors.").

[19] Direct Report ¶35.

inherent differences between the value of owning a CD or PDD, on the one hand, and having unlimited access to a full music library that can be streamed on demand.

21. In the sections below, I discuss these shortcomings in detail. I begin by discussing how the Services' benchmarks are affected by the shadow of the compulsory license, including explaining specifically why the fact that the 2012 Settlement was negotiated under the shadow of the copyright royalty rate proceeding is a flaw, not an advantage. Next, I explain why dramatic changes in the digital music marketplace between 2012 and now, including, but not limited to, the rise of interactive streaming, render the 2012 Settlement an inappropriate benchmark. Finally, I address the failure of the Service Experts to put forward an economically sound means of using Subpart A rates to value Subpart B and Subpart C licenses.

A. Agreements Under the Shadow of Compulsory Licensing are Not Appropriate Benchmarks

22. In this section, I first explain briefly why rates negotiated under the shadow of a compulsory license generally do not reflect the fair market value of the rights at issue, and how the Service Experts err by ignoring this generally accepted precept. Next, I address and specifically refute, the assertions put forward in the Katz and Marx Reports that the 2012 Settlement is a valid benchmark *because* it is negotiated under the shadow of the 801(b) criteria.

1. Market-Based Agreements are Superior to Agreements Negotiated in the Shadow of a Compulsory License

23. Benchmarking is a useful tool for assessing fair market value because it reflects the willingness of actual marketplace participants to enter freely into a transaction: by definition, both parties gain from reaching an agreement relative to their best available alternative (their "best alternative to a negotiated agreement," or "BATNA"). If bargaining power is equal between the parties, then, under certain assumptions, it can be expected that they will split the value created by

the bargain – defined as the difference between their outcomes under the agreement and their outcomes without one – evenly between them.

24. In a free-market environment, negotiated outcomes reflect the entrepreneurial activities of the parties to generate value and to enhance their bargaining positions. For example, parties may engage in innovation in order to differentiate their products from their competitors, thus increasing their value and raising the opportunity cost to the other party of forgoing the bargain. By enhancing the value of the bargain, such activities not only increase the transaction price (*i.e.*, the fair market value received by the producer), but also contribute to overall economic welfare by enhancing the total economic value of the transaction. Such incentives do not come into play in the case of bargaining advantages associated with the compulsory license.[20]

25. As I explained in my Direct Report, licenses negotiated in the shadow of compulsory licensing suffer from the fact that the compulsory nature of the license is one-sided, meaning that, as a practical matter, the statutory rate functions as a ceiling, but not a floor.[21] Thus, in the case of the Prior Settlements, the licensors knew that they ultimately *must* grant licenses to the licensees, either at a negotiated rate or, in the absence of a settlement, at the rate set in the rate determination proceeding. While both parties to those particular settlements theoretically could have walked away from the negotiations, the potential licensees would always remain free to not

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[20] License agreements that are signed to settle litigation may also reflect not just the value of the licensed IP, but also the value of avoiding the out-of-pocket costs of litigation, as well as the risk inherent in litigation to the value (or continued existence) of those rights.

[21] *See* Direct Report ¶¶29-32. Google tries to argue that the statutory rate might somehow act as a floor and not a ceiling, but Dr. Leonard explains [redacted]" Leonard Report fn. 129.

take a license, whereas the licensors would be required by law to grant licenses at the rate determined by the CRB. Similarly, the Section 115 Direct Licenses were all signed in the presence of the existing statutory rate and terms, which serve as a *de facto* ceiling on the rates and terms in the Direct Licenses – the licensee cannot be made worse off by signing a direct agreement than by relying on the statutory rate. The evidence I presented in my Direct Report shows that direct licensing is not only practical, but commonplace.[22]

2. The Circular Approach Embraced by the Katz and Marx Reports is Economically Unjustifiable

26. The Katz and Marx Reports argue that the 2012 Settlement is a desirable benchmark precisely because it was arrived at in the shadow of an 801(b) rate proceeding and, therefore, reflects the parties' expectations of the outcome of the proceeding. Specifically, the Katz Report states that the 2012 Settlement is a desirable benchmark because "private parties negotiating a settlement in the shadow of an 801(b)(1) proceeding will tend to agree to terms and conditions that promote the 801(b)(1) statutory objectives."[23] And, while the Marx Report makes only passing reference to using actual Section 115 Direct Licenses as benchmarks for determining the appropriate mechanical rates for musical works,[24] Dr. Marx testified at her deposition that [redacted][25] In other words, Dr. Marx opines

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[22] *See* Direct Report ¶¶26-28.

[23] *See* Katz Report ¶72. Dr. Katz appeared to [redacted]. *See* Katz Deposition at 135-136.

[24] *See, e.g.*, Marx Report Section X.A and, specifically, Section X.A.1.

[25] **CO EX. R-183**, Restricted Videotaped Deposition of Leslie Marx, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (January 20, 2017), at 31 and 222 (hereafter, the "Marx Deposition").

that [redacted][26]

27. In short, I understand both Dr. Katz and Dr. Marx to be arguing that the 2012 Settlement and Section 115 Direct Licenses are desirable benchmarks because they reflect the parties' expectations of what the CRB would have determined had there been a rate hearing under the 801(b)(1) factors rather than a settlement and, as to direct licenses, because the shadow of the compulsory license supposedly incorporates 801(b)(1) factors. This contention is wrong in at least three respects.

28. First, bargaining theory simply does not suggest that the parties to a negotiation will arrive at a bargain that satisfies the objectives of a third-party arbitrator. Rather, it suggests that they will achieve an agreement that maximizes the value of the bargain (given the setting in which the negotiation takes place and relative to each party's BATNA), and then divide that value between them according to their relative bargaining power. There is no reason to believe that the resulting bargain – especially one that involves multiple dimensions (e.g., service definitions, rates, terms, structures, contingencies, administrative provisions) – will mirror or reflect the objective function of a third-party arbitrator.[27] Indeed, it is my understanding that the Copyright Royalty

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[26] Marx Deposition, at 36-37.

[27] Dr. Leonard appears to [redacted]. *See* **CO EX. R-184,** Restricted Videotaped Deposition of Gregory Leonard, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (February 2, 2017) (hereafter, "Leonard Deposition"), at 146-149. For a useful discussion of the factors affecting bargaining outcomes in the context of intellectual property valuation, see J. Gregory Sidak, *Bargaining Power and Patent Damages*, Stanford Technology Law Review 19 (2015) 1-31. *See also* Ian Steedman, *Reservation Price and Reservation Demand*, The New Palgrave: A Dictionary of Economics (John Eatwell, Murray Milgate & Peter Newman, eds., 1st ed., Palgrave Macmillan, 1987) ("It will be clear that an agent's reservation price for any type of commodity can be expected to depend on one or more of the following considerations: the

Judges are required to accept the terms of a negotiated settlement, whether or not it reflects the 801(b)(1) factors. The terms of the 2008 Settlement were rolled over into the 2012 Settlement. At neither point were the Copyright Royalty Judges tasked with assessing whether the Prior Settlement terms reflected the 801(b)(1) objectives.[28]

29. Second, it is my understanding that, in determining reasonable rates under Section 115, the Copyright Royalty Judges traditionally review, among other available evidence, market-based benchmarks (as reflected in the first three prongs of 801(b)) and then consider whether some modification of the market-based rate, or range of rates, is called for on the basis of the policy factor concerning industry disruption.[29] In her deposition, however, Dr. Marx testified that the [redacted][30] Thus, Dr. Marx has [redacted]

30. Third, even if one accepted, for argument's sake, that a prior settlement was a perfect prediction of what the Judges would have done had there been a rate hearing, that does not

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scope for direct 'own use' of the commodity; the agent's present need for liquidity; the agent's other resources; the perishability of the commodity and thus the various elements of storage costs (including interest costs); expectations about future prices, there being always a speculative element in the reservation price of any commodity which is not immediately perishable.").

[28] *See* 17 U.S.C. 801(b)(7)(A); Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA (hereafter, "Phonorecords I"), 74 Fed. Reg. 4,514 (Jan. 26, 2009); Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords, Docket No. 2011-3 CRB Phonorecords II, 78 Fed. Reg. 67,939 (Nov. 13, 2013) (hereafter, "Phonorecords II").

[29] *See* Direct Report ¶¶22-25.

[30] Marx Deposition, at 37. Dr. Katz appears [redacted] *See* n. 23 above.

mean it was a perfect, or even a valid, predictor of the rates and terms the Judges would establish under the 801(b)(1) objectives today, either because factual circumstances have changed (and they have) or because the Judges continue to evolve their application of the statutory objectives on the basis of advancements in learning and doctrine (and they do).[31]

31. In sum, the fact that both the Prior Settlements and the Section 115 Direct Licenses were negotiated in the shadow of the compulsory license means that they do not accurately reflect either the fair market value of the Section 115 mechanical license or the 801(b) objectives, but are simply the products of a compulsory rate that itself was the product of a completely different business environment. Accordingly, they are not reasonable benchmarks in this proceeding.

B. The Prior Settlements Are Also Not Reasonable Benchmarks Due To Dramatic Changes in Market Conditions

32. In addition to the fact that the Prior Settlements were struck in the shadow of the statutory license, they are also unreliable as candidate benchmarks for the further reason that the market conditions under which they were signed are simply not comparable to current market conditions. In particular, as I describe in more detail in the rest of this section, at the time that both of the Prior Settlements were signed – in stark contrast to today – interactive streaming was an insignificant distribution channel, little used by consumers and with relatively few, and relatively small, service options available, while PDDs remained in vogue. Indeed, it is fair to say that there has been a significant disruption in the music business under the rates and terms embodied in the Prior Settlements. As Dr. Ramaprasad explained in her report:

> The interactive streaming industry today is markedly different than it was in the mid-2000s, when the current royalty rates were adopted. At that time, interactive music streaming was a nascent industry that had not demonstrated its viability. Since then,

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[31] *See generally* Strickler (2015).

> concerns about the survival of the interactive streaming industry largely have disappeared. The number of streaming services, the volume of music available for interactive streaming, interactive streaming services' revenues, and the number of paid subscribers all have increased substantially in recent years.[32]

Indeed, as I explained in my Direct Report, streaming in general (*i.e.*, both interactive streaming and non-interactive streaming) accounted for only about $310 million in revenue in 2007 and about $350 million in 2008. By comparison, revenues from physical sales and PDDs totaled about $11.9 billion in 2007 and $9.4 billion in 2008. Thus, at the time of the 2008 Settlement, *interactive and non-interactive streaming together* accounted for less than four percent of RIAA revenues.[33]

33. To estimate the proportion of total streaming revenues attributable to interactive streaming, one can look at the sum of the RIAA categories identified as "Paid Subscriptions" and "Ad-Supported On-Demand Streaming."[34] As shown in the column of Table 3 labeled "Interactive Streaming (est.)," these categories totaled about $268 million in 2007 and $244 million in 2008,

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[32] Ramaprasad Report ¶51.

[33] *See* Table 3 below. While I rely on RIAA reported revenues as a proxy for the overall economic significance of interactive streaming relative to other forms of music distribution, it is increasingly difficult to attribute revenues to specific digital services, especially in a dynamic marketplace with business models that combine different types of products and services, not all of which are included in determining revenue (*e.g.*, Amazon Prime Music/Echo, YouTube Red). Note that the definition of SoundExchange royalties includes all royalties paid to SoundExchange, which would also include royalties paid via SiriusXM performances and thus overstates total streaming royalties.

[34] RIAA defines "Paid Subscriptions" as "Streaming, tethered, and other paid subscription services not operating under statutory licenses" and "Ad-Supported On-Demand Streaming" as "Ad-supported audio and music video services not operating under statutory licenses." Non-interactive streaming services generally operate under statutory licenses, whereas interactive streaming services cannot avail themselves of a statutory license for sound recordings. Thus, the RIAA measure is an approximation to the extent some non-interactive services take direct licenses from some record companies. (Prior to September 2016, Pandora – by far the largest payer of non-interactive streaming royalties – paid under the statutory license. See **CO EX. R-49**, Pandora Media, Inc. Form 10-Q for the Quarterly Period Ended September 30, 2016 at 24, http://investor.pandora.com/Cache/36431006.pdf. ("Prior to the launch of Pandora Plus on September 15, 2016, we paid performance rates for the sound recordings we streamed on our ad-supported service and our Pandora One subscription service according to the Web IV rates set by the Copyright Royalty Board.")

approximately 2.2 and 2.5 percent of total RIAA revenues, respectively. Thus, at the time of the 2008 Settlement, interactive streaming was not a substantial component of the music ecosystem.

TABLE 3:
RECORD LABEL REVENUES (2007-2015) (2015 $MM)

Year	Physical	Digital Downloads	Synch	Streaming	Interactive Streaming, Est.	Total	Interactive Streaming as % Total
2007	$9,129	$2,738	$0	$309	$268	$12,175	2.2%
2008	$6,349	$2,960	$0	$354	$244	$9,662	2.5%
2009	$5,084	$2,946	$222	$400	$228	$8,652	2.6%
2010	$3,982	$2,935	$205	$502	$231	$7,624	3.0%
2011	$3,563	$3,060	$207	$689	$381	$7,519	5.1%
2012	$2,862	$3,118	$197	$1,066	$589	$7,242	8.1%
2013	$2,507	$2,971	$193	$1,475	$874	$7,146	12.2%
2014	$2,254	$2,644	$190	$1,871	$1,096	$6,959	15.8%
2015	$2,024	$2,382	$203	$2,407	$1,604	$7,016	22.9%
2016	$1,334	$2,078	$199	$3,200	$2,399	$6,811	35.2%

*Sources: RIAA U.S. Sales Database, RIAA, https://www.riaa.com/u-s-sales-database/; **CO EX. R-8**, Joshua P. Friedlander, News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics, RIAA, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf; Consumer Price Index - All Urban Consumers (Series ID CUUR0000SA0), BLS, https://www.bls.gov/cpi/#data. Note: [1] Interactive Streaming revenues are incorporated in Streaming Revenues. [2] 2016 amounts are annualized from the first half of 2016.*

34. It is also noteworthy that of the 14 entrants into the interactive music streaming highlighted in my Direct Report, only Rhapsody (which launched December 2001) was operating at the time of the 2008 Settlement.[35]

35. By the time of the 2012 Settlement, streaming in general – while still relatively new – had seen substantial growth, but interactive streaming had yet to take off. While total streaming revenues rose to about $689 million in 2011 (and about $1.1 billion in 2012), this growth was mainly in non-interactive streaming. As shown in Table 3, RIAA revenues for interactive streaming remained essentially constant in 2009 and 2010, and only began to rise in 2011, reaching

[35] *See* Direct Report Table 2. The fact that a few smaller, and ultimately unsuccessful, services existed at that time does not change the fact that interactive streaming was not a substantial factor in the digital music ecosystem at that time.

$589 million in 2012.[36] Much of this growth came after the launch of Spotify in the U.S., which started by offering 6-month unlimited listening ad-supported trials in July 2011, and after a brief period of restricting ad-supported listening hours, debuted its unlimited ad-supported streaming plan in March 2012.[37] Thus, at the time of the 2012 Settlement, there were essentially two material players in the interactive streaming market – Rhapsody and Spotify[38] – and Spotify was still sorting out what plans it would be offering. It was unclear at the time what interactive streaming might ultimately become and, importantly, how it would interact with the rest of the music ecosystem. As I discussed in my Direct Report, since that time (that is, since the 2012 Settlement), the interactive market has experienced rapid entry, including by such major and multi-dimensional businesses as Amazon, Apple, Google and iHeartMedia.[39]

36. Rapid entry has coincided with rapid growth. As shown in Table 3, the share of RIAA reported revenues accounted for by interactive streaming rose from approximately eight percent in 2012 to 35 percent in the first half of 2016, more than quadrupling in less than four years. This rapid growth in the significance of interactive streaming as a distribution channel – which appears to be accelerating – is reflected in market participants' assessments of economic values, *e.g.*, in Spotify's current $8.5 billion market valuation[40] and in the decisions of Google,

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[36] Despite the decline in overall industry revenues, these figures still represent only five percent of total revenues in 2011 and eight percent in 2012.

[37] **CO EX. R-201**, Mike Flacy, *Unlimited listening on Spotify will vanish for U.S. early adopters next week*, Digital Trends (Jan. 6, 2012), http://www.digitaltrends.com/music/unlimited-listening-on-spotify-will-vanish-for-u-s-early-adopters-next-week/; **CO EX. R-162**, Spotifysehr, *Announcing continued unlimited free listening!,* Spotify (Mar. 29, 2012), https://news.spotify.com/us/2012/03/29/announcing-continued-unlimited-free-listening/.

[38] Spotify was not a participant in the 2012 Settlement or proceedings.

[39] *See* Direct Report ¶¶51-53.

[40] **CO EX. R-39**, Douglas MacMillan, Matt Jarzemsky and Maureen Farrell, "Spotify Raises $1 Billion in Debt Financing," Wall Street Journal (Mar, 29, 2016), *available at* https://www.wsj.com/articles/spotify-

Amazon, Apple, iHeart, Pandora, Tidal and others to launch their own interactive streaming services. One manifestation is the [redacted] as shown in Figure 1. Analysts expect this [redacted] to continue. For example, [redacted].[41]

raises-1-billion-in-debt-financing-1459284467 (last accessed Feb. 13, 2017). One investment bank released a report suggesting that a Spotify IPO would be worth $20 billion as a base case and $53 billion as a best case. *See* **CO EX. R-50**, "Spotify – Growth Is Accelerating," GP. Bullhound (Sep. 2016) at 2, *available at* http://tech.eu/wp-content/uploads/2016/09/GP-Bullhound-Spotify-Update-Sept-2016.pdf (last accessed Feb. 13, 2017).

[41] **CO EX. R-51**, [redacted] (SPOTCRB0011316-11365 at 11342).

FIGURE 1:
SPOTIFY PREMIUM U.S. SUBSCRIBERS (MM)

37. While the continued and accelerating growth and economic impact of interactive streaming is by itself sufficient to call into question the comparability of the 2012 Settlement as a benchmark, it is hardly the only significant change in the digital music ecosystem since then. Rather, the entire marketplace has been reshaped by the rise of mobile (a sufficiently profound development that Spotify CEO Daniel Ek called it a "near-death" moment for the company),[42] the entry of integrated suppliers like Apple, Amazon and Google/YouTube, the proliferation of business models represented by increasingly diverse offerings from companies like iHeart Radio and Pandora and – on the horizon – the advent of artificial intelligence, which promises to fundamentally reshape the user experience and make it even easier for consumers to "multi-

[42] **CO EX. R-52**, Frederik Tibau, *How Spotify CEO Daniel Ek Failed His Way to Success*, Startups.be (Dec. 15, 2016), https://startups.be/blog/post/how-spotify-ceo-daniel-ek-failed-his-way-success.

home."[43] While the precise implications of these changes can reasonably be debated, it is not economically reasonable to deny or ignore the fact that they invalidate the comparability of the Prior Settlements. Yet, with the exception of the Ramaprasad Report on behalf of Apple, that is what all of the Service Experts do.[44]

C. Service Experts' Conversions of the Value of Ownership to the Value of Streaming Are Arbitrary and Uneconomic

38. In addition to relying on the Prior Settlements as comparable benchmarks for the Part B and Part C Services, the Katz, Leonard, Marx and Ramaprasad Reports also argue that it is appropriate to use Subpart A rates as benchmarks for determining reasonable rates under Section 115. Subpart A covers physical phonograph deliveries and PDDs and provides for a penny rate of 9.1 cents per track.[45] The Katz, Leonard and Marx Reports purport to convert the 9.1 cent-per-track penny rate to a percentage of revenue and then compare that percentage of revenue with the topline percentage of revenue in the current statutory rate, to conclude that the interactive services are paying Copyright Owners the same, or a higher, percentage of mechanical revenue than the record companies and sellers of PDDs.

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[43] *See, e.g.*, **CO EX. R-53**, SPOTCRB0007512-7553 at 7550 [redacted]. *See also* **CO EX. R-54**, *Google Home*, https://store.google.com/product/google_home.

[44] The Katz Report does identify one change it considers disruptive: the entry of a small performing rights organization, GMR, which they assert threatens the "fragmentation" of the musical rights market place. *See* Katz Report ¶¶90-94. Leaving aside that this argument fails on the merits (as I explain below), it is hardly plausible that it represents a more profound change than the ones I discuss above.

[45] In June of 2016, a partial settlement with Warner Music Group and Universal Music Group for Subpart A configurations was reached maintaining the current rates. *See* Library of Congress, Copyright Office, Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022), 81 Fed. Reg. (July 25, 2016) 48371. Sony Music Entertainment accepted the proposed settlement in October 2016. *See* Motion to Adopt Settlement Industry-Wide, In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (October 28, 2016).

39. Dr. Katz's analysis begins by noting that, expressed as a share of the average retail price of a digital download (based on RIAA data), the 9.1 cent penny rate corresponds to a percentage royalty rate of between 7.6 percent and 9.2 percent, which is lower than the 10.5 percent topline percentage of revenue prong in the existing statutory rate structure.[46] Then, he compares Subpart A rates and the current Subpart B rates on a royalty-per-equivalent-play basis, which converts unit sales into an "equivalent" number of streams by applying a "conversion" ratio of 150 streams per track. Dr. Marx estimates an effective penny rate of 9.6 cents per track after taking into account the number of overlong songs for which the 1.75 cents per minute prong is binding. Dr. Marx uses this effective Subpart A penny rate and a conversion factor of 150 streams per track ratio to calculate an "all-in" per-play royalty, which she then uses to calculate a percentage-of-revenue rate. Dr. Marx also calculates the penny rate as a percentage of revenue of the average price of digital and physical tracks, similar to the approach taken by Dr. Katz.[47]

40. Dr. Ramaprasad, in Section VIII of her report, supports Apple's proposal of a single per-play rate of $.00091 by using the Subpart A 9.1 cent penny rate per track and converting it to an "equivalent" number of streams by applying "conversion" ratios of 100, 137 and 150 streams per PDD or physical track.[48]

41. The Leonard Report uses an approach similar to that of Dr. Marx to estimate an effective penny rate of 9.3 cents per track. Dr. Leonard then calculates this effective penny rate as a percentage of revenue of the average price of digital tracks, with and without Google's proposed deductions of up to 15 percent of revenue. Dr. Leonard then compares the effective penny rate to

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[46] Katz Report ¶¶106-113.

[47] *See* Marx Report ¶¶108-112 and Figure 22.

[48] *See* Ramaprasad Report ¶¶93-95.

label payments for a PDD. Record labels receive 70 percent of the revenues from sales of PDDs from licensees such as [redacted] Apple, and then pass through the 9.1 cent penny rate to publishers. When prices per PDD increase, the labels' royalty of 70 percent of revenues increases, but they are still passing through the same 9.1 cent penny rate to publishers.[49] Taking this into account, Dr. Leonard argues for a decrease in the current ratio of musical works-to-sound recording royalties contained in Subparts B and C.[50]

42. All of these approaches are fundamentally flawed and do not yield reasonable benchmarks for the Subpart B and Subpart C offerings.

43. First, it should be immediately clear that the 9.1 cent per track penny rate does not reflect market prices, for the reasons discussed above relating to the 2008 Settlement, the 2012 Settlement and the Section 115 Direct Licenses: It is the result not mainly of market forces but of regulatory fiat. The compulsory license for mechanical rights has been in place since the enactment of the 1909 Copyright Act.[51] The 1909 Act set the compulsory mechanical rate at 2 cents per track, where it remained until Congress enacted the Copyright Act of 1976 which raised the rate to $.0275 per track. It was in the 1976 Act that Congress established the Copyright Royalty Tribunal (the first of two predecessors to the CRB) to determine rates going forward. Thereafter, the rates were subject to systematic review and incrementally increased by modest amounts. In connection with the rate proceeding pending in March 1987, the music publishers and record labels entered into a voluntary settlement which increased the penny rate to 5.25 cents per track and

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[49] This upside also has a potential downside. Under the statutory Subpart A rate, labels pass through the same 9.1 cent penny rate for musical works if prices for PDDs drop as well.

[50] *See* Leonard Report ¶¶ 38-46.

[51] For a summary of the changes in mechanical license royalty rate, see Copyright Royalty Judges, *Mechanical License Royalty Rates*, https://www.copyright.gov/licensing/m200a.pdf.

provided for further increases during the ten-year term. By 1996, the compulsory mechanical rate rose to 6.95 cents per track.[52] The next window for adjusting Section 115 rates came in 1997. Again, the parties were able to negotiate a voluntary agreement regarding the adjustment of the physical phonorecord and digital phonorecord delivery royalty rates (avoiding the need to engage in arbitration before the Copyright Arbitration Royalty Panel, or CARP, the immediate predecessor of the CRB). Under the settlement, the rate for physical phonorecords was set at 7.1 cents per track and a schedule was established for fixed rate increases every two years over the next ten years, so that by January 1, 2006, the rate would be 9.1 cents per track.[53]

44. The next review came in the CRB's Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding (Phonorecords I) in 2006. While the participants in that proceeding – NMPA, RIAA and DiMA (the trade association for digital distribution services) – were able to reach a settlement on interactive streaming and limited downloads, NMPA and RIAA were unable to reach an agreement on rates and terms for physical phonorecord deliveries, permanent digital downloads and ringtones, so the rates and terms for those configurations were determined by the CRB. Applying the Section 801(b) factors, the CRB maintained the 9.1 cent penny rate for physical phonorecords and permanent digital downloads and set the rate for ringtones at 24 cents. That rate was simply rolled forward in the 2012 Settlement and (most recently) the 2016 settlement (pending approval by the CRB).[54]

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[52] This settlement, of course, is not free of the shadow of compulsory licensing, for the same reasons the Prior Settlements are not.

[53] *See* Library of Congress, Copyright Office, Mechanical and Digital Phonorecord Delivery Rate Adjustment Proceeding, Docket No. 96-4 CARP DPRA, Federal Register 63:30 (February 13, 1998) 7288-7289.

[54] Phonorecords I at 4,514-5; Phonorecords II at 67,939.

45. In short, beginning in 1909 and to the present day, the Subpart A rates and terms have been determined either directly by Congress or by the CRB, or under the shadow of the statutory rate-setting process.

46. The uneconomic nature of the amount of the Subpart A penny rate for physical products and PDDs is perhaps most apparent in comparison with the mechanical rate for ringtones, which has been 24 cents since the initial determination in *Phonorecords I*, 2.6 times the mechanical rate for physical products and PDDs, despite the fact that a ringtone typically utilizes only a fraction of a musical work. Of the two rates, the ringtone rate is more closely tied to market forces because it was based on agreements negotiated in the free market before it was clear whether or not ringtones were eligible for the Section 115 license. As the Copyright Office has explained:

> The current rate to make and distribute permanent downloads or physical phonorecords of a musical work is 9.1 cents per copy. For ringtones, the rate is 24 cents per use. … It may seem counterintuitive that ringtones— which typically use only short excerpts of musical works—have a significantly higher royalty rate than full-length reproductions. Because ringtones abbreviate the full-length work, it was not immediately clear whether ringtones were eligible for the section 115 license. As a result, many ringtone sellers entered into privately negotiated licensing arrangements with publishers at rates well above the statutory rate for the full use of the song. In 2006, the Copyright Office resolved the section 115 issue, opining that ringtones were subject to compulsory licensing. But in the ensuing rate setting proceeding before the CRB, music publishers were able to introduce the previously negotiated agreements as marketplace benchmarks, and as a result secured a much higher rate for ringtones than the rate for full songs.[55]

47. That is, the Subpart A penny rate of 9.1 cents per track is lower than the ringtone rate precisely because, for a period, it was not clear that ringtones were subject to compulsory licensing. Accordingly, in free-market negotiations, the agreed-upon rate for ringtones was

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[55] U.S. Copyright Office, *Copyright and the Music Marketplace*: *A Report of the Register of Copyrights,* at 30 (Feb. 2015), http://www.copyright.gov/policy/musiclicensingstudy/copyright-and-the-music-marketplace.pdf (hereafter CMM).

considerably higher than 9.1 cents per track and the Copyright Royalty Judges in *Phonorecords I* embraced those free-market benchmarks. Yet in putting forth the Subpart A rate as a benchmark, the Service Experts studiously ignore the far higher ringtone rate, also established within Subpart A, a rate that actually was the product of free-market benchmarks never available for physical products and PDDs.

48. Second, the Service Experts fail to present an economically reasonable method for "converting" the penny rate for ownership rights in a single song into a rate reflecting the value of unlimited, on-demand usage of a music library. The economic value of the latter cannot be ascertained through the use of simple arithmetic "conversion" rates, especially when those rates are borrowed from third-party sources such as Billboard magazine or from economic studies which do not even address the question of relative valuation.[56]

49. From an economic perspective, ownership business models, on the one hand, and access business models, on the other hand, are fundamentally different. It is akin to trying to derive the value of a gym membership by asking the question: "How many visits to the gym equals one barbell?"[57] The consumer who purchases a PPD or physical copy of a sound recording obtains access and unlimited listening to that single sound recording for the purchase price, though in perpetuity (or more accurately, until the media decays or becomes obsolete, which happens regularly). The end user who acquires a subscription to an interactive streaming service obtains

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[56] *See* Ramaprasad Report ¶¶88-95; see also Katz Report ¶¶110-113.

[57] At his deposition, Dr. Leonard discussed [redacted]. *See* Leonard Deposition at 32-39.

access to an entire music library for unlimited listening (most having tens of millions of songs), though for only as long as they maintain their account with the service.

50. In order for a consumer of a PDD to obtain the same access to musical works as an end user of an interactive streaming service, the PDD consumer would have to purchase copies of the tens of millions of musical works in the service's library. One cannot "convert" the number of "listens" obtained from the purchase of a PDD with the number of plays obtained by an end user of an interactive streaming service without taking into account the fact that a PDD consumer can only listen to a single song over and over (without purchasing another PDD), whereas the streaming subscriber can sample from nearly all of the songs ever recorded as desired.

51. The option inherent in that choice is significant, regardless of whether the subscriber plays ten songs or ten million songs. Access to music on-demand is a substantial value, separate and apart from the value obtained from listening to music (which alone can be obtained from non-interactive sources and radio at lower cost). That is why on-demand services market the size of the catalogs that they offer, and why they feel they need to obtain (and provide to their users) access to the full repertoires of the major publishers (and record labels), as well as the songs of major independent publishers (and labels) and more. For example, under "Learn About Spotify" at www.spotify.com, Spotify begins by noting: "There are millions of songs on Spotify. Play your favorites, discover new tracks, and build the perfect collection."[58] Apple Music notes that "the vast Apple Music library is right at your fingertips."[59] Amazon notes that its Amazon Music

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[58] **CO EX. R-55**, *Learn About Spotify*, http://www.spotify.com/us/.

[59] **CO EX. R-56**, *Apple Music*, http://www.apple.com/apple-music/.

Unlimited Plans offer "[t]ens of millions of songs."[60] The Services promote access to the breadth of the catalogs available in order to entice customers to sign up for an account.

52. The simple arithmetic conversion factors applied by the Service Experts fail to account for these fundamental economic differences between the access and usage involved and end up not comparing like to like. Indeed, Dr. Leonard stated that, in his opinion, [redacted].[61] However, the exclusive right under copyright law that is being conveyed by the mechanical license is the same in both situations: the right of reproduction and distribution. If there truly was [redacted], then the royalty rate for the reproductions made by interactive streaming services every time a musical work was streamed should be the same as that for reproduction under Subpart A: 9.1 cents per play. Needless to say, Dr. Leonard is not advocating for this rate, because he surely does appreciate that there is a fundamental difference between the two types of use. The failure of each of the services' experts to evaluate and analyze that difference in connection with inchoate conversion attempts highlights the unsuitability of any such conversion to arrive at a fair and reasonable royalty rate.

D. The Leonard Report's Analysis of the Relative Value of Musical Works and Sound Recording Rights is Faulty

53. Google's proposal includes a change to a rate prong which, for certain Subpart B offerings, is a subminimum used to calculate the "All-In Royalty Pool" from which the mechanical royalties are paid to the music publishers. This rate prong is calculated by taking a percentage of the payments that a service makes to sound recording rightsholders, and is sometimes referred as

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[60] **CO EX. R-57**, *Amazon Music Unlimited*, https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/ref=sv_dmusic_0.

[61] Leonard Deposition, at 38-39.

the "TCC Prong," as it implicates a calculation of "total content costs." Currently, the TCC Prong for standalone portable mixed use plans is equal to either 21 percent of service payments to the record labels for the right to use sound recordings (if the record label does not pass through mechanical rights to the service) or 17.36 percent of what the service paid the record labels (if the label does pass through mechanical rights). Dr. Leonard argues in favor of Google's proposal to reduce the percentage of payments to the record labels to 13.5 percent for standalone portable mixed use plans (and other plans) by focusing on the relative ratio of payments to the record labels and music publishers in connection with PDDs. Specifically, he posits, based on RIAA data, that payments to music publishers from PDDs have ranged from about [redacted] of payments to record labels (corresponding to ratios of payments for sound recordings to payments for mechanical works of between [redacted]).[62] On this basis, Dr. Leonard concludes that Google's proposal of a 13.5 percent TCC subminimum is reasonable.

54. As I have explained above, the Subpart A rate relied upon by Dr. Leonard is itself unreliable as a result of a long history of regulatory influence, as exemplified, for example, in comparison to the ringtone rate. Moreover, Dr. Leonard does not conduct any analysis of any other benchmarks to assess whether or not this ratio is consistent with other benchmarks for the relative marketplace value of sound recording rights and musical works rights. Indeed, the testimony in my Direct Report shows that the [redacted] range derived by Dr. Leonard is an outlier which does not accurately reflect the relative values of the sound recording and musical works rights. Despite evidencing access to a broad array of license agreements, Dr. Leonard fails

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[62] Leonard Report ¶46.

to address numerous relevant benchmarks, including the Pandora opt-out deals[63] and the blanket licenses involving YouTube's streaming service.[64] A survey of these agreements, along with synchronization licenses and ratios of label to music publisher payments in the 2012 Settlement and related deals, demonstrates that the relative value of sound recording rights and musical rights lies between [redacted], with the most comparable and reliable benchmarks implying ratios of [redacted] respectively, with a mid-point of [redacted].[65] Further, Dr. Leonard makes questionable estimates based on RIAA shipment data of label revenues from Subpart A uses in order to build his ratio and infer a mechanical royalty rate,[66] but fails to consider actual label revenues under label interactive streaming agreements[67] that are far more useful in evaluating a reasonable rate for the comparable mechanical rights based on an appropriate ratio.

55. By focusing solely on the physical and PDD penny rate in Subpart A as a benchmark (a rate itself determined in the shadow of the statutory license), and ignoring the problems with that benchmark that I have discussed above, the Leonard Report significantly understates the value of musical works relative to sound recordings.

E. Dr. Leonard's Dismissal of the YouTube Benchmarks Ignores Their Suitability

56. I note that Dr. Leonard does acknowledge licenses for YouTube in his report, but dismisses them as "designed primarily to cover audiovisual works, which makes these licenses

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[63] *See* **CO EX. R-97** through **CO EX. R-108**; Direct Report ¶¶ 103-129.

[64] *See* **CO EX. R-87** through **CO EX. R-89**; Direct Report ¶¶ 100-102.

[65] Direct Report ¶130.

[66] Leonard Report ¶ 40.

[67] *See* **CO EX. R-83** through **CO EX. R-86**, **CO EX. R-90** through **CO EX. R-96**; Direct Report ¶¶ 135-174.

less relevant as benchmarks for purposes of the current analysis."[68] This misunderstands both the rights at issue and the usage of YouTube.

57. YouTube requires licenses to reproduce or fix musical works in digital files. In this way, YouTube is no different than any other on-demand streaming service. However, Section 115 of the Copyright Act subjects phonorecords to a compulsory licensing scheme that authorizes any person who complies with its provisions to obtain a license to make and distribute phonorecords. Phonorecords are defined by the Copyright Act as:

> [M]aterial objects in which sounds, *other than those accompanying a motion picture or other audiovisual work*, are fixed by any method now known or later developed, and from which the sounds can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term "phonorecords" includes the material object in which the sounds are first fixed.[69]

58. In other words, the licensing of the reproduction and distribution of musical works in audiovisual works would be subject to this proceeding if not for something of a definitional quirk in the statute. For the purposes of a benchmarking analysis, then, the rights at issue in the licensing of reproductions of musical works accompanying audiovisual works are highly comparable to the rights that are at issue in this proceeding.

59. Furthermore, the business uses at issue are remarkably comparable. YouTube is an online interactive streaming service. The consumer overlap between Section 115 services and YouTube is repeatedly admitted by the services. Spotify's Chief Economist Will Page testifies that "[redacted]," and in a section entitled "[redacted]

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[68] Leonard Report ¶58.

[69] 17 U.S.C. § 101 (emphasis added).

[redacted]" states that, "[redacted]"[70]

60. Dr. Marx places YouTube in the same industry segment as Spotify, stating that YouTube "has become a popular online channel for audio content."[71] Dr. Marx further lists YouTube Red, the ad-free YouTube subscription service, as an interactive music streaming service alongside the service participants in this proceeding: "Spotify, Apple Music, Tidal, Google Play, YouTube Red, Rhapsody, Groove Music, Deezer, and Amazon Unlimited all offer standard monthly individual subscriptions for $9.99."[72] Dr. Marx further notes that the RIAA puts YouTube and Spotify's ad-supported service in the same distribution category as well, and that YouTube would be a destination for [redacted][73]

61. An industry analyst report submitted as an exhibit by Amazon in this proceeding [redacted]:

> [redacted].[74]

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[70] Page WDT ¶¶ 47, 53, 55.

[71] Marx Report ¶ 19.

[72] *Id.*, fn. 99.

[73] *Id.*, fns. 54 & 165.

[74] Amazon WDT Ex. 1, p.4. Likewise, the Global Music Report submitted by Amazon as an exhibit puts YouTube in the music "on demand streaming" segment along with Spotify and other services. Amazon WDT Ex. 11, p.9

62. As these sources show, Dr. Leonard's dismissal of YouTube as a benchmark is misplaced. While YouTube may have audiovisual content, it is considered throughout the industry as a participant in the on-demand music streaming industry. Google does not even separate out its subscriptions to its Section 115 service Google Play Music and YouTube Red, only offering them both together as a single subscription, Recently, Google stated that "the music licensing team for Google Play Music was combined with the music licensing team for YouTube and moved to the YouTube business unit."[75] And a Google witness in this proceeding testified at deposition that:

[redacted][76]

63. This same witness further testified that [redacted].[77]

64. The facts that Spotify considers YouTube a major competitor, that service experts and industry analysts place YouTube in the same industry segment as Section 115 services and [redacted]

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[75] Levine WDT, ¶ 13

[76] **CO EX. R-185,** Excerpts from the Restricted Videotaped Deposition of Zahavah Levine, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (January 26, 2017) (hereafter, "Levine Deposition"), 118:9-119:3

[77] Levine Deposition 119:4-120:5. It has also been publicly reported that Google has merged its YouTube Music and Google Play Music teams into a single unit, "marking the first step towards a possible creation of a unified experience across a single app." **CO EX. R-195**, Michael Simon, *Google Merges YouTube, Play Music teams as it looks to create a streamlined experience*, PC World (Feb. 9, 2017), http://www.pcworld.com/article/3168317/android/google-merges-youtube-play-music-teams-as-it-looks-to-create-a-streamlined-experience.html.

[redacted], speak volumes to the comparability of the YouTube licenses as a benchmark. Without the ability to get free-market benchmarks from within the Section 115 context, benchmarking using YouTube licenses is an almost perfect substitute (indeed, the unique and arbitrary definitional carve out of audiovisual works from the statutory scope makes YouTube an almost scientifically-designed case for benchmarking relative royalty rates for sound recordings and musical works).

65. I note that YouTube is not a good benchmark, however, for determining *absolute* royalty rates for Section 115 services, as YouTube has an enormous bargaining advantage against both labels and publishers that is unavailable under Section 115, namely the potential safe harbor of the Digital Millennium Copyright Act. Spotify admits [redacted],[78] and Cary Sherman, the head of the RIAA, the label trade group, has explained the negative effect that the safe harbor has on label royalty rates due to the shift in bargaining power:

> When you compare what we get when we get to freely negotiate, with a company like Spotify, vs. what we get when we are under the burden of an expansively interpreted "safe harbor," when you're negotiating with somebody like YouTube, you can see that you're not getting the value across the platforms that you should.[79]

66. Since the DMCA safe harbor applies equally to sound recording and musical works copyrights, there is no reason to think that their relative valuation would be affected. The failure of the service experts to evaluate this persuasive benchmark indicates that their analyses are insufficient.

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[78] Page WDT, ¶ 62.

[79] **CO EX. R-196**, Peter Kafka, *Here's why the music labels are furious at YouTube. Again.*, Recode (Apr. 11, 2016), http://www.recode.net/2016/4/11/11586030/youtube-google-dmca-riaa-cary-sherman.

F. Amazon Prime License Agreements Provide Further Evidence that the Service Experts' Benchmarks are Faulty

67. License agreements between several record companies and Amazon, which were recently provided in discovery, provide further evidence that the [redacted]. In these agreements, Amazon has licensed sound recordings from [redacted] for use in its Amazon Prime Music and Amazon Music Unlimited Services.[80] In this section, I summarize the terms of these agreements and discuss how they affect the conclusions from my Direct Report.

68. I begin by discussing the terms in the licenses for Amazon Prime Music. Amazon Prime Music is the ad-free interactive streaming service that Amazon includes without any additional cost as a part of the benefits provided in its "Amazon Prime" service, which costs $99 a year or $10.99 a month and gives users access to a bundle of services, including free two-day shipping, video streaming through "Prime Video," photo storage and ebooks, as well as interactive music streaming.[81] Amazon Prime offers interactive streaming and limited downloads, but has a smaller catalog of songs than its Music Unlimited Service does.

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[80] **CO EX. R-58**, [redacted] **CO EX. R-13**, **CO EX. R-12**, **CO EX. R-59**, **CO EX. R-60**, **CO EX. R-61**, [redacted]

[81] *See* **CO EX. R-62**, *About Amazon Prime*, https://www.amazon.com/gp/help/customer/display.html?nodeId=200444160.

69. Under Amazon's agreement with [redacted], Amazon agreed to pay [redacted][83] [redacted][84] Under Amazon's agreement with [redacted][85]

70. It is noteworthy that all three of these agreements include [redacted]. As shown in Table 11 of my Direct Report, [redacted]

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[82] **CO EX. R-13**, [redacted]

[83] *Id.*

[84] **CO EX. R-58**, [redacted]

[85] **CO EX. R-12**, [redacted]

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71. Amazon's "Music Unlimited" service differs from its Prime Music service in that the Music Unlimited service offers on-demand access to 'tens of millions of songs' for a fee of $7.99 per month (or $79 per year) for Prime members, $9.99 per month (or $99 per year) for non-Prime members and $14.99 per month (or $149 per year) for a family plan.[87] Amazon also offers a $3.99 per month Music Unlimited Plan to purchasers of its Echo "smart speaker" devices.[88]

72. Amazon's agreements with for its Music Unlimited offering are In the agreement, for example, the

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[87] **CO EX. R-57**, *Amazon Music Unlimited*, https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/ref=sv_dmusic_0.

[88] *Id.* This service is limited to use via Amazon Echo, Amazon Echo Dot, and Amazon Tap hardware.

[89] *See* **CO EX. R-59**, (AMZN00004685-4778 at 4714); *see also* **CO EX. R-61**, (AMZN00004779-4914 at 4801); *see also* **CO EX. R-60**, (AMZN00004915-80 at 4949).

[redacted].

73. As shown in Table 15 of my Direct Report, [redacted]

G. The Interactive Sound Recording Agreements are Valid Benchmarks

74. The Katz Report asserts that "evidence suggests that there is little competition among publishers in licensing mechanical rights to interactive streaming services" because "from an interactive streaming service's point of view, the rights to the song portfolios of the largest publishers are complements rather than substitutes."[91] Dr. Katz further notes that "the Judges found in *Web IV* that licenses to the repertoires of the three largest record companies were 'must haves' for interactive streaming services and, thus, were complements, rather than substitutes, for

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[90] **CO EX. R-59**, [redacted]

[91] Katz Report ¶ 47.

one another."[92] Although it is not explicitly stated, it appears that in this section of his report, Dr. Katz is arguing that privately negotiated agreements that do not "take place in an effectively competitive marketplace" do not reflect market-based rates and, thus, are poor benchmarks because the rates are too high due to a lack of competition.[93]

75. The concept of effective (or workable) competition is often applied to describe markets in which sellers have some degree of market power, perhaps as a result of barriers to entry, product differentiation or an oligopolistic industry structure, but there is still sufficient competition (or potential competition) to keep prices below monopoly levels. Prices in markets that lack workable competition, so defined, are suspect as appropriate benchmarks for assessing the fair value of the goods involved.

76. While the workable competition framework can provide useful insights in markets where sellers have market power and buyers are price takers, the more appropriate framework for assessing outcomes in markets – like the markets for many of the potential benchmarks put forward in this proceeding – in which both buyers and sellers have a degree of market power, and where prices are determined through negotiations, is a game-theoretic "bargaining power" model.

77. In that context, given the rapid growth in the importance of interactive streaming services within the music ecosystem – now exceeding more than a third of RIAA revenues – the increasing diversity of business models in which interactive services are employed and the bargaining power advantages possessed by firms like Amazon, Apple, and Google, it would be

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[92] Katz Report ¶ 48. The Marx Report also refers to the "market power" of copyright owners. See Marx Report ¶ 88.

[93] Katz Report ¶ 47. While Dr. Katz testified at his deposition that [redacted] he expressed a belief that [redacted] *See* Katz Deposition at 162.

inappropriate to conclude that more recent deals between the record labels and the Services necessarily result in artificially inflated rates due to a lack of "effective competition." Whatever may be said of agreements arrived at years ago – including deals at issue in Web IV – the current deals for sound recording rights negotiated outside the shadow of compulsory licensing, such as those I analyzed in my Direct Report and the Amazon deals I discuss herein, are the fruits of private negotiations that reflect the growing importance of interactive services to the record labels and the increasing equality of bargaining positions that entails.[94]

78. Evidence in this proceeding shows that the Services see their relationships with record labels in bargaining power terms. For example, [redacted]. An Amazon document states that [redacted][95] This benefit could not exist if interactive streaming rates were set by price-setting oligopolists selling to price-taking licensees; instead, this can only be the case if prices are set via negotiations in which both sides have relatively equal bargaining power. [redacted]

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[94] To the extent that such an adjustment was appropriate in Web IV due to the differences between interactive services and non-interactive services, then obviously no such adjustment is necessary here, as the Section 115 mechanical rights at issue are being licensed for use in exactly the same set of interactive streaming services. *See* Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (May 2, 2016) at 74.

[95] **CO EX. R-24**, [redacted], AMZ00053095-53106 at 53095, 53098.

bargaining dynamic, with strengths and weaknesses on each side, is reflected in documents from other services.[96]

79. Further evidence that the rates found in the interactive streaming agreements for sound recordings are not artificially high due to the lack of effective competition among the record companies comes from the fact that interactive streaming services, such as Spotify, enjoy a standard split of revenues – roughly 70/30 in favor of copyright owners.[97] This same split is found in many other markets in which digital content is distributed to users. For example, in its 2016 10-K, Netflix reported total streaming revenues in 2015 of about $6.1 billion (domestic and international) with associated content costs (costs of revenues) of about $4.3 billion, and revenues in 2016 of about $8.3 billion with associated content costs of about $5.8 billion, reflecting a rate, in both years, of approximately 70 percent for content costs.[98] This same split is found in other services, such as Hulu, another popular video streaming service, and it is well known that Apple's agreements with record labels (and app developers) typically give 70 percent of every digital track

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[96] An internal Pandora strategic document outlining [redacted] (**CO EX. R-197**, PAN_24185 at 24204-05); Internal Spotify documents outline [redacted] (**CO EX. R-53**, SPOTCRB0007512 at 7543); a Spotify document outlining [redacted] (**CO EX. R-199,** SPOT 7869 at 7869-70).

[97] **CO. EX. R-63**, *Spotify Explained – How is Spotify contributing to the music business?*, Spotify Artists, https://web.archive.org/web/20161029041706/https://www.spotifyartists.com/spotify-explained/.

[98] **CO EX. R-64**, Form 10-K for the fiscal year ended Dec. 31, 2016, Netflix Inc., at 20-21, https://www.sec.gov/Archives/edgar/data/1065280/000162828017000496/nflx201610k.htm. Netflix produces some exclusive content, so some of the content costs included in these figures are the costs of it producing and developing its own content. In earlier years, however, before it increased its focus on original content, a similar ratio could be found. *See, for example*, **CO EX. R-65**, Form 10-K for the fiscal year ended Dec. 31, 2013, Netflix, Inc., at 19-20, https://www.sec.gov/Archives/edgar/data/1065280/000106528014000006/nflx10k2013.htm.

sale to the rights holders, with 30 percent going to Apple.[99] Spotify's own general counsel has recognized that such a split is "as it should be."[100] In this context, there is no basis for concluding that the interactive service agreements with record labels reflect either "disproportionate bargaining leverage" or an absence of "effective competition."

IV. EVALUATION OF PROPOSALS UNDER THE POLICY OBJECTIVE CONCERNING INDUSTRY DISRUPTION

80. In this section I assess the proposals put forward by the Services and the Copyright Owners as they relate to the Section 801(b)(1)(D) standard concerning industry disruption. As I noted in my Direct Report, the Judges have not traditionally embraced an overly broad interpretation of the policy objective concerning industry disruption, finding that:

> "[D]isruption" typically refers to an adverse impact that is *substantial*, *immediate and irreversible* in the short-run because there is insufficient time for the industry participants to adequately adapt to the changed circumstances and, as a consequence, *such adverse impacts threaten the viability of the music delivery currently offered* under the license in question.[101]

81. The Service Experts fail to demonstrate that adopting the Copyright Owners' rate proposal would be disruptive within the meaning of 801(b)(1)(D) or, indeed, that they would be disruptive in any material way at all. As I explain in the first section below, the evidence strongly indicates that interactive streaming services are currently earning economic profits and that there is no reason to believe that adopting the Copyright Owners' proposal would materially retard their

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[99] **CO EX. R-66**, Jennifer Van Grove, *Embrace the Mushy Mush! Hulu's 2012 Numbers Are a Mixed Bag*, Venture Beat (Dec. 17, 2012), http://venturebeat.com/2012/12/17/hulu-2012/; CO EX. R-67, Steve Knopper, *The New Economics of the Music Industry*, Rolling Stone (Oct. 25, 2011), http://www.rollingstone.com/music/news/the-new-economics-of-the-music-industry-20111025.

[100] **CO EX. R-68**, Loren Shokes, *Interview with Spotify General Counsel Horatio Gutierrez*, Harvard Journal on Sports & Entertainment Law (Dec. 19, 2016), http://harvardjsel.com/2016/12/interview-with-spotify-general-counsel-horacio-gutierrez/.

[101] Phonorecords I at 4510, 4516 (Jan. 26, 2009), citing SDARS I, 73 Fed. Reg. at 4097 (*emphasis added*).

growth. Moreover, as I discuss in the second section, claims that any sort of per-play structure would be inherently disruptive are belied by the fact that the Services [redacted][102]

82. Further, as noted above, four of the Services (all but Apple) propose leaving the current rates and structure generally intact, but without the Mechanical Per-Subscriber Prong. In the third section below, I explain how this change would be disruptive to the Copyright Owners because the Mechanical Per-Subscriber Prong accounts for a significant share of the royalties paid by Standalone Portable Subscription (S3) services, which account for [redacted] of Subpart B and C mechanical royalties (which presumably accounts for the Services' proposal to eliminate it).[103]

A. The Evidence Shows the Interactive Streaming Services Market is Earning Economic Profits and Growing Rapidly

83. The strongest evidence that the Services are earning positive returns lies in the fact – as detailed in my Direct Report and reiterated above – that entry is occurring. Indeed, few propositions are as widely accepted in modern microeconomics than the fact that entry occurs in response to the possibility of earning economic returns.[104] Dr. Marx has written, for example, that

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[102] The Leonard Report contends: "A change to the structure of the royalties under the compulsory license, e.g., a shift from the current percentage of revenue with per-subscriber minimums to per-stream royalty rates, likely would also cause substantial disruption to streaming services." (Leonard Report ¶124). The Katz Report notes that he is "unaware of any change in industry conditions since the 2012 Settlement was reached indicating that abandoning this approach is warranted. Indeed, imposing a new rate structure would run counter to the 801(b)(1) objective of minimizing disruption." (Katz Report ¶10). Similarly, the Marx Report argues: "Economic theory indicates that the most favorable rate structure for maximizing the efficiency of music distribution is a fee determined by a percentage of revenue rather than the number of subscribers or the number of streams." (Marx Report ¶16).

[103] Direct Report Table 10.

[104] Direct Report ¶53.

"Entrants are lured to a product market by the possibility of above-normal profits,"[105] while Dr. Katz, in his microeconomics textbook, wrote that:

> When entry is free and the price is greater than minimum average cost, a firm can earn positive profit by entering the market. The possibility of earning positive profit attracts new firms to enter the industry, increasing the market quantity supplied ever more.[106]

84. The Service Experts largely ignore the implications of ongoing entry into the interactive streaming market, relying, instead, on the purported failure of the Services to consistently earn accounting profits.[107] Yet, it is well understood that accounting profits are, at best, an unreliable indicator of economic profits, especially in markets – like the interactive streaming market – with significant economies of scale and scope or network effects.[108] Rather, economists tend to look at the conduct of industry participants, including investors, as well as actual and potential entrants, to assess an industry's current and future prospects.

85. Publicly available documents, plus documents and data produced in discovery in this proceeding, demonstrate that market participants believe that the interactive streaming business is earning economic profits and will continue to do so in the future.

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[105] Robert C. Marshall & Leslie M. Marx, *The Economics of Collusion: Cartels and Bidding Rings* (MIT Press, 2012) at 150.

[106] Michael L. Katz & Harvey S. Rosen, *Microeconomics*, 3rd Ed. (McGraw-Hill, 1998) at 337 (hereafter, "Katz and Rosen").

[107] *See, e.g.*, Katz Report ¶¶58-65. *See also* Leonard Report ¶¶98-102.

[108] *See* Katz and Rosen at 200 ("While the notion of economic profit is fairly intuitive, we have to be very careful about measuring it."). *See also* Expert Report of Mark Rysman, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016); and Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *The American Economic Review* 73(1) (Mar. 1983) 82-97.

86. For example, Pandora said, [redacted],[109] and in December 2016, Pandora publicly announced it would enter the interactive streaming market in Q1 2017 with its "Pandora Premium" product.[110] Similarly, in a [redacted] Spotify admitted that [redacted][111] Spotify represented that [redacted].[112]

87. The recent investment by Sprint in music streaming service Tidal is another indicator of the long-term health of the interactive streaming industry. Specifically, on January 23, 2017, Sprint and Tidal announced that Sprint is purchasing a 33 percent ownership interest in Tidal and will make Tidal and its exclusive content available to 45 million Sprint mobile customers.[113] Sprint is reported to have paid $200 million for its one-third ownership interest and to have agreed to provide $75 million annually to a dedicated artist marketing fund.[114] The $200 million price for a one-third interest in Tidal implies a valuation of Tidal of $600 million-- a ten-

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[109] *See* **CO EX. R-69**, [redacted], PAN_CRB115_00050293-50362, at 50320.

[110] *See* **CO EX. R-70**, Andrew Flanagan, *Pandora Reveals Its Spotify Competitor, Pandora Premium*, Billboard (Dec. 6, 2016), http://www.billboard.com/articles/news/7604144/pandora-premium-reveal-spotify-competitor-streaming.

[111] **CO EX. R-71**, [redacted], SPOTCRB0005676-5702, at 5702.

[112] *Id.*

[113] **CO EX. R-72**, *Sprint Acquires 33 Percent of TIDAL and Creates Game-Changing Partnership*, Sprint (Jan. 23, 2017), http://newsroom.sprint.com/news-releases/sprint-acquires-33-percent-of-tidal-and-creates-game-changing-partnership.htm.

[114] *See also* **CO EX. R-73**, Dan Rys, *Sprint Purchases 33 Percent Stake in Tidal*, Billboard (Jan. 23, 2017), http://www.billboard.com/articles/business/7662653/sprint-jay-z-tidal-33-percent-stake-purchase.

fold increase since early 2015 when Jay Z acquired Tidal for $56 million.[115] The deal also highlights the increasingly converged nature of the digital music marketplace, creating the potential for significant synergies between interactive streaming and complementary products, such as mobile phones (Apple and Google), services like Amazon Prime, video content (YouTube Red) and communications services (Sprint).

88. The value of interactive streaming as part of a larger platform of offerings is widely recognized. As Pandora put it in its introductory memorandum:

> Offering its differentiated products across a range of price points will allow Pandora to reach millions of additional consumers *that it could not reach as an exclusively noninteractive service*, and it will create opportunities to upsell, over time, many millions of listeners introduced to Pandora through its radio-style offerings to its premium priced offering.[116]

Pandora President and CFO Michael Herring explained that Pandora views entry into the interactive streaming market as sufficiently important to warrant a "complete redesign of Pandora's service."[117] In short, Pandora and other firms are entering the market for interactive music streaming as a necessary complement to their other offerings and services; they are unlikely

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[115] *See* **CO EX. R-74**, Zack O'Malley Greenburg, *Sprint Invests in Jay Z's Tidal, Paying A Reported $200 Million for 33%*, Forbes (Jan. 23, 2017), http://www.forbes.com/sites/zackomalleygreenburg/2017/01/23/sprint-buys-33-of-jay-zs-tidal-for-a-reported-200-million/#ae846ee1471d.

[116] Pandora Introductory Memorandum at 3 (emphasis added). See also Written Direct Testimony of Christopher Phillips, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016) at 7 (hereafter Phillips Testimony) ("We concluded that the absence of these additional features on Pandora's service was hurting our product and our ability to maximize our appeal to our listener base. This lack of functionality was inhibiting growth in listener hours, contributing to a decline in monthly users, and limiting our ability to attract new customers who wanted this additional functionality.").

[117] Written Direct Testimony of Michael Herring, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016) ¶12 (hereafter, "Herring Testimony").

to be dissuaded from doing so by the need to pay the fair market value of the musical works rights required to do so.

89. Evidence produced by Pandora in this proceeding provides specific support for this conclusion. While Herring states in his written direct testimony that Pandora's decision to enter the interactive streaming market was based on the existing statutory rates and terms remaining in place,[118] the fact that it chose to move forward demonstrates that the expected returns of doing so exceed Pandora's internal "hurdle rate" for capital allocation, and that it was prepared to tolerate the risk that this proceeding would result in higher rates. Internal Pandora documents support both of these propositions. First, a spreadsheet titled [redacted] shows that [redacted][119] Second, its [redacted]

[118] Herring Testimony ¶55 (stating that Pandora's "analyses and its decision to enter the market for on-demand streaming assumed no increase in the current statutory rates for the license at issue in this proceeding."). Pandora also produced documents, some of which I discussed above, showing [redacted]

[119] *See* **CO EX. R-75**, [redacted], PAN_CRB115_00091858.

FIGURE 2:
PANDORA COST REDUCTION STRATEGIES FOR "T-3" INTERACTIVE SERVICE[122]

90. In my opinion, this evidence demonstrates that Pandora [123]

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[120] *See* **CO EX. R-76**, , PAN_CRB115_00051038-51061 at 51049, 51059-51060.

[121] A recent internal Pandora strategy document . *See* **CO EX. R-198**, PAN_CRB115_00102666-102757 at 102702.

[122] **CO EX. R-76**, PAN_CRB115_00051038-51061, at 51049.

[123] To be clear, I understand that Pandora has not yet launched its "T-3" service, and it may well choose not to do so, although Mr. Herring testified at his deposition that

B. The Interactive Streaming Services Business Has Multiple Opportunities to Grow and Increase Profitability

91. The impact of the Section 115 rates and terms on the interactive streaming business must also be assessed in the context of the ability of the services to more efficiently monetize streaming music, especially on mobile platforms and through the growing use of programmatic advertising. The Interactive Advertising Bureau (IAB) defines programmatic advertising as "the process of buying and selling media in an automated fashion. This includes four main types of transactions – open auctions, invitation-only/private auctions, unreserved fixed rate/preferred deals, and automated guaranteed/programmatic guaranteed deals."[124] Press and reports from industry participants, as well as industry experts, confirm the growing importance of mobile and programmatic advertising to the music streaming industry. For example, in a recent music industry analyst report, Goldman Sachs states:

> We believe ad-funded streaming (on YouTube, Pandora, Spotify, etc.) will become increasingly relevant and appealing for advertisers *given the exponential growth in online audio and video consumption especially on mobile devices, the ability to better target and interact with consumers, and the opportunity to do so by leveraging programmatic advertising technologies.*[125]

92. Streaming services have begun to use programmatic advertising and deploy private programmatic advertising platforms in order to increase advertising revenues. For example, Pandora launched its Premium Programmatic platform in June 2015, allowing advertisers to

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[redacted] My point is that the evidence indicates that musical works royalties are not likely to be the determining factor.

[124] **CO EX. R-77**, Carl Kalapesi, *Top 10 Things You Need To Know About Programmatic But Were Too Afraid To Ask*, IAB (Nov. 4, 2014), https://www.iab.com/news/top-10-things-you-need-to-know-about-programmatic/.

[125] **CO EX. R-5**, Lisa Yang et al., *Music in the Air: Stairway to Heaven*, Goldman Sachs (Oct. 4, 2016), (*emphasis added*).

purchase targeted advertising spots on the streaming service.[126] Pandora notes in its 2015 10-K: "We have introduced a programmatic advertising buying solution into the market primarily for national digital display and remnant performance advertising inventory. We intend to continue to invest in our programmatic advertising buying solution in the future."[127] An analyst report by Morgan Stanley notes that [redacted]" is one of Pandora's key value drivers.[128]

93. Pandora's testimony in this proceeding indicates that it continues to break new ground. In his written direct testimony, Chief Product Officer Christopher Phillips details what he calls Pandora's new "intelligent interruption" technology:

[redacted].[129]

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[126] **CO EX. R-78**, *Pandora's Premium Programmatic Solution Offers Brands a Quality Environment*, Pandora (June 16, 2015), http://pandoraforbrands.com/insight/premium-programmatic/.

[127] **CO EX. R-79**, Form 10-K for the fiscal year ended Dec. 31, 2015, Pandora Media, Inc., at 6, https://www.sec.gov/Archives/edgar/data/1230276/000123027616000057/p-12312015x10k.htm.

[128] **CO EX. R-80**, [redacted] (AMZN00053459-53485 at 53461).

[129] Written Direct Testimony of Christopher Phillips at 16.

94. While Pandora's claim that these additional revenues will ultimately benefit rightsholders may be encouraging (if not entirely convincing), the more salient point from an economic perspective is that the Services continue to improve their ability to monetize their growing audiences and, thus, to pay the fair market value of musical works rights without trouble, for even their free-to-the-user offerings.

95. Other services are also benefiting from improved advertising technologies. For example, Goldman Sachs states that:

> Going forward, Spotify sees programmatic as a key growth driver for the ad supported business and aims to open up all its audio inventory to programmatic within the next five years (Adage interview). Spotify introduced its programmatic offering in November 2015 and opened up its audio ad inventory for programmatic media buyers by signing a deal with Rubicon Project, App Nexus and the Trade Desk in July 2016. This enables Spotify to sell its ad inventory in near real time through private digital exchanges and in a highly targeted way, based on devices and demographics but also first-party playlist data that reflect the person's interests.[130]

96. As Spotify explained in its July 2016 press release announcing the move:

> We're partnering with three of the largest and most established platforms in the programmatic space – AppNexus, Rubicon Project and The Trade Desk – to give buyers access to over 70 million music fans on Spotify Free… This is available globally across Spotify's 59 markets. Buyers can target audiences by age, gender, genres and playlists – all in real time.[131]

97. In an internal 2016 analysis produced in discovery, [redacted].[132] Documents reflecting the thousands of user data

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[130] **CO EX. R-5**, Lisa Yang et al., *Music in the Air: Stairway to Heaven*, Goldman Sachs (Oct. 4, 2016).

[131] **CO EX. R-81**, *Spotify Launches Programmatic Audio Globally*, Spotify (July 20, 2016), https://brandsnews.spotify.com/us/2016/07/20/spotify-launches-programmatic-audio-globally/.

[132] **CO EX. R-82**, [redacted] (SPOTCRB0001461-1489 at 1480).

fields that are compiled by Spotify and Pandora in connection with their respective advertising businesses speak to the significant programs to increase user targeting and customization.[133]

FIGURE 3:
SPOTIFY ANALYSIS OF BUSINESS CASE FOR COMPETING WITH RADIO FOR ADVERTISING[134]

[redacted]

C. Copyright Owners' Proposed Rate Structure Would Not Be Disruptive

98. Dr. Katz, on behalf of Pandora, argues that the use of a per-play rate, as is part of the Copyright Owners' proposal, would itself violate the 801(b) criteria. In his deposition, Dr. Katz stated that [redacted]"[135]

99. These opinions regarding the effect of a per-play rate are not only unsupported by economic theory, but directly contradict marketplace evidence, especially the fact that, as

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[133] *See, e.g.*, **CO EX. R-200**, SPOTCRB0012341 [redacted].

[134] **CO EX. R-82**, [redacted] (SPOTCRB0001461-1489 at 1480).

[135] Katz Deposition, at 206, 215.

demonstrated in the Amazon sound recording agreements with the record companies, discussed above, and the majority of the other Services' sound recording agreements I reviewed in my Direct Report, the [redacted].[136] A further per-play rate (especially one that is, based on my analysis in my Direct Report, just a fraction of the rate paid to the record companies) would not fundamentally alter the relationship between the cost structure of an "all-you-can-eat" model and the subscription revenues associated with one.

100. Similarly, the Marx Report, on behalf of Spotify, also argues against per-play or per-user royalties, arguing specifically that "flat per-subscriber or per-stream royalties can penalize free-to-user ad-supported services in particular. Those services provide an efficient avenue for expanding listening and generating profits from consumers with low willingness-to-pay ("WTP")."[137] The Marx Report conjectures (but provides no empirical analysis demonstrating) that [redacted][138]

101. For the reasons I have argued above, it is clear that the Services have the capacity to significantly increase revenues from ad-supported services, and also that technological and

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[136] *See* **CO EX. R-13**, [redacted] (AMZN00053865-53869); **CO EX. R-12**, [redacted] (AMZN00001171-1311); **CO EX. R-58**, [redacted] (AMZN00063084-90); **CO EX. R-83**, [redacted] (SPOTCRB0005221-5409); **CO EX. R-84**, [redacted] (SME_PH3_00005402-5574); **CO EX. R-85**, [redacted] (PAN_CRB115_00093953-94048).

[137] Marx Report ¶14.

[138] Marx Report ¶129.

market forces are resulting in the introduction of a variety of new business models, many of which bundle interactive streaming as part of a platform. Further, Spotify's own documents and data demonstrate [redacted]"

102. Advertising revenues are by no means the only benefit to Spotify of its ad-supported service. Spotify Free undoubtedly aids Spotify in its acquisition of new paying customers, each of which represents a stream of profits over time, although if Spotify were to take efforts to further differentiate Spotify Free from its paid subscription service, it might be able to convert a greater number of free users to paid users.

103. The Marx Report also suggests that [redacted], but produces no evidence in support of this proposition.[139] However, to the extent there is some truth to this proposition, the benefits accrue, at least in part, to Spotify's record label investors. Indeed, this incentive likely explains why Spotify, alone among interactive services, continues to offer an unlimited ad-supported option.[140]

104. Finally, while currently Spotify Free is the only unlimited ad-supported interactive streaming service, it is important to note that it is by no means the only source of "free" music on the Internet. Indeed, an internal analysis by Spotify, made available through production in this

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[139] Marx Report ¶129.

[140] Note that if songwriters and publishers were to determine that there are significant anti-piracy (or other) benefits of having an unlimited ad-supported service, they could (like the labels) enter into direct licenses (and/or equity relationships) to support such offerings. There is no economic basis for forced subsidization by rightsholders via the compulsory license.

proceeding, shows that [redacted]. [141]

FIGURE 4:
SPOTIFY ANALYSIS OF MULTI-HOMING BY SPOTIFY FREE USERS[142]

[redacted]

105. Thus, whatever changes Spotify may choose to make in Spotify Free, the ubiquity of legal free music, and the multi-homing behavior of even those consumers who sometimes use Spotify Free, ensure that there will be no material effect – contrary to Dr. Marx' concerns[143] – on the availability of works to the public.

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[141] **CO EX. R-53**, SPOTCRB0007512-7553, at 7536. [redacted]

[142] *Id.*

[143] Marx Report ¶135.

D. The Mechanical Per-Subscriber Prong Is an Important Component of the 2012 Settlement

106. As I have argued above, the use of the 2012 Settlement as a benchmark is fatally flawed for several reasons. Further, the Services' proposals that are based on the use of the 2012 Settlement as a benchmark are flawed for an additional reason, one that the Services are careful to avoid discussing. Google, Spotify and Pandora have all proposed that, while the terms of the 2012 Settlement should largely be rolled over for the 2018-2022 period, they also argue that the Mechanical Per-Subscriber Prong of $0.50 per-subscriber from the 2012 Settlement should not be continued (as well as seeking deductions from "Service Revenue" of up to 15%).

107. The Katz Report argues that "a separate floor on mechanical royalties no longer promotes the statutory objectives"[144] because of the actual or possible risk that public performance royalties may rise, and will cause the Mechanical Per-Subscriber Prong to kick in without there being an "increase in the intrinsic value of performance rights or mechanical rights."[145] Dr. Leonard argues that Google's proposal to eliminate the Mechanical Per-Subscriber Prong would not be disruptive and that Google's Section 115 Direct Licenses with some of the music publishers provide evidence that the statutory mechanical license should be "all in" and cover performance rights, too, because Google's direct deals are "all in," in which case, there is no need for a

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[144] Katz Report ¶87.

[145] Katz Report ¶94; *see also id.* ¶10 ("[T]he marketplace for negotiating musical works public performance rights licenses has become fragmented—and, importantly, threatens to become more so—with: the rise of Global Music Rights, a new Performing Rights Organization ("PRO"); recent efforts by at least some PROs to grant only "fractional" rights; and the threat of withdrawals by publishers from PROs. Based on well-accepted economic principles, the resulting fragmentation can be expected to lead to higher total royalties for performance rights. These higher performance rights royalties would interact with the current mechanical-only royalty floor to boost the effective "all-in" royalty rate above the rates contemplated by the 2012 Settlement.").

Mechanical Per-Subscriber Prong.[146] The Marx Report generally avoids a discussion of Spotify's proposal to eliminate the Mechanical Per-Subscriber Prong, but Dr. Marx does state that "[b]ecause the current statutory royalty formula includes a floor based on the percentage of music label payments, the formula includes downside protection even without the $0.50 minimum."[147]

108. Dr. Katz's opinion that the Mechanical Per-Subscriber Prong risks creating a situation in which payments to publishers do not reflect the "intrinsic value of performance rights or mechanical rights" is predicated on two concerns, neither of which, in my opinion, are warranted. First, Dr. Katz states that "there is no economic rationale for setting [public performance rates and mechanical rates] separately from one another" because they "are perfect complements" from the perspective of an interactive streaming service.[148] Second, Dr. Katz expresses concern that due to "various forms of (unanticipated) fragmentation in the performance rights marketplace" – specifically, a concern that the major performance licensing agencies are "must haves," combined with the prospect of fractional licensing, will lead to increases in the public performance rate – the Mechanical Per-Subscriber Prong will be triggered, and this increase in mechanical payments would not be related to the "intrinsic value of performance or mechanical rights."[149]

109. Dr. Katz's analysis is incorrect for several reasons. First, as I describe in more detail below, the Mechanical Per-Subscriber Prong is already an important part of the current rate

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[146] Leonard Report ¶¶82-83, 121 ("[T]he mechanical rights fee floor would be eliminated given that the division of the all-in rate between mechanical and public performance rights has no economic relevance and that voluntary agreements have negotiated an all-in rate that is fixed and not subject to changes in the public performance marketplace.")

[147] Marx Report n.137.

[148] Katz Report ¶88.

[149] Katz Report ¶¶92-94.

structure and an important determinant of the mechanical rates paid by statutory licensees. There is no "risk" that the Mechanical Per-Subscriber Prong will be triggered; it is already routinely triggered.

110. Second, the concern that the risk of fractional licensing will cause an inappropriate increase in performance rates is simply speculation. Moreover, the rates for public performance rights are not at issue in this proceeding. If the publishers (through the licensing Performing Rights Organizations) and licensees cannot reach mutually agreeable terms, then the proceedings are taken up by the rate courts tasked by government consent decree to assess the appropriate rates. The public performance rates are not before the Judges, and Dr. Katz's speculation about what might happen to such rates in the future has nothing to do with setting mechanical rates in this proceeding. Indeed, this past December, the American Society of Composer, Authors and Publishers ("ASCAP") signed a new directly negotiated, five-year agreement with the Radio Music License Committee ("RMLC") that covers terrestrial radio broadcasts, as well as certain digital transmissions.[150] Under the new deal, according to public reports, the royalty rate increases from 1.7 percent of gross revenue (less some deductions) to 1.73 percent and up to 1.75 percent by the end of the deal.[151] Given both the background of a rate court, and the fact that both sides agreed to this deal, there is no reason to believe that the modest increase is unrelated to the intrinsic value of the publishing rights.

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[150] **CO EX. R-189**, *ASCAP and the Radio Music License Committee Announce New Agreement* (Dec. 15, 2016), http://www.radiomlc.org/pages/4795848.php.

[151] **CO EX. R-194**, Ed Christman, *ASCAP and Radio Group's 5-Year Pact Doesn't Address the Elephant in the Room*, Billboard (Jan. 3, 2017), http://www.billboard.com/articles/business/7640666/ascap-rmlc-radio-licensing-agreement-analysis.

111. Third, Dr. Katz is wrong to assert that there is no way to separately value the mechanical right from the public performance rights. In fact, the Mechanical Per-Subscriber Prong, rather than being a threat to lead to high rates that do not reflect the value of the rights, serves to ensure that the value of the mechanical rights – the rights at issue in this proceeding – are protected and do not drop below a threshold amount. Dr. Katz is simply wrong to dismiss this argument by asserting that there is no reasonable basis on which to separately value the mechanical and performance rights.

112. First, and most obviously, when the current rates were first determined, the parties were able to mutually agree that, independent of the public performance rate, the mechanical rate was worth at least $0.50 per subscriber per month. Second, the fact that two inputs (here, mechanical and public performance rights) are required for each stream does not mean that there is no mechanism by which to assess their values independently. In particular, public performance rights are valued independently of mechanical rights, as demonstrated by many determinations and agreements, include the ASCAP-RMCL agreement cited above. Dr. Katz, himself, focuses on a mechanical-only valuation of musical works rates (the Subpart A penny rate) in his expert report.[152]

113. Dr. Katz errs because he ignores the fact that interactive streaming services have chosen to enter a business in which the rights are used in fixed proportions; it is not inherent in the rights themselves. The question of what the mechanical right is worth is a question that can be addressed with common economic tools, by assessing the additional value that the adoption of the mechanical right for streaming brings to the business. Indeed, in my Direct Report, I did just that,

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[152] Katz Report, Section V.B.

focusing on the additional amounts that interactive streaming services paid for sound recording rights above what it would have cost them to use only a public performance right for sound recordings as a non-interactive service. This difference is the value of the mechanical right for an interactive service.[153]

114. Finally, as I briefly mentioned above, Dr. Katz and the other Services' experts' assessments of the removal of the Mechanical Per-Subscriber Prong ignore the simple fact that payments made by interactive streaming services under the 2012 Settlement for portable subscription services are currently often determined by the Mechanical Per-Subscriber Prong, and this Prong accounts for a significant portion of royalties paid.

115. To demonstrate the impact of this component of the Services' "all-in" proposals – and putting aside, for the sake of argument, the flaws I detailed above in relying on the 2012 Settlement as a benchmark for determining a rate structure going forward – the table below shows how mechanical payments would have changed in 2015 for services paying under the "Standalone Portable Mixed Use" terms.[154] The current rate structure for calculating mechanical royalties each month is complex, and has been described elsewhere.[155] As can be seen in Table 4, in 2015, services operating under this structure paid a total of [redacted] in mechanical royalties. After calculating the All-In Royalty Pool, mechanical royalties due are calculated by taking the greater

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[153] Direct Report, Section V. As described therein, I then adjusted that mechanical right for sound recordings to account for the market's assessment of the difference in value between sound recording rights and musical works rights. It is commonplace for firms that use inputs in fixed proportions to purchase them separately. For example, bakeries do not pay a single price for butter and flour, nor is there any economic basis for them to do so.

[154] The data I have relied upon include Harry Fox Agency ("HFA") data on payments under this tier (primarily composed of payments from Spotify and Rhapsody) as well as data from Music Reports, Inc. ("MRI") for Deezer payments under this tier.

[155] *See, for example*, Direct Report, Figure 1.

of (A) the All-In Royalty Pool minus total Performance Royalties and (B) the $0.50 Mechanical Per-Subscriber Prong. Of the 152 service-months in the data,[156] the Mechanical Per-Subscriber Prong was the binding, "greater of," total in 66 months. That is, in those 66 service-months, if the Mechanical Per-Subscriber Prong did not exist, the mechanical royalties due would have been lower. As shown below, if the Mechanical Per-Subscriber Prong had been removed, total royalties would have only been [redacted] The same calculation, restricted only to Spotify's primary service, shows that Spotify paid a total of [redacted] in 2015, which would have been reduced to [redacted], absent the Mechanical Per-Subscriber Prong.

TABLE 4:
EFFECT OF REMOVING THE MECHANICAL PER-SUBSCRIBER PRONG FOR STANDALONE PORTABLE MIXED USE (2015)

[redacted]

116. Thus, the inclusion of this prong is substantial in determining the royalties due. If it were not a part of the 2012 Settlement, mechanical payments would have been about [redacted] than the actual royalties, as shown in Table 5 below. Table 5 also shows that the approximately [redacted] of royalties due to the $0.50 Mechanical Per-Subscriber Prong accounts for about [redacted] of total publisher royalties (mechanical plus public performance) under this category in 2015. Restricted just to Spotify, the Mechanical Per-Subscriber Prong

[156] A service-month represents one service paying royalties in one month, for example, Spotify in January 2015 is one service-month, and Rhapsody in July 2015 is another service-month.

accounts for about [redacted] of Spotify's mechanical royalties, and about [redacted] of its total publisher royalties.

TABLE 5:
PERCENTAGE CHANGE IN STANDALONE PORTABLE MIXED USE ROYALTY PAYMENTS WITHOUT MECHANICAL PER-SUB PRONG (2015)

[redacted]

117. However, while this tier is important for publishers, it is less so to the Services. As a fraction of total royalty payments to music publishers and songwriters, the [redacted] of mechanical royalties from the $0.50 Mechanical Per-Subscriber Prong represents only about [redacted] of the cost to the Services of licensing rights to the tracks they streamed in 2015, and the [redacted] from Spotify represents only [redacted] of Spotify's total licensing costs. Simply put, in the context of the payments to labels for the sound recording rights, the Mechanical Per-Subscriber Prong (as well as the $1.06 per-user per month in NMPA's proposal) is relatively small. Indeed, as I calculated in my Direct Report, the average royalty paid to record labels by interactive services in 2015 was around [redacted] per user month in 2015 in the "Standalone Portable Mixed Use" tier.[157]

V. SUMMARY OF CONCLUSIONS

118. As I have described throughout this report, the testimony and reports put forward by the Services with respect to the appropriate benchmark(s) are faulty and unreliable. In

[157] Direct Report, Table 15.

particular, the benchmarks upon which the Services' Experts rely are flawed because there have been dramatic changes in the digital music marketplace since the time they were struck, they were negotiated under the shadow of the statutory license and, therefore, do not reflect what would happen in a free market negotiation and, in the case of the Subpart A penny rate benchmarks, the experts present no reliable methodology for adjusting the penny rate to take into account the difference in value between ownership and access. Further, the Services and the Service Experts misinterpret and misapply the Section 801(b)(1) policy objective concerning industry disruption, leading to an assessment of how the rates and terms proposed by the Copyright Owners would affect the interactive streaming marketplace that is contrary to both empirical evidence and economic theory.

119. Ultimately, nothing I have reviewed in the testimony and reports submitted by other participants in this proceeding has caused me to change the opinion I expressed in my Direct Report that Copyright Owners' proposed terms for Section 115 statutory mechanical rates and terms for interactive streaming and limited downloads are reasonable and consistent with the requirements set forth in Section 801(b)(1) of the Copyright Act.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: February 13, 2017

Jeffrey Eisenach

APPENDIX A

Materials Reviewed by Jeffrey A. Eisenach, Ph.D.

Academic Books and Journal Articles

Michael L. Katz & Harvey S. Rosen, *Microeconomics*, 3rd Ed. (McGraw-Hill, 1998).

Robert C. Marshall & Leslie M. Marx, *The Economics of Collusion: Cartels and Bidding Rings* (MIT Press, 2012).

Restricted Documents

CO EX. R-13, [redacted] (AMZN00053865 – AMZN00053869).

CO EX. R-12, [redacted] (AMZN00001171 – AMZN00001311).

CO EX. R-58, [redacted] (AMZN00063084 – AMZN00063090).

CO EX. R-59, [redacted] (AMZN00004685 – AMZN00004778).

CO EX. R-61, [redacted] (AMZN00004779 – AMZN00004914).

CO EX. R-60, [redacted] (AMZN00004915 – AMZN00004980).

CO EX. R-83, [redacted] (SPOTCRB0005221 – SPOTCRB0005409).

CO EX. R-84, [redacted] (SME_PH3_00005402 – SME_PH3_00005574).

CO EX. R-85, [redacted] (PAN_CRB115_00093953 – PAN_CRB115_00094048).

Amazon Digital Services LLC's Proposed Rates and Terms, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Amended Expert Report of Gregory Leonard, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Jan. 25, 2017).

Apple Inc. Proposed Rates and Terms, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Expert Report of Glenn Hubbard, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Expert Report of Jui Ramaprasad, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Expert Report of Leslie Marx, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Expert Report of Mark Rysman, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Expert Report of Michael Katz, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Google Inc.'s Proposed Terms, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Introductory Memorandum to the Written Direct Statement of Amazon Digital Services LLC, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Introductory Memorandum to the Written Direct Statement of Pandora Media, Inc., In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Introductory Memorandum to the Written Direct Statement of Spotify USA Inc., In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

CO EX. R-51, John Blackedge et al., "Music Industry Poised to Get Its Groove Back," Cowen and Company (Jun. 29, 2016) (SPOTCRB0011316 – SPOTCRB0011365).

Proposed Rates and Terms of Pandora Media, Inc., In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Proposed Rates and Terms of Spotify USA Inc., In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

Restricted Videotaped Deposition of Gregory Leonard, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Feb. 2, 2017).

Restricted Videotaped Deposition of Michael Katz, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Jan. 12, 2017).

Restricted Videotaped Deposition of Zahavah Levine, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (January 26, 2017).

Restricted Videotaped Deposition of Leslie Marx, In the Matter of Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Jan. 20, 2017).

Written Direct Statement of Amazon Digital Services LLC, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Written Direct Testimony of Christopher Phillips, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Written Direct Testimony of Michael Herring, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Written Direct Testimony of Will Page, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

Written Direct Testimony of Zahavah Levine, In the Matter of: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Nov. 1, 2016).

CO EX. R-80, [redacted] (AMZN00053459 – AMZN00053485).

CO EX. R-24, AMZ00053095 – AMZ00053106.

CO EX. R-5, [redacted] (SPOTCRB0011512-11596).

CO EX. R-69, PAN_CRB115_00050293 – PAN_CRB115_00050362.

CO EX. R-76, PAN_CRB115_00051038 – PAN_CRB115_00051061.

CO EX. R-53, SPOTCRB0007512 – SPOTCRB0007553.

CO EX. R-82, [redacted] (SPOTCRB0001461 – SPOTCRB0001489).

CO EX. R-198 PAN_CRB115_00102666 – PAN_CRB115_00102757.

CO EX. R-71, SPOTCRB0005676 – SPOTCRB0005702.

CO EX. R-197. PAN_00024185.

CO EX. R-199, SPOTCRB0007869-7873.

<u>Restricted Data</u>

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KOBALT00001680	[redacted]
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HFA00000001	[redacted]
CO EX. R-75, PAN_CRB115_00091858	[redacted]
CO EX. R-200, SPOTCRB0012341	

Public Data

RIAA U.S. Sales Database, RIAA, https://www.riaa.com/u-s-sales-database/.

Consumer Price Index - All Urban Consumers (Series ID CUUR0000SA0), BLS, https://www.bls.gov/cpi/#data.

Legal

17 U.S.C. 101, 801(b)(7)(A).

37 C.F.R. 385.11, 385.21.

Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords, Docket No. 2011-3 CRB Phonorecords II, 78 Fed. Reg. 67,939 (Nov. 13, 2013).

Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2006-1 CRB DSTRA, 73 Fed. Reg. 4,092 (Jan. 24, 2008).

Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, 78 Fed. Reg. 23,058 (decided Apr. 17, 2013).

Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR, (May 2, 2016).

Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA, 74 Fed. Reg. 4,514 (Jan. 26, 2009).

Library of Congress, Copyright Office, Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022), 81 Fed. Reg. 48,371 (Jul. 25, 2016).

Library of Congress, Copyright Office, Mechanical and Digital Phonorecord Delivery Rate Adjustment Proceeding, Docket No. 96-4 CARP DPRA, Federal Register 63:30 (Feb. 13, 1998) 7288-7289.

Motion to Adopt Settlement Industry-Wide, In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022) (Oct. 28, 2016).

Industry Reports

CO EX. R-8, Joshua P. Friedlander, News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics, RIAA, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

News and Journal Articles

CO EX. R-201, Mike Flacy, *Unlimited listening on Spotify will vanish for U.S. early adopters next week*, Digital Trends (Jan. 6, 2012), http://www.digitaltrends.com/music/unlimited-listening-on-spotify-will-vanish-for-u-s-early-adopters-next-week/.

CO EX. R-70, Andrew Flanagan, *Pandora Reveals Its Spotify Competitor, Pandora Premium*, Billboard (Dec. 6, 2016), http://www.billboard.com/articles/news/7604144/pandora-premium-reveal-spotify-competitor-streaming.

CO EX. R-196, Peter Kafka, *Here's why the music labels are furious at YouTube. Again.*, Recode (Apr. 11, 2016), http://www.recode.net/2016/4/11/11586030/youtube-google-dmca-riaa-cary-sherman.

CO EX. R-77, Carl Kalapesi, *Top 10 Things You Need To Know About Programmatic But Were Too Afraid To Ask*, IAB (Nov. 4, 2014), https://www.iab.com/news/top-10-things-you-need-to-know-about-programmatic/.

CO EX. R-67, Steve Knopper, *The New Economics of the Music Industry*, Rolling Stone (Oct. 25, 2011), http://www.rollingstone.com/music/news/the-new-economics-of-the-music-industry-20111025.

CO EX. R-73, Dan Rys, *Sprint Purchases 33 Percent Stake in Tidal*, Billboard (Jan. 23, 2017), http://www.billboard.com/articles/business/7662653/sprint-jay-z-tidal-33-percent-stake-purchase.

David R. Strickler, *Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis*, Review of Economic Research on Copyright Issues 12(1/2) (2015) 1-15.

CO EX. R-39, Douglas MacMillan, Matt Jarzemsky and Maureen Farrell, "Spotify Raises $1 Billion in Debt Financing," Wall Street Journal (Mar, 29, 2016), *available at* https://www.wsj.com/articles/spotify-raises-1-billion-in-debt-financing-1459284467 (last accessed Feb. 13, 2017).

CO EX. R-194, Ed Christman, *ASCAP and Radio Group's 5-Year Pact Doesn't Address the Elephant in the Room*, Billboard (Jan. 3, 2017), http://www.billboard.com/articles/business/7640666/ascap-rmlc-radio-licensing-agreement-analysis.

Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *The American Economic Review* 73(1) (Mar. 1983) 82-97.

CO EX. R-52, Frederik Tibau, "How Spotify CEO Daniel Ek Failed His Way to Success," Startups.be (Dec. 15, 2016), https://startups.be/blog/post/how-spotify-ceo-daniel-ek-failed-his-way-success.

Ian Steedman, *Reservation Price and Reservation Demand*, The New Palgrave: A Dictionary of Economics (John Eatwell, Murray Milgate & Peter Newman, eds., 1st ed., Palgrave Macmillan, 1987).

J. Gregory Sidak, *Bargaining Power and Patent Damages*, Stanford Technology Law Review 19 (2015) 1-31.

CO EX. R-66, Jennifer Van Grove, *Embrace the Mushy Mush! Hulu's 2012 Numbers Are a Mixed Bag*, Venture Beat (Dec. 17, 2012), http://venturebeat.com/2012/12/17/hulu-2012/

CO EX. R-68, Loren Shokes, *Interview with Spotify General Counsel Horatio Gutierrez*, Harvard Journal on Sports & Entertainment Law (Dec. 19, 2016), http://harvardjsel.com/2016/12/interview-with-spotify-general-counsel-horacio-gutierrez/.

CO EX. R-50, "Spotify – Growth Is Accelerating," GP. Bullhound (Sep. 2016), *available at* http://tech.eu/wp-content/uploads/2016/09/GP-Bullhound-Spotify-Update-Sept-2016.pdf (last accessed Feb. 13, 2017).

CO EX. R-73, Zack O'Malley Greenburg, *Sprint Invests in Jay Z's Tidal, Paying A Reported $200 Million for 33%*, Forbes (Jan. 23, 2017), http://www.forbes.com/sites/zackomalleygreenburg/2017/01/23/ sprint-buys-33-of-jay-zs-tidal-for-a-reported-200-million/#ae846ee1471d.

CO EX. R-195, Michael Simon, *Google Merges YouTube, Play Music teams as it looks to create a streamlined experience*, PC World (Feb. 9, 2017), http://www.pcworld.com/article/3168317/android/google-merges-youtube-play-music-teams-as-it-looks-to-create-a-streamlined-experience.html.

Financial

CO EX. R-65, Form 10-K for the fiscal year ended Dec. 31, 2013, Netflix, Inc., https://www.sec.gov/Archives/edgar/data/1065280/000106528014000006/nflx10k2013.htm.

CO EX. R-64, Form 10-K for the fiscal year ended Dec. 31, 2016, Netflix Inc., https://www.sec.gov/Archives/edgar/data/1065280/000162828017000496/nflx201610k.htm.

CO EX. R-79, Form 10-K for the fiscal year ended Dec. 31, 2015, Pandora Media, Inc., https://www.sec.gov/Archives/edgar/data/1230276/000123027616000057/p-12312015x10k.htm.

CO EX. R-49, Pandora Media, Inc. Form 10-Q for the Quarterly Period Ended September 30, 2016, http://investor.pandora.com/Cache/36431006.pdf.

Press Releases

CO EX. R-189, *ASCAP and the Radio Music License Committee Announce New Agreement* (Dec. 15, 2016), http://www.radiomlc.org/pages/4795848.php.

CO EX. R-78, *Pandora's Premium Programmatic Solution Offers Brands a Quality Environment*, Pandora (June 16, 2015), http://pandoraforbrands.com/insight/premium-programmatic/.

CO EX. R-162 Spotify, *Announcing continued unlimited free listening!,* Spotify (Mar. 29, 2012), https://news.spotify.com/us/2012/03/29/announcing-continued-unlimited-free-listening/.

CO EX. R-81, *Spotify Launches Programmatic Audio Globally*, Spotify (July 20, 2016), https://brandsnews.spotify.com/us/2016/07/20/spotify-launches-programmatic-audio-globally/.

CO EX. R-72, *Sprint Acquires 33 Percent of TIDAL and Creates Game-Changing Partnership*, Sprint (Jan. 23, 2017), http://newsroom.sprint.com/news-releases/sprint-acquires-33-percent-of-tidal-and-creates-game-changing-partnership.htm.

Websites

CO EX. R-62, *About Amazon Prime*, https://www.amazon.com/gp/help/customer/display.html?nodeId=200444160.

CO EX. R-57, *Amazon Music Unlimited*, https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/ref=sv_dmusic_0.

CO EX. R-56, *Apple Music*, http://www.apple.com/apple-music/.

CO EX. R-54, *Google Home*, https://store.google.com/product/google_home.

CO EX. R-55, *Learn About Spotify*, http://www.spotify.com/us/.

CO. EX. R-63, *Spotify Explained – How is Spotify contributing to the music business?*, Spotify Artists, https://web.archive.org/web/20161029041706/https://www.spotifyartists.com/spotify-explained/.

Other

U.S. Copyright Office, *Copyright and the Music Marketplace*: *A Report of the Register of Copyrights,* at 30 (Feb. 2015), http://www.copyright.gov/policy/musiclicensingstudy/copyright-and-the-music-marketplace.pdf

Copyright Royalty Judges, *Mechanical License Royalty Rates*, https://www.copyright.gov/licensing/m200a.pdf.

Goldman Sachs

MUSIC IN THE AIR

STAIRWAY TO HEAVEN

Streaming grows up and puts music back on path to growth after decades of disruption

The music industry is on the cusp of a new era of growth after nearly two decades of disruption. The rising popularity and sophistication of streaming platforms like Spotify and Pandora is ushering in a second digital music revolution – one that is creating value rather than destroying it like the piracy and unbundling that came before. In this first of a "double album" on the nascent industry turnaround, we lay out the converging trends that we expect to almost double global music revenues over the next 15 years to $104bn, spreading benefits across the ecosystem.

DOUBLE ALBUM VOL.1

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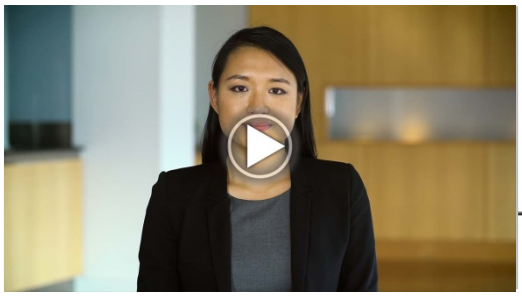
Don't miss Vol. 2: 'Music in the Air: Paint it Black'



In the second of our "double album" on the music industry's return to growth, we assess the risks and scenarios that could derail our thesis. Access the report below and visit our portal to watch a video summary of our thesis.

Vol. 2: Music in the Air – Paint it Black

MUSIC'S RETURN TO GROWTH in numbers

EASY LISTENING

630 million — Audio streams consumed per day by the US population during 1H2016—a 97% yoy jump. (p. 32)

400 — The number of streaming platforms available globally. The US alone boasts 57. (p. 32)

30 million vs. 21,000 — The number of tracks available on Spotify compared to the number of tracks available at a Walmart store. (p. 32)

MILLENNIAL APP-ETITE

4 — Of the 10 most-used apps by Millennials, the number that are music-related. (p. 47)

77% — Proportion of Spotify listeners that are Gen Z/ Millennials. (p. 47)

LISTENING LIVE

24 million / 40%

Average unsold concert tickets in the US per year because of lack of awareness of the events. Streaming sites like Pandora are attempting to use behavioral and geo-targeting to better match ticket supply and demand, which could help recover some of the estimated $2bn in lost revenue. (p. 14)

ROOM TO GROW IN PAY-TO-PLAY

2% — Paid streaming penetration globally as a % of smartphone subscribers. (p. 9)

<50% — Percentage of the DM population that pays to listen to music. According to YouTube, only 20% of people globally have ever paid for music. (p. 31)

+60 million — The growth in paid streaming subscribers globally between 2010 and 2015, bringing the total to 68mn people. Associated revenue grew from $0.3bn to $2.3bn. (p. 39)

THE PAYMENT GAP

0 — Royalty paid by traditional radio to labels and artists in the US. (p. 18)

40% / 4% — Share of music listening on YouTube compared to the share of global recorded music revenue generated by YouTube. (p. 25)

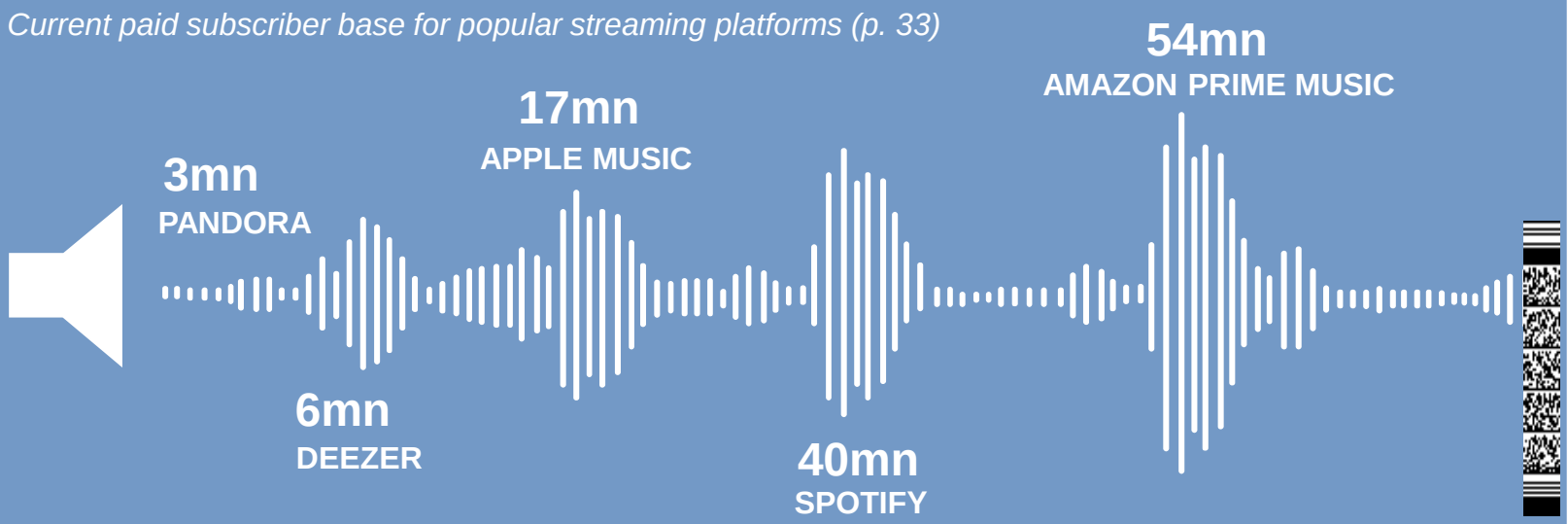
EMERGING MARKETS

90% — Piracy rates in China, India, Mexico, and Brazil, according to IIPA, implying a huge potential for better quality (paid/free) streaming services. (p. 43)

Additional revenue (equivalent to 10% of the global recorded music market) that can be generated with a 1% increase in paid penetration in EMs. (p. 45) **$1.5 billion**

ALL ABOUT THAT BASE

Current paid subscriber base for popular streaming platforms (p. 33)



Stairway to Heaven: Streaming drives new era of growth

We believe new technology changes such as the emergence of internet radio and music streaming are driving a new era of growth for the recorded music industry. New tech enablers such as Spotify, Apple or Pandora have disentangled music content from its delivery. The resulting convenience, accessibility and personalization has driven more consumption of legal music and greater willingness to pay for it, at a time of improving connectivity and growing consumer preference for accessing rather than owning music. Unlike its predecessor, this "second" digital revolution creates more value for rights holders (rather than destroys it), shifting revenue streams from structurally declining markets (physical, download sales) to a significantly larger new revenue pool (ad-funded and subscription streaming). This shift has enabled the recorded music market to return to growth in 2015 following almost two decades of value destruction led by piracy and unbundling.

We believe the overall music industry, including recording, publishing and live, is now set to double to over $100 bn by 2030. In this first of a "double album", we explore the converging trends that make this digital revolution different to and more profitable than the last.

Streaming drives greater monetization of music content…

By revolutionizing the listening experience, making it seamless and personalized, streaming improves the monetization of music content through 1) a range of **subscription streaming options** with multiple price points that address consumers willing to pay for better access and convenience, and 2) **ad-funded, free streaming** that addresses consumers not able or willing to pay (therefore reducing piracy). Moreover, streaming **improves the discoverability of catalogues and increases their value.**

… while benefitting from a growing and captive audience

We see particularly attractive forces supporting streaming growth:

- **Room to grow penetration of subscription services in DMs**, currently at 3%. We see scope to catch up with the Nordics, already at over 20% as user mix continues to evolve favourably towards paid tiers. Globally, we forecast paid streaming to grow to 9% of the smartphone population in 2030 from 2% in 2015.
- **The nascent music markets in EMs**, which stand to benefit from improving recognition of IP, new business models (ad-funded, prepaid, telecom bundles, etc.) and innovative payment capabilities. EMs accounted for just 10% of the global recorded music market in 2015 and the Chinese music market was smaller than that of Sweden.
- **Media consumption habits of Generation Z and Millennials,** who are the ideal audience for streaming given their inherent characteristics of being "digital natives" focused on experience and convenience. Millennials already spend more on music than the average person in the US driven by paid streaming and live music.
- **Further benefit from telecom and tech companies' large marketing budgets and existing customer base** as these players increasingly leverage music content to drive greater differentiation of their services and upselling.

Further upside from regulatory changes

Convoluted rules and regulations dictate the flows of payments from platforms to rights holders, and understanding these intricacies and their evolution is essential. We believe the emergence of new digital distribution models is positive for rights holders given a more attractive royalty structure in the US and see further upside from potential regulatory changes which could reshape future flows of payments from platforms (especially YouTube and on-demand streaming services).

A rising tide lifts (almost) all boats; industry responses will be key

In addition to the structural and regulatory tailwinds highlighted above, we believe industry responses will be critical in shaping the future growth of the industry which has only started to recover. We would expect some level of coordination among labels and platforms to maximize that growth potential. As a result, we believe the split of revenue pools will remain broadly unchanged in the medium term.

- **Subscription streaming services are the enablers and the direct beneficiaries of the above-mentioned shifts.** We also believe they will increasingly leverage their promotion capabilities, user data and customer relationships to drive new revenue streams (e.g. ticketing) and improve their deals with the labels. However, the landscape is more competitive (Pandora and Amazon launch in 2H16) with risk of disruptive behaviour such as exclusivity and price competition. As a result, we believe their distributor's cut will remain at c.30%, leading to $13 bn/$2-2.5 bn of additional revenue/ profit by 2030. We expect the scene to be divided among pure play streaming services such as Spotify and large tech players such as Apple or Amazon.
  Main beneficiaries in our coverage: Apple (Buy), Pandora (CL-Buy).
- We expect **ad-funded services to eat into terrestrial radio** given the ongoing migration to online listening and better targeting capabilities, creating $5 bn of additional revenue by 2030. Future roll-out of connected cars and 5G will further accelerate that shift.
  Main beneficiary in our coverage: Pandora (CL-Buy); main loser: iHeart (Not Covered)
- We believe **the labels have the most to gain given their royalty cut of 55%-60%**. Their position should remain solid as distribution fragments (and they will have a vested interest in keeping a minimum of competitive tension among platforms) and digital increases the complexity of the industry. The outcome of their (re)negotiations with YouTube, Spotify or Amazon in the coming months and regulatory changes will be key in this regard. However, we see disruptive forces, such as alternative labels, driving a greater redistribution of profits to artists. Overall, we forecast that streaming will increase their revenue pool by $21 bn by 2030 and profit pool by $7 bn.
  Main beneficiaries in our coverage: Vivendi (CL-Buy), Sony (CL-Buy).
- **Publishers should see similar trends to labels but to a lesser extent** given their royalty cut of 10% (note that publishers and labels often belong to the same parent company), creating an additional revenue pool of $3 bn and profit pool of $1 bn.
- **Live music growth benefits ticketing and streaming players.** By using geo-specific targeting to known fans, players such as Ticketfly/Pandora and other streaming services should be able to drive down vacancy rates, increasing artist revenues, and improving relationships with artists.
  Main beneficiary in our coverage: Pandora (CL-Buy).

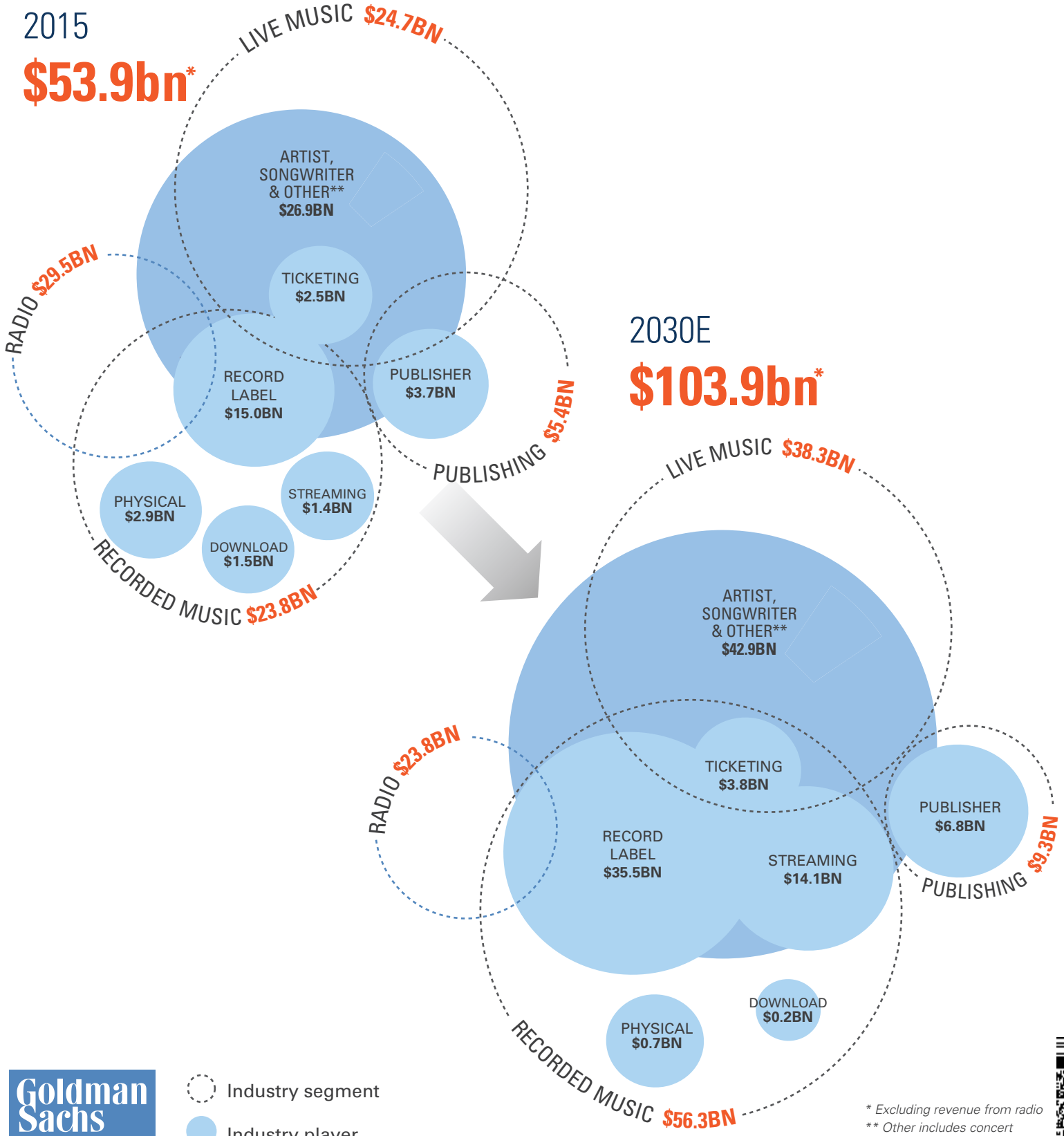
Industry risks: See the second of our double album "Paint It Black"

See the second of our double album: Music in the Air – Paint it Black

While a number of positive structural and regulatory shifts pave the way for better monetisation of music content, industry responses will also be critical in shaping the future growth of the industry. In this first of a "double album", we have assumed some level of coordination among labels and platforms to maximize that growth potential. In the second of our double album, "Paint It Black", we highlight potential disruptive behaviour that could derail the music recovery.

The Ecosystem

Evolution of revenues 2015-2030E



Goldman Sachs

* Excluding revenue from radio
** Other includes concert promoters, venue operators etc.

Source: IFPI, Goldman Sachs Global Investment Research

The Ecosystem

Key players and market shares (2015)

LABEL
Share of global recorded music

Vivendi - UMG (34%)
Sony - SME (23%)
WMG (17%)
Independents (26%)

PUBLISHER
Share of global music publishing

Sony (30%)
Vivendi - UMPG (23%)
WMG (13%)
Independents (34%) incl BMG (5%), Kobalt (4%)

PURCHASE

Physical/Online Retail
Share of US CD sales

Amazon (24%)
Walmart (22%)

Download
Share of US downloads

Apple - iTunes (52%)
Amazon (19%)
Alphabet - Google Play (11%)

STREAM (ACCESS)

Pure Player
Share of global paid subscribers

Napster/Rhapsody (4%)
Tidal (2%)
Spotify (44%)
Deezer (5%)
Pandora (N/A)

Tech Player
Share of global paid subscribers (unless otherwise indicated)

Apple - Apple Music (15%)
Alphabet - YouTube (90% share of ad-funded users)
Amazon (N/A)
Tencent - QQ Music (N/A)

BROADCAST

AM/FM
Share of US radio

iHeartMedia (23%)
CBS Radio (8%)
Cumulus Media (8%)
Entercom Communications Corporation (3%)
Emmis Communications Corporation (c.2%)

Satellite Radio
Share of US satellite radio

Sirius XM (100%)

Online Radio
Share of US online radio

Pandora (31%)
iHeartRadio (9%)

Goldman Sachs

UMG - Universal Music Group
SME - Sony Media Entertainment
WMG - Warner Music Group
UMPG - Universal Music Publishing Group
BMG - Bertelsmann Music Group

Source: Company data, Music & Copyright, IFPI, Goldman Sachs Global Investment Research

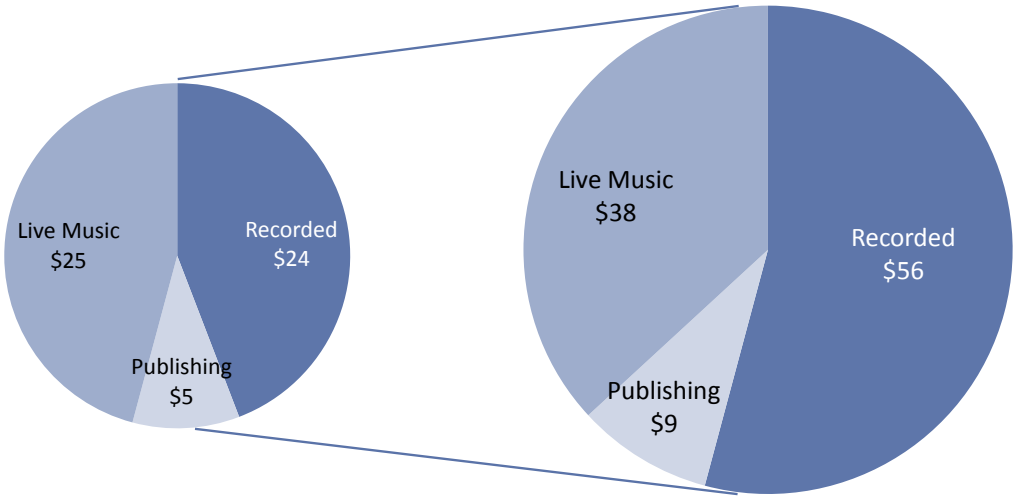
We use the following list of terms interchangeably throughout the report:

- Freemium = ad funded tier = free tier (applicable to streaming services such as Spotify or Deezer but not to Apple Music or Tidal)
- Interactive = on-demand (applicable to streaming services such as Spotify, Deezer, or Apple Music but not to Pandora's ad-supported internet radio service)
- Internet radio = non interactive streaming = webcasting (applicable to Pandora's internet radio service or iHeart but not to Sirius XM's satellite radio)
- Rights owners = labels, artists, publishers and songwriters altogether or any one of them
- Recorded music companies = record labels = labels

Stairway to $50 bn of additional revenue opportunity

We forecast overall music industry (recorded music, music publishing and live music) revenue to almost double in size over the next 15 years to $104 bn from $54 bn in 2015. Of that $50 bn revenue growth potential, we expect $32 bn to come from the recorded music segment, which has only started to recover after almost two decades of decline, while Publishing and Live should continue to show healthy growth and add $4 bn and $14 bn of revenue respectively.

Exhibit 1: $50 bn of additional revenue opportunity mainly driven by recorded
Music industry revenue split in bn, 2015 vs. 2030E

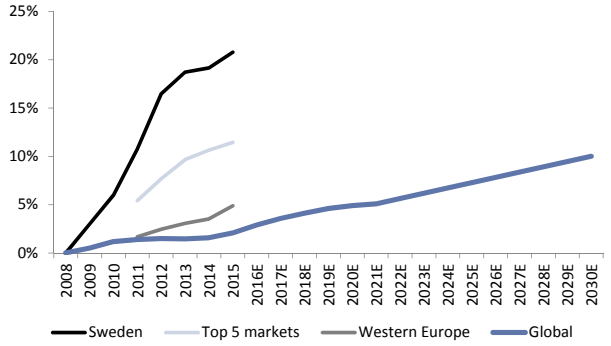


Source: IFPI, Goldman Sachs Global Investment Research.

We assess the size of the total addressable market by looking at the smartphone population, consumer spending on entertainment and the advertising market (in particular radio).

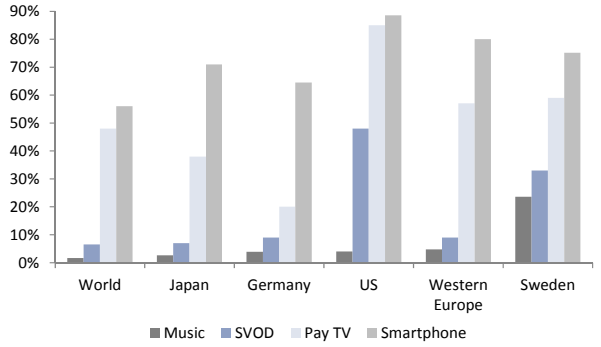
- **We forecast that paid streaming services will reach 9% of the global smartphone population in 2030** from 2% in 2015 by extrapolating the 2015 penetration growth rate of 50 bp. This level would still be below the average penetration for the top five paid streaming markets of 11% in 2015 and less than half the penetration in Sweden and Norway (over 20%), the most advanced markets. By comparison, Pay TV penetration is 48% of TV homes globally and SVOD (subscription video on demand) is 6% of broadband homes (SNL Kagan/ Digital TV Research). In the US, Pay TV and SVOD are in 85% and 48% of eligible homes compared to only 4% for music subscription.

Exhibit 2: We forecast global paid streaming penetration to reach 9% by 2030E, slightly below the top five markets today and less than half of the rate attained in Sweden
Paid streaming penetration as % of smartphone subscribers



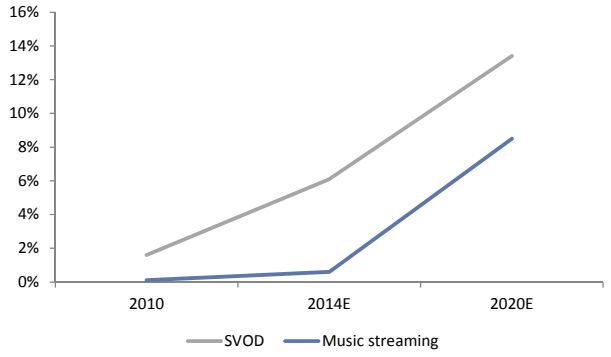
Source: IFPI, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 3: Paid streaming penetration stands at 2% globally compared to 6% for SVOD and 48% for Pay TV
Paid streaming penetration as % of smartphone subscribers, SVOD penetration as % of broadband homes, Pay TV penetration as % of TV homes, Smartphone penetration as % of total population



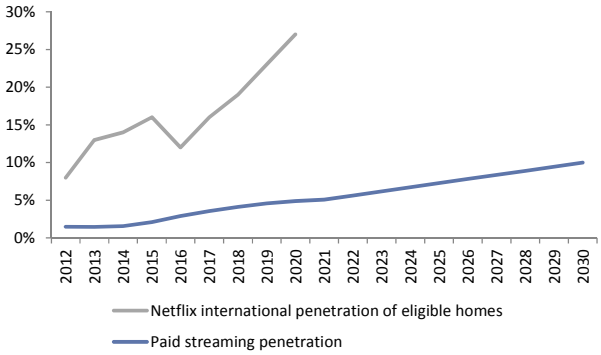
Source: IFPI, Digital TV Research, SNL Kagan, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 4: We expect music streaming to follow the path of SVOD globally
Global paid streaming penetration vs. SVOD penetration



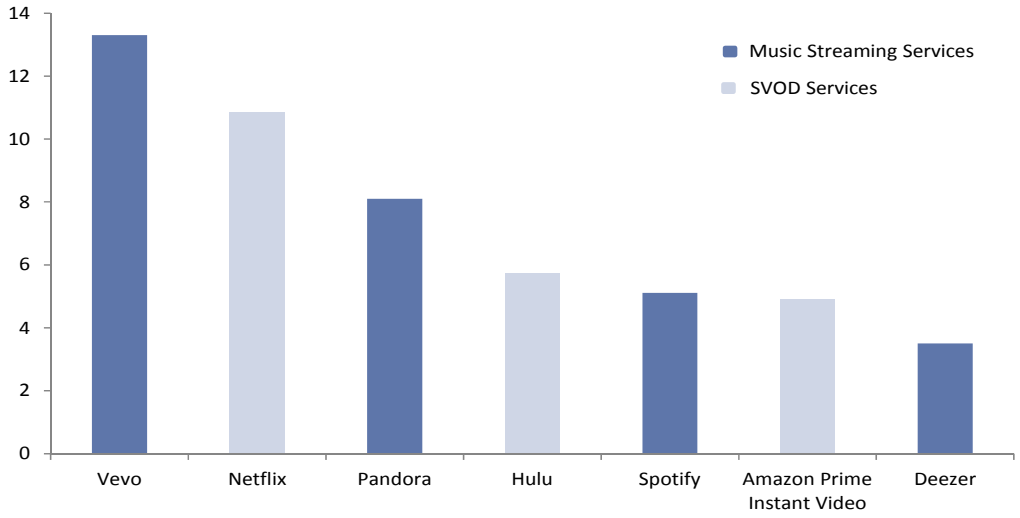
Source: IFPI, Digital TV Research, Goldman Sachs Global Investment Research.

Exhibit 5: Netflix's penetration of eligible homes doubled over three years to 16% in 2015
Global music paid streaming penetration vs. Netflix international penetration of eligible homes



Source: IFPI, Digital TV Research, Company data, Goldman Sachs Global Investment Research.

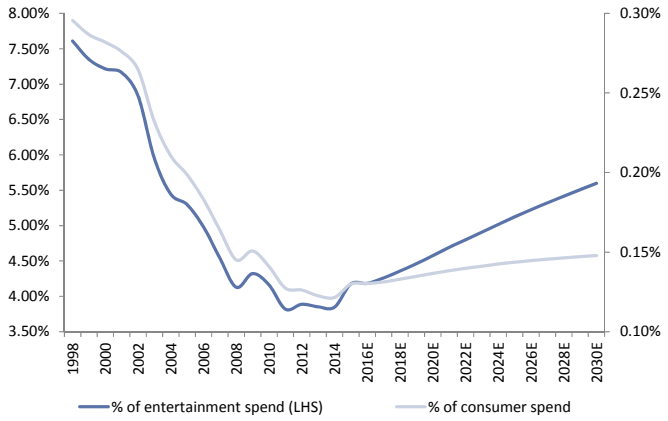
Exhibit 6: Consumption of music streaming services comparable to SVOD
Average weekly hours of streaming



Source: Press reports, Deezer.

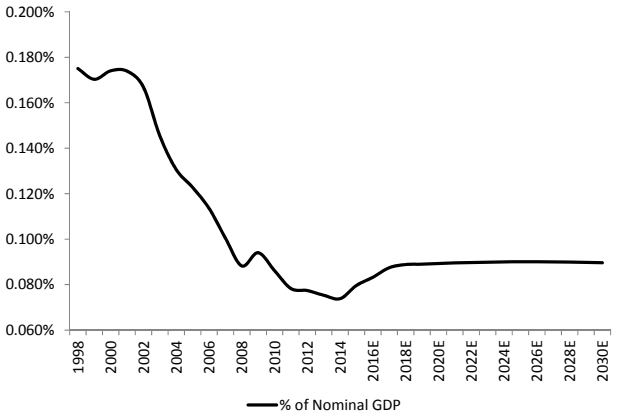
- Overall consumer spend on entertainment amounted to $1.3 tn in 2015 (Euromonitor), with music accounting for 4.2% on our estimates. We forecast that share will rise to 5.6% in 2030, still well below the 7.6% attained in 1998. Based on overall consumer spend, we expect music's share to increase from 0.13% in 2015 to 0.15% in 2030, compared to the 0.30% recorded in 1998.

Exhibit 7: Music revenue as % of entertainment spend and overall consumer spend
Entertainment includes: Recreational and Cultural Services, Newspapers, Magazines, Books and Stationery



Source: Euromonitor, Goldman Sachs Global Investment Research.

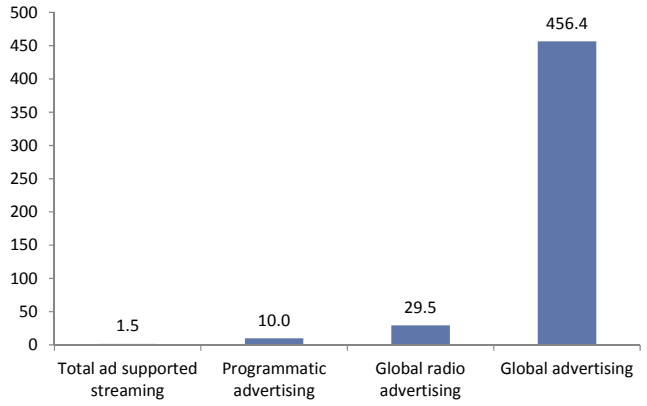
Exhibit 8: We forecast music revenue to remain below 1 pp of global nominal GDP by 2030, less than half the share it had in 1998
Global music revenues as % of global nominal GDP



Source: World Bank, IFPI, Goldman Sachs Global Investment Research.

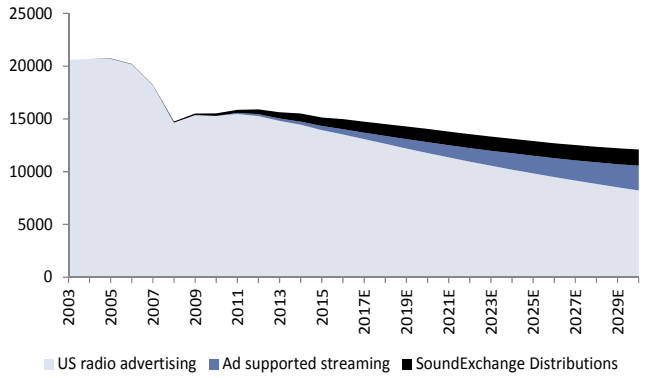
- We forecast the ad funded, streaming market (including payments from YouTube, Pandora, Spotify, etc.) to grow to $7.1 bn by 2030 from $1.5 bn currently. This compares to a global advertising market worth $456 bn and global radio advertising market worth $30 bn in 2015 as per MAGNA Global.

Exhibit 9: The global addressable market for advertising funded streaming is huge
Advertising revenue by category ($ bn)



Source: MAGNA Global, IFPI.

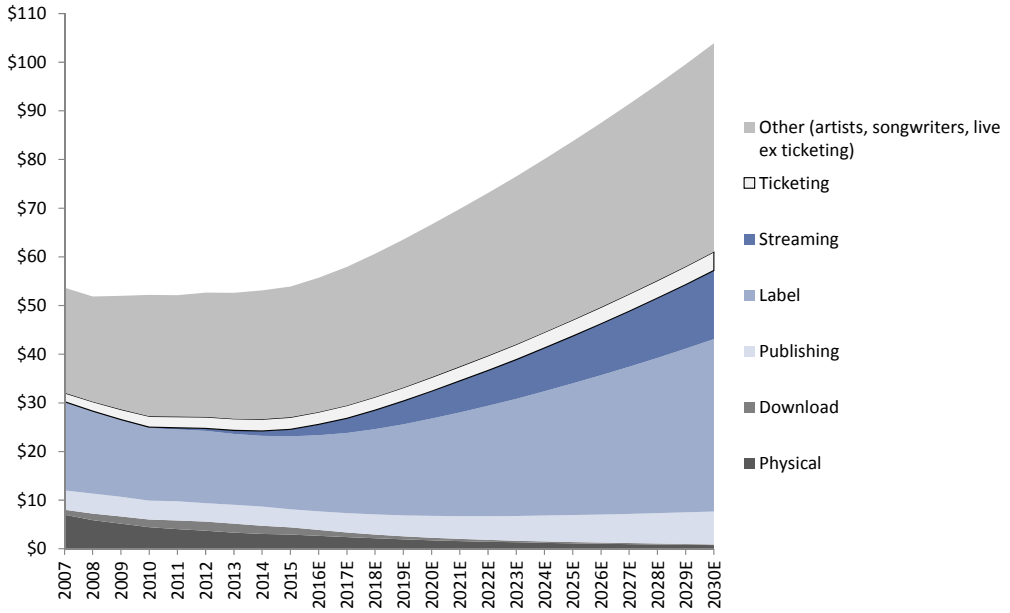
Exhibit 10: We expect digital radio and streaming services to eat into the radio ad market in the US
Advertising revenue by category ($ mn)



Source: MAGNA Global, IFPI, Goldman Sachs Global Investment Research.

Digging into the economics for stakeholders

Exhibit 11: Evolution of revenue pool for the different industry players
Revenues, $ bn

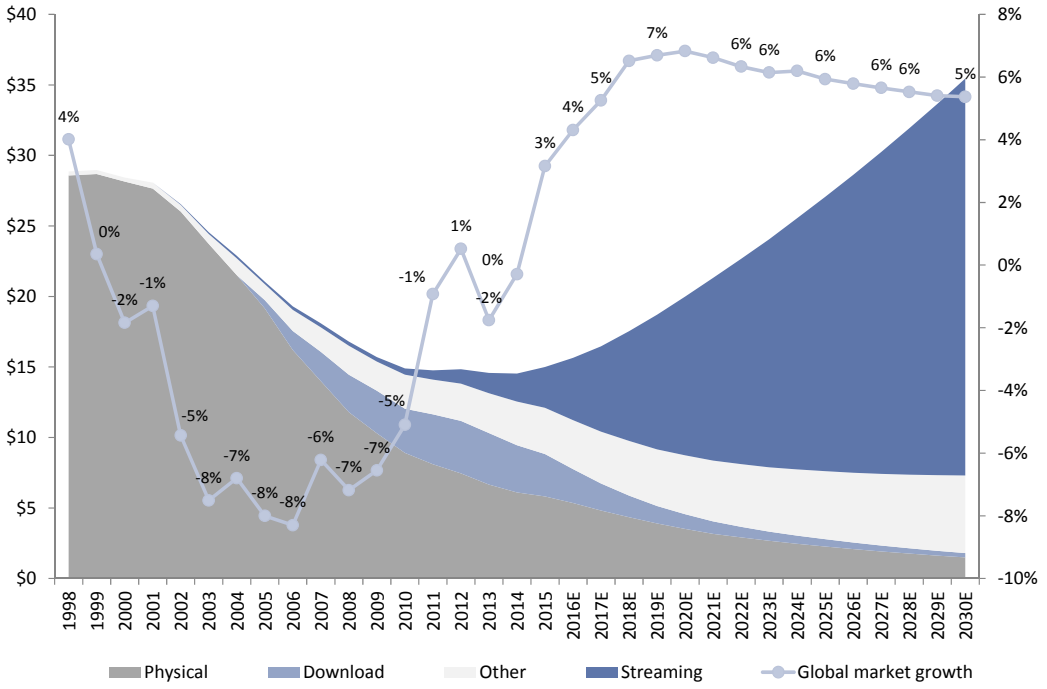


Source: IFPI, PwC, Goldman Sachs Global Investment Research.

We believe the **online innovators** (interactive streaming platforms and ad funded services) will grow to $14 bn of revenue in 2030 from $1.4 bn today, assuming they retain a distributor cut of 30%. With around 70% of their revenues being redistributed to rights owners (71.5%/ 73% in the US/internationally in the case of Apple Music according to Recode) and other COGS accounting for 10%-15%, this gives a gross margin of 15%-20% or $2-2.5 bn of potential gross profit. We assume that pure streaming players (Spotify, Deezer, Pandora, etc.) will account for 37% share of net subscriber additions over 2020-30E, Apple Music 26% and other large tech players (Google, Amazon, etc.) 37%.

For the **incumbent labels**, which receive around 55%-60% of the platforms' revenue as royalties, we forecast their revenue pool to grow to $35.5 bn in 2030 from $15 bn today mainly through streaming. This compares to the current pool at risk of $9 bn from physical and download sales. We believe profit growth could be even more meaningful as we estimate margins are 15% in streaming and download and 8% in physical at present, with the potential for streaming to grow to 20%-25% over time. This means $4-6 bn of additional profit from streaming alone bringing the total pool to $9 bn, compared to the current pool of $2 bn, of which $1 bn is from physical and downloads.

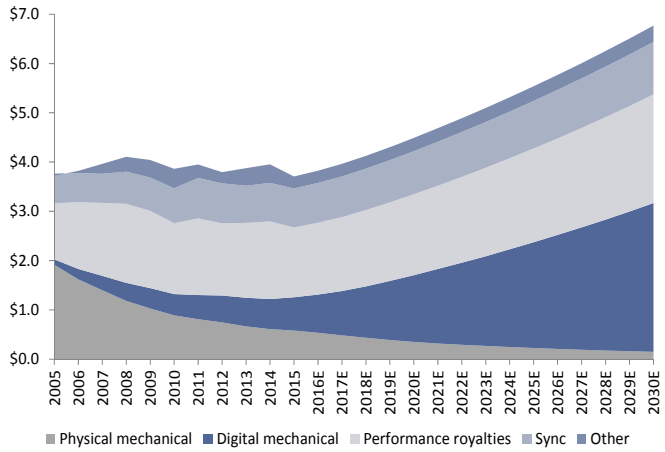
Exhibit 12: Streaming should help drive recorded music back to its 1999 peak by 2027
Global recorded music market breakdown ($ bn, LHS) vs. global music market growth (%, RHS)



Source: IFPI, Goldman Sachs Global Investment Research.

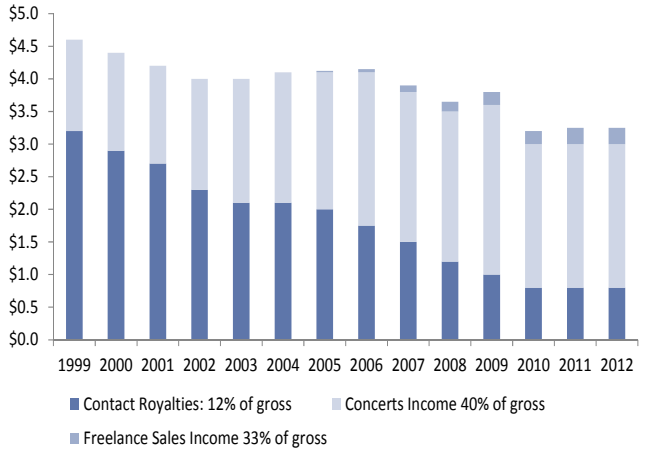
The incumbent publishers, who so far have been more insulated from digital disruption, are also likely to gain as they receive around 10% of the platforms' revenue as mechanical and performance royalties. We forecast their revenue pool to grow to $7 bn in 2030 from $4 bn in 2015, with streaming alone adding $3 bn of revenue. The main pool at risk (i.e. physical mechanical royalties) is currently worth $0.6 bn on our estimates. Assuming margin remains broadly unchanged at 30% as publishers do not benefit from the same margin uplift in streaming as the labels, we forecast profit to double to $2 bn in 2030.

Exhibit 13: Publishing – a $7 bn market by 2030 driven by streaming
Global music publishing market breakdown ($ bn)



Source: IFPI, Company data, Goldman Sachs Global Investment Research.

Exhibit 14: Artists have become increasingly reliant on touring
Sources of artists income ($ bn)



Source: Digital Music News.

For the **live music** segment, which has been the fastest growing area of the music industry, streaming could also bring a significant revenue opportunity by leveraging listening data for the marketing and promotion of live events and the possibility to connect directly with fans, therefore increasing artist revenues and improving relationships with artists. We forecast the market to grow to $38 bn by 2030 from $25 bn of revenue in 2015 according to IFPI (International Federation of the Phonographic Industry). It is estimated that 40% of tickets are currently unsold in the US (Billboard, September 4, 2010) and our analysis of Pollstar data for over 5,000 live events in the United States over the last year shows an average vacancy of 26% (29% for events at venues with fewer than 2,500 seats). Better matching the supply and demand could save up to $2 bn of revenues for the US live industry alone assuming 24 million tickets are unsold every year in the US at an average price of $67.33 (WSJ, December 16, 2010).

Artists and songwriters should benefit from the recovery of the industry through the contract royalties paid by labels/publishers and ongoing growth in live music. While much of the recent focus has been on their income from royalties, we note that recorded music has become a much less important source of revenue at 16% for the top 40 earning artists compared to touring at 80% (this is not applicable to songwriters). Artists are also reported to be earning 12% of gross contract royalties compared to 40% of the gross touring revenue (Digital Music News). We believe that music creators will gain a stronger bargaining position vs. the labels/publishers and the platforms as technology and new disruptors (alternative label/publishers) will allow greater transparency and easier access to users. This will be manifested through higher royalty payments from labels/publishers and greater control over their IP over time. We estimate labels currently invest around 30%-35% of their revenue (net of the publishing cut) in artists & repertoire and this may grow to 40% or more over time. Meanwhile, we also expect publishers' pay away to songwriters to rise to c.55%-60% over time from 50% today.

Regulation sets the stage – streaming positive for rights holders

The music industry is entrenched in a convoluted regulatory environment governing copyrights and royalties and understanding its intricacies and the potential for change is key. Our main focus will be the US, where we see the most upside for rights holders. We believe the migration of listeners to online streaming is positive for labels/artists who enjoy new sources of royalty payments in streaming as opposed to terrestrial radio where they get paid nothing. Based on IFPI data, payments of nearly $3 bn were made to labels by streaming services in 2015 and we expect that amount to increase to $11 bn in 2020 with an average annual growth rate of 30% and to reach $28 bn by 2030 which is double the current recorded music market size. Future regulatory reviews, notably of safe harbour rules applicable to YouTube and of songwriting royalties applicable to interactive streaming services, could drive further redistribution of revenue pools in favour of the rights holders.

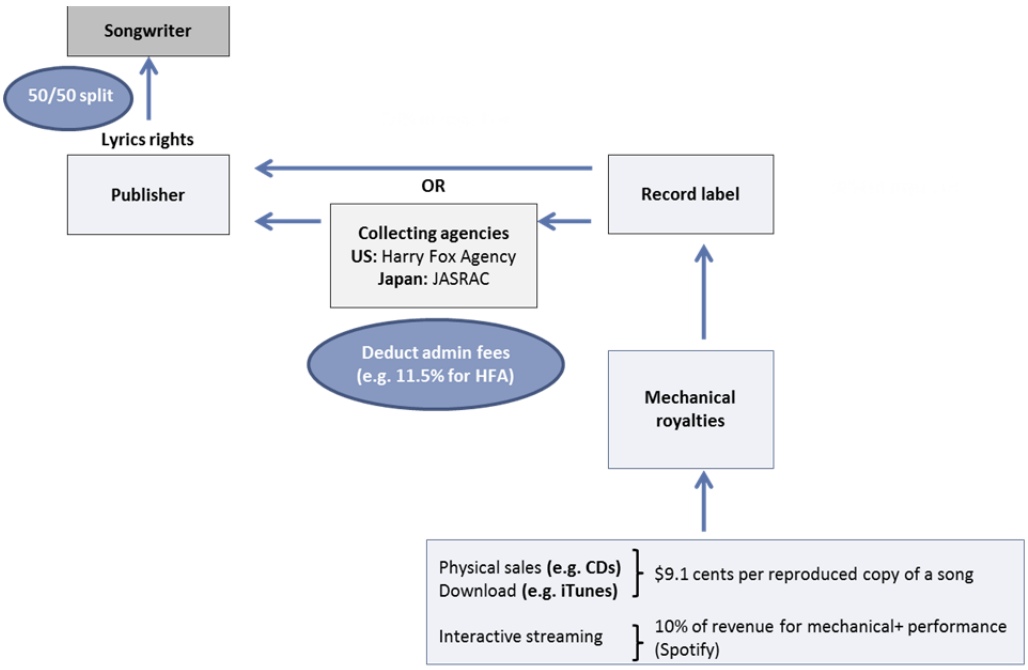
What are royalty payments?

Royalty payments are the method through which all the players involved in the production of a song make money, yet they are extremely convoluted. When thinking about royalties in the music industry, it is important to separate out the different copyrights, and so the right to royalties, owned by different players. **Songwriters** own the rights to the lyrics and melody of a piece of music, and these song copyrights are usually managed by **music publishers** (we will often refer to songwriters/publishers together). **Performance artists** own the rights to a particular recording of a song, known as the master recording, and these master recording rights are usually assigned to **record labels** for management (we will often refer to artists/labels together).

There are distinct types of royalties paid to rights owners. These royalty payments and the way royalty rates are set vary significantly depending on how the song is accessed (AM/FM vs. online radio, physical or digital purchase, streaming).

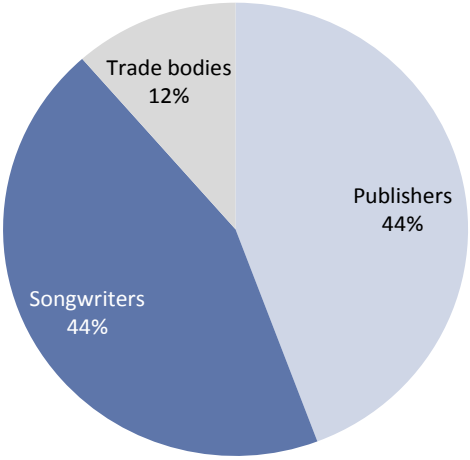
1. **Mechanical royalties** are owed whenever a song is manufactured onto a CD, downloaded on a digital music site, or streamed through a service such as Spotify. These are paid by the record label to the publisher (either directly or through a third party organization such as Harry Fox Agency in the US). The publisher then shares 50% of its royalty with the songwriter. In the US, royalty rates are set by the government through a compulsory license and are 1) either calculated on a penny basis per song for physical/download, or 2) based on a formula for interactive streaming services. Satellite and online radio such as Pandora or Sirius do not pay mechanical royalties to publishers. In most countries outside of the US, royalties are based on percentages of wholesale/consumer prices for physical/digital products respectively and negotiated on an industry-wide basis.

Exhibit 15: How do publishing mechanical royalties work?



Source: Harry Fox Agency, Royalty Exchange, Sound on Sound, Goldman Sachs Global Investment Research.

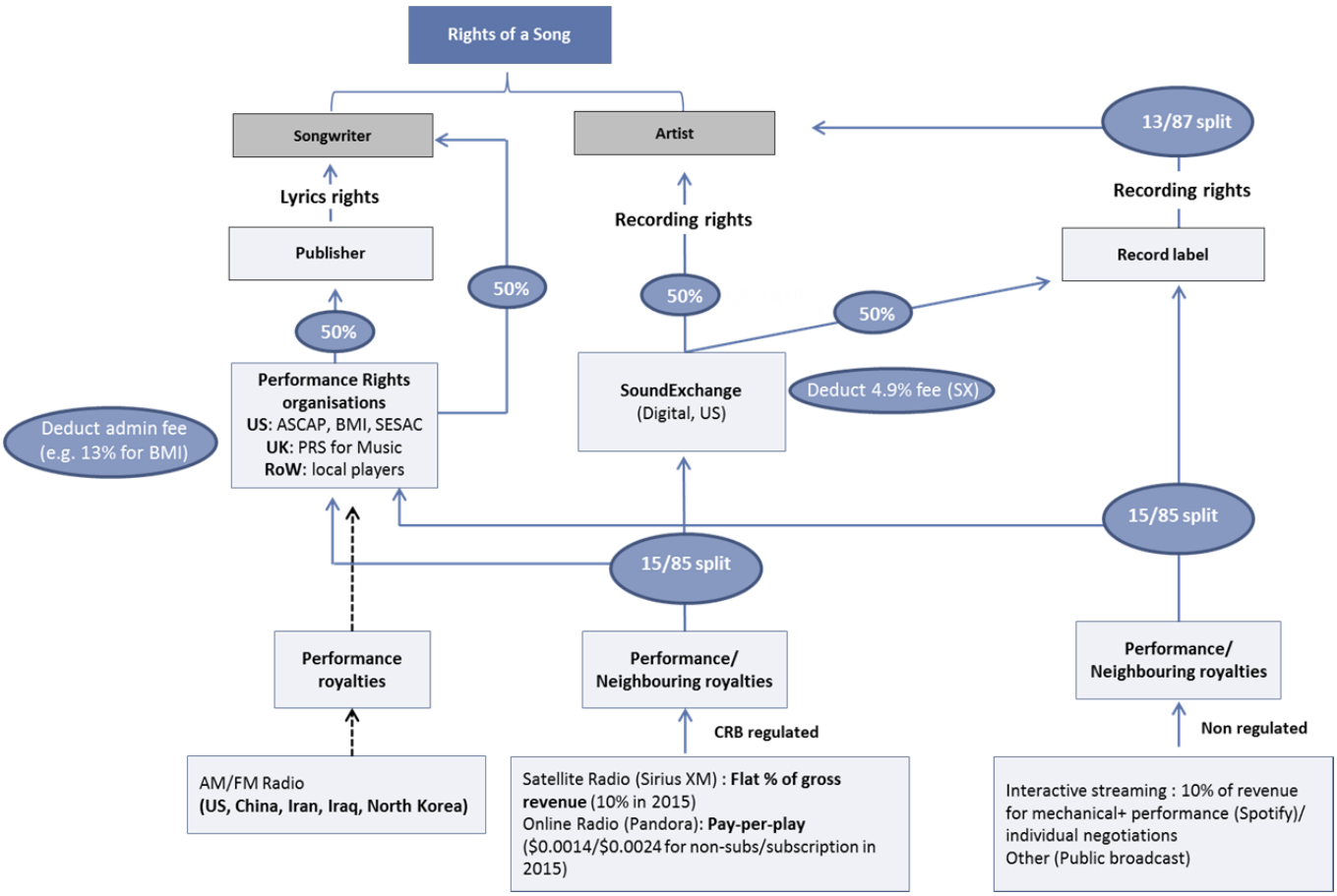
Exhibit 16: Mechanical royalties split



Source: Goldman Sachs Global Investment Research.

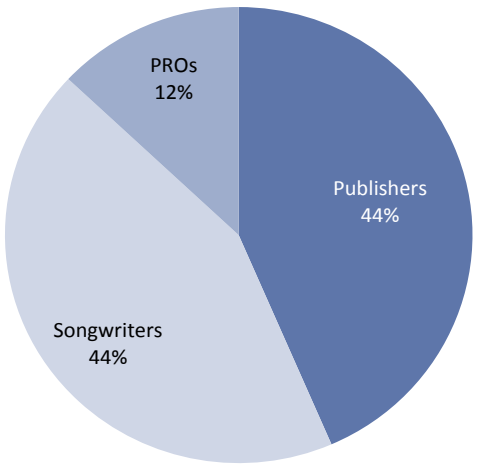
2. **Performance royalties for publishing/ neighbouring royalties for recording** are owed whenever a song is performed (radio/TV/online streaming services/live venues).
   - Songwriting performance royalties are paid to songwriters/publishers through Performance Rights Organizations (PROs) and collection societies (after a 10%-20% administrative fee).
   - Recording neighbouring royalties are paid to the recording artists and labels (either directly or through SoundExchange "SX" in the US). **In the US however, artists/labels only get paid for digital performances (i.e. satellite/online radio, interactive streaming services) and not by terrestrial radio** as antiquated US legislation exempts terrestrial broadcasters from paying royalties for the use of the master recording.

Exhibit 17: How do performance royalties work?



Source: SoundExchange, Royalty Exchange, PRS for Music, Company data, Goldman Sachs Global Investment Research.

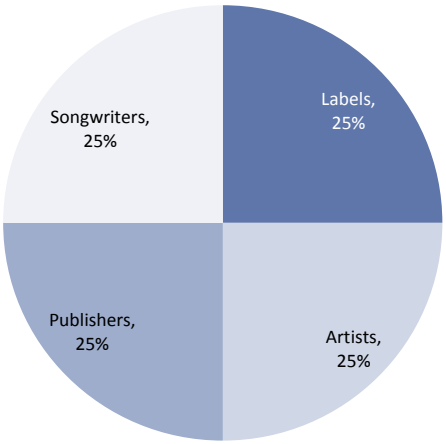
Exhibit 18: Terrestrial radio does not pay any performance royalties to labels/artists
Estimated distribution of terrestrial radio performance royalties in the US



Source: Goldman Sachs Global Investment Research.

3. **Synchronisation or "sync" royalties** are paid to songwriters/publishers and record labels/artists for use of a song as background music for a movie, TV programme or commercial, video game, etc. There is no explicit rate that defines the compulsory percentage of royalty that must be paid. This will mostly depend on the commercial value of the work to those who want it and on the media to be used. Sync royalties are usually equally split between labels, artists, publishers and songwriters.

Exhibit 19: Estimated distribution of sync royalties to rights holders



Source: Goldman Sachs Global Investment Research.

Artists/Labels are the main beneficiaries of the move to streaming

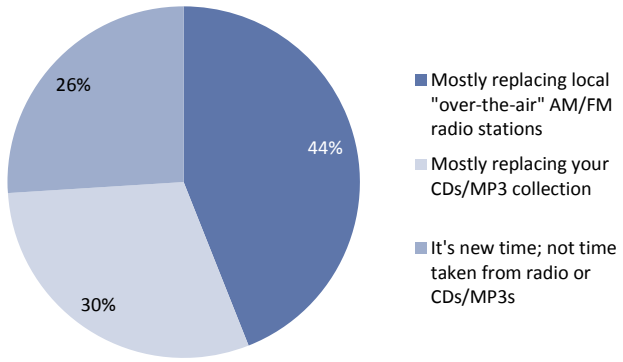
The evolution of consumption from terrestrial to digital on one hand, and from ownership to access on the other, has profound implications for the rights holders.

1. **The move from analogue to satellite or internet radio services creates a new revenue stream for artists/labels who get paid nothing by terrestrial radio.**

The US is one of the few countries where terrestrial radio operators are exempted from paying any performance royalties to labels and artists (although they are required to pay the publishers and songwriters). This situation is inherited from the long-standing argument that labels and artists receive important free promotion through radio play. With analogue radio's share of listening declining and other meaningful discovery platforms emerging such as YouTube, social media or streaming services' playlists, we see a strong case for this rule to change over time but, as a US music lawyer puts it, it will likely face strong lobby opposition. In the meantime, we expect to see more bilateral commercial agreements (see later section "*3. Compounding this already positive picture is the move by many analogue operators to sign deals with labels to receive preferential royalty rates in order to launch their own digital services"*).

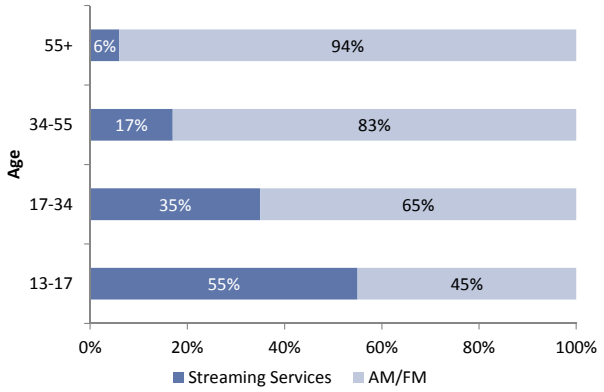
With the introduction of streaming services and online radio, US legislation evolved to create a statutory license for digital audio transmissions and require the payment of performance royalties by such services under the Digital Performance in Sound Recording Act of 1995 and the Digital Millennium Copyright Act ("DMCA") of 1998. The ongoing shift of listeners from terrestrial radio to online radio and streaming services is therefore incremental for labels and artists.

Exhibit 20: Nearly half of digital radio listening is displacing AM/FM in the US
Survey, Summer 2013



Source: Edison Research Streaming Audio Task Force, Summer 2013/ IAB.

Exhibit 21: While AM/FM consumption remains dominant overall, streaming services are increasingly popular for younger age groups
Daily listening to streaming service vs. AM/FM by age group, US, 2014



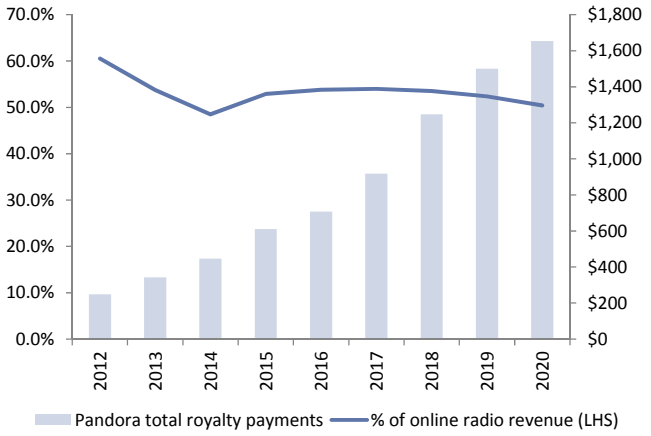
Source: Activate.

The rate paid by non-interactive services such as Sirius or Pandora is set every five years by the Copyright Royalty Board (CRB), a panel composed of three federal judges. Anyone regulated by the CRB splits performance royalties on fixed terms with 50% going to the label, 45% to the artist, and 5% to the Musicians' Union after SoundExchange fees are deducted. In contrast, on-demand streaming services such as Spotify or Tidal negotiate their rates on the free market.

Leading digital radio service Pandora has historically paid on a pay-per-play basis under CRB rules. The latest CRB ruling for 2016-2020 set these rates at $0.17 and $0.22 for ad-funded and subscription services respectively in 2016, and these will be adjusted annually to reflect changes in the Consumer Price Index for 2017-20. However, Pandora has just negotiated direct deals with record labels, and the terms of those deals will supersede the CRB ruling. The exception is the deal with Warner Music, under which Warner will continue to distribute the artists' share of the statutory ad-funded rates through SoundExchange. Our US Internet team expects Pandora to pay $1.65 bn in total content acquisition costs in 2020 (50% of its online radio revenue) up from $610 mn in 2015 (45% of its online radio revenue excluding one-offs). The increase is primarily driven by the launch of Pandora's on-demand offering in 4Q16, from which the company expects to pay 65-70% of revenue.

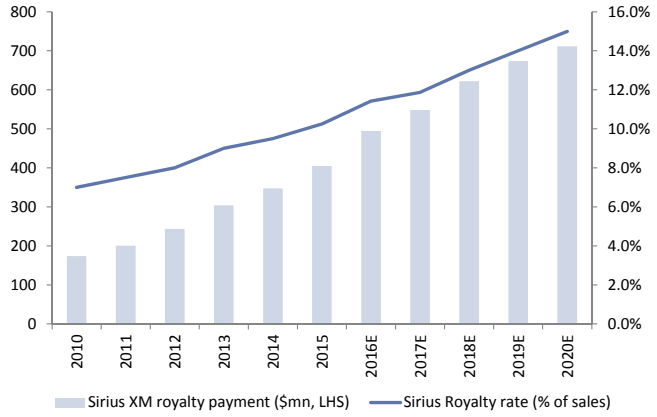
Leading satellite radio operator Sirius XM pays a flat fee out of its gross revenues. This rate has progressively increased by c.50 bp pa from 7.0% in 2010 to 10.0% in 2015 and is set to rise to 11.0% by 2017. Sirius XM paid royalty fees of $405 mn in 2015, up from $174 mn in 2010 – an 18.5% CAGR (vs. a 7.9% CAGR in subscriber growth). Our US Telecoms team forecasts these fees to rise to $712 mn by 2020 at a CAGR of 12%. On January 5, 2016, CRB started a new proceeding to set music royalties for the 2018-2022 five-year period.

Exhibit 22: We forecast Pandora's royalty fees to increase to $1.65 bn in 2020 from $610 mn in 2015



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 23: We forecast Sirius XM's royalty fees to increase to $712 mn in 2020 from $405 mn in 2015



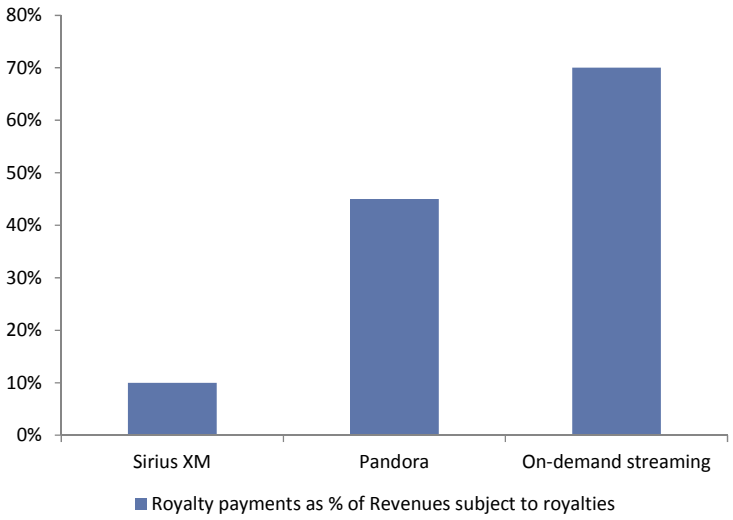
Source: Company data, Goldman Sachs Global Investment Research.

2. In our view the rise of on-demand streaming services is even more positive for rights owners as compared to satellite/internet radio

Streaming services pay away a higher share of their revenue to rights holders than satellite and online radio. As on-demand streaming royalties are negotiated on the free market, streaming services generally pay c.70% of their revenues to labels and publishers (90/10 split) similar to the levels physical and digital retailers pay. Apple Music pays a slightly higher rate of 71.5% in the US and 73% elsewhere according to Recode. Pandora has stated that its on-demand offering will pay 65-70% of associated revenue to rights holders, and overall the company pays out 54% of music revenue to rights holders. Prior to signing the direct deals with rights holders, Pandora paid c.45% of its online radio revenues royalties in 2015 (excluding one-offs). Sirius XM, by contrast, pays away around 10% of their revenue as royalties as they benefit from lower CRB-regulated rates.

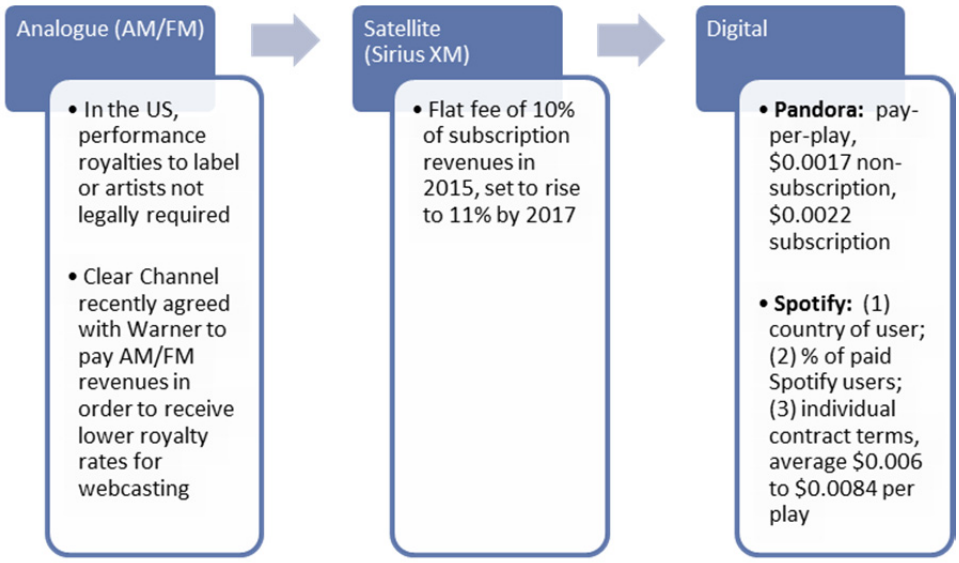
Based on reported streaming revenue of $1.9 bn in 2015, this implies that roughly $1.361 bn was paid as royalties to labels/publishers in 2015 alone.

Exhibit 24: On-demand streaming services pay away around 70% of the revenue compared to 10% for Sirius XM and 45% for Pandora radio in 2015



Source: Company data, Goldman Sachs Global Investment Research.

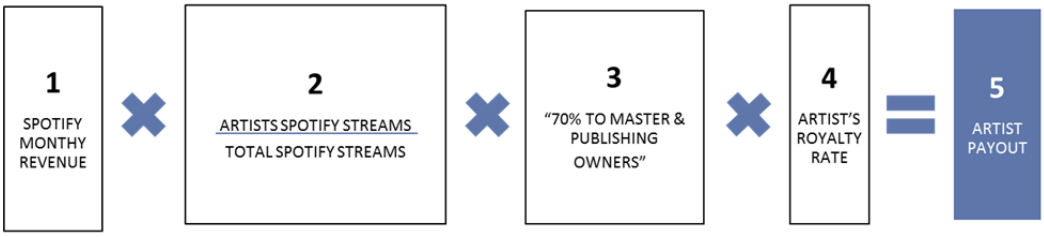
Exhibit 25: Performance royalties for labels/artists more favourable in a digital world



Source: Company data, Goldman Sachs Global Investment Research.

On-demand streaming rates however vary significantly by individual contract and market. For instance, Spotify's royalty calculation is not a fixed pay-per-play and depends on: 1) the country in which the user is based; 2) Spotify's number of paid users as a percentage of total users; and 3) individual contract terms with the label and/or artist. The company indicates the average per stream payout to rights holders is between $0.60 and $0.84 per 100 streams.

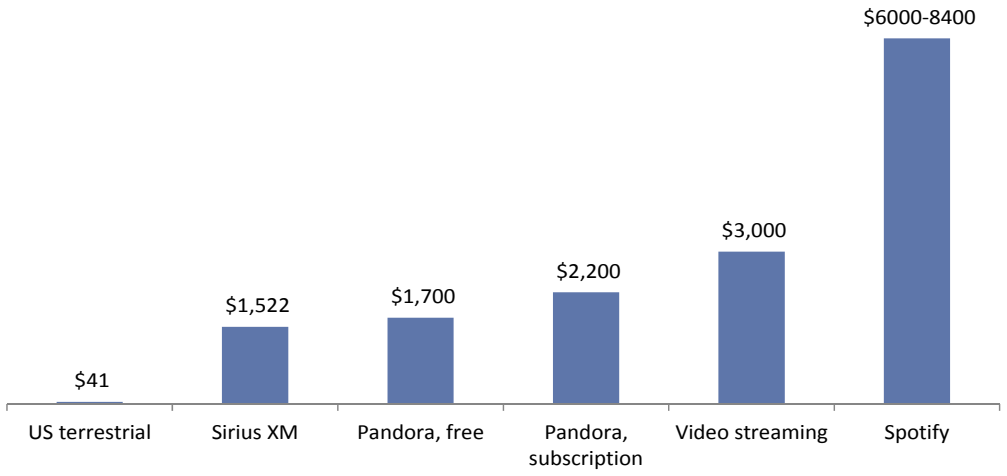
Exhibit 26: Spotify royalty system



Source: Spotify.

Streaming rates are higher on a per-user basis. Much has been made of the dilutive nature of streaming services, with artists and labels arguing they do not receive equitable compensation compared to satellite radio. Based on Sirius XM's royalty payments of $500mn in 2015, and an average song length of 3.5 minutes, we calculate that the implied royalty rate per play is $33.3, compared to fractions of a penny for Spotify and Pandora. What this argument ignores, however, is that Spotify is a one-to-one service, while satellite radio is a one-to-many (Sirius has 31 mn subscribers). Controlling for the number of users listening to a song, both Pandora and Spotify pay more on a per-user basis. We estimate that a song played on Sirius is listened to by 0.07% of Sirius' 31 mn subscribers, which would imply a cost per play per million subscribers of $1,522, which is 10%-30% lower than Pandora's historical per-play-per-million users rate of $1,700-2,200 and around 75%-80% lower than Spotify's per-million streams rate of $6,000-8,400. As such, we see the migration to online streaming services as incremental to the market.

Exhibit 27: The shift to digital consumption drives higher royalty payments in the US
Royalty per million streams, 2015

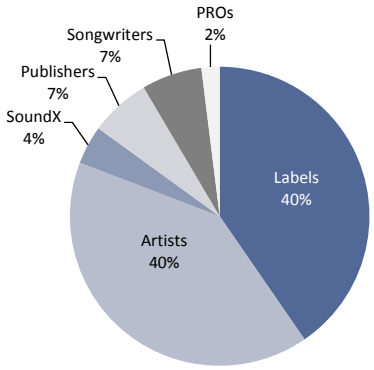


Source: Spotify, Goldman Sachs Global Investment Research.

Pandora's move to on-demand streaming presents upside for rights holders. Pandora recently announced direct licensing agreements with record labels to launch an on-demand streaming service in the US in 2H16 alongside its existing digital radio service. Under the terms of the deal with UMG, Sony and independent labels, Pandora will pay away 65%-70% of its subscription revenue to rights holders (while the CRB arrangements led to a pay away rate in 1H16 of roughly 45% of its online radio subscription revenue). In conjunction with these direct deals, Pandora also negotiated new terms for its ad-funded online radio service and will pay away a LPM (licensing cost per 1,000 listener hours) of around $33 from roughly $31 previously. The terms of the deal with Warner on the subscription service are unknown, but we would expect them to be similar to the other labels.

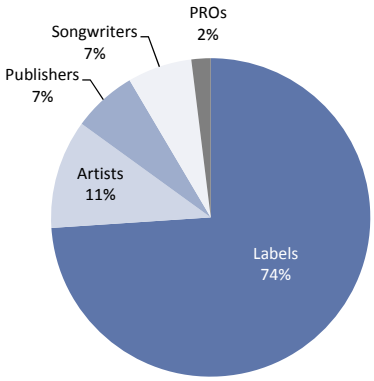
With Pandora targeting $1.3 bn of subscription revenue by 2020 without cannibalizing its existing ad-funded radio business, this presents significant upside for the rights holders given the expansion of Pandora's addressable market and the higher royalties in on-demand streaming as opposed to online radio. This will disproportionately benefit the labels, who typically receive 74% of the royalties from on-demand services compared to 40% from online radio, while artists' share will move to 11% from 40% (we argue however that artists' absolute royalties will still be higher in the on-demand world).

Exhibit 28: Estimated distribution of Pandora's performance/neighbouring royalties



Source: Goldman Sachs Global Investment Research.

Exhibit 29: Estimated distribution of interactive streaming performance/neighbouring royalties in the US

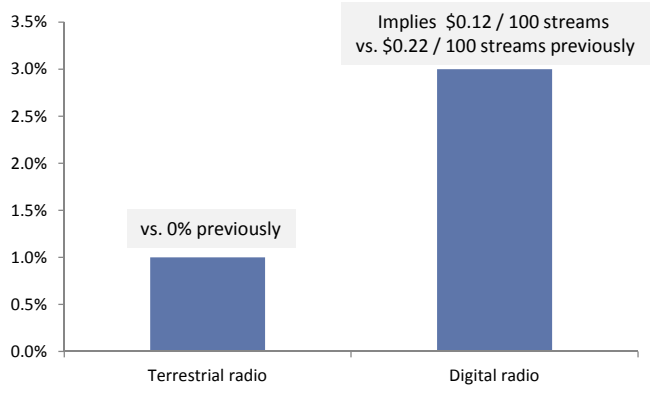


Source: Goldman Sachs Global Investment Research.

3. **Compounding this already positive picture is the move by many analogue operators to sign deals with labels to receive preferential royalty rates in order to launch their own digital services**.

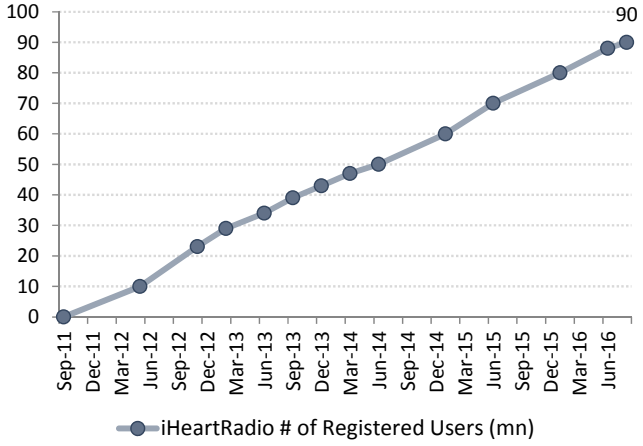
In response to the migration of listeners from analogue to digital platforms, US AM/FM radio operator iHeartMedia "IHRT" launched an online radio service iHeartRadio in 2008 under the same CRB regime as Pandora. The website garnered 90 mn of registered users as of August 2016. In 2012 IHRT's parent company Clear Channel struck an unprecedented deal with label Big Machine whereby IHRT would pay an undisclosed percentage of its advertising revenue for digital *and terrestrial* radio play, despite being legally exempt, compared to the then digital royalty per play of $0.002. This was very favourable for rights holders, as terrestrial accounted for 98% of IHRT's ad revenue and fees were said to be split 50/50 with artists without any SoundExchange deduction of 4.9% (Billboard, June 5, 2012). In 2013, IHRT sealed another important agreement with Warner Music to pay royalties for terrestrial airplay in return for lower royalties for online streaming. Warner artists now receive extra promotion on IHRT's 850 terrestrial stations and are being paid more, as Forbes reported that Clear Channel will pay WMG 1% of advertising revenue for terrestrial broadcasts, and 3% for digital. The return for Clear Channel is a discounted rate on its digital streams of Warner artists' music, down from $0.22 per 100 streams to $0.12 per 100 streams (Forbes, September 16, 2013). For comparison, Pandora in 2015 paid $0.14 per 100 streams. More recently, IHRT announced its intention to launch an interactive streaming service iHeartRadio All Access together with an ad-free radio listening service in 2017. We view this as a positive for the labels given 1) they receive 55%-60% of revenues as royalties from interactive streaming services but nothing from US terrestrial radio, and 2) this will give labels the opportunity to include a fee for terrestrial airplays in their direct deals as illustrated by the IHRT/Warner Music deal.

Exhibit 30: IHRT agreed to pay WMG 1% of its ad revenue for terrestrial airplays, despite being legally exempt, in exchange for discounted rates in digital
% of advertising revenue paid for terrestrial and digital radio plays



Source: Forbes.

Exhibit 31: IHRT's iHeartRadio service has seen a surge in the number of users
Number of registered iHeartRadio users (mn)



Source: iHeart.

Songwriters/publishers also benefit but to a lesser extent

1. **Unlike artists/labels, songwriters/publishers are already getting paid by terrestrial radio for performance royalties in the US, so do not benefit to the same extent from the shift to satellite radio and online streaming.**

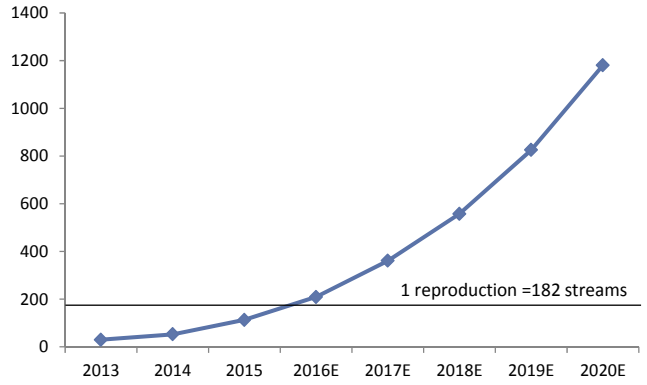
2. **For mechanical royalties in the US, streaming currently offers lower royalty rates than physical/downloads. But there is upside from higher streaming consumption and the upcoming CRB review.**

Publishers/songwriters currently receive a $0.091 mandated rate per reproduced copy of a song (CD, vinyl, MP3, etc.) independently of whether that copy is sold. Outside of the US the rate typically varies in the range 8%-10% of wholesale prices for physical products/consumer prices for digital products, according to digital music distribution company TuneCore. When moving to interactive streaming services, the government-mandated rate is at least 10.5% of the gross revenue after deduction of the payments to collection societies such as ASCAP (the American Society of Composers, Authors and Publishers), BMI (Broadcast Music, Inc.) and SESAC (The Society of European Stage Authors and Composers).

This would imply average payment per 100 streams of about $0.05 according to music royalty collection company Audiam. We calculate this implies that 182 streams of one song would be needed to equate to the mechanical royalty generated from one reproduction. Using the Recording Industry Association of America (RIAA) and Nielsen data for the number of physical and digital copies sold and the number of audio streams consumed, we calculate that there were 113 more audio streams consumed than physical/digital copies sold in 2015 meaning streaming is currently dilutive. However, we forecast that ratio to grow to 209:1 in 2016 and 1180:1 by 2020. Even though the growth in streaming value does not follow the growth in consumption (Spotify's paid streaming ARPU does not depend on individual consumption, although ad-funded revenues do), we believe the increase in streaming consumption will be able to compensate for lower royalty rates. Warner Music's 2015 10K form reveals that its revenue from digital mechanical royalties exceeded physical for the first time in 2015.

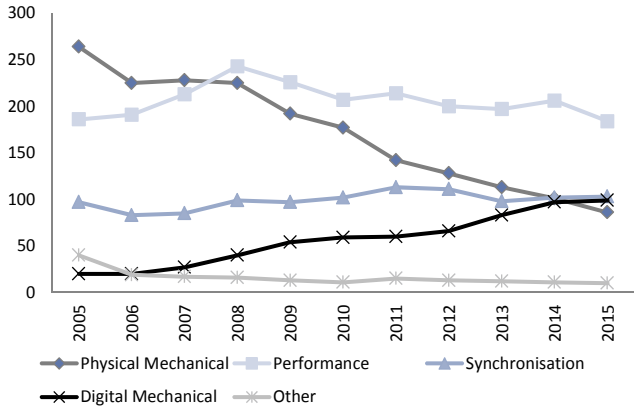
The upcoming CRB review of songwriting mechanical rates applicable to interactive streaming services such as Spotify or Deezer could totally change the way songwriters/publishers are getting paid (see next section).

Exhibit 32: 182 streams of one song currently needed to match the revenue from one unit sale – we forecast the number of streams in comparison to unit sales to exceed 182 from 2016



Source: Goldman Sachs Global Investment Research.

Exhibit 33: Digital mechanical royalties are already exceeding physical for Warner
Warner/Chappell breakdown of publishing revenue, $ mn



Source: Warner Music Group data.

3. **In Japan, the online shift is positive for songwriters/publishers, as physical mechanical royalty rates are typically 1%-2% lower than digital to compensate for their higher manufacturing costs known as the "record cover fee".**

Future regulatory changes could present upside for rights holders

1. **The US review of safe harbour rules and implications of the recent EU Copyright proposal will be important in addressing the value gap between the usage and monetization of music on platforms such as YouTube.**

What are safe harbour rules? These provisions exempt passive, neutral hosting platforms from copyright infringement liability for the actions of their users. Put another way, online service providers, including YouTube and internet service providers, are not responsible for vetting whether or not the users are putting copyright cleared content on their platform. When rights holders find evidence of copyright infringement, they have to submit a formal notice to YouTube for instance to request a copyright takedown. To its credit, YouTube has a finger printing system called Content ID, which enables labels and artists to identify and manage their work and entitle them to a share of the advertising revenue (if any).

Why do they matter? Many artists and industry bodies have complained about YouTube's use of those safe harbours which give it an unfair advantage in negotiations with rights holders. For instance, a label which does not sign a licensing deal with YouTube will have to actively monitor that its content does not appear on YouTube and if so request it to be removed. YouTube also shares 55% of its music ad revenue with rights holders (according to Music Business Worldwide "MBW"), with labels receiving 45% and publishers 10%. This compares to the standard 70% payout rate from other non-regulated platforms (iTunes, Spotify, etc.), with labels receiving 60% and publishers 10%. This situation has resulted in a rising **"value gap"** between the amount of streams consumed on YouTube and their monetization for rights holders. YouTube accounted for 40% of overall music listening according to Apple Music's Jimmy Iovine, with c.90% of the 900 mn ad-supported music users reported by IFPI, and yet generated only 4% of global recorded music revenues ($634 mn in 2015), which is lower than the revenues from vinyl sales. In contrast, paid streaming revenues were almost 4x higher at $2.3 bn in 2015 and were generated by only 68 mn paying users.

What's next? The EC just came out with its highly anticipated draft Copyright Directive. The new proposals will require platforms such as YouTube to enter negotiation with rights holders in good faith and put in place "appropriate and proportionate" measures to identify and remove unlicensed copyrighted content, therefore putting greater responsibility on/demanding more proactivity from the platform owners. Previously the likes of YouTube had to wait for a formal takedown request from rights holders – this will still be the case, however, if no agreement has been reached. We believe that YouTube should be less impacted than other services as it already has effective content recognition and removal processes in place. Nonetheless, as the EC puts it, this should "reinforce the position of rights holders to negotiate and be remunerated for the online exploitation of their content on video-sharing platforms such as YouTube or Dailymotion." These proposals will still need to go to Parliament and individual member states for approval, while the effective implementation of such measures remains unclear and is likely to take time.

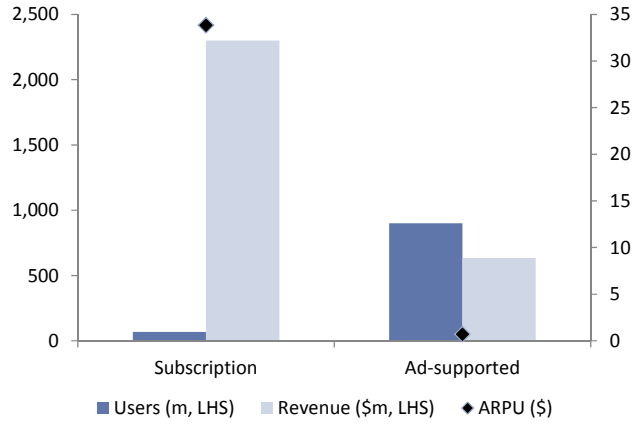
Separately, the US Copyright Office is currently reviewing copyright rules including safe harbour provisions (also called DMCA 512 in the US) with a decision expected in 2017. In April 2016, 400 artists, songwriters and music bodies sent a letter to the US Copyright Office pleading for reforms to the DMCA. They were followed by another 180 artists and songwriters (including Taylor Swift, Lady Gaga, Paul McCartney, etc.) in June.

2. **The CRB is currently engaged in proceedings to set the new mechanical songwriting royalty rates applicable to interactive music services for 2018-2022, with a decision expected by end-2017.**

This review will be much in focus, given Apple's recent proposal that all interactive streaming services should pay a statutory rate of $0.091 per 100 streams. Note that this rate would not apply to Apple given that it has direct deals with publishers in place. The current rate is set as a percentage of revenue and varies depending on whether the user is

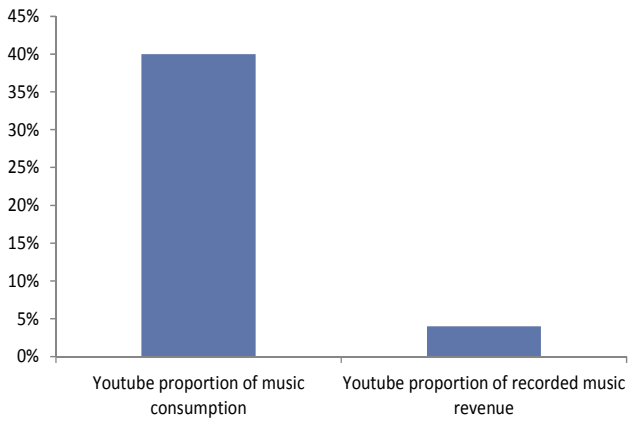
a subscriber or non-subscriber – on average it implies around $0.05 per 100 steams according to Audiam. A move towards a higher, unified rate would be more damaging for freemium streaming services, although positive for songwriters/publishers.

Exhibit 34: Ad-funded services (mainly YouTube) generated 4x less revenue than paid streaming despite 13x more users



Source: IFPI.

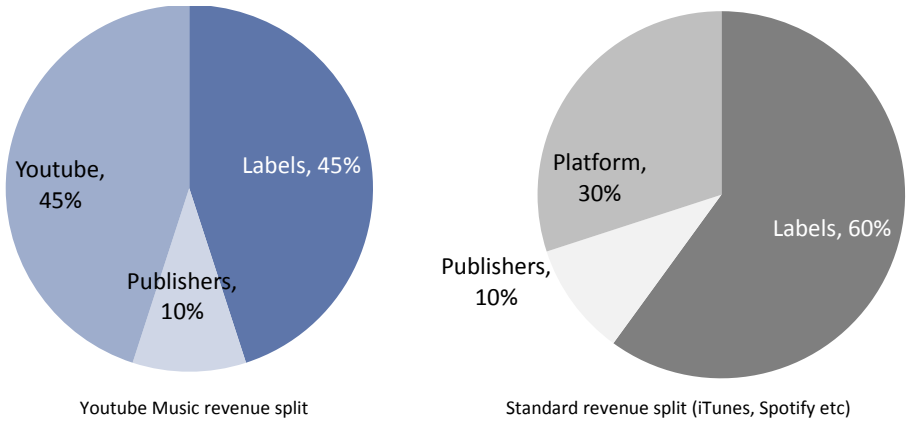
Exhibit 35: The value gap: YouTube accounts for 40% of music listening but 4% of recorded music revenue



Source: Apple, IFPI.

Exhibit 36: Labels receive a lower share of royalties from YouTube than from other digital services

Estimated split of YouTube vs. industry standard music royalties



Source: Music Business Worldwide, Press reports, Goldman Sachs Global Investment Research.

3. Potential changes to copyright protection of pre-1972 sound recordings.

Songs recorded before February 15, 1972, are currently not protected by US federal copyright law, but are protected under state law in some jurisdictions. This resulted in CRB-regulated entities such as Pandora and Sirius XM not paying royalties for their use. In 2015, Pandora and Sirius XM both agreed to settle with the major labels for $90 mn and $210 mn, respectively, for the use of such rights until end-2016 for Pandora and end-2017 for Sirius XM. Unless regulation evolves to include pre-1972 recordings in US federal law, the two players will need to extend their deals with labels to keep playing those songs.

4. The CRB has commenced proceedings to set new royalties for digital performance of sound recordings to be paid by satellite radio service Sirius XM for 2018-2022.

An interview on EU music regulation with…

John Enser, Head of Music and Partner, Olswang

John is Head of Music and a Partner in the Media Team at international law firm Olswang LLP. Acknowledged as an expert in all of the leading directories of lawyers, his client-base includes record companies, broadcasters, other content aggregators and distributors and mobile operators as well as companies that invest in and lend to the sector.

What are the main regulatory intricacies in Europe?

One of the key challenges is fragmentation: whilst on the recording side you can do deals that cover the entire European landscape by doing deals with the majors and Merlin (which represents the indie labels), on the publishing side, it is exceedingly complex and an ever moving picture because of the role of the collecting societies, who control both the performing right and, often, also the copying right, both of which are needed for digital exploitation. In many countries, a collecting society is granted exclusive rights directly from the composers, so music publishers aren't in a position to aggregate rights. That leaves a pretty messy picture where, to launch a pan-European service you need to do around 30 deals on the publishing side – and realistically you can't launch a service without getting the vast majority of the repertoire. That clearly is good for the big players and gives a significant barrier to entry. This is part of the reason why Pandora packed up and went home some years ago.

How are royalties set in Europe?

Contrary to the US, in Europe it is more of a free market, but it does vary from country to country. In some countries there are tribunals, arbitration bodies, like the CRB in the US although not as powerful, that set the rates. The UK is probably the closest structure to the US. In most of continental Europe, the collecting societies often have some degree of royalty rates review by some form of government agency with various degrees of rigour and independence.

How does the safe harbour regime work and how does that benefit YouTube?

The way it works effectively is that, because YouTube doesn't have editorial control, if somebody else posts a video onto YouTube, their only obligation is to take it down once they're on notice. They don't have to do anything until then and they don't have to stop that going back up again. So, they have the Content ID tool which enables rights holders to make their own choices based on whether the rights holder wants the material removed or is willing for it to be left in return for a revenue share. But the problem is that if you choose not to be part of the Content ID scheme, all that you can do is to have your material taken down and it keeps coming back up again. YouTube argues that they do license their rights, but, from the label perspective, it is always with one hand tied behind their back, as it is under the threat that YouTube will just use the safe harbour. Sure, they do have deals with all the majors, but the economics of those deals are different from what they would be if there was no safe harbour regime.

The safe harbour works in a similar way in respect of true pirate sites, Pirate Bay and the like, where the music industry want to make it harder for people to find those sites. For that reason, the music industry has sent billions of take down notices to Google – that's about the search engine, rather than YouTube – if you search for the newest Rihanna single, the chances are that 4 out of the top 10 research results will be pirate pages. So, the debate is partly about Google and search engines, about them taking more responsibility to get rid of links to pirate sites and to keep those links down. The YouTube issue is slightly different but it is very similar because the argument is if you don't play along with YouTube's way of doing things, the only thing you can do is send DMCA complaint notices and have the material disappear only to pop back up again. So your choices are to either get rid of it or monetize it on their terms.

The EC just released its draft copyright package - what could the implications be?

Platforms making available large amounts of copyright material which is uploaded by users will be required to enter into negotiations with rights owners in good faith and to put in place "appropriate and proportionate" measures to ensure the functioning of those agreements with rights-holders in relation to the use of their works. Some platforms, like YouTube, have these processes in place already but not all do and even those that do are subject to on-going criticism for not ensuring that infringing content stays down. The Commission believes that the fact that many platforms benefit from the safe

harbour, meaning effectively that they are not the ones responsible for communicating the copyright works to the public, makes for an uneven negotiation between platform and rights-holder. The notice and take down procedures that emanate from the E-Commerce Directive will continue to apply if no agreement is in place or the content cannot be identified using "appropriate and proportionate" measures. This will clearly impact on the Google search example mentioned above, but how far it would move the balance of power between the labels and YouTube is not very clear. Judging by the welcome the draft received from the music industry, it is seen as a move in the right direction.

The draft package now falls to be considered by the so-called Council of Ministers (the representatives of the governments of each Member State) and the European Parliament. Both processes are likely to lead to extensive amendments to the draft. The Parliament is likely to want to protect the platforms, in what they see as the consumer interest, while the Member States are more inclined to support the industry (and that mostly means the indigenous content industries who are seen to be threatened by the largely US-headquartered platform operators).

We are therefore talking about a period from 18 months to up to 3 years before these things actually become law in individual member states. It is hard to see YouTube or other intermediaries doing very much ahead of any change in the law, unless they think that by doing so, they might stave off a more onerous regime.

Can artists force transparency to be able to show the economics and flow of payments?

To some extent I think it will happen. Again, the draft proposals of the European Commission include specific obligations which will increase transparency (if they survive the legislative process). There has been a lot said by artists about this, which isn't always necessarily reflective of the way deals work. As an example, if you have a deal let's say between Spotify and a major label, there will be a pot of money that Spotify allocates to rights holders. The label will get a share of that based upon the usage and plays of that label's repertoire. The area where the artists get very excited about is the chunks of money that the labels get that are not directly allocated to plays – whether that's a marketing advance or other fees. The transparency concern is about how much of that is really money that is being paid in respect of artists' repertoire that the artists are not getting their share of.

Labels will say that they are being transparent with their artists and the artists just don't trust them. Part of it is the perception that the amount of money flowing through from streaming services is just not big enough. It is not about the labels hiding money, it is about labels trying to support the migration of their business model and recognizing that, for them in order to do that, they will not get the like-for-like amount they were getting for an iTunes sale.

How easy is it for an artist to change labels or go direct to a streaming service?

Typically artist deals don't last more than 3 or 4 albums, that's down from in the worst days 7 albums. Subject to the fact that once you've recorded the first two, you renegotiate the terms and you give the label another two so you're always 4 albums away from the end of your deal. But it also means that there is an end in sight, if you decide you don't like your label, you don't want to renegotiate after two years, you let it run and then you go away. The difficulty with that is that your old label gets to keep the existing material. So the challenge you then get is that your new material is going out with a different label, but the old label is sitting on the stuff that made you successful in the first place. What also tends to happen is that you'll put out your new album and then 6 months later your old label puts out your greatest hits.

What have been the mistakes that the industry made in the past?

Some of the mistakes of the past have been overstated. There has been a lot of criticism about labels not moving fast enough to licensed download services. It is slightly unfair because part of the problem was that that they didn't have the rights in place. Piracy got out of the bag at the same time. You could argue that the biggest mistake was the introduction of the CD format without robust rights protection mechanisms. I do think that allowing Apple to become virtually the single major download retailer was a mistake that they have learned from and they will make sure that choice remains in the streaming market. There are still things that they can learn from – the reluctance to explore different business models – one example would be that there are people who won't pay $9.99 a month for access to 40m tracks; but would they pay for access to a more limited, more curated service at a different price point? Will the labels be flexible enough to allow a service to introduce that?

An interview on US music regulation with…

Leslie Jose Zigel, Chair of Entertainment Practice, Greenspoon Marder

Leslie José Zigel is a shareholder and Chair of Greenspoon Marder's Entertainment Practice, focusing on both the creative and business sides of the entertainment industries in the music, TV, film and new technology sectors. Mr. Zigel is known for representing Pitbull and other Latin stars including Colombia's Carlos Vives and urban hitmaker Wisin.

Do you think there is potential for broader music regulatory reform globally, including intervention on radio's right to free plays in certain markets?

There is an opportunity, but it will depend on a lot of factors. I don't think anything will happen before the presidential election in the US. There are very strong lobbying and interest groups that will drive the legislative discussion. Take the example of US terrestrial radio that, unlike its European counterparts, has managed to avoid paying neighbouring rights royalties. In 1995 when the Copyright Act was amended, digital transmission neighbouring rights were introduced (and later further codified under the Digital Millennium Copyright Act when Sound Exchange was set up), and webcasting services like Internet radio stations (and more recently, Pandora), along with Sirius and XM satellite radio (the two later merged into what is now known as Sirius XM) became obligated to pay the US equivalent of neighbouring rights royalties. I do think there is potential for legislative action, but in what direction it will go is anybody's guess.

How does streaming change the way royalty rates are being set? How does that affect the various parties?

Economically, streaming pays a percentage of revenues versus a per unit royalty as is the case with physical and digital sales. I like to look at this revenue stream from a business perspective. It is easy to say that streaming services like Spotify pay very little per stream, but to be intellectually honest, one needs to look at the overall business model. Of the 100% revenue pie, Spotify keeps 30% and pays 70% to rights owners. Within that 70%, labels and publishers have to split the amount among them. Labels generally take a higher percentage of that pie than publishers, as is the case with physical and digital sales. This harkens back to the industry perspective that labels invest much more to sell the "single" than publishers so they are entitled to more. In terms of impact, there is a constant fight for publishers to receive more money and the labels want to maintain their larger share. It is a complex proposition. How we get there is a question for the future – one should take a step back and think about the right split and value proposition of each party. Having too many entrenched lobbyists doesn't help either.

What is the debate around the "safe harbour" rules?

The safe harbour provision says that the ISPs and platforms like YouTube are not responsible for vetting whether or not the users are putting copyright cleared content on their platforms. Their only obligation is to take down content if they receive a notice from the content owner that something on their site is a copyright violation. To give you an example, in 2007 Viacom sent a take-down notice to YouTube claiming that over 150,000 Viacom clips were illegally being hosted on YouTube. YouTube promptly took the clips down and claimed safe harbour protection. This still occurs today and the copyright owners have to notify YouTube each time they see a new clip of their content. It's like a game of Whack-a-mole where they take down one infringer only for 5 more to pop up. So content owners feel the safe harbour rules don't go far enough to impose an obligation on YouTube and others to vet the content uploaded to their sites. By contrast, on television, TV networks and show producers have to clear all musical content before it is aired – there is no safe harbour and as a result networks and producers are very vigilant about clearing music cues and rights owners make significant amounts in licensing fees as a result. To its credit, YouTube has a finger printing system that identifies music on user generated content and helps labels and publishers receive a share of the advertising on the videos that YouTube identifies on the YouTube platform. One effective change could be to enact a "take down and stay down" approach whereby the ISP could add the digital fingerprint of non-licensed content they are told to take down into a database which would then be used to prevent the same user (or another) from re-uploading the work to the service.

What could be done to improve music monetization?

My view is we should look at music as a utility. If you look at all the traffic on internet service providers (ISPs). – music drives a significant percentage of their traffic and thus their income. However, it is difficult to ascribe precisely how music fits into each user interaction on these sites. These sites work on subscription-based business models and collect advertising dollars based on eye balls and not a one-for-one commercial exchange of music to listener for a fee. If 40% of these sites' traffic is related to music in some tangential way, why not create a pool of a few percentage points of their gross revenues to be paid to the rights owners much like radio stations pay into BMI and ASCAP? Of course there will be a fight between labels and publishers as to how to carve up the pie, but this scenario would provide a much needed cash infusion to rights owners who help ultimately drive significant traffic (and value) to these sites.

What is your view on the global state of piracy regulation/ enforcement?

Global piracy regulation can be better. What will change piracy is the advent of services that pay artists. Take the example of Sweden that saw a dramatic decline in piracy in early 2000s with the launch of Spotify from 90% piracy to approximately 5% piracy today. I think people will ultimately pay if you give them a service where they can watch/listen to what they want, when they want, on a device/medium of their choosing at a reasonable price. If the service and the experience are good, people will pay. Government regulation can only go so far to combat piracy.

We've recently seen Pandora and Sirius settling with labels on pre-1972 recordings – do you see scope for these recordings to be included in federal copyright law?

These recordings should be part of what these services pay for in the future. The law says they don't have to, but players like Sirius or Pandora make revenues on those rights so it is only fair that they should pay for it. I think the law should change, but there are strong lobbyists against this proposition. From an artist's point of view, if they have enough leverage they can renegotiate. Otherwise, it doesn't really happen. As a general principal, if the copyright in the recordings is still valid, those recordings should receive the same protection as their brethren recorded post-1972.

What are the implications from a royalty's point of view of Pandora's recent move into paid streaming?

Pandora accounted for around 60% of Sound Exchange's total royalty collections of about $1bn in 2015 for what is known as non-interactive streaming. The change in Pandora's business model to now include interactive streaming (like Spotify and Apple Music where you can select the songs you want to hear on-demand) has a massive impact from an artist's perspective. Artists enjoy getting their money from SoundExchange rather than through a label. The fear is Pandora will now pay the labels directly (like Spotify and Apple Music) meaning artists will be subject to their record royalty of 15% that could be cross-collateralized against their royalty account instead of being paid 45% of each dollar of Pandora's overall recording-related royalties directly each month. As the new Pandora on-demand interactive streaming model siphons off users from its non-interactive streaming platform, SoundExchange royalties could go down significantly.

How do you think of exclusivity and windowing in terms of its impact on the industry as a whole?

I'm not in favor of exclusives. I believe ubiquity is best for an artist. Why would an artist want to alienate their fan base and not allow them to listen to their songs from week one? Artists should not be in the business of forcing consumers to adopt one platform or another.

To put this into perspective, this would be akin to artists saying you can only play your album on a Panasonic turntable instead of a Sony turntable so buy a Panasonic to listen to my music! This only benefits Panasonic, or in today's world Apple, Tidal or Spotify. I think the windowing will be good in the short term for the streaming services but bad ultimately for artists and worst of all for consumers.

Streaming drives greater monetization for music owners

The music industry faces the paradox of an ever growing demand for music consumption and a low propensity to pay for it. Some 93% of the US population listens to music and spends more than 25 hours a week doing so according to Nielsen. Yet, less than half of the population in developed markets pays for music – YouTube even estimates only 20% of the global population has been a buyer of music. Moreover, the average spend per person on recorded music is only around $15 in developed markets and $1 in EM in 2015, based on IFPI data. This compares to an average spend per person on entertainment of around $1,095 in developed markets based on Euromonitor data.

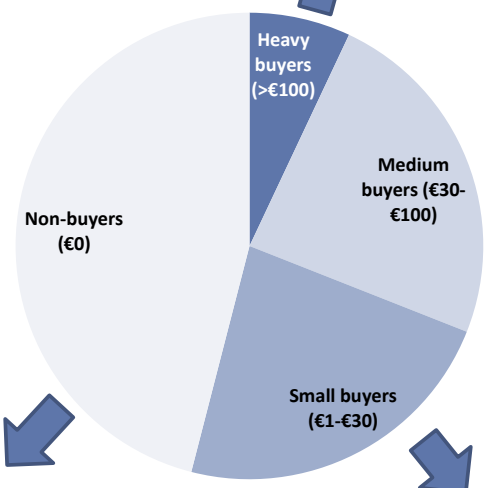
The monetization potential for the music industry is therefore huge we believe, but much of this potential is still being hindered by piracy and cultural factors. How and why could consumer propensity to pay for music change?

We see two distinct types of consumers and ways to address them: a) paid streaming addresses the portion of consumers who are willing to pay for better access and convenience, and b) ad-funded streaming helps address those who are not willing to pay (partly because of piracy) or cannot afford it by shifting illegal streaming to legal, better quality, more convenient streaming services which are equally free for the user. This could have significant implications in EM where up to 90% of music content is pirated according to IIPA (International Intellectual Property Alliance).

Exhibit 37: The shift to legal streaming has the potential to improve monetization for all types of music users
Breakdown of average spend and type of users based on French data – four scenarios

More likely to shift to paid streaming

% Ad funded \ % paid streaming	50%	60%	70%	80%	90%	100%
0%	€ 60.0	€ 72.0	€ 84.0	€ 96.0	€ 108.0	€ 120.0
10%	€ 61.4	€ 73.4	€ 85.4	€ 97.4	€ 109.4	
20%	€ 62.8	€ 74.8	€ 86.8	€ 98.8		
30%	€ 64.2	€ 76.2	€ 88.2			
40%	€ 65.6	€ 77.6				
50%	€ 67.0					



More likely to shift to mix paid streaming/ ad funded

% Ad funded \ % paid streaming	20%	30%	40%	50%	60%	70%
20%	€ 26.8	€ 38.8	€ 50.8	€ 62.8	€ 74.8	€ 86.8
30%	€ 28.2	€ 40.2	€ 52.2	€ 64.2	€ 76.2	€ 88.2
40%	€ 29.6	€ 41.6	€ 53.6	€ 65.6	€ 77.6	
50%	€ 31.0	€ 43.0	€ 55.0	€ 67.0		
60%	€ 32.4	€ 44.4	€ 56.4			
70%	€ 33.8	€ 45.8				

More likely to shift to ad-funded – all incremental

% Ad funded \ % paid streaming	0%	1%	2%	3%	4%	5%
0%	€ -	€ 1.2	€ 2.4	€ 3.6	€ 4.8	€ 6.0
20%	€ 2.8	€ 4.0	€ 5.2	€ 6.4	€ 7.6	€ 8.8
40%	€ 5.6	€ 6.8	€ 8.0	€ 9.2	€ 10.4	€ 11.6
60%	€ 8.4	€ 9.6	€ 10.8	€ 12.0	€ 13.2	€ 14.4
80%	€ 11.2	€ 12.4	€ 13.6	€ 14.8	€ 16.0	€ 17.2
100%	€ 14.0					

More likely to shift to ad funded

% Ad funded \ % paid streaming	0%	2%	4%	6%	8%	10%
10%	€ 1.4	€ 3.8	€ 6.2	€ 8.6	€ 11.0	€ 13.4
20%	€ 2.8	€ 5.2	€ 7.6	€ 10.0	€ 12.4	€ 14.8
30%	€ 4.2	€ 6.6	€ 9.0	€ 11.4	€ 13.8	€ 16.2
40%	€ 5.6	€ 8.0	€ 10.4	€ 12.8	€ 15.2	€ 17.6
50%	€ 7.0	€ 9.4	€ 11.8	€ 14.2	€ 16.6	€ 19.0
60%	€ 8.4	€ 10.8	€ 13.2	€ 15.6	€ 18.0	€ 20.4

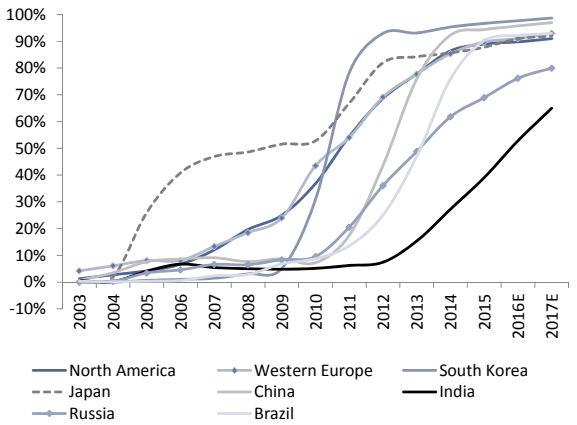
Source: SNEP, Goldman Sachs Global Investment Research.

1. Greater consumer willingness to pay for convenience and access

Streaming has totally revolutionized the way people listen to music, offering seamless access to a near-infinite library of songs (compare Walmart's estimated 21,000 tracks on shelves to Spotify's 30 mn), anywhere and anytime, and enabling greater personalization through curated playlists and more interactivity. This has led to a strong surge in consumption of online music and, in particular, on mobile devices. The US population alone consumed c.114 bn audio streams during 1H16, representing a 97% yoy jump according to Nielsen, which implies around 630 mn streams per day. This trend is likely to grow from here, driven by:

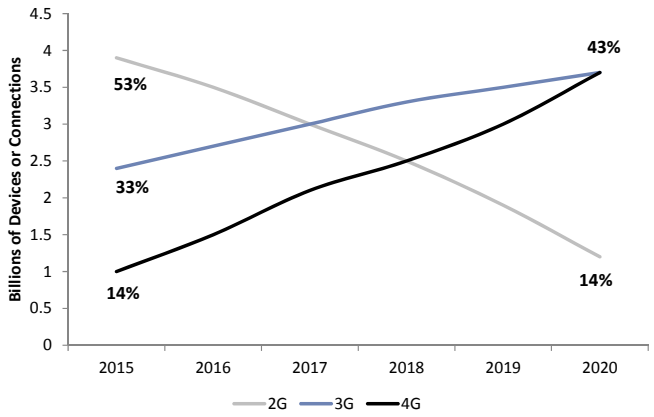
- Further improvement of fixed and mobile broadband infrastructure, especially roll out of 4G (and later 5G) enabling 6x more data consumption as compared to non 4G connection.
- The proliferation of connected devices, especially smartphones, and the growing share of time spent on mobile devices. A March 2016 study from Parks Associates found that 68% of smartphone owners listen to streaming music at least once a day in the US and that average time spent is 45 minutes.
- The proliferation of streaming services – IFPI counted c.400 platforms globally and 57 interactive streaming services in the US alone.

Exhibit 38: Smartphone penetration continues to rise
Smartphone subscribers, % of total handsets



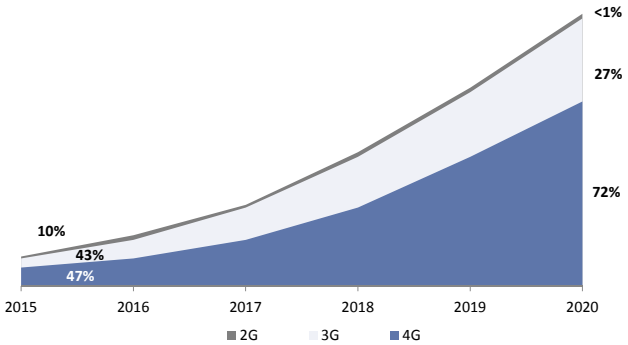
Source: Gartner, Goldman Sachs Global Investment Research.

Exhibit 39: 4G is expected to reach 43% device share by 2020…
Global mobile devices by 2G, 3G, 4G



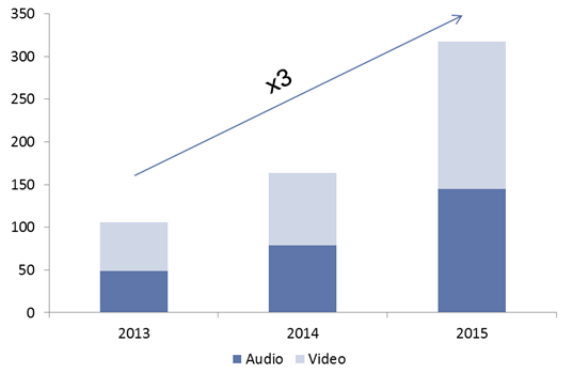
Source: Cisco VNI Mobile.

Exhibit 40: …driving 6x more traffic than a non-4G connection
Global mobile traffic by connection type



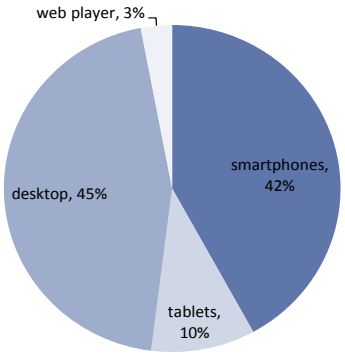
Source: Cisco VNI Mobile.

Exhibit 41: US on-demand music streams have risen 3x over the last two years
US audio and video streams (bn)



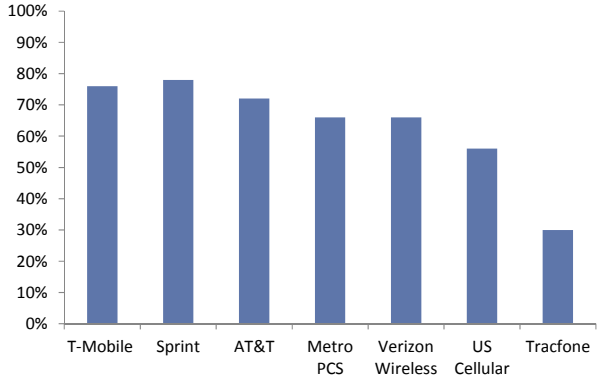
Source: Cisco VNI Mobile.

Exhibit 42: Over 50% of music consumption on Spotify now on smartphones and tablets
Share of Spotify listening by device type (2014)



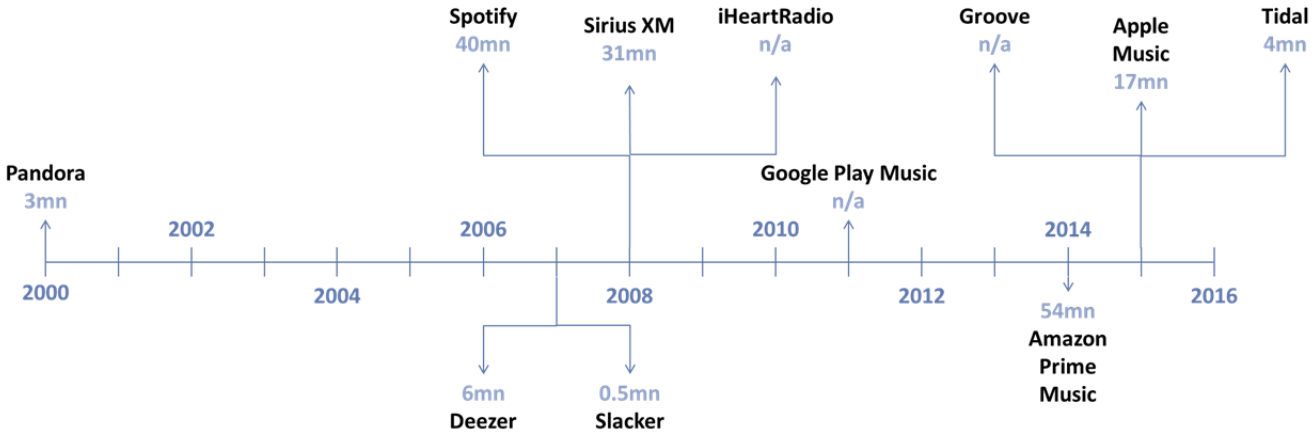
Source: Activate.

Exhibit 43: Proportion of consumers who listen to streaming music on a smartphone at least once per day
US broadband households with mobile phone service from specified providers (2016)



Source: Parks Associates.

Exhibit 44: There has been a proliferation of streaming music platforms over the last 10 years
Using the latest number of paying subscribers available

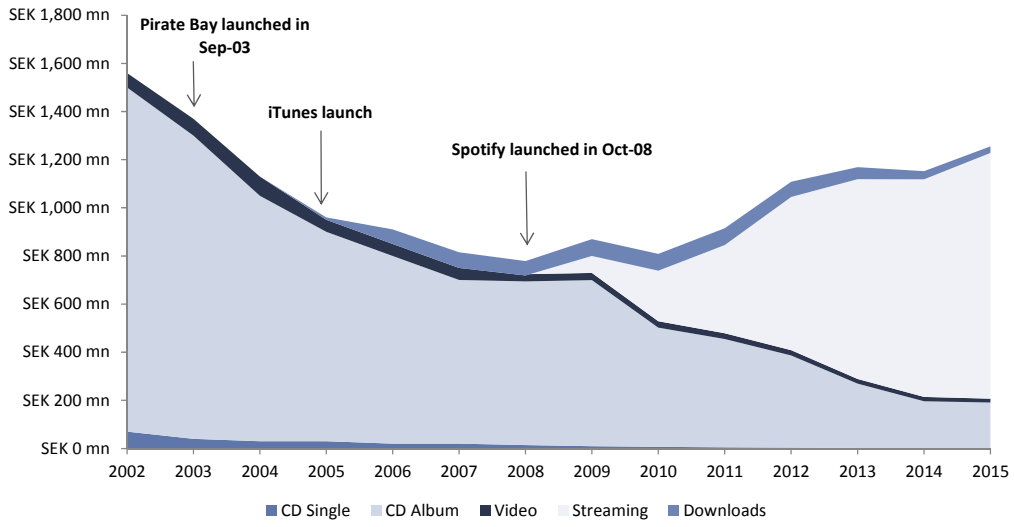


Source: Press reports, Goldman Sachs Global Investment Research.

This surge in consumption, combined with better convenience and accessibility, should make consumers more willing to pay for music streaming in our view. While the Swedish context is rather specific, as Spotify benefitted from a combination of favourable factors such as good broadband infrastructure, tech-savvy population and stringent laws against piracy, it still shows that the introduction of paid streaming services has helped drive a significant recovery for the industry back to its 2004 highs. We have also seen examples of customer propensity to pay more in other fields such as TV content as a result of increased convenience and enhanced quality (HD, Personal Video Recorders or Online streaming services in addition to traditional TV packages).

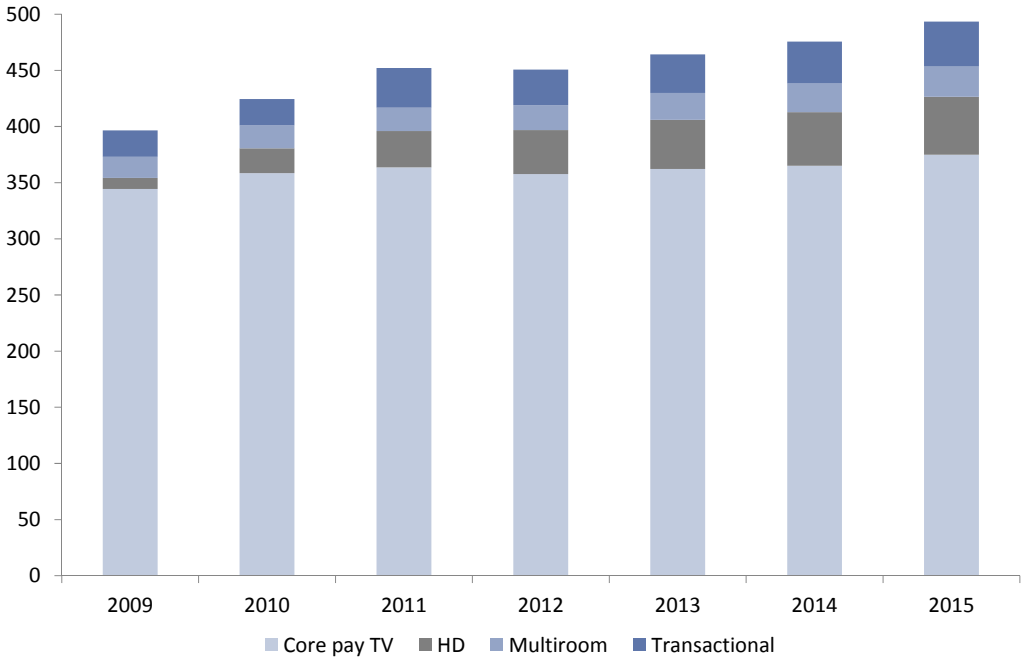
According to a survey from BPI, the main reasons for paying are the removal of adverts, and the on-demand and the on-the-go functionality.

Exhibit 45: Streaming helped the Swedish recorded market recover in seven years the value it had lost in five years
Sweden music sales revenues (Skr mn)



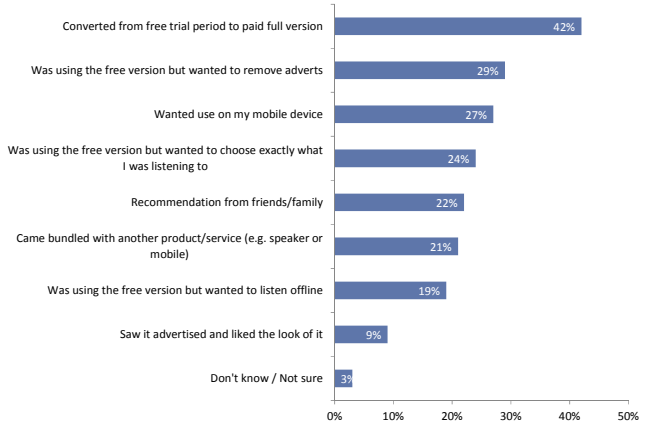
Source: IFPI.

Exhibit 46: Sky customers have been paying more for add-on products and services
Estimated Sky UK Pay TV ARPU breakdown



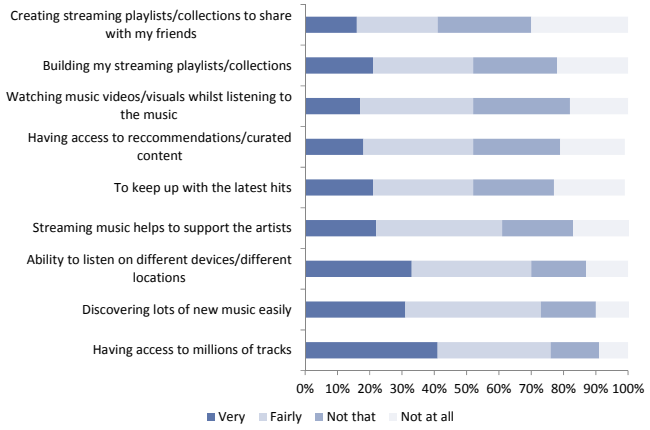
Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 47: Users are willing to pay for greater convenience and accessibility
Reasons for Paying for Music Streaming



Source: BPI.

Exhibit 48: Streaming users value the vast library, discoverability and seamless experience the most
How important are the following to you?



Source: BPI.

A lot of questions have been raised about the propensity of consumers to move to a 120 per annum price point (local currency) subscription, given the annual average spend of a music buyer is on average €36.8 in France and £52.42 in the UK, with a wide dispersion of spend per person. In France, 7% of the overall population spends more than €100, 24% spends €30-€100 and 23% less than €30, with 46% not paying anything. In the UK, we calculate that 8% of the population spends £170, 8% spends £49, and 24% spends between £4 and £25 on average, with 60% of the population not spending anything. We see opportunities to address these different needs and budgets through more segmented offerings and price points.

- The full, "all you can eat" on-demand service typically has a monthly 9.99 price point (in local currency) in DM. We believe this will be appealing for the c.10% of the population who are already heavy buyers (>€120 in France, £170 in the UK), but also to a portion of the 15%-20% of medium buyers who spend on average €30-100 in France and £25-49 in the UK.
- For the light to medium buyers, we believe lower price points could be attractive including telecom bundles, student plans (50% discount to standard price) and also family plans (Apple Music has a $14.99 plan which can be shared by up to six family members). We believe more price points will be introduced with varying degrees of functionality and content availability in the future to better segment customers. Amazon is reportedly planning to launch a $4-5 monthly on-demand service that would be streamed solely on Echo, its voice-controlled speaker and digital assistant. Pandora is also reportedly introducing multiple price tiers for its new on demand service, including one at $5 which allows users to soft-download a limited number of tracks.
- In Emerging Markets, most "all you can eat" services have a price point of c.$4 for the likes of Apple Music or Spotify.

2. Ad-funded streaming helps address users who do not want or cannot afford to pay for music

We believe people currently not paying anything for music (including many piracy users) could be attracted to streaming services via: 1) free, ad-funded tiers (which have lower functionality than the paid tier), 2) free trials (e.g., Apple Music's 3-month free trial), and 3) subsidies (student plans, telecom bundles or family plans). We believe these are powerful marketing tactics that would give the opportunity to discover the service, appreciate the

convenience and curation capabilities and ultimately hook the consumer and drive conversion to paid streaming. Recent data have been encouraging in this regard, with Spotify's proportion of paid users rising from 7% in 2010 to c.25%-30% in 2012-15 and more recently to 33% following the introduction of a $0.99 promotion for three months subscription in several territories. We examine in a later section how streaming could have an even bigger impact in emerging markets where piracy usage is as high as 90%.

Streaming has proven to reduce illegal downloads…

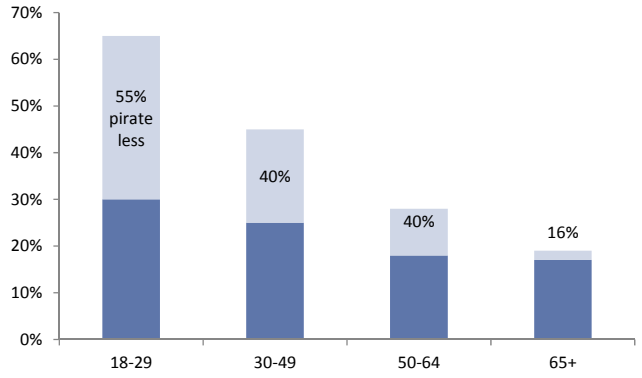
Piracy has long been one of the major challenges in the music industry either in its digital or physical form, and the principal driver of the collapse of the recording music industry in the 2000s. IFPI estimates that there were tens of billions of files downloaded illegally in 2014. The Social Science Research Council estimates that piracy costs the US music industry alone $12 bn compared to the actual $7 bn US retail recorded music market (RIAA).

A number of actions have been taken in the last decade either technological (e.g. automating large-scale takedowns of infringing links and mobile applications), educational (e.g. adverts) or legal (lawsuits, anti-piracy legislation). While these efforts will continue to be important, we believe the proliferation of online streaming services could be a more potent incentive to curb piracy. Multiple studies have demonstrated the positive impact of legal streaming:

- The proportion of internet users worldwide regularly accessing unlicensed services on desktop-based devices went down to 20% in 2015 from 30% in 2012 (IFPI/ComScore/Nielsen).
- An IPSOS MMI report found that the number of illegally copied songs in Norway plummeted to 210 mn in 2012 from 1.2 bn in 2008 (the year of Spotify's launch in the country), while in the meantime legal streaming penetration increased to 10.3% in 2012 from 4.5% in 2011.
- A study from the European Commission in 2015 revealed that the number of illegal downloads decreases by one for every 47 Spotify streams.
- A Spotify study showed that overall music piracy volume fell by over 20% between December 2012 and December 2013, with casual pirates being converted to legal services but hard core pirates persisting.

Exhibit 49: 55% of 18-29 year olds in Spotify's markets are pirating less now that they have a free alternative

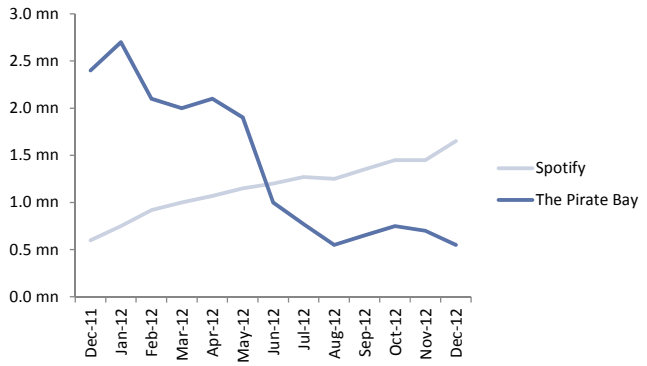
Respondents choosing to "pirate less" when given a free and legal alternative



Source: Columbia University 'Copyright Infringement and Enforcement in the US'.

Exhibit 50: Spotify's growth has coincided with declines in peer-to-peer download sites following recent tougher regulation

Online use of Spotify vs. The Pirate Bay in the Netherlands

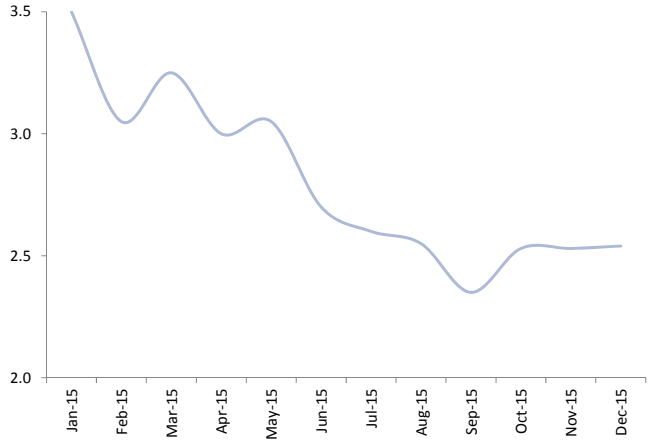


Source: ComScore.

… but many challenges remain, putting YouTube at the center of the debate
With YouTube being the most accessed platform for free online and mobile music consumption, there has unsurprisingly been a growing debate and scrutiny over YouTube's role in fighting piracy. An IPSOS survey in 13 key markets revealed that 82% of YouTube's 1.3 bn users listen to music, and that 57% of internet users have accessed music through video sites such as YouTube in the past six months, compared to 38% for streaming services such as Spotify and 26% for digital stores such as iTunes.

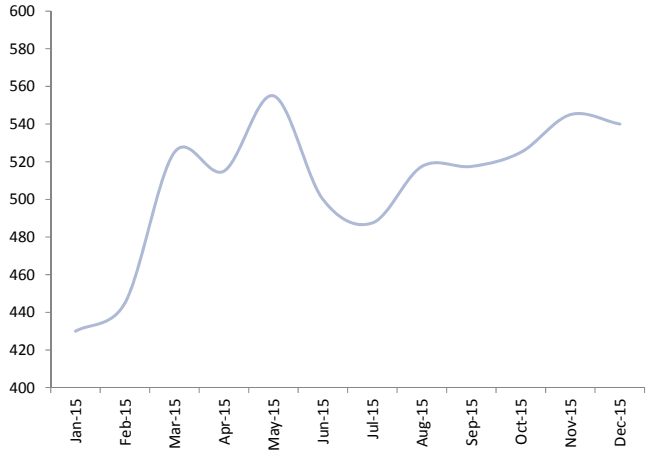
- **YouTube-based stream ripping the new form of music piracy replacing torrent sites**. Stream-ripping essentially means illegally converting legal streams into downloads through ripper sites. IFPI reckons stream-ripping has become the most popular form of piracy, with almost half of 16-24 year olds engaging in such activities. Anti-piracy tech company Muso also found that stream-ripping makes up 18% of all visits to piracy sites for music content and that torrent sites have been partly displaced by YouTube ripper sites. We believe this will remain a challenge for the future monetization of music.

Exhibit 51: There are fewer people using torrent sites…
Global monthly visits to public torrent sites (bn)



Source: Muso.

Exhibit 52: …as more people are directly downloading music videos from YouTube
Global monthly visits to YouTube ripper sites (mn)



Source: Muso.

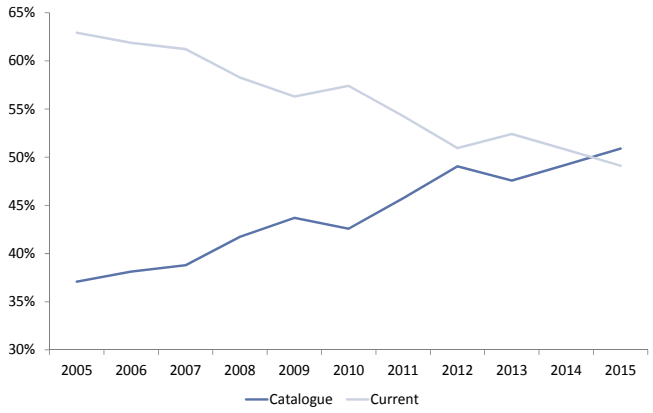
- **The debate about efficiency of YouTube's Content ID.** As a passive and neutral hosting service under EU and US copyright laws, YouTube is not liable for copyright infringement taking place on its platform. It is up to the rights holders to submit takedown notice claims and manage their content through Content ID, a copyright-management system that allows them to track and then choose to block or monetise user-generated content that uses their IP. This creates a disconnect between the amount of copyrighted content being consumed and its monetization (see section *Regulation sets the stage*). Music rights holders argue that Content ID is not efficient enough in preventing copyright infringement and fails to identify 20%-40% of their recordings (IFPI). YouTube responded that it solves 98% of copyright issues and that music rights holders choose to monetise more than 95% of their Content ID claims rather than get the videos removed from YouTube.

3. Streaming increases the value of catalogues

Streaming improves discoverability and monetization of back catalogues, thus turning a one-off transaction into an annuity of cash flows. Catalogue songs (i.e., older than 18 months) accounted for 70% of all streaming volume in 2015, compared to 50% of overall physical and digital album sales (Nielsen). This comes at a time when physical sales of

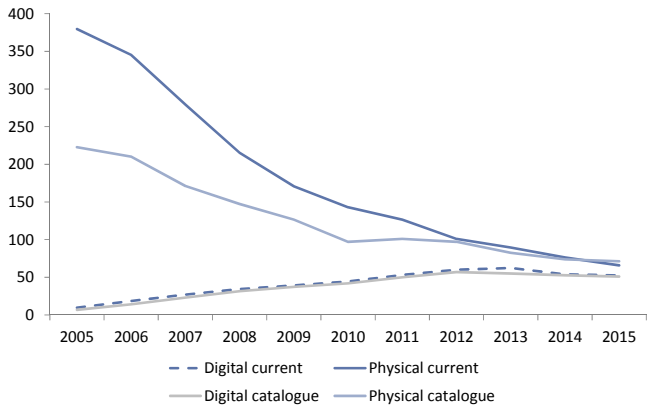
current albums have come under significant pressure, which led the overall share of current album sales (physical + downloads) to decrease from 63% in 2005 to less than 50% today (Nielsen). Warner Music in its 2015 10K report said that it sees greater monetization of its catalogue songs in streaming and higher margins (given lower marketing cost).

Exhibit 53: Catalogue sales now account for over half of total sales from 37% in 2005…
Share of current album sales physical vs. digital in the US, 2005-2015



Source: Nielsen, Goldman Sachs Global Investment Research.

Exhibit 54: … although this was mainly driven by the fall in physical current sales
Current vs. catalogue album sales, physical vs. digital in the US, 2005-2015 (mn)



Source: Nielsen, Goldman Sachs Global Investment Research.

Streaming benefits from a growing and captive audience

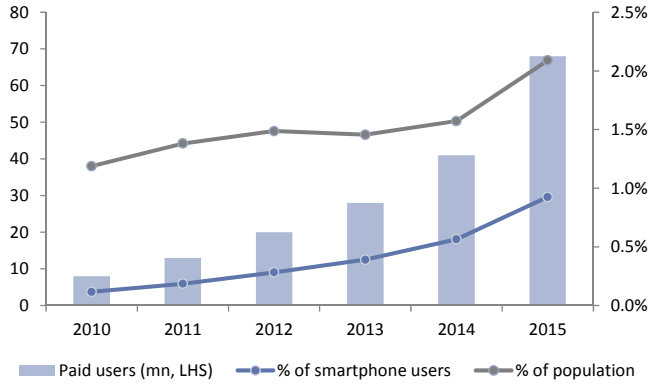
1. Growing penetration of paid subscription services led by DMs

With 90% of the recorded music revenue globally being concentrated in DMs, and an average ARPU of $120 in subscription streaming compared to around $50 for the average music buyer, the future take-up of paid streaming services in those markets will be a key driver of the overall recovery of the music industry. We see plenty of room to improve the penetration rate (currently at 3% on average) in DMs and catch up with the most advanced markets (the Nordics) which are already over 20%.

Paid streaming penetration growth has been accelerating

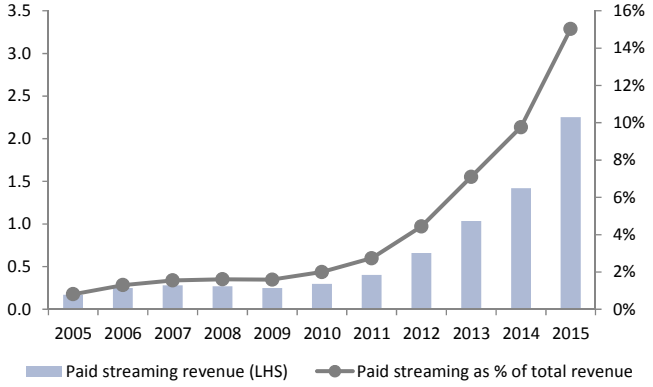
Streaming services have been available over the past 10 years, but we have observed a material acceleration in adoption over the past four years. The number of paying users grew to 68 mn in 2015 from 8 mn in 2010 (virtually all in DMs), driving a revenue increase to $2.3 bn in 2015 (15% of recorded music revenue) from $0.3 bn in 2010 based on IFPI data. We still see plenty of room for growth, with total population penetration only at 0.9% in 2015 or 2% of smartphone users.

Exhibit 55: The number of paying users increased to 68 mn in 2015 (2% of smartphone users) from 8 mn in 2010
Paid interactive streaming users (mn) worldwide and penetration of smartphone/ total population



Source: IFPI, Goldman Sachs Global Investment Research.

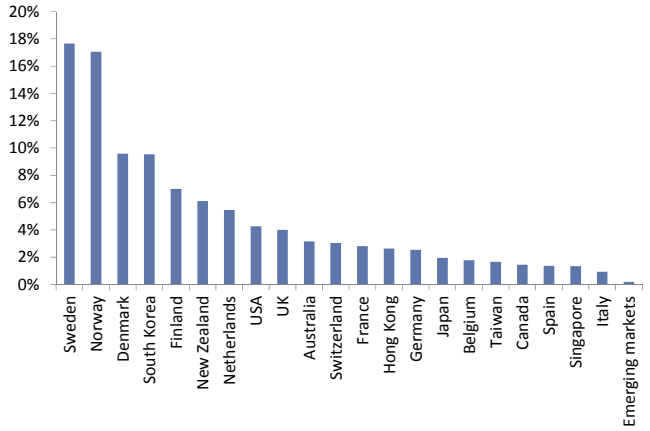
Exhibit 56: Paid streaming now accounts for 15% of total music revenue
Paid streaming revenue ($ bn, LHS) vs. % share of recorded music revenues (RHS)



Source: IFPI.

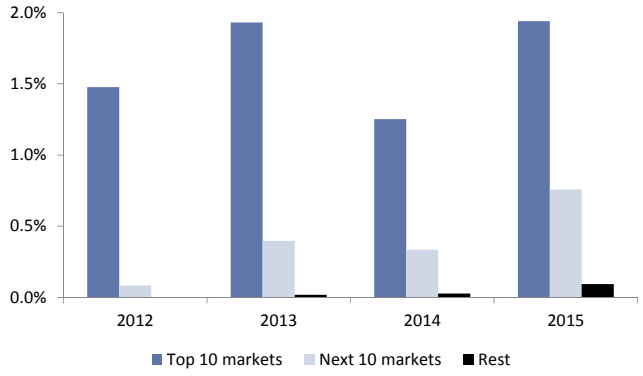
We calculate that the top 10 streaming markets were already at 8% of the population in 2015, with Sweden and Norway the most advanced markets at over 20% in 2015 (Deezer reckons that Sweden was close to 30% as of September 2016). The next 10 markets were still at 2% and the rest of the world only 0.2%. Encouragingly, penetration growth has been accelerating, up 36 bp globally in 2015 vs. +16 bp pa over 2011-14. This was also the case in the 10 most advanced markets, up 190 bp in 2015 vs. 160 bp pa over 2011-14. The next 10 markets grew 80 bp in 2015 vs. 30 bp and the rest of the world 10 bp vs. 2 bp.

Exhibit 57: A wide disparity of paid streaming adoption
Paid streaming penetration, 2015



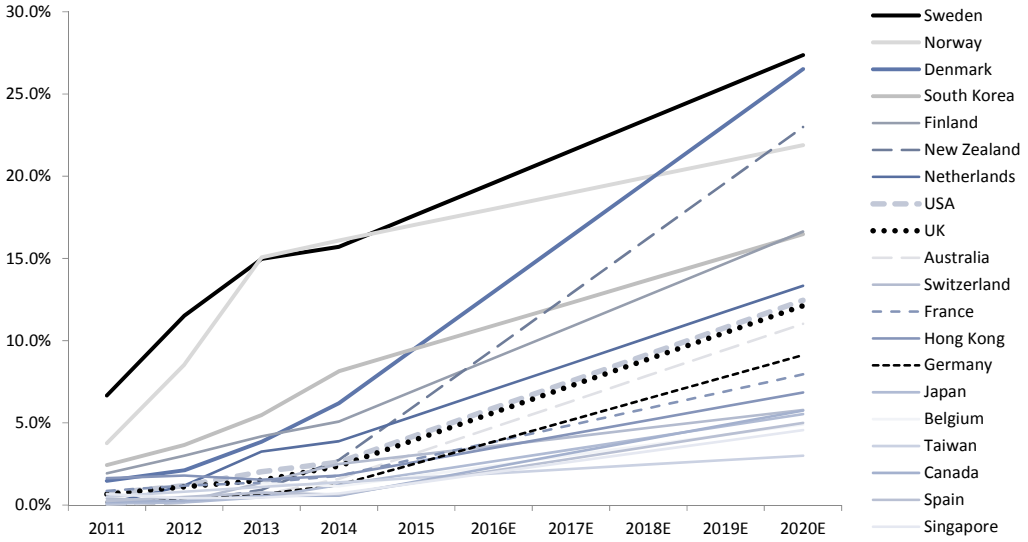
Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 58: Growth in penetration has been accelerating
Paid streaming penetration growth (absolute)



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 59: Extrapolating 2015 penetration growth rates would result in 18% penetration on average in the top 10 markets vs. 8% today, 6% in the next 10 vs. 2% today
Top 20 markets in terms of subscription streaming penetration



Source: IFPI, Goldman Sachs Global Investment Research.

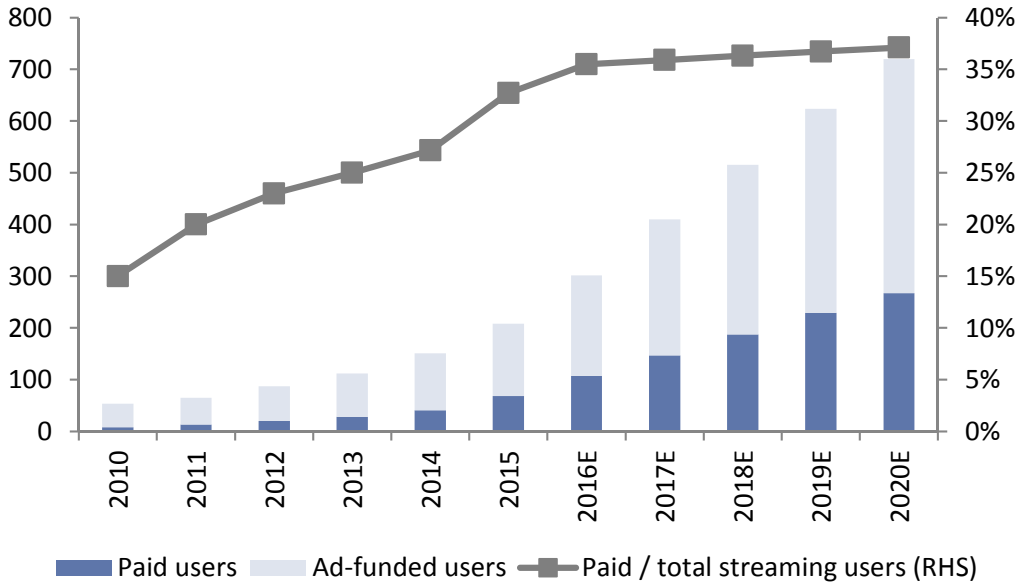
Improving free-to-paid conversion rates

Underpinning this is the improved free-to-paid conversion rates seen across the industry in the past few years, with the ratio of paid users vs. total users rising from 15% in 2010 to 33% in 2015, based on IFPI data and our estimates. For instance, the proportion of paid users at Spotify increased from 7% in 2010 to 28% at the end of 2015 and 33% as of August 2016 following the introduction of a $0.99 promotion for three months in several territories. Although not a direct comparison, Apple reported that its streaming service had 15 mn users of which 6.5 mn were paying and the remainder on the free trial as of October 2015, implying a conversion rate of 43%. Since then, Apple has not given any split, but commented that it has not changed much. Eddie Cue: "We're not giving out any numbers, but we've been very happy with the results we've seen. And it's stayed very consistent - it hasn't really changed at all, which I thought was interesting." (Billboard, June 15, 2016).

We expect that ratio to continue to rise and reach 37% by 2020 as consumers increasingly value the convenience of the service and streaming players focus more on the paid model (note all recent launches have been paid only such as Apple Music, Deezer in the US, YouTube Red, with Amazon, Pandora and iHeartRadio also entering the space).

Exhibit 60: The proportion of paid as % of total streaming users increased to 33% in 2015 from 15% in 2010 across all services

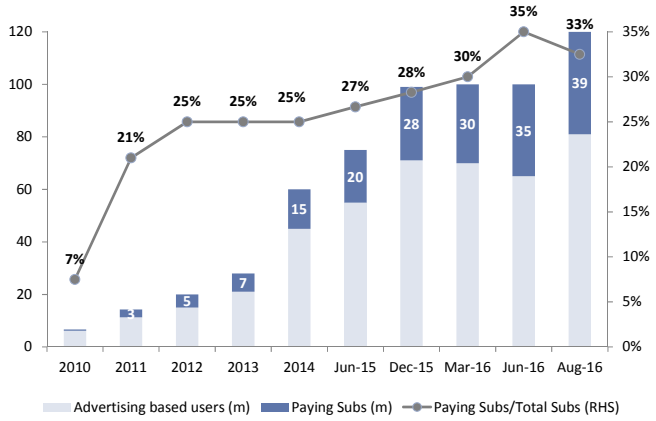
Total streaming users: paid vs. ad supported (mn, LHS)



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 61: Conversion rates have improved for Spotify

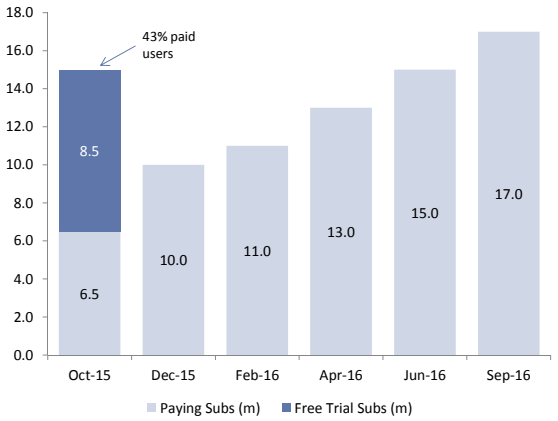
Spotify total subscribers: ad-based and paying (mn, LHS) vs. paying subs as % of total subscribers (%, RHS)



Source: Spotify, Press reports.

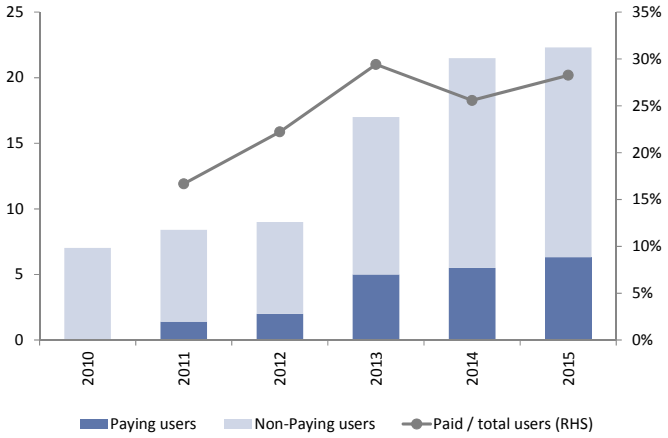
Exhibit 62: 43% of Apple Music users were paying as of October 2015

Apple Music total subscribers: free trial and paying (mn)



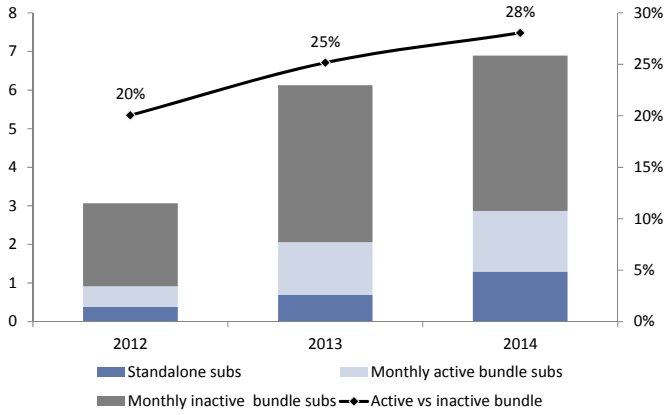
Source: Apple, Press reports.

Exhibit 63: Deezer's paid penetration has been more or less stable since 2013
Deezer users (mn, LHS) and ratio of paying users as % of total users (%, RHS)



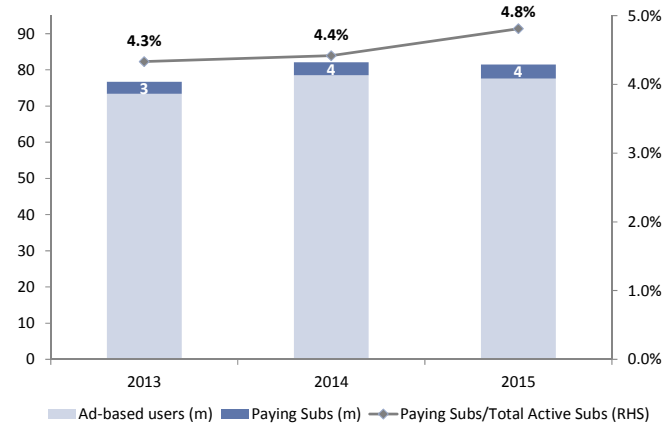
Source: Deezer, Press reports, Goldman Sachs Global Investment Research.

Exhibit 64: The proportion of active vs. inactive mobile phone bundle subscribers increased over 2012-14 to 28% for Deezer
Deezer subscribers (mn, LHS) and active bundle subscribers as % of total subscribers (%, RHS)



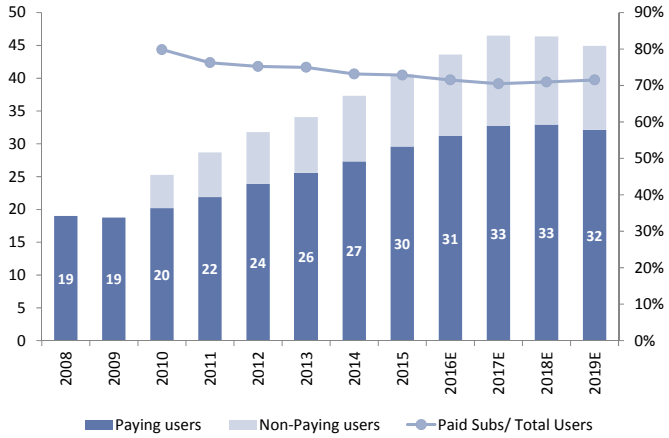
Source: Deezer, Press reports, Goldman Sachs Global Investment Research.

Exhibit 65: Pandora's paid penetration has increased slightly but remains heavily reliant on advertising
Pandora users (mn, LHS) and ratio of paying subscribers as % of total active subscribers (%, RHS)



Source: Company data.

Exhibit 66: Sirius' paid penetration has decreased slightly but remains heavily reliant on paid users
Sirius XM users (mn, LHS) and ratio of paying users as % of total users (%, RHS)



Source: Apple, Press reports.

Our base case is 9% penetration of smartphone population globally by 2030

We forecast that total paid streaming penetration will reach 9% of the total smartphone population globally by 2030 from 2% in 2015, by extrapolating 2015 growth trends. This level will still be below the average penetration for the top five paid streaming markets of 11% in 2015 and less than half the penetration in Sweden and Norway (over 20%), the most advanced markets. We assume that ARPU stays flat as the growth of lower ARPU streaming services in EM ($4 monthly average price currently) will likely offset the improving mix towards higher ARPU services in DM and the underlying inflation. This brings the total paid streaming market alone to $23 bn in 2030 from $2.3 bn in 2015, well above the total recorded music market of $15 bn in 2015.

Our sensitivity analysis shows that any 1% of additional penetration would lift the overall market by c.$2.5 bn and any 1% change to ARPU would have a $3 bn impact.

Exhibit 67: Paid streaming market forecasts

	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Paid and freemium streaming revenue ($bn)	**0.3**	**0.4**	**0.7**	**1.0**	**1.4**	**2.3**	**3.6**	**5.1**	**6.6**	**8.1**	**9.5**	**10.9**	**12.2**	**13.6**	**14.9**	**16.3**	**17.6**	**18.9**	**20.3**	**21.6**	**22.9**
% growth		36%	63%	57%	37%	59%	61%	40%	30%	23%	17%	15%	12%	11%	10%	9%	8%	8%	7%	7%	6%
% of total recorded music	2%	3%	4%	7%	10%	15%	23%	31%	38%	43%	48%	51%	54%	56%	58%	60%	61%	63%	63%	64%	65%
Paid users (m)	**8**	**13**	**20**	**28**	**41**	**68**	**107**	**147**	**187**	**230**	**270**	**310**	**348**	**386**	**424**	**462**	**500**	**538**	**576**	**614**	**652**
% growth		63%	54%	40%	46%	66%	57%	37%	27%	23%	17%	15%	12%	11%	10%	9%	8%	8%	7%	7%	6%
% of smartphone users	1.2%	1.4%	1.5%	1.5%	1.6%	2.1%	2.9%	3.6%	4.1%	4.6%	4.9%	5.1%	5.7%	6.2%	6.6%	7.1%	7.5%	7.9%	8.3%	8.7%	9.1%
% of total streaming users ex YouTube	15.0%	20.0%	23.0%	25.0%	27.2%	32.7%	35.5%	35.9%	36.3%	36.7%	37.1%	37.5%	37.9%	38.3%	38.7%	39.0%	39.4%	39.8%	40.1%	40.5%	40.8%
% of total population	0.1%	0.2%	0.3%	0.4%	0.6%	0.9%	1.4%	2.0%	2.5%	3.0%	3.5%	4.0%	4.4%	4.8%	5.3%	5.7%	6.1%	6.5%	6.9%	7.3%	7.7%
Average revenue per paying subs	**37.2**	**31.1**	**33.0**	**37.0**	**34.6**	**33.1**	**33.8**	**34.5**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**
% growth		-17%	6%	12%	-6%	-4%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Apple Music						**10**	**24**	**38**	**52**	**66**	**78**	**90**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
Net adds						10	14	14	14	14	12	12	10	10	10	10	10	10	10	10	10
Share of net adds						37%	36%	35%	35%	33%	30%	30%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Penetration of iPhones						2.0%	3.9%	5.3%	6.6%	7.6%	8.3%	8.9%	9.8%	10.6%	11.5%	12.3%	13.1%	13.9%	14.7%	15.5%	16.2%
Global internet players (AMZ, FB, GGL)							**2**	**8**	**16**	**28**	**40**	**52**	**64**	**76**	**90**	**104**	**118**	**132**	**146**	**160**	**174**
Net adds							2	6	8	12	12	12	12	12	14	14	14	14	14	14	14
Share of net adds							5%	15%	20%	28%	30%	30%	32%	32%	37%	37%	37%	37%	37%	37%	37%
Pure streaming players	**8**	**13**	**20**	**28**	**41**	**58**	**81**	**101**	**119**	**136**	**152**	**168**	**184**	**200**	**214**	**228**	**242**	**256**	**270**	**284**	**298**
Net adds			7	8	13	17	23	20	18	17	16	16	16	16	14	14	14	14	14	14	14
Share of net adds						63%	59%	50%	45%	40%	40%	40%	42%	42%	37%	37%	37%	37%	37%	37%	37%

Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 68: Our base case is 9% total paid streaming penetration by 2030 with a flat ARPU

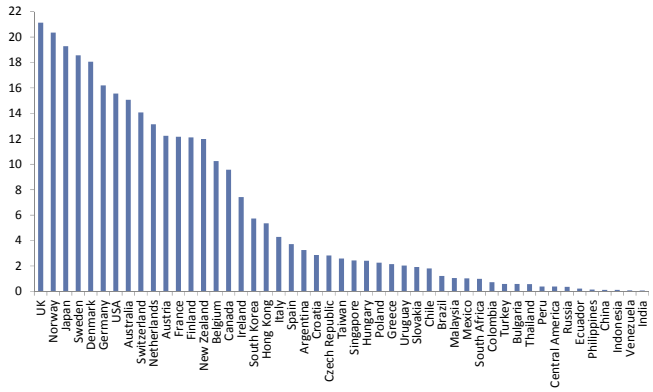
ARPU CAGR 2020-30	PAID STREAMING PENETRATION 2030								
	3.0%	5.0%	7.0%	9.0%	11.0%	13.0%	15.0%	17.0%	19.0%
-2.0%	6.0	10.0	13.9	17.9	21.9	25.9	29.9	33.8	37.8
-1.5%	6.3	10.6	14.8	19.0	23.3	27.5	31.7	36.0	40.2
-1.0%	6.7	11.2	15.7	20.2	24.7	29.2	33.7	38.2	42.7
-0.5%	7.2	11.9	16.7	21.5	26.3	31.1	35.8	40.6	45.4
0.0%	7.6	12.7	17.8	22.8	27.9	33.0	38.1	43.1	48.2
0.5%	8.1	13.5	18.9	24.2	29.6	35.0	40.4	45.8	51.2
1.0%	8.6	14.3	20.0	25.7	31.4	37.2	42.9	48.6	54.3
1.5%	9.1	15.2	21.2	27.3	33.4	39.4	45.5	51.6	57.6
2.0%	9.7	16.1	22.5	29.0	35.4	41.8	48.3	54.7	61.1

Source: Goldman Sachs Global Investment Research.

2. The emerging market opportunity

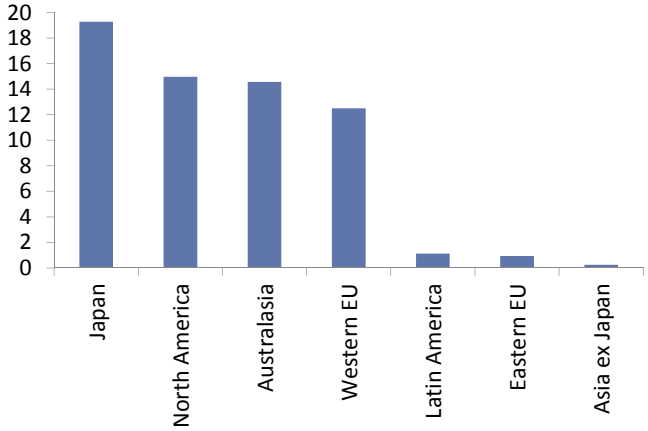
We believe emerging economies represent one of the biggest opportunities for the streaming industry, driven by a growing recognition of the value of IP, new business models (ad-funded, prepaid, telecom bundles etc.) and payment capabilities, while smartphone penetration is already at levels close to DMs. Average annual spend on recorded music per capita in EM stood at less than $1 in 2015 compared to around $15 in DM (IFPI). EM accounted for just c.10% of the global recorded music market in 2015. The entire Chinese music market was smaller than that of Sweden (while nominal GDP is 22x bigger) and the Indian market was smaller than that of Norway (while nominal GDP is 5x). This under-representation is mainly the result of widespread counterfeiting and piracy and under-developed physical retail infrastructure. The International Intellectual Property Alliance (IIPA) estimates music piracy rates are in excess of 90% in China, India, Mexico and Brazil.

Exhibit 69: Music spend per capita shows a clear divide between DM and EM
Music spend per capita ($, 2015)



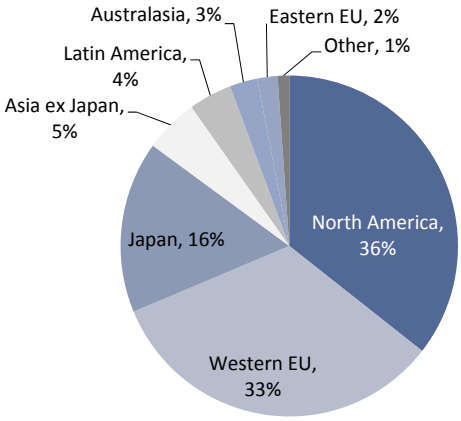
Source: IFPI.

Exhibit 70: Music spend per capita is around $1 in EM vs. $15 in DM
Music spend per capita ($, 2015)



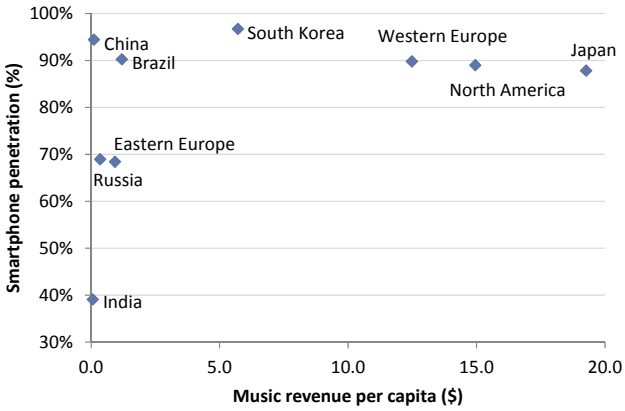
Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 71: EMs accounted for just 10% of the global recorded music market in 2015
Music revenues – market share by geography



Source: IFPI, Goldman Sachs Global Investment Research.

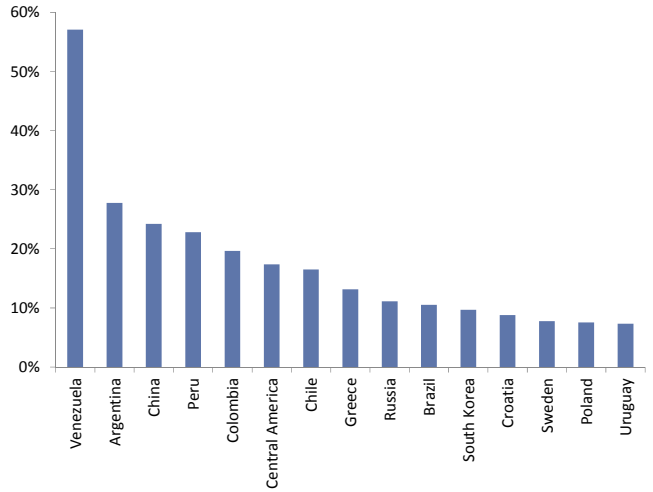
Exhibit 72: BRICs show significant revenue growth potential with smartphone penetration close to DMs
Music spend per capita ($) vs. smartphone penetration



Source: IFPI, Goldman Sachs Global Investment Research.

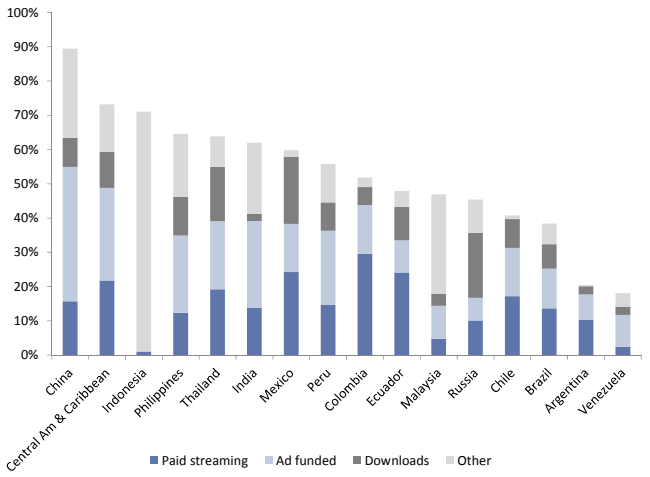
We believe the launch of convenient, better quality, legal streaming alternatives with a free tier could reduce piracy rates and therefore generate new revenue streams for the music industry. This transition should also be supported by the high level of digital penetration already present in many EM music markets and a growing recognition of the value of IP. Many emerging markets, which historically have not been big spenders on music, have seen a resurgence of their music industry thanks to the launch of streaming services and more innovative payment capabilities (paying for music using the phone number/email address instead of credit card details for example); nine of the top 10 fastest growing markets in 2015 were EMs.

Exhibit 73: Nine of the top 10 fastest growing markets in 2015 were EMs
Average music revenues growth, 2012-2015



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 74: Many EM music markets are already highly digital
Digital music share of total recorded music (broken down by genres)



Source: IFPI, Goldman Sachs Global Investment Research.

We see various routes available to tap into the EM opportunity such as pre-paid models, low ARPU subscriptions, ad-funded models or telecom bundles. The importance of local content also paves the way for the emergence of indigenous companies, such as QQ Music (China), KKBOX (Taiwan), MelOn (South Korea) and Saavn (India). In China for instance, local repertoire accounts for 80% of music consumption, Korean and Japanese pop another 10% and international only 10%, according to IFPI.

We calculate that a 1% increase in paid penetration assuming a monthly price of $4 (the current average price of an Apple Music or Spotify subscription in EM) would generate $1.5 bn of additional revenue or a 10% uplift to the current global recorded market.

Exhibit 75: A 1% increase in paid streaming penetration could bring an incremental c.$360 mn revenue assuming $1 ARPU and $1.5 bn revenue assuming $4 ARPU
Global paid streaming penetration vs. ARPU – scenario analysis

EM		Paid streaming penetration						
		0.20%	0.5%	1.0%	2.0%	3.0%	4.0%	5.0%
Monthly price	1.0	0.073	0.181	0.363	0.726	1.089	1.452	1.814
	2.0	0.145	0.363	0.726	1.452	2.177	2.903	3.629
	3.0	0.218	0.544	1.089	2.177	3.266	4.355	5.443
	4.0	0.290	0.726	1.452	2.903	4.355	5.806	7.258
	5.0	0.363	0.907	1.814	3.629	5.443	7.258	9.072
	6.0	0.435	1.089	2.177	4.355	6.532	8.709	10.886

Source: Goldman Sachs Global Investment Research.

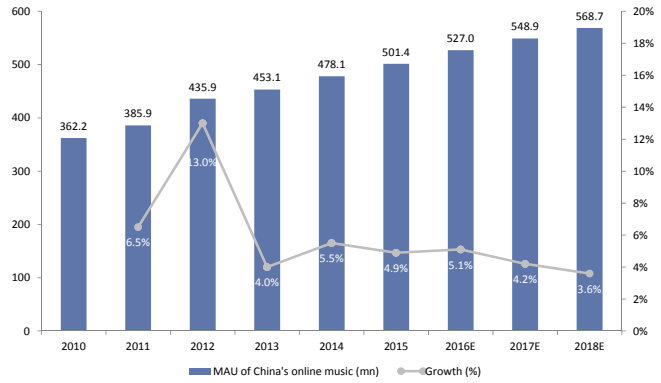
China case study: Local tech giants drive greater monetization of music content
China offers a useful case study of a large, under-monetised music market plagued by piracy where streaming is opening up sizeable new monetization avenues at a time when the value of IP is being increasingly recognized. Streaming drove a 64% yoy increase in the Chinese recorded music market in 2015. However, at $169.7 mn, it remains the 14th largest market globally behind Sweden (despite boasting a GDP that is 22x larger).

We see significant growth potential with the Chinese online music industry already counting 501 mn users in 2015 according to iResearch, which is the largest user base in the world and more than the entire population of the US. The market is estimated to be worth RMB9.6 bn in 2016 (China Economic Net). The three major local internet players or BAT (Baidu, Alibaba, Tencent) play a crucial role in driving music growth by:

- **Signing licensing deals with various international and regional record labels therefore helping enforce IP protection.** Baidu paved the way for monetization of digital music in China in 2011, when it signed an agreement with One-Stop China, a JV between UMG, Warner Music and Sony. Since then, Alibaba has signed deals with Universal Music Group and BMG, and Tencent sealed exclusive agreements with Sony, Warner Music and South Korea's YG Entertainment. Meanwhile, government regulation has been tighter against piracy with China's National Copyright Administration (NCA) last year ruling that all unlicensed content be removed from music platforms.
- **Leveraging their massive reach to attract customers.** Baidu Music had 150 mn monthly active users (both free and paid) as of December 2015. Tencent's QQ Music has nearly 100 mn daily active users and 400 mn monthly active users. Following the merger with China Music Corporation (CMC)'s music streaming services Kugou and Kuwo, iResearch estimates that QQ Music now has 800 mn users, 56% of the Chinese mobile-music market and 60% of all available music rights in China.
- **Offering users an easy way to pay for music subscriptions** through their own wallets (e.g. Alipay, WeChat wallet). While the main route to monetization will remain ad supported streaming in our view, we see encouraging evidence of greater consumer willingness to pay for music: 10 mn of Tencent's 400 mn monthly active users are paying (source: Mashable). In December 2015, Singaporean artist JJ Lin sold 610,000 copies of his single 'Twilight' on QQ Music in just one week for as little as RMB2 per download. A survey from iResearch found that nearly 57% of QQ Music's users in China would have paid for something on their music apps this year while a further fifth are open to paying in the future.

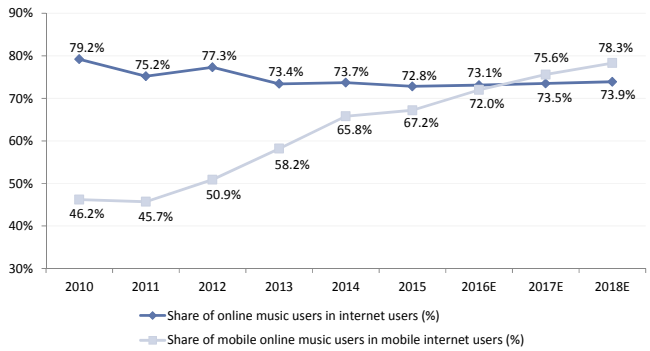
Interestingly, QQ Music is reportedly profitable (Digital Music News, August 2) which could be credited to Tencent's capacity to cross sell various products such as concert tickets as well as more favourable licensing deals with labels (according to Mashable).

Exhibit 76: Chinese online music users expected to reach c.569 mn by 2018
China's online music users 2010-2018



Source: iResearch, CNNIC.

Exhibit 77: A large proportion of users listen to music on mobile in China
Penetration of China's online & mobile Music 2010-2018



Source: iResearch, CNNIC.

Exhibit 78: Comparison of China music streaming services
China music streaming services

Music service	Parent company	Ad-funded offering	Paid Model	Pricing	Number of users	Paid Subscribers	Catalogue size	Deals with record labels	Comments
QQ Music	Tencent	Yes	Monthly subscription/ download package	RMB 10 per month / RMB 8 for 300 songs	400 mn MAU, 100 mn DAU	10mn paying users	15 mn	200 deals incl. exclusive rights to Sony Music and Warner Music in China	Also sells concert tickets and offers live streaming of concerts
Kugou	Tencent	Yes	Monthly subscription/ download package	RMB 10 per month / RMB 8 for 300 songs	222 mn mobile MAU	10mn paying users		40 labels including Sony/ATV, UMG	Merged with Kuwo and Omusic in 2015. Can also live stream concerts
Xiami	Alibaba		Monthly subscription	RMB 10 per month	20 mn MAU		2.5 mn	Various including Universal Records, Rock Records and HIM International Music	
Alibaba Planet (previously TTPOD)	Alibaba		Monthly subscription	RMB 12 per month	300 mn (2012)		2.5 mn	BMG Records, Rock Records and HIM Records	Also acts as a music marketplace for artists, producers to connect
Baidu Music	Baidu	Yes	Monthly subscription	Premium Service - RMB 10 per month	150 mn			UMG, BMG, various Chinese labels	
Apple Music	Apple	No	Monthly subscription	RMB 10 per month			30 mn		
Migu Music	China Mobile		Monthly subscription	RMB 10 per month	> 100 mn		4.2mn		Limited download music service
NetEase Music	NetEase	Yes	Monthly subscription/ download	RMB 8 per month	> 100 mn		5 mn		
Duomi Music	A8 New Media Group		Monthly subscription/ download	RMB 8 per month / RMB 3 for 100 songs					

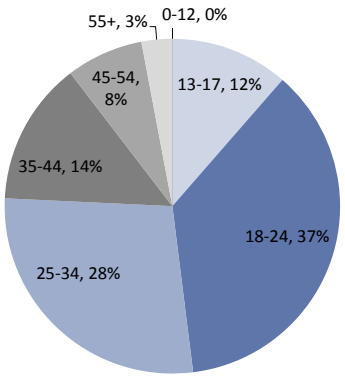
Source: Company data, Trade Press, Goldman Sachs Global Investment Research.

3. Gen Z and Millennials: The ideal audience for streaming

The changing media consumption habits of Millennials and Generation Z (more mobile, cross-platform and connected than their Millennial predecessors) are particularly beneficial to the music industry as a greater share of their spare time is being spent on music (along with social media), as opposed to watching TV and reading. Mobile music streaming is particularly suited to younger age groups with a study from ComScore showing that 4 out of the top 10 mobile apps used by Millennials are music related.

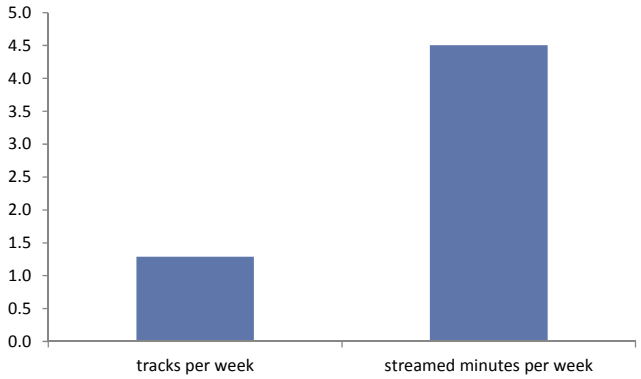
Their inherent characteristics of being "digital natives", focused on experience and convenience, make them the ideal targets of music streaming services which can be tailored for any taste, different budgets (ad-supported, student plans, family plans) and most importantly for any device. Millennials already spend a higher absolute amount of money on music than the average population in the US, which is mainly attributable to live music and paid streaming. The 13-17 year old age group, while having a smaller budget than the average population, already spends as much on paid streaming than the average American on an absolute basis. Spotify reports that Gen Z and Millennials (13-34) account for 77% of users across its markets. In the US, Millennials alone (18-34) account for 72% and spend 4.5 bn minutes streaming listening to 1.3 bn tracks every week (143 minutes per day on average for those accessing Spotify on multiple screens).

Exhibit 79: 77% of Spotify' customers are Gen Z & Millennials



Source: Spotify

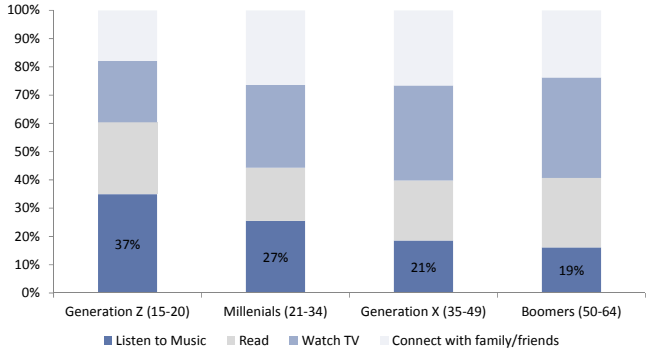
Exhibit 80: Millennials spend 4.5 bn minutes listening to 1.3 bn tracks every week on Spotify in the US



Source: Spotify/ AdWeek.

Exhibit 81: Gen Z and Millennials spend a higher proportion of their spare time listening to music

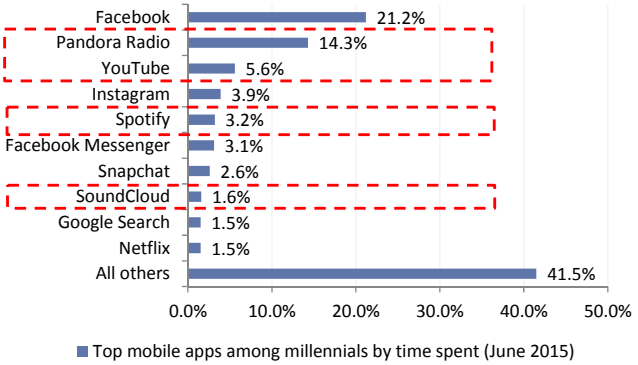
Top 5 spare-time activities, by generation (percentage selecting each as one of their top 3)



Source: Deloitte.

Exhibit 82: 4 out of top 10 mobile apps used by Millennials are music-related

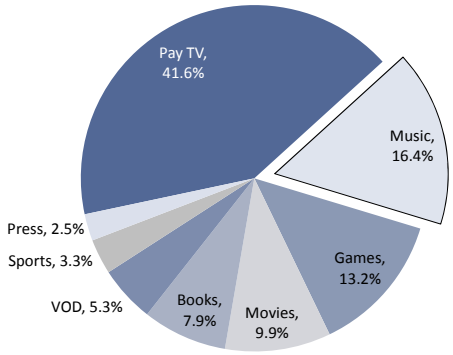
Top mobile apps among Millennials (18-34) by time spent (US, June 2015 – before Apple Music launch)



Source: ComScore.

Exhibit 83: Millennials spend 16% of their entertainment budget on music in North America

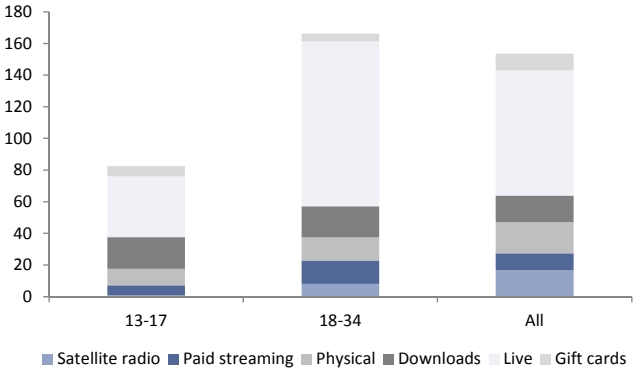
Breakdown of entertainment spend



Source: Deloitte.

Exhibit 84: In the US, Millennials spend more money on music than the average person and more on live music and paid streaming

Breakdown of music spend by genre



Source: Nielsen.

4. Telecom and tech companies leveraging music content

With the proliferation of premium data plans and smartphones, mobile carriers are now increasingly seeking out streaming music and video services as a means of driving upgrading and upselling opportunities as well as differentiation. Almost non-existent in 2011, there are now 11.5 mn telco bundled music subscribers globally according to MIDiA.

Telecom operators' large marketing budgets and sizeable existing billing relationships make them ideal partners to (1) enter a new market at little cost, especially in EM where subscription ARPUs are lower and credit card penetration remains low, and (2) reach younger demographics (whose bills are paid by parents). While such deals are dilutive from an ARPU perspective (27% according to Deezer), we believe that margins are broadly similar given lower marketing and customer acquisition/retention costs.

In parallel, large tech companies have also made a major foray into music streaming over the last three years as a way to better lock users into their ecosystem and sell more advertising (Google), devices (Apple) and products (Amazon).

- Google launched a dedicated music streaming service in 2011, Google Play Music, which includes a $9.99 "all you can eat" subscription option (since 2013) and an ad-supported free tier (since 2015). It presents a number of additional features such as free online music storage (up to 50,000 songs), a self-publishing platform Artist Hub for artists and music sharing via Google +. In 2015, it launched YouTube Red, which enables users to access all YouTube content free of ads and includes the premium version of Google Play Music for $9.99 a month ($12.99 for iOS users).
- Apple bought headphone maker and music streaming service Beats for $3 bn in May 2014 and launched a paid only subscription service Apple Music in June 2015 in a move to compensate declining digital music sales at iTunes.
- Amazon launched a free music streaming service in 2014 with over one million songs for Prime customers ("Prime Music") and is reported to be launching soon a paid music subscription service that would cost $10 pm for unlimited access on any device and $4-5 for unlimited access exclusively on Amazon's Echo Player (MBW, September 2, 2016).

Exhibit 85: Selected streaming services/ telecoms partnerships

Telecoms Company	Country	Partnership	Launch date	Price	Package details	Firm Rationale	Additional Details
EE	UK	Apple Music	Aug 2016	6 months free, £9.99 thereafter	- Offered both to new EE customers, and those renewing their contracts	- Increase the amount of music streamed over its network	
Bouygues	France	Spotify	Jan 2015	Free	- Bonus for subscribers to Sensation 3GB plans and above	- Enhance customer experience by expanding services and content	- Unlimited smartphone, tablet or computer access to Premium offer of <30m titles, with offline listening.
Orange	France	Deezer	Dec 2014	€2.99/month for 3 months (or €1/month for 6 months if you are a Play or Jet customer); €9.99 thereafter	- Standalone offering through Orange platform	- Importance of new digital services to attract customers	- Unlimited music listening, ad-free - On your mobile, tablet, PC or TV - Listen without network (offline)
Sprint (SoftBank)	US	Spotify	May 2014	Free trial of Spotify	- Sprint subscribers on its tiered "family plan" will get discounts to Spotify subscriptions once the trial period ends - Family (1-5 people): 6 months free; $7.99/month onwards - Family (6-10 people): 6 months free; $4.99/month onwards - All other customers: 3 months free; $9.99/month onwards	- Sprint gets cachet with the cool kids from an association with the market-leading music streaming service – and, assuming its customers appreciate access to a large library of music, a valuable tool to reduce customer churn.	- Coincide with the Spotify partnership, Sprint also unveiled a special version of HTC'S One M8 handset featuring HD audio technology supplied by Harmon Kardon.
Globe Telecom	Philippines	Spotify	Apr 2014	Free for prepaid subscribers	- Globe Telecom customers to get Spotify Premium with new GoSURF mobile plan - mobile internet access and Spotify for P10/ day Spotify premium P129/ month	- Strengthens its vision to provide an enriched online experience and access to free online content.	- Exclusive partnership with Globe Telecom, the best free music experience in the history of the smartphone - available now Instant access to over 30m songs
Telefónica	Spain, Germany, LatAm	Napster	Oct 2013	$4.90/month	- Speedy fixed broadband and Movistar mobile broadband products - Available as Napster Web & Napster Premium	- Increase attractiveness of mobile packages to operators in Europe and Latin America - Bolster the launch of 4G networks globally	- First carrier to release Firefox OS-based smartphone
SFR	France	Napster	Sep 2013	Free add-on for 4G SFR customers	- "Napster Decouverte" package: 2 hours of calls, unlimited SMS/MMS & 2 GB of mobile data/ month - Premium music service offered for €9.95/ month as an Extra service	- Add innovative content to provide a better experience of 4G	- Five Napster options on monthly basis & access <20 million songs – online and offline – using smartphones and tablets. - Available for iPhone, iPad and iPod Touch & smartphones using Android operating system
Vodafone	UK	Spotify	Aug 2013	Free for 6 months, £4.99/ month thereafter	- Red 4G plan priced at £26 or more/ month - Spotify unlimited: £4.99/ month - Spotify Premium: £9.99/ month	- Emphasize worth of 4G offering	- Spotify can be chosen as content option - Available on multiple compatible devices
Telenor	Norway, Thailand, Hungary	Deezer	Oct 2012	Free for three months, HUF 1390/ month thereafter	- Content add-on for customers with existing packages - Five different 'Hipernet' price plans: Start, Active, Medium, Heavy & Pro offering download speeds of 5/1-60/10 Mbps, data allowance of 3-30GB & extra service allowance.	- Capitalize on their position as a provider of a legal alternative to pirated music	- Access to 18m tracks on phones, PCs or tablets at any time.
Deutsche Telekom	Germany	Spotify	Aug 2012	£4.99/month: Spotify Unlimited £9.99/month: Spotify Premium	- Special Complete Mobile Music Tariff: €29.95 (£23.95)/month - Add Spotify Premium for €9.95 (£7.95)/month - €39.95/month with new Smartphone	- Claiming the platform's integration with Facebook and other social networks was a major driver behind the deal and indicative of where the industry is heading. - Gives operator exposure to new audiences	- Consumers able to listen to more than 19m songs on their smartphone, tablets, or PCS, both online and offline without impact on their data limits. - All tariff bundles include call flat, data flat and SMS allnet flat besides the Spotify Premium.
Virgin Media	UK	Spotify	Jul 2011	Spotify Premium free for three months with Premiere & VIP collections	- **Premiere**: unlimited broadband, 60Mb download speeds, free wireless Super Hub, free connection, 200 channels (43 HD) 2x 500GB Tivo boxes: £25/month for 6 months & £52/month thereafter - **VIP**: 225 channels, 2x 1TB TiVo boxes, anywhere Virgin TV access: £50/ month for 6 months, rising to £104.45/ month thereafter - Catch Up TV services & Virgin TV On Demand	- Boost appeal of Virgin Media's bundled TV, broadband and telephone services.	- Access millions of tracks from thousands of artists, online, on mobile or through exclusive Spotify app on Virgin Media's TiVo-powered digital TV service
KPN	Netherlands	Spotify			- Streaming service comes free as part of a bundle package		
Mobilcom-Debitel	Germany	Juke			- The streaming service will now come bundled on the telecom's mobile platforms		- New customers of mobilcom-debitel will have access to different tiers of the service, incl. a subscription service with unlimited access to Juke's library of more than 20m songs or access to the library for a fee added to their service contract.

Source: Press reports.

A rising tide lifts (almost) all boats

In addition to the structural and regulatory tailwinds highlighted above, we believe industry responses will be critical in shaping the future growth of the industry which only started to recover in 2015 after almost two decades of decline. We would expect some level of coordination among labels and platforms to maximize that growth potential. As a result, we believe the split of revenue pools will remain broadly unchanged in the near to medium term.

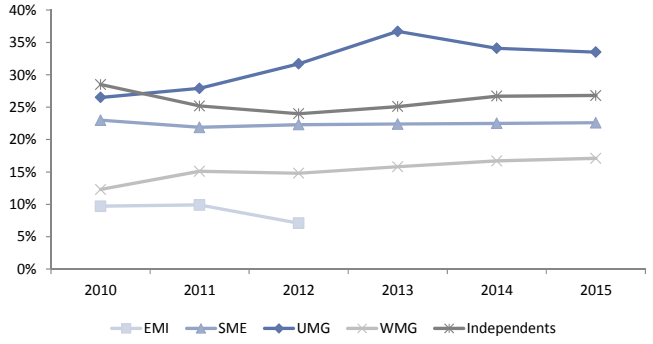
Labels have the most to gain from the growth of streaming and growing competition among distributors

Recorded music companies or labels perform a vast array of functions from the discovery and development of artists to the marketing, sale and licensing of their recorded music in various formats. Labels also increasingly engage in ancillary activities such as merchandising, sponsorship, live performance, artist management, etc., which are often referred to as "artist services and expanded rights" agreed as part of "expanded rights deals" or "360° deals."

The recorded music industry is dominated by three companies (Universal Music, Sony Music, Warner Music) which commanded 73% market share in 2015 according to Music & Copyright. The industry has experienced a wave of consolidation over the past few decades, the most recent sizeable deal being the acquisition of EMI Recorded Music by UMG in 2012 for €1.4 bn. The remaining 27% of the market is extremely fragmented, made up of thousands of independent labels. This concentration helps the labels maintain a strong negotiating power with the platforms – note that the distributors' cut of c.30% has hardly moved over the past 15 years despite the launch of downloads and streaming services by large players including Apple.

Exhibit 86: The recorded market is dominated by three majors

Global recorded music market revenues, % market share



Source: Music & Copyright.

Exhibit 87: Major three labels compared

	Universal Music Group (UMG)	Sony Music Entertainment (SME)	Warner Music Group (WMG)
Presence	>60 countries	30 countries	>50 countries
Employees	6,967	c.3,000	c. 4,200
Labels	>100	>20	>200
Record labels	Interscope Geffen Capitol Music Group Republic Records Def Jam Recordings Polydor Island Records	Columbia Records Warner Bros. Records Epic Records RCA Records Arista Nashville Legacy Recordings	Atlantic Records Asylum Big Beat East West Electra Erato
Publishers **Copyrights managed**	UMPG 3.2m copyrights	Sony/ATV 4m copyrights	Warner/Chappell > 1.2m copyrights
Top artists 2015	Taylor Swift Justin Bieber Sam Smith The Weeknd Drake	Adele One Direction David Bowie Meghan Trainor Sia	Ed Sheeran Coldplay Wiz Khalifa Mark Ronson Jason Derulo
Other major artists	ABBA Louis Armstrong The Beatles Andrea Bocelli Elton John	Beyonce Mariah Carey Celine Dion The Fray Michael Jackson	Linkin Park Michael Buble Bruno Mars David Guetta Prince

Source: Company data, Goldman Sachs Global Investment Research.

As highlighted earlier, we see greatest value growth potential in the recorded segment as streaming improves the monetization of music content (reduction in piracy rates, more favourable royalty structure notably in the US, higher ARPU when migrating customers onto the paying tier) and creates new revenue streams.

The recorded music industry has recently turned a corner, with the proliferation of subscription streaming driving an improvement in global recorded music revenues from a 6% pa decline over 2007-2010 to a 1% pa decline over 2011-14, and 3% yoy growth in 2015, the fastest growth recorded since 1998. We expect growth to accelerate further from here, as confirmed by 1H16 trends. Three of the top 5 markets that have reported so far (the US, Germany, France) posted c.6% revenue growth on average in 1H16, following flat performance in FY15. Even the most advanced markets in terms of paid streaming penetration such as Sweden and Norway (over 20% penetration - Deezer even estimates Sweden is close to 30% as of September 2016) saw an acceleration to c.8% in 1H16 after +5% growth in FY15. We forecast the recorded music market to grow 4% in 2016, 5% in 2017 and pick up to 6% pa after 2018. Overall, we believe the recorded music segment should return to its 1999 peak of $29 bn by 2027, from $15 bn today.

Exhibit 88: Recent music data points confirm the recorded music industry turnaround
Recorded music revenue growth by market, % yoy change

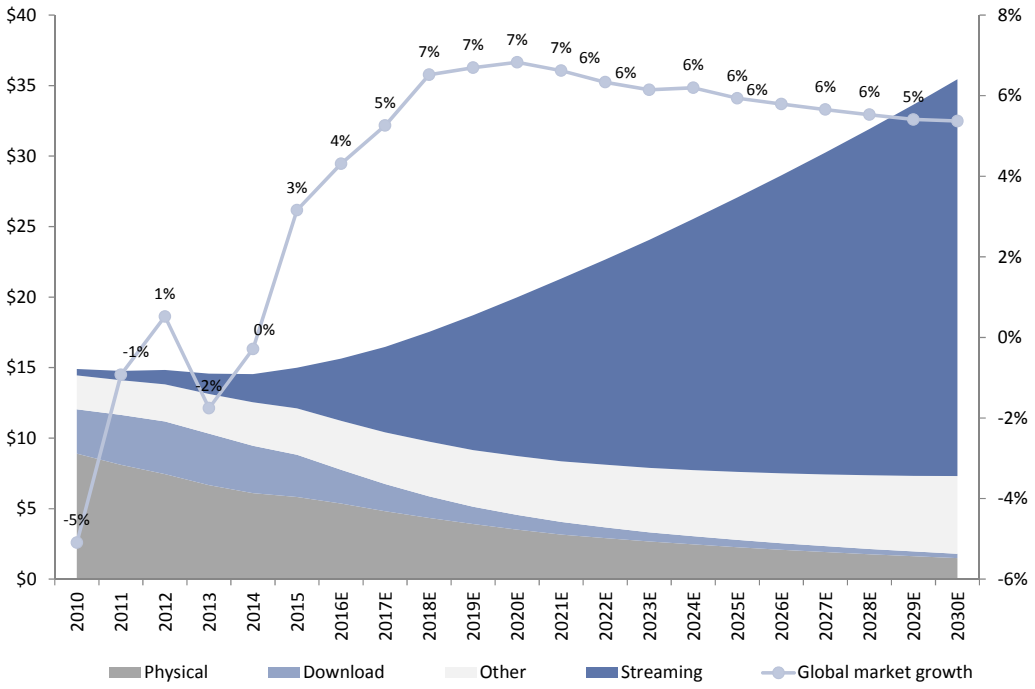
Recorded music	FY 14	1H 15	2H 15	FY 15	1H 16
TOP 5 Markets					
US	-0.7%	-0.5%	2.4%	0.9%	8.1%
UK	-2.8%	-5.0%	6.1%	0.6%	
Japan	-2.6%	1.1%	4.9%	3.0%	
Germany	1.8%	4.4%	4.8%	4.6%	3.6%
France	-5.3%	-7.0%	-2.4%	-4.7%	6.0%
Nordics					
Sweden	0.0%	4.2%	11.1%	7.6%	8.6%
Finland	-9.0%	0.5%	5.0%	2.7%	
Denmark	3.8%	0.4%	2.6%	1.5%	
Norway	-2.5%	7.0%	-1.8%	2.6%	7.8%
Southern Europe					
Spain	5.4%	10.9%	9.0%	10.0%	4.0%
Italy	1.5%	22.3%	27.9%	25.1%	

Source: RIAA (US), IFPI, unless local data available.

We believe labels have the most to gain within the value chain, given they receive 55%-60% of a platforms' revenue as royalties which is the same across streaming, physical or downloads. We do not foresee a major change in this share in the near term as distribution fragments and digital increases the complexity of the industry. Labels will have a vested interest in keeping a minimum level of competitive tension among platforms, assuming they have learnt from past mistakes such as allowing the formation of a monopoly in distribution. The outcome of their (re)negotiations with YouTube, Spotify or Amazon in the coming months and regulatory changes will be key in this regard. That said, we believe streaming platforms will be able to increasingly leverage the vast amount of user data to cut better deals with labels over time.

As such, we estimate that streaming will represent a $28 bn market by 2030 and will enable the overall revenue pie for labels (i.e., recorded music market) to return to its 1999 peak of $29 bn by 2027 and reach $36 bn in 2030. This compares to the current revenue pool of $15 bn, of which $9 bn is at risk (physical and download sales).

Exhibit 89: Streaming: A $28 bn market opportunity by 2030
Global recorded music market revenues ($ bn, LHS) vs. global revenues growth (%, RHS)

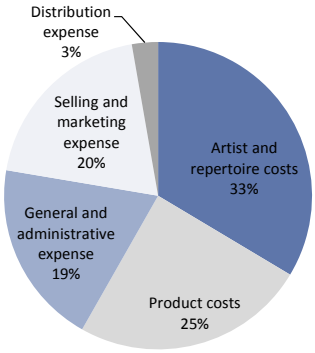


Source: IFPI, Goldman Sachs Global Investment Research.

The potential expansion of the profit pool is even more meaningful as labels generate higher margins in digital where the cost of manufacturing, distribution, inventory and returns is removed. We estimate that labels currently generate around 15% EBITA margins in both streaming and download compared to 8% in physical. Over time, we believe streaming margin could grow to 20%-25% given (1) more cost-effective marketing, (2) higher profitability of catalogue sales where development and marketing costs are lower than new releases, and (3) ongoing adaptation of the cost structure to a streaming world (conversion of fixed to variable costs, IT systems upgrade enabling greater efficiencies etc.). We expect however, disruptive forces such as the emergence of alternative labels to lead to a greater redistribution of profits to artists (artists and repertoire costs currently account for 30%-35% of labels' revenue netted of payments to publishers). Based on a streaming EBITA range of 15%-25%, we forecast $2-3 bn of additional profit to be unlocked from streaming, compared to current profit pool of $1 bn generated from physical and downloads.

Exhibit 90: Warner Music breakdown of recorded music costs

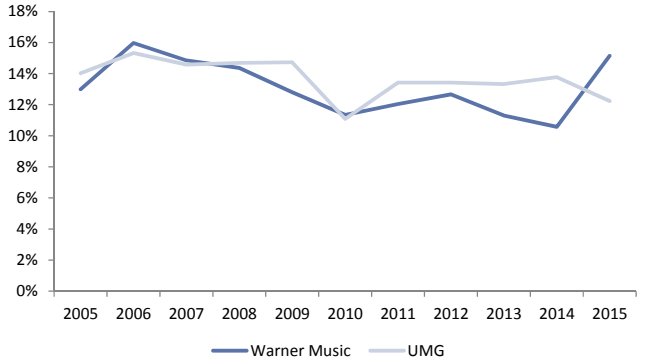
Warner Music breakdown of recorded music costs



Source: Company data.

Exhibit 91: Warner Music and UMG generate around 14% recorded EBITDA margin

Warner Music and UMG Recorded EBITDA margin



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 92: We estimate labels generate 15% EBITA margins in digital compared to 8% in physical; paid streaming is particularly attractive, commanding a profit per person that is 2-3x higher than other formats

Note: The publishers/songwriters receive their royalties via the labels in physical and downloads, but directly from the streaming services

Physical		
Average spend per person	$ 55.0	% of gross revenue
VAT	$ 11.0	20%
Net revenue	$ 44.0	
Split:		% of net revenue
Distributor revenue	$ 13.2	30%
Record company revenue	$ 30.8	70%
Record company costs		% of record revenue
Pay away to publishers	$ 4.4	14%
Artists & Repertoire	$ 5.5	18%
Production & Distribution	$ 4.3	14%
Other Product Costs	$ 1.5	5%
Gross margin	**$ 15.0**	**49%**
Selling & Marketing	$ 7.1	23%
G&A	$ 4.7	15%
EBITDA Margin	**$ 3.2**	**10%**
Depreciation	$ 0.77	3%
EBITA Margin	**$ 2.4**	**8%**

Downloads		
Average spend per person	$ 48.0	% of gross revenue
VAT	$ 9.6	20%
Net revenue	$ 38.4	
Split:		% of net revenue
Distributor revenue	$ 11.5	30%
Record company revenue	$ 26.9	70%
Record company costs		% of record revenue
Pay away to publishers	$ 3.5	13%
Artists & Repertoire	$ 5.9	22%
Production & Distribution	$ -	0%
Other Product Costs	$ 2.7	10%
Gross margin	**$ 14.8**	**55%**
Selling & Marketing	$ 6.2	23%
G&A	$ 4.0	15%
EBITDA Margin	**$ 4.6**	**17%**
Depreciation	$ 0.67	3%
EBITA margin	**$ 3.9**	**15%**

Streaming - ad funded + subscription		
Average revenue per user	$41.0	% of gross revenue
VAT	$ 8.2	20%
Net revenue	$32.8	
Split:		% of net revenue
Distributor revenue	$ 9.8	30%
Content pool	$23.0	70%
Split Publishing	$ 3.3	10%
Split Record company	$19.7	60%
Record company costs		% of record revenue
Artists & Repertoire	$ 7.5	38%
Production & Distribution	$ -	0%
Other Product Costs	$ 4.6	20%
Gross margin	**$10.9**	**55%**
Selling & Marketing	$ 4.5	23%
G&A	$ 3.0	15%
EBITDA Margin	**$ 3.4**	**17%**
Depreciation	$0.49	3%
EBITA margin	**$ 2.9**	**15%**

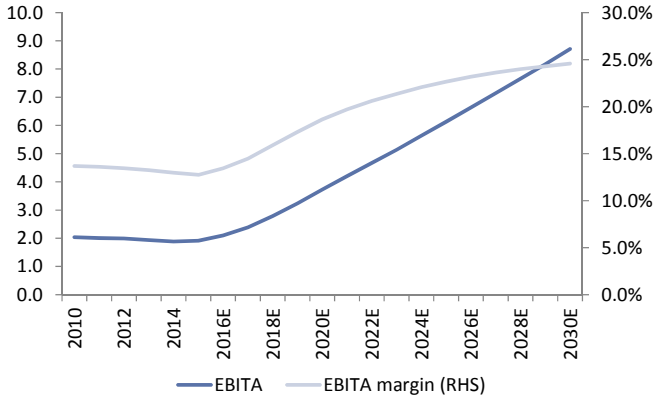
Streaming - subscription		
Average spend per person	$120.0	% of gross revenue
VAT	$ 24.0	20%
Net revenue	$ 96.0	
Split:		% of net revenue
Distributor revenue	$ 28.8	30%
Content pool	$ 67.2	70%
Split Publishing	$ 9.6	10%
Split Record company	$ 57.6	60%
Record company costs		% of record revenue
Artists & Repertoire	$ 21.9	38%
Production & Distribution	$ -	0%
Other Product Costs	$ 13.4	20%
Gross margin	**$ 31.9**	**55%**
Selling & Marketing	$ 13.2	23%
G&A	$ 8.6	15%
EBITDA Margin	**$ 10.0**	**17%**
Depreciation	$ 1.44	3%
EBITA margin	**$ 8.5**	**15%**

+63% +21% -26% +118%

Source: Goldman Sachs Global Investment Research.

Exhibit 93: The recorded music profit pool growth is even more substantial

Recorded music profit pool ($ mn, LHS) vs. EBITA margin (%, RHS)



Source: Goldman Sachs Global Investment Research.

Quotes from WMG CFO on the outlook for the music industry and the impact of streaming

Eric Levin is Executive Vice President and Chief Financial Officer, Warner Music Group, a role in which he is responsible for the company's worldwide financial operations. He joined the company in 2014, having held a number of senior executive posts in the US and Greater China.

It seems like we've reached a tipping point for the recorded music industry – how do you see the growth path from here?

"We are optimistic about the long-term growth potential of the music business and for Warner in particular. Recent industry data is improving with real growth worldwide, led by subscription streaming. This is more than offsetting declines in physical and downloads."

How do you see the role of the labels in shaping this future recovery?

"We are laser focused on executing against our strategic priorities, which include having a steady stream of great new music, expanding our global presence, and embracing commercial innovation, including the shift to streaming. Every region around the world is at a different stage of transition to digital formats. It is our job as an industry leader to help our artists and songwriters navigate the complexity across countries to maximize potential globally."

How do you think the streaming distribution landscape will evolve?

"We are seeing heightened commitment to streaming from a myriad of large players, which is aiding consumer awareness and yielding higher adoption. Having many players is good for us as it creates competition for consumers' share of wallet which in turn benefits the entire industry. "

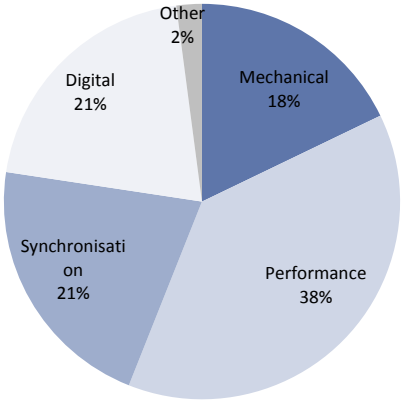
A lot more music is being consumed yet only a small portion of people pay for it – how can we address the issue of music monetization?

"It is imperative that monetization continues to improve and that artists, songwriters, labels and publishers are all fully and fairly compensated for their work. We have seen some encouraging signs from the EU but there is still a long way to go, as the value of music is still not being fully recognized."

Music publishers should benefit from streaming growth but to a lesser extent than labels

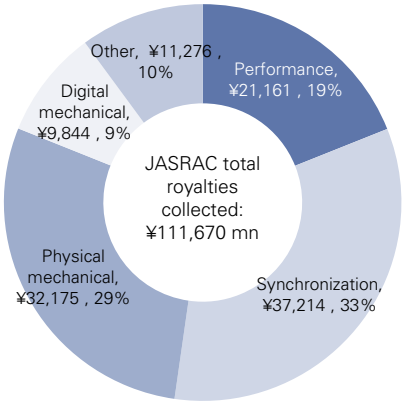
Music Publishing companies work for songwriters – they exploit and market musical compositions (of which they own/share the rights with songwriters) and receive royalties or fees for their use. Publishers derive royalty income (mechanical, public performance, synchronization royalties and other licenses) which they generally share 50/50 with the songwriters.

Exhibit 94: Mechanical (digital & physical) and Performance royalties each account for c.40% of revenue
Warner/Chappell breakdown of revenue



Source: Warner Music Group company data.

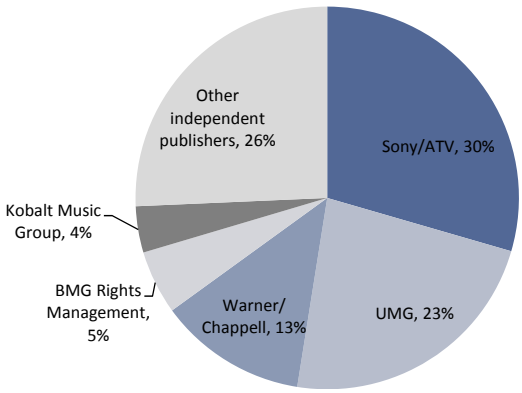
Exhibit 95: Publishing in Japan is dominated by Mechanical (38%) and synchronisation (33%) royalties
JASRAC 2015 royalties collected



Source: JASRAC.

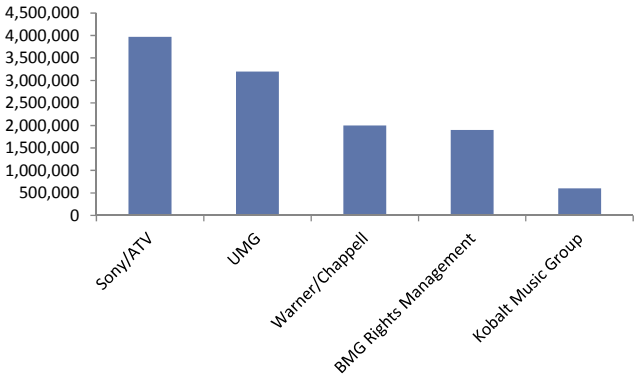
Similarly to recording, the publishing market is highly concentrated with the three majors commanding 66% market share and the top five companies commanding 75%. The industry has also seen a lot of M&A activity, the most recent being the Sony/MJ deal (approved in 2016) and the acquisition of EMI Publishing by Sony in 2012.

Exhibit 96: The publishing market is dominated by 5 players
Publishing market share, 2014



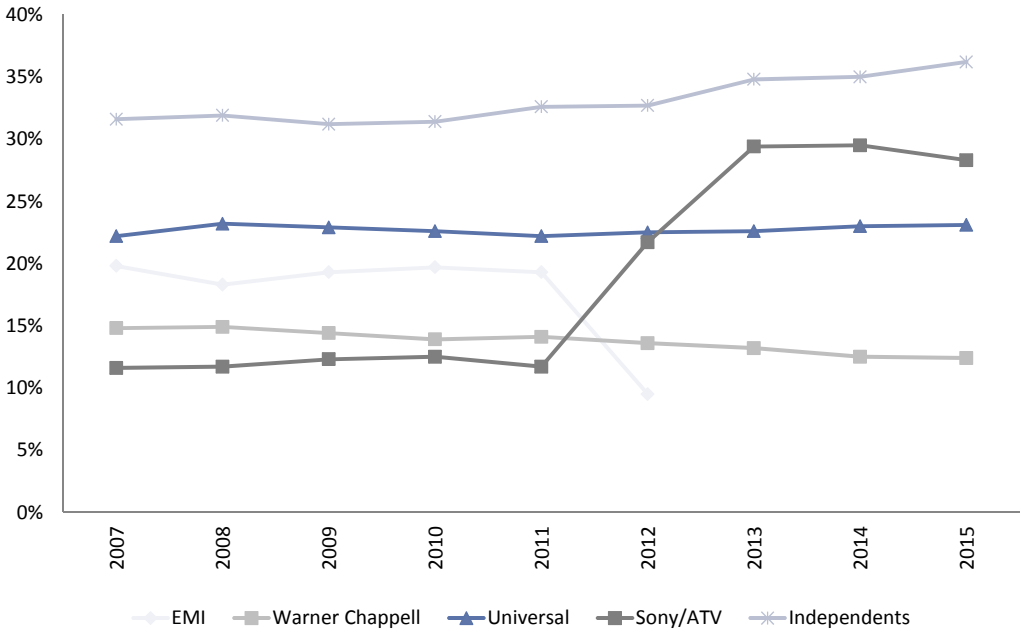
Source: Music Business Research.

Exhibit 97: … who control/ administer a large number of copyrights
Number of administered music copyrights



Source: Music Business Research.

Exhibit 98: Independents have gained market share (although this was partly boosted by the sale of assets by Sony/ATV to BMG)

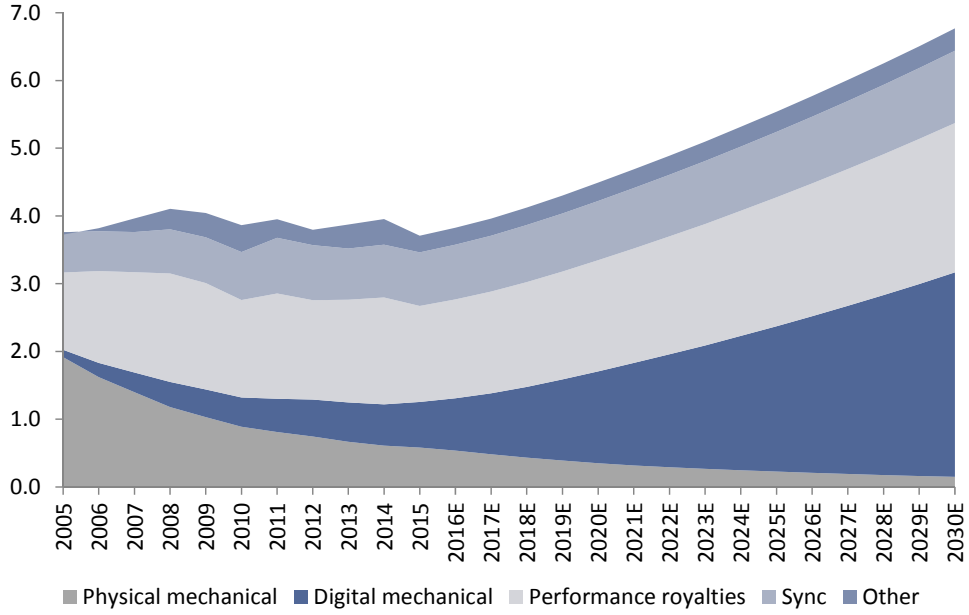


Note: Sony bought EMI Publishing in 2012 and had to divest some assets that were then acquired by BMG

Source: Statista.

The incumbent publishers, who so far have been more insulated from the digital disruption, also benefit from streaming growth although to a lesser extent than labels, as they receive a 10% cut of gross revenue as mechanical/performance royalties. We forecast an additional $3.5 bn of revenue potential from streaming, while the main revenue pool at risk (physical mechanical royalties) is currently worth $0.6 bn. Publishers also generate another $1 bn of revenue from synchronization rights which should continue to benefit from growing demand for music.

Exhibit 99: Publishing – a $7 bn market by 2030, partly driven by streaming
Global music publishing revenues, $ bn

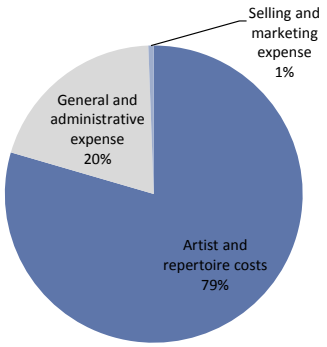


Source: Company data, Goldman Sachs Global Investment Research.

We estimate EBITA margins to be broadly stable at 26%-28%, implying c.$1 bn of additional profit to be generated over the next 15 years. The upside to margins could however come from a better leveraging of new digital technologies that can improve the monitoring and tracking of copyrighted music, and collection and onward payment of royalties. A shift towards more direct deals, thus circumventing the fragmented landscape of collection societies, could also present further upside. Against this, we expect publishers to redistribute a greater share of their profits to songwriters (to 55%-60% from 50% today) as a result of the pressure from alternative publishers.

Exhibit 100: Author royalties and repertoire account for the bulk of publishers' expenses

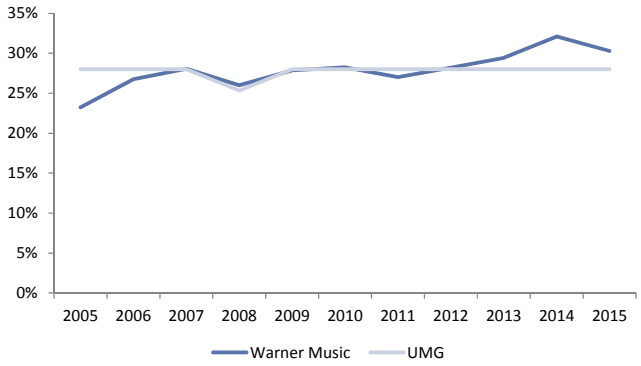
Warner/Chappell breakdown of costs



Source: WMG company data.

Exhibit 101: Major publishers generate around 28%-30% EBITDA margins (pre-corporate costs)

Warner/Chappell vs. UMG Publisher EBITDA margin



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 102: We estimate publishers generate 26% EBITA margins across all formats

Physical			Downloads			Streaming - ad funded + subscription			Streaming - subscription		
Average spend per person	$ 55.0	% of gross revenue	Average spend per person	$ 48.0	% of gross revenue	Average revenue per user	$41.0	% of gross revenue	Average spend per person	$120.0	% of gross revenue
VAT	$ 11.0	20%	VAT	$ 9.6	20%	VAT	$ 8.2	20%	VAT	$ 24.0	20%
Net revenue	$ 44.0		Net revenue	$ 38.4		Net revenue	$32.8		Net revenue	$ 96.0	
Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue
Distributor revenue	$ 13.2	30%	Distributor revenue	$ 11.5	30%	Distributor revenue	$ 9.8	30%	Distributor revenue	$ 28.8	30%
Record company revenue	$ 30.8	70%	Record company revenue	$ 26.9	70%	Content pool	$23.0	70%	Content pool	$ 67.2	70%
						Split Record company	$19.7	60%	Split Record company	$ 57.6	60%
Publisher revenue (paid by labels)	$ 4.4	10%	Publisher revenue (paid by labels)	$ 3.5	9%	Split Publishing	$ 3.3	10%	Split Publishing	$ 9.6	10%
		% of publisher revenue			% of publisher revenue			% of publisher revenue			% of publisher revenue
Songwriters & Repertoire	$ 2.4	55%	Songwriters & Repertoire	$ 1.9	55%	Songwriters & Repertoire	$ 1.8	55%	Songwriters & Repertoire	$ 5.3	55%
Gross margin	**$ 2.0**	**45%**	**Gross margin**	**$ 1.6**	**45%**	**Gross margin**	**$ 1.5**	**45%**	**Gross margin**	**$ 4.3**	**45%**
Admin and other	$ 0.7	17%	Admin and other	$ 0.6	17%	Admin and other	$ 0.6	17%	Admin and other	$ 1.6	17%
EBITDA Margin	**$ 1.2**	**28%**	**EBITDA Margin**	**$ 1.0**	**28%**	**EBITDA Margin**	**$ 0.9**	**28%**	**EBITDA Margin**	**$ 2.7**	**28%**
Depreciation	$ 0.09	2%	Depreciation	$ 0.07	2%	Depreciation	$0.07	2%	Depreciation	$ 0.19	2%
EBITA margin	**$ 1.1**	**26%**	**EBITA margin**	**$ 0.9**	**26%**	**EBITA margin**	**$ 0.9**	**26%**	**EBITA margin**	**$ 2.5**	**26%**

Source: Goldman Sachs Global Investment Research.

An interview on music publishing with…

Jane Dyball, CEO of UK Music Publishing Association

After spending 6 years at indie publisher Virgin Music in international copyright and licensing, Jane Dyball joined Warner/Chappell Music's Business Affairs Department. She eventually became SVP International Legal & Business Affairs in 2005 assuming responsibility for all WCM's business affairs worldwide ex US & Canada, alongside strategic issues such as collective rights management and digital rights. In October 2015, Jane was appointed CEO of the MPA Group of companies.

What is the role of a collection society?

The music publishers association that I run has a collection society called MCPS and that is collecting money on behalf of its publisher members. From a commercial point of view, almost all publishers use MCPS for broadcast licensing and for collecting monies from record sales, but not all publishers use MCPS for online licensing as this tends to be licensed on a multi-territory basis. The main sources of income at MCPS are therefore record sales, online and broadcast. Online income is increasing, album sales seem to have stabilised and broadcast is stable as well. MCPS is a mechanical right society that is administering reproduction rights as opposed to PRS in the UK, or ASCAP and BMI in the US, which are performing rights societies. In the UK, if you are a writer or a publisher you need to be a member of the performing rights society and you give PRS exclusive rights across all pretty much all types of performance income.

How does streaming impact the music publishers…?

Firstly, it is important to separate the paid subscription from the ad-supported streaming model. I think the ad supported model is a challenge to music publishers while the subscription model is an opportunity. As with any new business models, it is difficult to tell what your revenues are going to be. Under the traditional model, publishers are used to think in terms of record sales. They know that they would generate about 50p per album sold and they can therefore estimate how many albums they need to sell in order to recoup their advances. We are still struggling with the technology required to be able to easily process trillions of lines of data (vs. millions of lines before) that come with streaming. So there is a technical challenge, the flow is not yet real time, making it much more difficult for a publisher to know what a song that is streamed on Spotify is going to pay out.

… and songwriters?

You can look at that in a number of ways. Songwriting is a career you can pursue whether or not you are an artist. If you are an artist you have got access to other revenue streams like touring fees and endorsements. If you are a songwriter it is hard because you have a very speculative career based around having to pay for yourself, going to studio sessions not knowing whether you've got a song or a cut and that applies whether you are an unheard of songwriter or whether you are the most successful songwriter in the world. So if your income is dependent on ad supported streaming services it is very hard to get proper compensation for your revenues - that's one issue. The next issue is the amount of time it is taking to get the money through the pipes as it gives current songwriters a false impression of how much money they are earning from services. So there is a delay, there is the processing time, there are all sorts of problems with how ad-funded services want to account and how the societies want the latter to account. It is very likely that the money songwriters are seeing on their royalty statements is less than it should be. So what does a steady state look like? Once all that money is getting through, will they still be making enough money from streaming services? We are currently in a market where you cannot take any figures with any accuracy. However, another way to look at it is to say, overall, is the business growing or in decline? And overall the business is growing slightly.

What do you think could be done to address these inefficiencies?

To work properly the system requires invoicing protocols to be agreed between collection societies, and for societies to have the ability, preferably working together, to develop systems which can process and distribute many billions of lines of data in a timely and accurate manner.

Do you think the recent EC copyright draft directive could have any impact on the monetization of music content?

It is draft legislation at this stage so it's a step in the right direction, but could change significantly one way or another before it comes out. It doesn't put much

requirement on YouTube to do anything other than behave commercially which I expect YouTube would say they are doing anyway. I think it's too early to tell really but it is certainly a step in the right direction.

How are royalties set for publishers?

Subscription services are paying a share of the monthly subscription as royalties, but you don't know what your share of that is going to be as royalties are paid out on a basis of all of that money going into a big pot and being divided by the number of plays. So you don't know in advance the amount that will be paid out per play. If more people listen to the service during a particular accounting period then the per-play payment is going to reduce because it is a finite pot of money. So it is not going to be a straight line increase against the number of plays and the royalties that come out. In the case of an ad-funded service, the only source of income is advertising and therefore it is completely dependent on the strength of the advertising business.

What is your view on Apple's proposal to change the way songwriters are getting paid in the US for digital services? Any read across for Europe?

Things work very differently in Europe and all of the negotiations in Europe are happening individually with different companies behaving differently in the market. It would be great if there was a sensible per stream rate paid by all services. Certainly it is our hope that over time we will be able to drive up the rates so they properly reward the creative endeavors of those whose content it is, but that will be a slow process.

Do you expect the publishers' role to evolve to a more administrative role over time?

If you are a publisher, you are not in the business of setting up an administration office, you are in it to discover talent and invest in talent and see that talent become successful. However, it is essential that you have strong administration in order to properly collect all monies due.

How do the 3 major publishers differentiate from one another?

All three companies are run differently because they have different requirements at the executive level, but they largely perform the same job.

Will writers still need publishers and how easy is it for songwriters to change publishers?

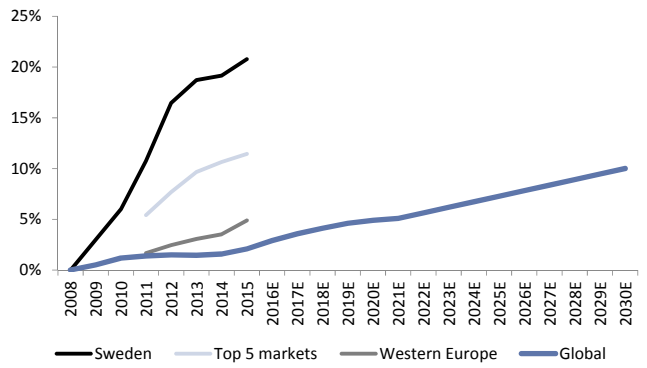
If you are a kid and you put your songs on YouTube and your songs are successful you will start to earn money from YouTube and you won't necessarily think about getting a publisher because you'll be getting some money from YouTube. However sooner or later you will think you are not getting any money from the BBC or television or someone has asked to use your song in a film and you don't know what to do…So sooner or later you will go looking for a publisher. How easy is it to change publisher? There have been lots of law suits over the years - Elton John was one of the first writers in the 70's who filed lawsuits because they'd been tied to publishing agreements for their whole career and those agreements started to be overturned. But now, it would be standard to do a deal that has 4 contract periods. The first contract period could last anything from 1 to 3 years and there is an option after that for the publisher to continue. Then usually when they exercise the option then money is paid out and maybe the deal terms improve slightly and that's all agreed at the beginning when you do your agreement and all publishers usually insist that writer have proper representation in that early negotiation. Usually, if they have been successful songwriters are not tied to a publisher for more than around 12 years.

Subscription streaming platforms have significant growth potential but also face growing competition

We see strong growth prospects for streaming services with the growth in smartphone penetration and improvement in connectivity enabling greater convenience and access on the one hand, the proliferation of online music services and bundles driving greater awareness and adoption on the other. We identify the main growth drivers below:

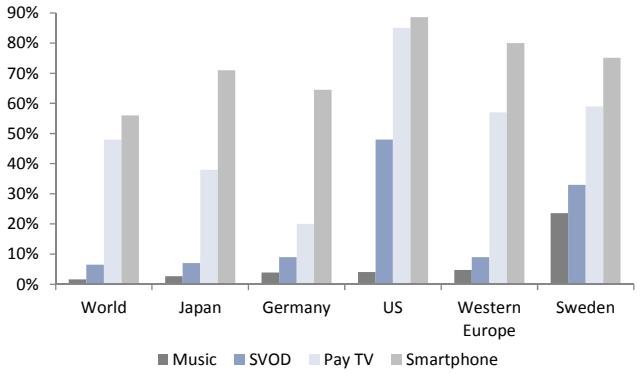
1) **Market penetration is currently low**, with 2% of smartphone owners subscribing to a paid streaming service globally and another 4% using a freemium, ad funded service excluding YouTube (140 mn). As discussed earlier, we forecast the subscription and non-subscription base to grow to 9% and 13% of smartphone users respectively by 2030.

Exhibit 103: We forecast global paid streaming penetration to reach 9% by 2030, slightly below the top five markets today and half of the rate attained in Sweden
Paid streaming penetration as % of smartphone subscribers



Source: IFPI, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 104: Streaming penetration stands at 2% globally compared to 6% for SVOD and 48% for Pay TV
Paid streaming penetration as % of smartphone subscribers, SVOD penetration as % of broadband homes, Pay TV penetration as % of TV homes, Smartphone penetration as % of total population



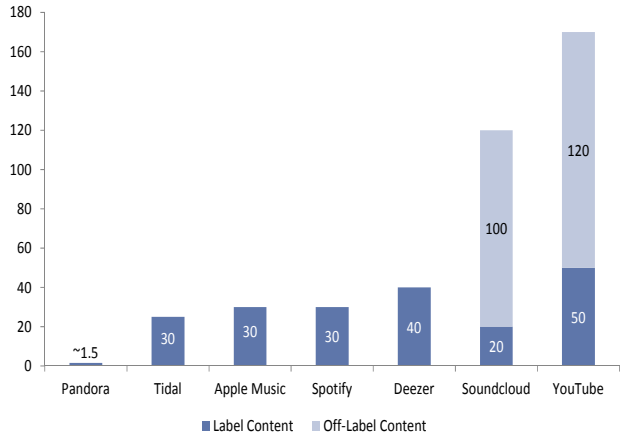
Source: IFPI, Digital TV Research, ZenithOptimedia, Goldman Sachs Global Investment Research.

2) The opportunity to segment the market to tailor to different tastes (local vs. global content, genres, etc.) and financial conditions (family vs. student plans, EM vs. DM), means that multiple players can co-exist and grow in our view.

- **Spotify** is the incumbent and leading music streaming service in the world with around 80 mn ad-funded users and 40 mn paid users across 58 countries (source: The Verge/Spotify). Relative to other streaming services, Spotify appears more mainstream and has a greater emphasis on younger demographics given the availability of discounted student plans and telecom bundled deals (Spotify reported that 77% of its users are Gen Z/ Millennials). Spotify's ad-funded freemium tier helps it reach a wider audience (basically anyone with a broadband/ mobile access and a connected device) which it then aims to switch onto its paid subscription service. The proportion of paid users increased from 7% in 2010 to 33% as of August 2016. Despite being the incumbent player, Spotify has hardly been affected by the launch of other streaming services, including Apple Music in June 2015. Spotify added 15 mn paid customers between June 2015 and June 2016, as many as the number of paid users it added between 2012 and June 2015 or even more than the number of paid subscribers it had cumulated since inception in 2008 until the end of 2014. This is an encouraging sign that multiple streaming services (with different market segmentations) can co-exist, and that the proliferation of new services contributes to awareness of such services and growth of the overall market.

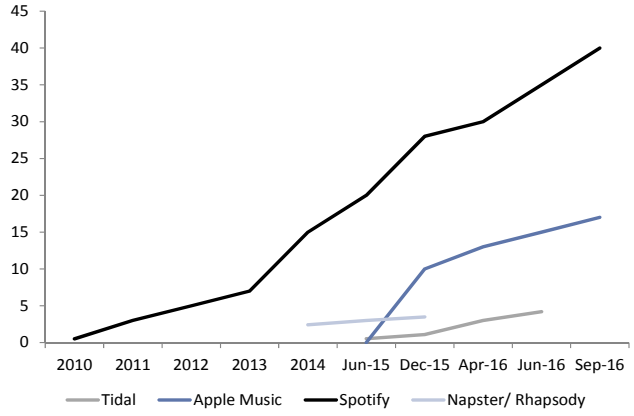
- Like Spotify, **Deezer** offers a freemium and a paid tier, but with the particularity of deriving a large portion of its subscribers from telecom partnerships (50% in 2016 from 80% in 2014 although 60% were then inactive bundled users). Deezer recently launched a paid only streaming service in the US.
- **Apple Music** operates a paid only service with no ad-funded free tier. It has a greater bias towards families (with its $14.99 family plans) and iTunes accounts giving it an enviable access to 800 mn credit cards on file. Apple has also made its service available to Android smartphones. Launched in June 2015, the service counted 17 mn paid subscribers as of September 2016.
- **Tidal** operates a more niche, high end paid-only service with a greater focus on exclusivity (nine exclusive album releases) and high sound quality. As of March 2016, 45% of subscribers were on the $19.99 hi-fidelity, lossless audio/video tier, despite costing twice as much as the standard tier (source: Billboard). Unlike other platforms it is also backed by a number of renowned artists, counting 16 artist-owners at launch who each received a 3% stake in the company (incl. Jay Z, Beyonce, Rihanna, Madonna, Kanye West, etc.). The launch of exclusives has had a clearly favourable impact with the number of subscribers jumping to 2.5 mn from 1 mn after the exclusive release of 'The Life of Pablo' by Kanye West in February 2016 (source: TMZ). Tidal said it added another 1.2 mn subscribers after the release of Beyonce's 'Lemonade' in April 2016 (NYT, May 13, 2016).
- **YouTube Red** is a paid-only service launched in October 2015 that gives access to all YouTube video content free of ads as well as Google Play Music. It also includes exclusive access to YouTube Red Originals which are new, original shows produced by some of YouTube's biggest creators. The service is so far only available in the US, Australia and New Zealand, with no subscriber figures having been made available as yet.
- **Amazon** offers over one million songs for free for its Prime customers ("Prime Music") and is reported to be soon launching a paid music subscription service that would cost the usual $9.99 pm for unlimited access on any device and $4-5 for unlimited access exclusively on Amazon's Echo Player (MBW, September 2, 2016). Amazon currently counts over 300 mn active customer accounts.
- **Pandora** recently signed a direct licensing agreement with the major labels to launch an on-demand paid service with multiple price tiers in the US later this year, alongside its existing internet radio service (which has a base of 78 mn active users). MBW (September 19, 2016) suggested that Pandora will launch three tiers including a $5 on-demand service with more limited functionality (which only allows users to soft-download a limited number of tracks) and an $9.99 unlimited on-demand service.
- **iHeartRadio** recently announced plans to enter the on-demand market in January 2017 with two new packages - iHeartRadio All Access, a $10 per month full on-demand music subscription similar to Spotify Premium or Apple Music, and iHeartRadio Plus, a $5 per month ad-free radio listening offer according to MBW. iHeartRadio already signed all three major labels ahead of the planned launch. IHRT digital radio service, iHeartRadio, currently counts c.90 mn users.
- **Local services** such as Saavn in India or QQ Music in China are more focused on local repertoire and have their own specific features.

Exhibit 105: Streaming platforms libraries compared
Number of tracks available on digital streaming services (mn)



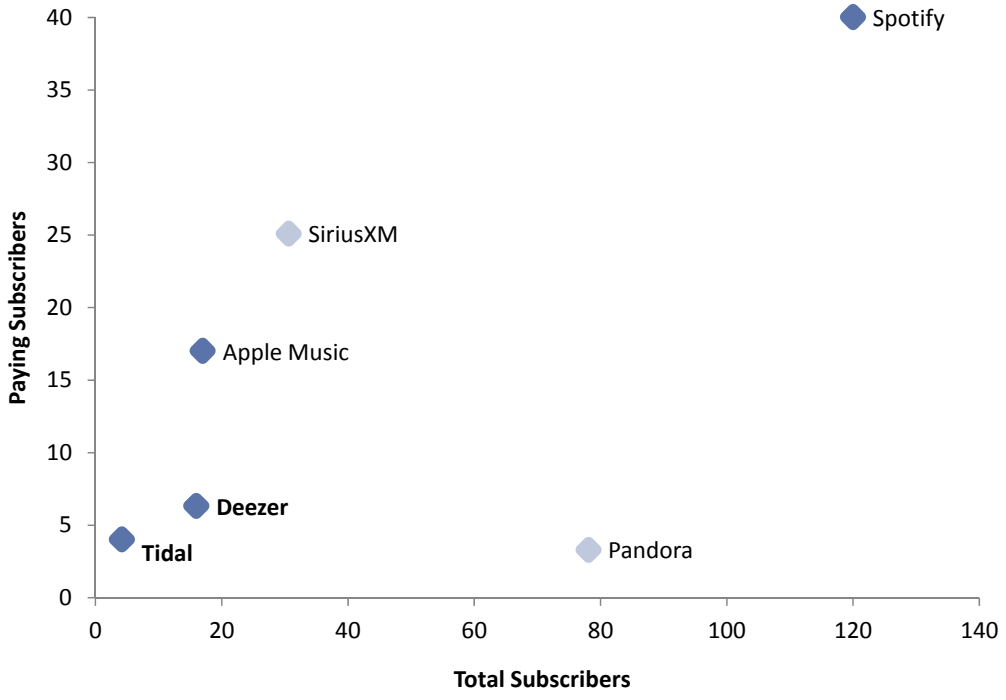
Source: Activate, press reports.

Exhibit 106: The launch of new streaming services has not had any major cannibalisation effect
Number of paid subscribers (mn)



Source: Spotify, Billboard, Napster.

Exhibit 107: Spotify leads among streaming services both in terms of paying and total subscribers
* Dark blue: interactive streaming services; paying and total subscribers (m)



Source: Company data, press reports.

Exhibit 108: Key platforms and their differentiating features

Streaming Service	Total Users	Paying Subs	Type of Streaming	Free Version?	Paid Version	Exclusives	Defining Features	Target Audience
Apple Music	17 mn	17 mn	Interactive	**Yes**: 3 month trial	**$9.99/month** **$14.99/month**: **family plan** (up to 6 people, each with their own account)	Taylor Swift Drake Frank Ocean Chance the Rapper	Simple interactive streaming Curated playlists Beats 1 radio Music available offline	Higher-end and users of Apple Products (focus on families)
Spotify	120 mn	40 mn	Interactive	**Yes**: ads, limited listening time	**$4.99/month** for desktop & laptop, no ads. **$9.99/month** lets you use all devices, no ads (1-month free trial)	-	Simple interactive streaming Curated playlists Music available offline	Main-stream (especially Students)
Tidal	4.2 mn	4 mn	Interactive	**Yes**: free for 30 days	Tidal Premium (standard sound quality) - **$9.99** standard plan/ **$8.49** value plan. Tidal HiFi (hifi sound) - **$19.99** standard plan/**$16.99** value plan **Family Plan**: Gives other members (up to 4) their own logins for 50% of normal fee	Kayne West Beyonce Prince Jay-Z Rihanna	Simple interactive streaming Ability to import playlists from other streaming devices through Soundiiz.com	Music enthusiasts (through high quality sound & exclusives)
Deezer	16 mn	6.3 mn	Interactive	**Yes**: ads, unlimited music on computer & tablet	**$9.99/month** (ad-free, 1-month free trial) **$20/month**, high quality audio experience Deezer Elite (CD quality audio): £14.99/ month for 12 months & £9.99/ month for a year (£120 paid upfront), £9.99/ month for 2 years (£240 paid upfront)	-	Simple interactive streaming Curated playlists Music available offline	Main-stream & use in telco bundles
Sirius XM	30.6 mn	25.1 mn	Non-Interactive (Satellite Radio)	**Yes**: 7 day trial	Sirius Select: **$14.99/month** for over 140 channels. Sirius All Access: **$19.99/month** for 150+ channels and online listening. Sirius Mostly Music: **$10.99/month** 80+ channels ($4 extra to listen online)	-	Satellite Radio	Main-stream & use in cars
Pandora	78.1 mn	3.3 mn	Non-Interactive (Webcasting) Interactive service launching soon	**Yes**: limited skips, ads, reduced quality	PandoraOne: **$4.99/month** for new subscribers (from May '14); **$3.99/month** for existing subscribers Pandora Plus: **$5/month update of PandoraOne,** unlimited skips, no ads, replays, offline listening (4Q16 launch) **$10/month** full on-demand streaming service (4Q16 launch)	-	Users create their own radio station The Music Genome project generates recommendations	Main-stream
iHeartRadio	90 mn		Non-Interactive (Webcasting) Interactive service launching soon	**Yes:** limited skips, ads	iHeartRadio Plus **$5/month** ad-free offering (Jan 2017 launch) iHeartRadio All Access **$10/month** full on demand service (Jan 2017 launch)	-	Users create their own radio station or listen to live radio	Main-stream
Amazon			Interactive	**No**	**$9.99/ month** **$4/$5/month** for streaming on Echo	-	Standalone from Prime	Main-stream
YouTube Red			Interactive	**Yes:** YouTube	**$9.99/month** **$12.99/month** for iOS users	-	Watch videos ad free Offline viewing Listen to videos with the screen off	Users of YouTube

Source: Company websites, press reports.

3) Opportunity to better leverage their promotion capabilities (e.g. playlists), user data and customer relationships to (1) help in their future negotiations with labels, (2) drive more advertising revenue on the freemium tier (cf Spotify partnership with the Rubicon Project), and (3) create new adjacent revenues such as ticketing sales (cf Pandora's purchase of TicketFly). In particular, streaming services are becoming a much more important partner for labels and artists as their data analytics fundamentally change the way music consumption is measured and promoted and how new artists are being discovered:

- **Promotion capabilities:** we believe playlists will become an increasingly important promotion tool for artists with one in five plays on Spotify now occurring inside a playlist. Algorithms would even amplify the loudest voices as the highest trending artists will be brought forward in the suggested lists. Spotify's Discovery Weekly playlist of 30 tracks generated over half of the monthly streams for 8,000 artists in June 2016 according to the company and 40% of Spotify users listen to it.
- **User engagement:** while labels have never had control over the distribution and direct access to consumers, it has become much easier for artists to directly engage with their fans on streaming and social media platforms. Apple Music's Connect platform, for example, allows artists to directly reach their fans offering them the ability to post music, videos, photos and status updates in real time.
- **User data informs better decisions:** Labels can use the data to track digital sales and streams on different platforms. Artists can leverage social network statistics and listener data to adapt to their fans' ever changing tastes and even inform their tour

decisions. Social media in particular has become a critical tool for artists to ensure they stay relevant.

- **Artists are more easily discovered**: Labels are increasingly following the trending artists on SoundCloud or YouTube and the number of followers they have on social media platforms to sign up new artists.

4) Execution and innovation will become increasingly important. As having a comprehensive music library becomes a prerequisite, **differentiation through data analytics and curation capabilities** among the streaming platforms will become increasingly important to drive customer growth. This puts incumbent streaming platforms such as Pandora or Spotify at somewhat of an advantage as they have already accumulated a vast database.

- **The importance of personalized curation:** Consumers have never had it better in terms of convenience, discoverability and personalization of their music thanks to technology that is powering selection algorithms and integrating social network relationships. Spotify's "Discover Weekly" introduced in July 2015, which automatically generates a tailored two-hour playlist every week, is internet-scale curation demonstrating that algorithms can tailor a playlist to someone's tastes. It now has 40 mn users among the more than 100 mn Spotify subscribers (IEEE Spectrum, September 2016). Apple Music, on the other hand, has chosen a more human approach whereby leading music experts curate the music. Apple's Jimmy Iovine stated that "Algorithms alone can't do that emotional task. You need a human touch." Reports suggest that both Spotify and Apple Music hired radio veterans to help with their programming and curation capabilities (MBW, July 16, 2016), proving that a mix of the two approaches might bring the best results.
- **Platforms build brand loyalty**: The fact that the streaming services allow subscribers to create their own playlists, follow friends and engage with a community of followers ensures customers are committed to a service with little incentive to switch as song libraries are not typically transferrable from one service to another (exc. Apple Music allowing the transfer of the iTunes library).

Spotify's "Discover Weekly" – who said algorithm driven playlists can't read your mind?

"Discover Weekly" defined… It is a Spotify feature that generates a personalized 30-song playlist for each of the more than 100 mn users every Monday based on their listening habits and other playlists using algorithms.

First steps… Spotify introduced the "Discover Weekly" playlists in July 2015. The idea behind it came from the team that was working on Spotify's Discover page that did not take off with consumers. Once powered with – at that time – an algorithm prototype aimed at putting recommendations in a playlist, it gave birth to the "Discover Weekly" feature.

Becoming a major success… The personalization and curation capabilities have been a major success with consumers as witnessed by Spotify's search for feedback on Twitter: "At this point @Spotify's Discover Weekly knows me so well that if it proposed I'd say yes". Because of high demand, Spotify even suffered a service outage in September 2015. As of August 2016, the playlists are listened to by more than 40 mn people with more than 6-7 bn tracks having been streamed (AdWeek, August 28, 2016). In May 2016, Spotify reported that more than half of Discover Weekly's listeners streamed at least 10 tracks from their personalized playlist, while more than half of listeners came back again the following week.

A competitive advantage… We argue that as major streaming services have similar catalogues, knowing the customer base and offering them the most convenient service becomes a source of differentiation. This gives Spotify an advantage over the services that are still to launch in our view.

5) Scale will become more important. The streaming industry has relatively high barriers to entry given the need to meet rights holders' minimum revenue requirements and secure a broad catalogue based on multi-year agreements with labels. A new streaming service has to sign 30 different licensing deals in order to launch on a pan-European basis for instance.

We identify two key risks however for streaming players (for further detail, see second of the double album: "Paint It Black"):

- **The growth potential of the streaming market and the strategic importance of such services (interactions with users) attract a plethora of players, which will likely lead to intense competitive pressure.** Among the main risks for streaming services (and ultimately for rights owners) is the pursuit of greater differentiation through exclusivity and windowing to the detriment of the user experience. A recent move from leading label UMG, which reportedly ordered its labels to ban any exclusives with streaming services, could help curb the growth of this practice in the industry. Another source of disruption could come from tech giants (Google or Amazon) who are ruled by a different set of economics and can use music as a loss-leader. Apple's recent proposal to the CRB to shift to a statutory rate of $0.091 per 100 streams for songwriting royalties applicable to all interactive streaming services in the US (except Apple which has a direct deal with publishers) seems to be intended as a competitive move against pure streaming players. That said, **we believe labels will be careful to keep a minimum level of competitive tension among the distributors** and therefore ensure the economics work for pure streaming players. We note that the major labels also own stakes in the major streaming services such as Spotify (UMG, Warner, Sony) and Deezer (Warner).
- **With no interactive streaming service currently being profitable, the economic viability of such business models is yet to be proven**. Internet radio or online streaming platforms are still trying to find the right balance between freemium and subscription revenues to fund growing royalty payments and, in the case of interactive services, minimum guarantees. Recent developments point to a greater emphasis on the paid model given growing complaints from artists about the free window – cf. Taylor Swift's decision to remove her entire back catalogue from Spotify in 2014. Most new services now only offer a paid tier such as Apple Music and Deezer in the US, with Pandora set to launch its on-demand service later this year and Amazon reportedly doing the same. Spotify is also said to be introducing its premium-only music windowing later this year (MBW, September 5, 2016).

  Streaming services currently redirect around 70% of their revenues to rights owners (70% for Spotify; 71.5% for Apple Music in the US/73% outside of the US according to Recode), and we estimate they have to incur another 10%-15% of costs of goods sold. Producing original videos and other content, pursuing new revenue streams such as ticketing (Spotify recently partnered with Songkick and Pandora acquired Ticketfly), seeking partnerships with telecom operators (to lower customer acquisition cost) and the ongoing improvement in paid user conversion rates could help improve their profitability. Encouragingly, Deezer reported that it generated a 13% EBITDA margin in France in 1H15, its most mature market. Spotify's UK accounts showed that it generated a 16% operating profit margin in 2013 which however fell to 2% in 2014 owing to higher cost of sales and administrative expenses.

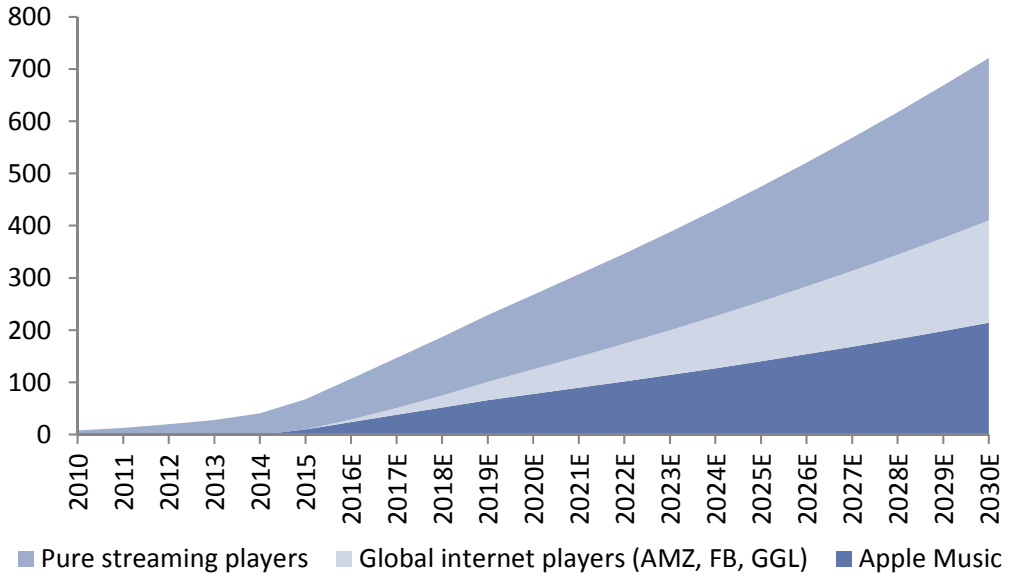
Over time, we expect to see more consolidation in the space. A few streaming services have already been discontinued (Rdio, Beatport, Zune, etc.). Apple has been reported to be interested in acquiring Tidal (Wall Street Journal, June 30, 2016). Sirius XM's owner Liberty Media was recently reported to have made an offer to buy Pandora which the latter rejected (Wall Street Journal, July 21, 2016).

As a result of these conflicting trends, **we believe streaming platforms' distributor cut will remain at around 30%**. This would leave them with a revenue pool of $11 bn in 2030E,

from $1 bn in 2015, and a profit pool of $1-1.5 bn based on long-term operating margins of 10%-15%. We expect the large tech entrants (Google, Amazon, BAT, etc.) to increase their market share of net adds to 30% by 2020 (from nil in 2015), meaning pure-play services (Spotify, Deezer, Pandora, etc.) will decrease from 63% in 2015 to 40% and Apple Music from 37% to 30%.

Exhibit 109: Future subscriber growth to be divided among three major groups of streaming players

Number of subscribers (mn)



Source: Goldman Sachs Global Investment Research.

An interview on music streaming with…

Dr. Hans-Holger Albrecht, CEO of Deezer

Dr. Hans-Holger Albrecht is the CEO of Deezer and a member of the company's board of directors. Prior to assuming his current role in February 2015, Albrecht served as president and CEO of media groups Millicom and Modern Times Group.

Deezer was one of the first streaming services to be launched in 2007. A number of new streaming services have launched since. Is there room for everyone? How can you differentiate yourself?

There is no one single streaming model fitting all countries in the world. We are just in the early days of streaming growth with global penetration being only 3%-4% in mature markets with plenty of opportunity for players to define their niche. In 2015, there were 68 mn streaming subscribers worldwide – which give a much lower penetration of the population. The biggest challenge for the new entrants is to build a compelling product – some of the incumbents, including Deezer, have spent years in acquiring content, building a multi-local product (languages, currencies, etc.) and developing the algorithms and data analytics that are hard to replicate – it takes time and significant funding. We also differentiate ourselves through the Flow product that creates an individually personalised listening experience the moment you press the button. It is much more responsive than a playlist that is updated every week. Another differentiation point lies in our go to market strategy – we have cultivated a partnership model that helped us build a strong position in Europe and expand in emerging markets.

Regarding your go to market strategy, you've been more reliant on telecom partnerships than others; do you still think this is the best strategy?

It really depends on the cycle of the market you are entering. It certainly has its limits, but it has proven to be the best strategy so far in entering emerging markets, but not only. It's a great way to scale quickly in a very cost efficient manner as you can leverage telecom operators' brand and marketing capabilities. However, we do realise the importance of direct customer acquisition and that is why we have gradually shifted our model from 80% of revenues being telco partnership driven five years ago, to less than 50% currently.

How do you view the competition from the larger internet players and what's the role of labels in ensuring competition is balanced?

Take Apple for example, it has around 20% of the global smartphone market, meaning there are still 80% of people who do not use Apple devices, creating room for other players and strategies to succeed as well. It is not easy to compete against the likes of Amazon, Google, Apple, but there are alternative strategies and competitive advantages you can rely on. Regarding the role of labels, I think they learned from their experience of iTunes that dominated 80% of the download market. Their role is to make sure that music has its price while maintaining some competitive pressure in the market.

Is there anything that a label does today that a streaming service can do better?

Labels' core competencies are around research and development, promotion and talent funding. I think streaming services will be able to take over the promotion capability from radio over time. On the funding side, there are artists that want and can do it on their own. But that doesn't mean we are competing against labels at this stage, it is more of a partnership and we are exploring opportunities together.

What do you think of exclusivity and windowing? Is it something you might be tempted to explore as well?

We could do that if we wanted to, but we see it as a major risk to the industry as a whole. The biggest competitor we have is piracy still – the moment we make the experience more complicated, the consumer will shift back to piracy. Look at what happened with Frank Ocean's exclusive that was illegally downloaded 750k times in a week and that probably meant a lot of money was lost. It is very naïve to think that people will go to different streaming services for different artists. Windowing, on the other hand, is interesting, but unlike sports events, it is really difficult to drive conversion from windowing while piracy remains a risk. Consumers join Deezer for the convenience and the music experience. Exclusivity and windowing risk destroying the model.

There are a lot of complaints from artists and labels against streaming services' free tier. Do you believe there is a future for freemium?
As long as the freemium model demonstrates that it converts people to pay, I do think there is a way forward. I also think that if artists complain about not being paid enough by the freemium tier they should be at least twice as angry against YouTube that directly competes against the free tier. YouTube has around 900 mn users and pays only 30% of the fees paid by subscription streaming companies to the labels and generates 20 times lower revenue per user. There is a huge value gap in that respect and labels will have to do something about it.

Will we see a streaming-only future and when? What level of paid penetration do you think we could get to?
I can't see any reason why other markets wouldn't get to Sweden or Norway's level of paid streaming penetration at around 25% of total population over time. Factors that can affect that trajectory are consumer behaviour around music – look at the Germans that are shifting to streaming very slowly or Japan that has a peculiar way of bundling CDs – and also further integration of streaming services (in cars, at home, etc.). Consumer education will play an important role as people are used to having music for free and a lot of them still like the ownership model. We have to explain to them the value proposition and the fact that we are not simply replacing download with streaming but rather offer them a completely new experience. Another factor will be the level of market development – emerging markets will shift to streaming right away for example. I think the potential is there, it is more a question of how fast we'll get there and what will be the trigger to accelerating growth.

How does Deezer pay labels/songwriters?
A couple of years ago we paid over 90% our revenues to labels and that has come down to 75%. We are negotiating with labels on a daily basis and the rates tend to come down over time, but the absolute amount is going up, so it is a win-win situation. One of the reasons why the royalties are coming down is because we can provide labels with data around the end customer.

None of the streaming services are currently profitable – what's your breakeven horizon and where do you think you can get to in terms of margins?
The business model is driven by three cost components: royalty payments to rights owners that are structurally coming down; product development and overhead costs that are currently high because we are in a start-up mode but will come down as percentage of sales as we gain scale; and finally marketing costs that are at our discretion. I'm not concerned about profitability as such as it would mean we miss out growth opportunities. The question is more what sort of operating margins we believe the industry will have and that's a wide range from single digit up to 20%.

Streaming services, labels, artists: how do you see the balance of power evolve in the future?
I wouldn't say it is all about a power shift, but rather about the opportunities we have by bringing more transparency to artists and more convenience to customers. Currently, c.90% of music industry revenues are coming from six or seven markets. And all of a sudden, we can build a model that brings double digit millions revenue from Colombia for example. Deezer is in a favourable position as it has the relationship with the end consumer and the data around it. That is why the labels have invested in us, they have to adapt and I can say they have been doing ok so far.

What do you think of the ad revenue opportunity in streaming given how large the radio market is?
When you consider that half of the usage on Deezer is a radio-like experience, i.e., in lean back mode, it gives you an idea of the impact it can have on radio. It is definitely an opportunity for streaming services to tap into the radio advertising market. It is difficult to say at this stage whether this will be done through acquisitions or organically, but the opportunity is definitely there.

What do you think of the current promotional activity in the market and how sustainable is the $9.99 price?
Promotion is a tactical thing that you do in every subscription model as you try to get the customer over the finish line. They are normally locked in for three months or so and that's fine. The 9.99 is a given price by the label, but to be fair, if you look around the world we have more pricing points already – we have the family packages where you can sign up to six people for 14.99, we have different pricing points in the emerging markets, with the telco partnerships sometimes – so the 9.99 is not set in stone and we all adapt. I think the key point is that music is not cheap. With most of our costs being variable, if the price point goes down or royalties go down our margin as a percentage of revenues does not change.

You mentioned data analytics being a key differentiator for Deezer. Can you elaborate on that?
Today we collect around 10 bn customer data points every month and we have been using data for the past 10 years. This gives us a deep understanding of the individual customers in terms of what they listen to, where, how, their music tastes, etc. It then helps us build the consumer experience – we bring the over 40 mn tracks into personalised playlists or adapt it to the consumer's own music consumption style. I think people underestimate how difficult it is to launch a new streaming service, that will have to build the data analytics from scratch. Through our partnership with the labels, for the first time they have access to that data. Once you know the customer, you can build adjacent revenue streams such as ticketing for example. But we have to be careful not to ruin the experience.

Ad funded streaming to eat into terrestrial radio

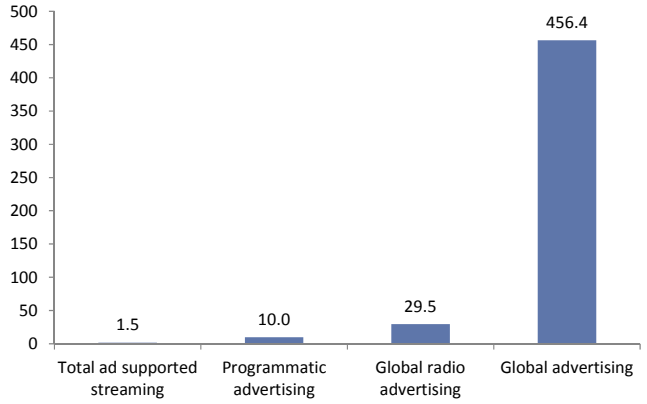
We believe ad-funded streaming (on YouTube, Pandora, Spotify, etc.) will become increasingly relevant and appealing for advertisers given the exponential growth in online audio and video consumption especially on mobile devices, the ability to better target and interact with consumers, and the opportunity to do so by leveraging programmatic advertising technologies.

We estimate the current ad funded market to be worth $1.5 bn globally and expect this to rise to $7 bn in 2030 – this includes revenues from purely ad funded websites (YouTube, etc.), advertising revenues from freemium services (Spotify, Deezer, etc.) and advertising revenues from digital radio services (Pandora, etc.). Note that these three items are reported under different definitions in the IFPI data (IFPI's ad funded revenues only refer to websites such as YouTube, freemium revenues are included in paid streaming and online radio in other digital revenue). We see a huge addressable market with the global advertising market worth $456 bn, global radio market $30 bn and programmatic advertising $10 bn in 2015 (MAGNA Global).

In the US, we see online radio as a substitute for terrestrial radio services and this shift is particularly positive for labels and artists who currently do not get paid performance royalties from analogue radio. Consumption of radio under its analogue form remains dominant at 54% (4Q2015, Edison Research) but is decreasing: the US Radio Advertising Bureau reported that average listening hours has decreased from 20 hours a week in 2007 to nearly 14 hours a week. A survey from Edison Research shows that nearly half of digital radio listeners are using those services as a replacement for AM/FM.

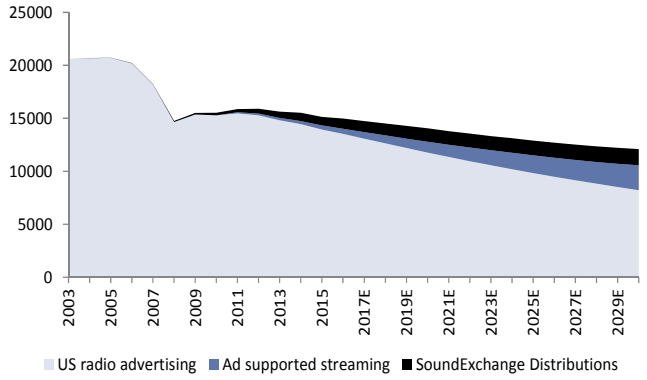
The US ad-funded streaming market was worth $385 mn and digital radio around $803 mn in 2015 as per RIAA data and we believe this has the potential to rise to $2.3 bn and $1.5 bn respectively by 2030. This compares to a radio market worth $14 bn in 2015 (MAGNA Global). With half of terrestrial radio consumption still happening in the car in the US, we believe the replacement with newer cars with more advanced dashboards, that are compatible with smartphones or have internet connectivity, will drive greater shifts towards streaming services.

Exhibit 110: The global addressable market for advertising-funded streaming is huge
Advertising spend by category, $ bn



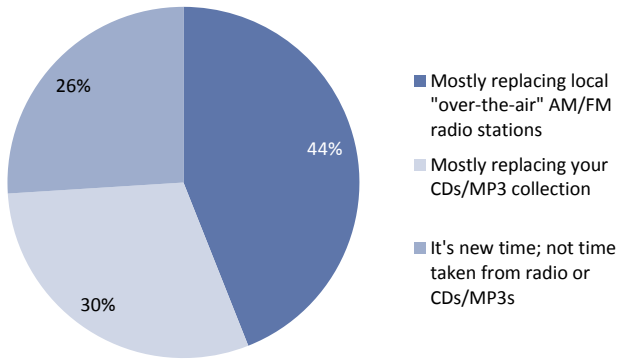
Source: MAGNA Global, IFPI.

Exhibit 111: We expect digital radio and streaming services to eat into the terrestrial radio ad market in the US
Advertising spend by category, $ mn



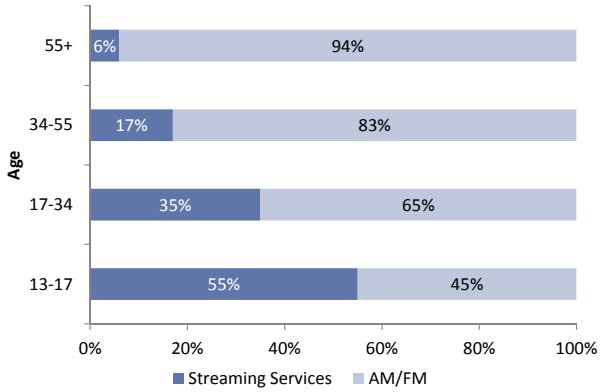
Source: MAGNA Global, IFPI, Goldman Sachs Global Investment Research.

Exhibit 112: 44% of digital radio listening is replacing analogue
Daily listening to streaming service vs. AM/FM by age group, US, 2014



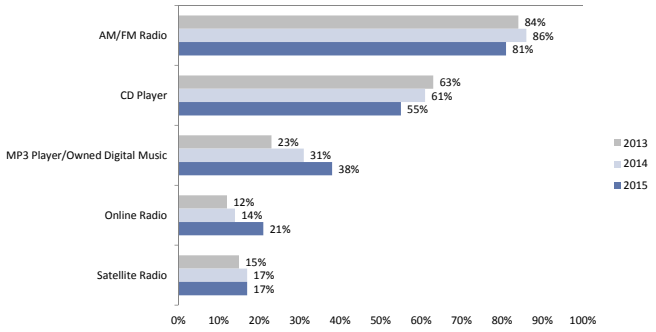
Source: Edison Research Streaming Audio Task Force, Summer 2013/ IAB.

Exhibit 113: Young listeners spend more time listening through streaming, although AM/FM radio remains the largest overall
Daily listening to streaming service vs. AM/FM by age group, US, 2014



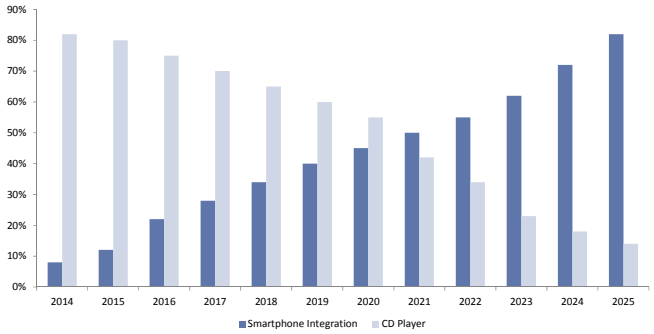
Source: Activate.

Exhibit 114: AM/FM remains dominant in the car, but decreasing
% currently using medium in primary car



Source: Edison Research, Triton Digital, Gartner.

Exhibit 115: Penetration of connected cars is rising and expected to reach 80% in 10 years' time
% of new cars sold with CD players and smartphone integration in Europe



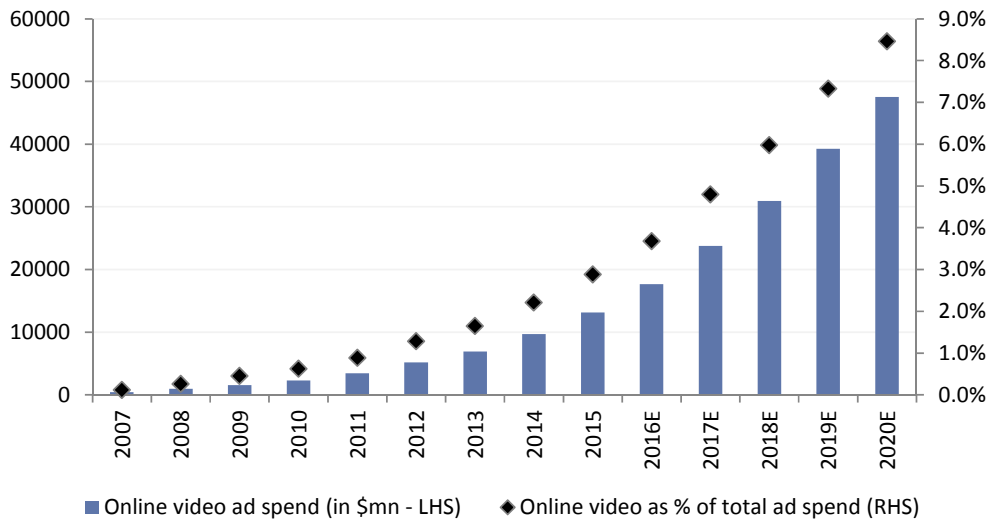
Source: BPI.

Purely ad-funded services (mainly YouTube) have plenty of growth opportunity ahead, but face greater pressure to improve monetisation for rights holders

The pure ad-funded landscape is currently dominated by YouTube which accounts for c.90% of users according to IFPI. **We see room for YouTube's revenue from music to grow as:**

1. Online video is still c.3% of overall ad spend globally but has been the main driver of online advertising growth (together with social media), growing at a CAGR of 42% over the past five years (as per MAGNA Global). We expect this strong growth to continue; MAGNA Global forecasts a 2015-29 CAGR of 29%. We believe this will continue to be funded by a shift in advertising budgets from other digital formats such as display and also TV.

Exhibit 116: Online video advertising is to reach 8.5% of overall ad spend by 2020E
Global online video ad spend

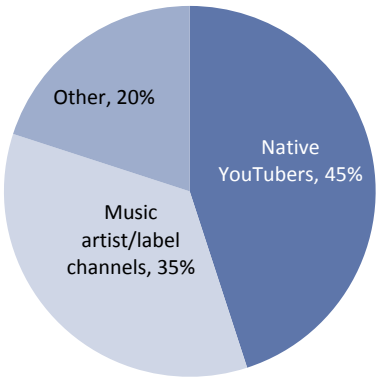


Source: MAGNA Global, Goldman Sachs Global Investment Research.

2. YouTube is particularly well placed to benefit as we estimate the platform accounted for c.40% of the online video market in 2015. We estimate that YouTube revenues grew at a 50% CAGR over 2010-15 and forecast c.30% CAGR over 2015-18, driven by further growth in YouTube consumption and improved monetization as more innovative ad formats are introduced.

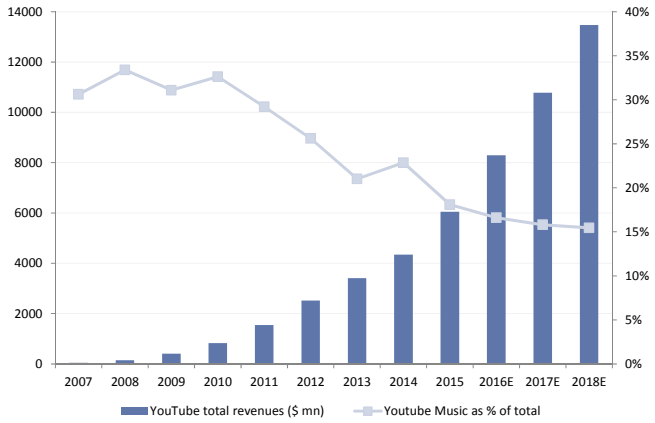
3. We see music as an important driver of traffic – around 35% of YouTube viewing is on music artist/label channels, second only after channels of YouTube natives according to FT. IFPI also found that 82% of YouTube users access music content through the service in the top 13 music markets. We calculate that music accounted for around 18% of YouTube revenues in 2015, based on the global ad-funded streaming revenue reported by IFPI and YouTube's 45% cut (according to MBW), and forecast that share to reduce slightly to 15% of YouTube revenue in 2018.

Exhibit 117: 35% of video views on YouTube are on music artist/label channels
YouTube most viewed channels for last 90 days, Dec 2015



Source: FT.

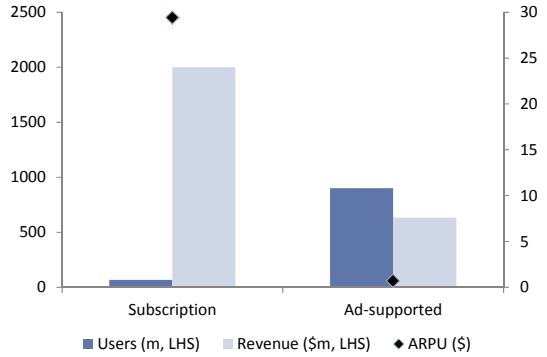
Exhibit 118: We expect YouTube revenues to reach almost $14 bn in 2018E with c.15% coming from music
YouTube revenues, 2007-18E



Source: Company data, Goldman Sachs Global Investment Research.

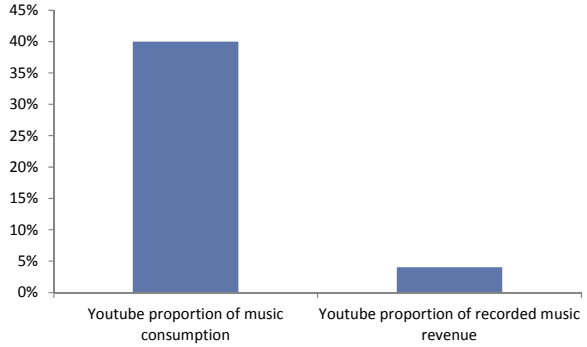
We believe however that YouTube will face ever growing pressure from regulators and content owners to improve the monetization of its videos and redistribute a greater share of its gross revenues. The outcome of the US review of safe harbour rules and implications of the recent EU Copyright proposal will be important in addressing the perceived value gap between the usage and monetization of music on platforms such as YouTube (see section *Future regulatory change could present upside for rights holders*).

Exhibit 119: There are 13x more ad-funded users (of which 90% is YouTube) than paid users, yet ad-funded generate 3x less revenue



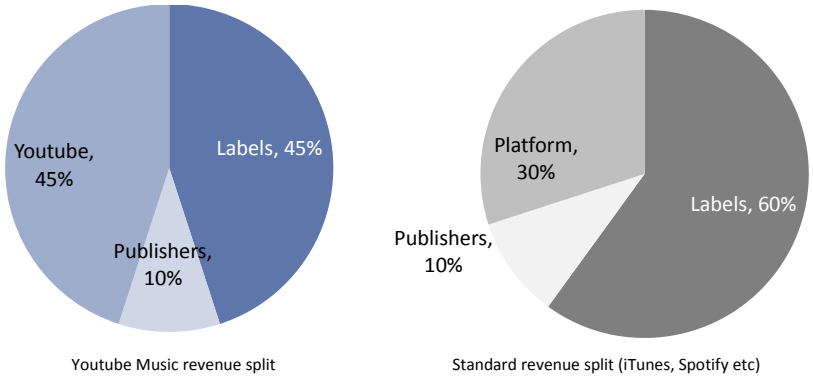
Source: IFPI.

Exhibit 120: YouTube accounts for 40% of music listening but 4% of recorded music revenue
Total streams by service, 1Q-2Q, 2014 vs. 2015 (bn)



Source: Apple, IFPI.

Exhibit 121: YouTube's distributor cut is 45% compared to 30% for music platforms
Estimated split of YouTube vs. industry standard music royalties



Source: Music Business Worldwide, Press reports, Goldman Sachs Global Investment Research.

VEVO aims to become less reliant on YouTube

VEVO is the leading music channel on YouTube, with more than 18 bn of music video views per month and 850 mn hours of viewed content, of which 60% from mobile. VEVO also claimed 17 of the top 23 YouTube videos with more than 1 bn views to date (April 2016). Recent press reports suggest that VEVO aims to reduce its dependence on YouTube following the re-launch of its app and website and ahead of the launch of a paid subscription service by the end of the year (FT, August 19, 2016). VEVO's CEO, Erik Huggers, stated that he wanted to position VEVO more as a specialty record store as opposed to YouTube that is more of a "one size fits all" model, while recognizing that there is room for both services to grow and that YouTube will remain an important partner (FT, August 2016). We note that VEVO has just signed a distribution deal to include for the first time WMG videos on its apps and website but not on its YouTube pages. VEVO is currently owned by SME and UMG (40% stake each) with Abu Dhabi Media and Alphabet also owning small stakes.

Pandora

In the US, Pandora has rapidly grown to 78 mn active users of which 4 mn are paid subscribers, and we forecast total active users to grow to 90 mn by 2020, a 2% CAGR. Pandora reported 10.1% share of total US radio listener hours in 2Q16, which we forecast to grow to 12.4% by 2020. We believe that the leverage in Pandora's model lies in the company's ability to shift its advertising from national and remnant to a majority local mix, similar to the majority local mix of terrestrial radio. Local is the fastest growing part of Pandora's advertising revenue, accounting for 28% of ad revenue in 2Q16 (up from 20% just two years prior), while local commands eCPMs that are 2.5-3x greater than national ads. BIA/Kelsey forecasts location targeted mobile ad spend to grow from $9.8 bn last year to $29.5 bn in 2020, though that figure does include some national brand advertising.

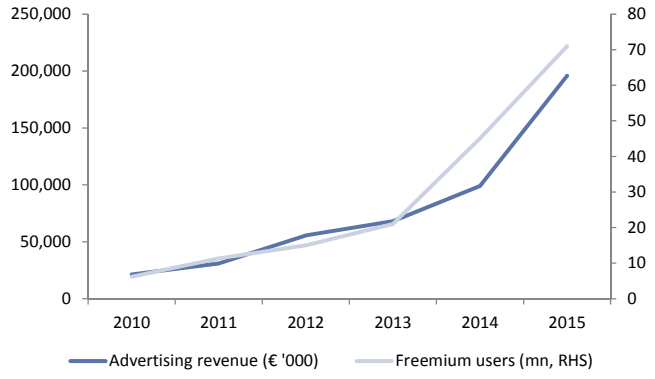
While local sales dollars are more expensive to acquire as they take more investment in both people and time, the leverage they generate from superior pricing more than makes up for the increased cost of sales on that revenue. Importantly, driving incremental local ad sales is more accretive to Pandora's bottom line than selling more national ads. Pandora believes the combination of local audience reach, local ad sales teams, and technology integration has resulted in increased momentum in local advertising revenue. Pandora currently has local sales teams in 39 markets. The company noted in 2Q16 that 154 of its 508 sales reps were specifically focused on local markets.

Pandora also intends to use its ad-supported service as a user acquisition channel for its proposed on-demand offering, which we believe creates a competitive advantage as its free, ad-supported product has shown the potential to be profitable (positive GAAP EBITDA in 3Q14 and 4Q15, and positive operating cash flow in 2014). Customer acquisition costs have generated large upfront losses for online streaming competitors, and being able to offset those costs with a potentially profitable user acquisition channel creates a unique advantage for Pandora, in our view. We also see potential for Pandora to move more local sales to a lower-cost self-service model over time, which would further increase profit potential for that product.

Spotify

Spotify's advertising revenues grew strongly from €21 mn in 2010 to €196 mn in 2015 (98% growth in 2015 alone) while freemium users grew from 6 mn at end-2010 to 71 mn at end-2015 (MBW); this implies average revenue per ad funded user of €3.6 throughout the period. Going forward, Spotify sees programmatic as a key growth driver for the ad-supported business and aims to open up all its audio inventory to programmatic within the next five years (Adage interview). Spotify introduced its programmatic offering in November 2015 and opened up its audio ad inventory for programmatic media buyers by signing a deal with Rubicon Project, App Nexus and the Trade Desk in July 2016. This enables Spotify to sell its ad inventory in near real time through private digital exchanges and in a highly targeted way, based on devices and demographics but also first-party playlist data that reflect the person's interests. Moreover, Spotify's ads are 100% viewable as they are shown in-app and only when the user is active. Spotify counted 70 mn ad-supported listeners globally in 2015 and reported that around 70% of streams were mobile.

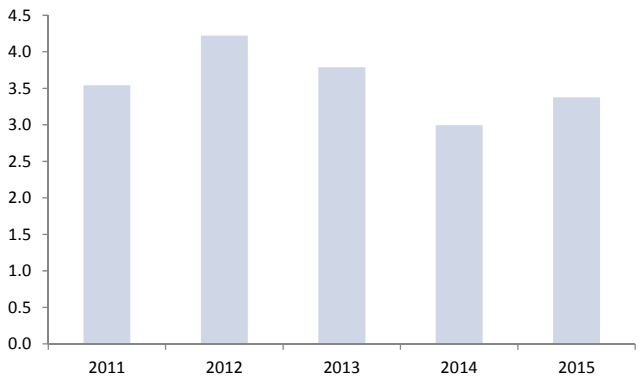
Exhibit 122: Spotify's advertising revenue has increased in line with the number of freemium users



Source: Spotify.

Exhibit 123: Spotify's ad revenue per user has hardly moved over the last five years

Spotify advertising revenues per free user (€)



Source: Spotify.

Sync revenues: An additional growth opportunity for rights holders

Synchronisation revenues refer to flat fees or royalties generated by the use of sound recordings in TV, films, games and advertising as background sound.

Sync remains small at $360 mn or 2% of the global recorded music industry in 2015 (IFPI) but it is a growing source of recurring revenues for which we forecast a 2015-30 CAGR of c.4% after 7% over 2013-15, driven by a rising consumption of content – be it TV, films, adverts or games, especially in markets outside of the US. The US is the largest sync market accounting for 57% of the total in 2015, far ahead of the UK at 9% and France at 8%.

Not only is this becoming a more important source of revenue for rights holders, but it is also becoming a more important source of discoverability of artists with 26% of people discovering artists through sync according to a 2015 Ipsos study conducted across 13 major music markets.

We see Vivendi and Sony as well positioned to leverage their other media assets to increase sync revenues and turn artists into brands such as: TV/movies (StudioCanal, Sony Pictures), video games (Gameloft, Playstation), online video (Dailymotion, VEVO) or advertising (through the partnership with Vivendi' sister company Havas). We believe this will improve relationship with artists and strengthen their competitive advantage over time.

Vivendi: Exploiting synergies across its asset portfolio to boost sync revenue

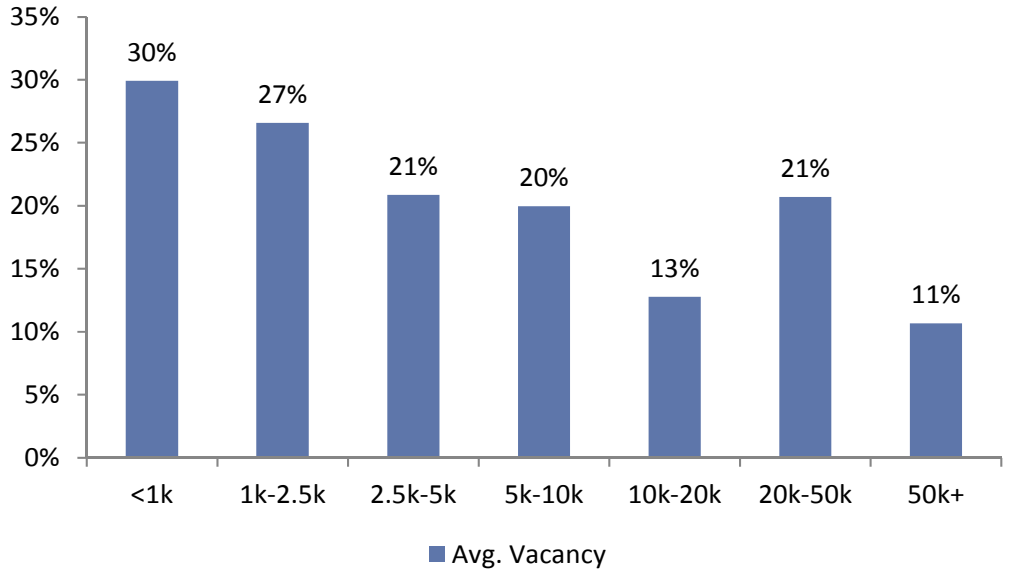
- **TV production**: Vivendi has identified c.40 potential collaborations between UMG and StudioCanal such as documentaries, musical movies and biopics. The film "Legend", for example, was the best British box-office launch ever posted by StudioCanal whose soundtrack was produced by one of UMG's artists – Duffy. Vivendi's Studio+ will produce digital mini-series for mobile in cooperation with both UMG and StudioCanal. UMG CEO and Chairman, Lucian Grainge, was appointed on the board of Lionsgate (September 14, 2016) and was reported to have strengthened the relationship between UMG and other US entertainment companies in recent years.
- **Video games**: UMG music can be used in Vivendi's gaming assets (Gameloft, potentially Ubisoft) as soundtracks.
- **Online video**: Dailymotion and VEVO (of which Vivendi owns 40%) are among the most viewed online video platforms globally with 3.5 bn and 18 bn monthly video views and can therefore improve the visibility of UMG's artists and the monetisation of its music videos.
- **Advertising**: Vivendi's sister company Havas and UMG announced the formation of the Global Music Data Alliance (GMDA) in January 2015 in order to leverage UMG's proprietary data across multiple artists and genres by combining it with Havas' analytical capabilities to reach a holistic view of music consumption across a range of platforms. This can help provide new revenue opportunities for UMG artists and labels by creating marketing opportunities for brands. Examples of potential opportunities include driving sponsorship for live events or album tie-in promotions. There is also scope for advertisers to utilise a particular artist or tune for a campaign based on data about consumer preferences. UMG added another layer to its relationship with Havas in September 2015 by teaming up with BETC (owned by Havas) to launch a jointly-run record label called POP Records since September 2015 with an aim to launch new artists and use BETC's pop culture expertise to create content for artists.
- ***Touring:*** *Vivendi can also leverage its ticketing businesses (Digitick, See Tickets) and concert halls (Olympia) to promote artists and boost performance income*

Live entertainment will become more important and a growth opportunity for streaming platforms

Unlike recorded music, live music has been relatively immune to the online transition and resulting piracy over the past decade. With recorded music sales declining, artists also became more dependent on live music performance which in turn led record companies to expand into that segment. Live music has indeed been the fastest growing area of the music industry worth another $25 bn of revenue in 2015 according to IFPI.

We forecast $14 bn of additional revenue opportunity by 2030 as the segment will benefit from favourable demographic shifts (greater preference for experiences among Millennials and Gen Z) and optimization of vacancy rates enabled by new technologies and data. Streaming services are particularly well placed to leverage listening data for the marketing and promotion of live events and the possibility to connect directly with fans. It is estimated that 40%-50% of tickets are currently unsold in the US (Billboard, September 4, 2010). According to our analysis of over 5,000 live events in the United States (data from global concert industry trade publication, Pollstar), average vacancy was 26%, with venues with fewer than 1k seats seeing vacancy rates of 30%. This explains the move of various music players such as Pandora, Vivendi (owner of UMG) and Access Industries (owner of WMG) to acquire ticketing companies.

Exhibit 124: Vacancy rates have tended to be higher for shows at smaller venues, typically featuring lesser-known artists with smaller promotion budgets
Average vacancy rate, by venue size (maximum seat capacity)



Source: Pollstar.

Pandora's October 2015 acquisition of Ticketfly should enable it to leverage its user data, especially listening history and location data, to drive down vacancy rates at some venues. One key driver of high vacancy rates is a lack of awareness of smaller acts which do not have national marketing campaigns. Many of the largest venues in the United States (stadiums, arenas, etc.) are booked in partnership with LiveNation for ticketing and promotion. Pandora has noted that its target market for Ticketfly is outside of those mega venues, and more focused on Tier 2 events. Pandora has deep insight into its users' listening habits and artist preferences – the company knows where its users live and which artists they like based on station creation and thumb data (which songs a user has "thumbed up" or "thumbed down"). Given this data, Pandora believes it can help drive awareness of local events among known fans of a given artist, and more effectively fill venues. Better matching the supply and demand could save up to $2 bn of revenues for the US live industry alone assuming 24 mn tickets are unsold every year in the US at an average price of $67.33.

Stock implications

Vivendi (CL-Buy)

We see Vivendi as a main beneficiary of the recovery in the music industry through UMG, the world's largest record company and second largest music publisher. UMG accounted for 47% of 2015 group revenue and 63% of EBITA. We believe UMG will not only benefit from overall music market growth, especially in the recorded segment, but will also drive new revenue streams and synergies in synchronization and live though greater integration with Vivendi's other businesses and partners: leading online video services Dailymotion and VEVO, TV, video games, ticketing and telecom partnerships (Telefonica, Telecom Italia, Orange). UMG should also increasingly benefit from the marketing/branding/PR expertise brought from its partnership with Vivendi's sister company Havas, the world's sixth largest advertising agency.

We increase our UMG revenue by 3.2% and EBITA by 6.5% on average over 2016-2020E to reflect our new global industry forecasts. We now forecast revenue to grow 4.4% (2015-20E CAGR) and margins to expand to 15.2% in 2020 from 11.6% in 2015 thanks to streaming. This drives a 3% average increase in our Vivendi EPS forecasts over 2016-20. Our UMG DCF-based valuation increases by 5% to €13.1 bn leading us to raise Vivendi's 12-month SOTP-based target price to €21.5 from €21.1. We reiterate our Buy rating, and the stock remains on the Conviction List.

Sony (CL-Buy)

Music is the cornerstone in Sony's transition to becoming a global entertainment giant. We believe Sony is one of key beneficiaries of recovery in the music industry alongside Vivendi, and reiterate our Conviction List-Buy. Sony is the world's second largest record company and the largest music publisher. We estimate the music segment will account for 8% of group revenue and 23% of operating profits in FY16 (30% in FY2015). We believe Sony Music will benefit from two structural advantages which should enable it to outperform the overall music market: 1) large song catalogue, with Sony's main label Columbia Records founded in 1887, the oldest surviving record label in the world. The growth of streaming increases consumption and monetization of its catalogue. 2) Cross-media synchronization opportunity and improved discoverability, with Sony being a large media conglomerate with strong TV production activity in North America, unprofitable yet large-scale motion pictures studios and the world's most successful video game platform, PlayStation.

We raise our Sony estimates slightly (+1%) and build a more detailed growth outlook for the music business. We now assume a negative 10% CAGR (2015-20) for the physical recording business and assume a CAGR for the streaming business of +29% over the same period. We assume the recording business will grow at 7% in aggregate, with a 5% CAGR in music publishing. We also assume margins will improve as we believe digital has 7-10 pp higher operating profit margin vs. the physical business. We forecast Sony's music business operating profit margin to improve from 12.2% in FY16 to 15.7% by FY20.

Pandora (CL-Buy)

We believe Pandora's leadership in internet radio, combined with the data generated by its 100 mn+ quarterly logged-in users and nearly 6 bn hours of quarterly listening, provides a strong competitive platform, which we expect to continue taking share of listening hours from terrestrial radio in the US. Pandora has more than doubled its share of US radio listener hours from 4% in 2011 to 10% in 2015. Pandora's cost structure has also stabilized now that it has signed direct deals with all major record labels. Licensing cost for its ad-supported product will be in the region of $33 per thousand hours, modestly above the $31 it had been paying prior to the deals. With secular tailwinds from the proliferation of connected devices, including autos, mobile devices, and in-home entertainment, we expect Pandora to surpass 23 bn listener hours in 2017, excluding the potential impact of any on-

demand offering. We believe Pandora's move into interactive streaming will significantly expand its addressable market and monetisation of its listeners. Its unique database, long-standing brand and strong customer relationships put it in a favourable position to upsell its on-demand service to its c.80 mn ad-funded radio customers and better segment its customer base through multiple price points. We recently added Pandora to the Conviction List (see *Adding Pandora to CL ahead of subscription driven product cycle*, October 4, 2016)

Apple (Buy)

Apple is a leading provider of smartphones, tablets, and PCs with proprietary operating systems across mobile devices (iOS) and general purpose computers (Mac OS). Apple's platforms attract a robust user base with nearly 800 mn iTunes accounts, over 590mn iPhone users (GSe), and a Mac installed base of 80 mn. As we expect core device sales to slow, we believe Apple will increasingly focus on its services stream with the iTunes/Software/Services segment which we forecast to growth to $29.9 bn of revenue in FY18 (12.8% of revenue) from $19.9 bn of revenue in FY15 (8.5% of total). Within this, Apple should increasingly benefit from the growth of music streaming through its subscription service Apple Music which it can upsell to its large installed base of iPhones. We forecast Apple Music users as a percentage of iPhone users to increase from 2% in 2016E to 14% in 2030E. This implies that Apple will account for around 35% of global net subscriber additions over the next five years and 27% over 2020-30 (as more rival services launch). This gives revenue of US$1.2 bn in 2016E growing to US$13 bn in 2030. While Apple's iTunes remains a dominant player in the structurally declining downloads business, we expect the growth from streaming to more than offset the decline in downloads by 2017.

Alphabet (CL-Buy)

As the dominant online video platform for music, we view YouTube as particularly well positioned to benefit from the strong growth in music video consumption and online video advertising especially on mobile devices. We estimate the platform accounted for ~40% of the online video market in 2015. We estimate that YouTube revenues grew at a 50% CAGR over 2010-15 and forecast c.30% CAGR over 2015-18, with around 15%-20% coming from music. We believe however that YouTube will be under greater pressure to improve monetisation for rights holders amid greater regulatory scrutiny and as competition for online audiences intensifies. We estimate that YouTube accounted for 9% of Alphabet's revenue in 2015 and we forecast its share to rise to 12% by 2018.

iHeart (Not Covered)

While the overall US terrestrial radio industry is likely to lose share to digital alternatives and will need to adapt to change, we believe IHRT will continue to outperform peers by a healthy margin for years, given 1) it is the largest station and benefits from scale, particularly as it relates to national advertising, 2) it has a credible digital platform that others lack, which therefore allows it to recapture more of the terrestrial pie that is migrating to digital, and 3) it is the biggest player but is still c.20% of the industry at c.$3 bn in radio revenues vs. a $15 bn pie.

Sirius XM (Neutral)

Sirius XM (SIRI) is the leading subscription-based satellite radio broadcaster in the United States with over 30 mn paid subscribers. The company is best known for its curated commercial free music, live sports and talk radio content. We believe SIRI will continue to maintain its competitive advantage and market share in the in-car radio market given its (1) exclusive content portfolio (most notably major sports leagues and Howard Stern), (2) established distribution platform via +23k auto dealerships, and (3) ease of use via its driver friendly interface. SIRI is also making strides to participate in the connected car and streaming music universe via the upcoming launch of its "360L" platform. This platform looks to incorporate the economics of linear satellite distribution with interactive music streaming, customizable user interfaces and analytic abilities of two-way data networks.

We believe the launch of 360L will better position SIRI to compete with both IP radio and on-demand streamers while maintaining its industry leasing cost structure.

Our Neutral rating represents a balance of a few key factors. Key positives are (1) superior cost structure and margins when compared with streaming counterparts, (2) an expanding addressable market of Sirius-enabled vehicles within the used car market, and (2) growing FCF that we expect to fund material share repurchases over the next 3-6 years. These are balanced, in our view, by (1) potential moderation in new car sales (SIRI's key subscriber acquisition 'funnel'), (2) emerging competition as connected car sales ramp, and (3) valuation that continues to remain in-line with peers', even if we account for SIRI's strong FCF growth.

Exhibit 125: Summary of price target methodologies and risks

Company	Ticker	Rating	Price	12M Price target	Valuation methodology	Risks
Alphabet	GOOGL	* Buy	$ 800.4	930.0	Price target is derived from a three-way equal-weighted valuation approach, which includes a five-year traditional discounted cash flow (DCF) analysis, an EV/EBITDA multiple analysis, and a P/E analysis. - On EV/EBITDA, we use a multiple of 13x - On P/E, we use a multiple of 22x - DCF assumptions are a discount rate of 7% and a FCF perpetuity growth rate of 4%.	(-) Weaker-than-expected cost discipline, competition, dilutive M&A
Apple	AAPL	Buy	$ 112.5	124.0	Our 12-month price target is based on a 12.5X CY17 P/E	(-) Product cycle execution, end demand, and a slower pace of innovation
Pandora	P	* Buy	$ 14.2	19.0	12m price target is based on a 70% / 30% blend of 55x 2017E EV/EBITDA fundamental valuation and 3X 2017E EV/Sales M&A valuation	(-) Competition, content costs, failure to grow monetization/engagement.
Sirius XM	SIRI	Neutral	$ 4.2	4.5	12-month price target is based on a blend of three methods 1/2 FCF (15x), 1/4 EV/EBITDA (13x), and 1/4 DCF (7.9% WACC, 3.0% Term).	(+) Strong new car sales, higher uptake in the used car segment, increased share repurchases. (-) Competition from streaming services, loss of key content, weak auto sales.
Sony	6758.T	* Buy	¥ 3371.0	4400.0	Our 12m price target is based on a SOTP valuation	(-) Delays rebuilding the movie business, stronger yen, weak consumption.
Vivendi	VIV.PA	* Buy	€ 17.7	21.5	Our 12m price target is based on a SOTP valuation	(-) Lack of recovery in Music, worse trends at Canal+ France, M&A.

** Denotes Conviction List membership*

Source: Goldman Sachs Global Investment Research.

Appendix

Exhibit 126: Vivendi: changes to our estimates

€mn	New					Old					% change				
	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E
Sales															
UMG	5,147	5,369	5,630	5,950	6,334	5,121	5,285	5,463	5,690	5,964	0.5%	1.6%	3.1%	4.6%	6.2%
Canal +	5,371	5,413	5,541	5,682	5,836	5,371	5,413	5,541	5,682	5,836	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village	349	529	582	640	704	349	529	582	640	704	0.0%	0.0%	0.0%	0.0%	0.0%
Others	(22)	(20)	(20)	(20)	(20)	(22)	(20)	(20)	(20)	(20)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**10,844**	**11,292**	**11,734**	**12,253**	**12,854**	**10,819**	**11,208**	**11,567**	**11,992**	**12,484**	**0.2%**	**0.8%**	**1.4%**	**2.2%**	**3.0%**
EBITA															
UMG	643	725	800	881	963	640	713	754	797	847	0.5%	1.6%	6.0%	10.6%	13.7%
Canal +	375	530	668	743	768	375	530	668	743	768	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village + new initiatives	(50)	(20)	-	5	10	(50)	(20)	-	5	10	0.0%	0.0%	0.0%	0.0%	0.0%
Holding & Corporate	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**874**	**1,140**	**1,373**	**1,534**	**1,646**	**871**	**1,129**	**1,327**	**1,450**	**1,530**	**0.4%**	**1.0%**	**3.4%**	**5.8%**	**7.6%**
% margin	8.1%	10.1%	11.7%	12.5%	12.8%	8.0%	10.1%	11.5%	12.1%	12.3%					
Income from Operations															
UMG	683	760	835	916	998	685	723	764	807	857	-0.3%	5.0%	9.2%	13.5%	16.4%
Canal +	398	533	671	746	771	398	533	671	746	771	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village + new initiatives	(50)	(20)	-	5	10	(50)	(20)	-	5	10	0.0%	0.0%	0.0%	0.0%	0.0%
Holding & Corporate	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**937**	**1,178**	**1,411**	**1,572**	**1,684**	**939**	**1,142**	**1,340**	**1,463**	**1,543**	**-0.2%**	**3.2%**	**5.3%**	**7.5%**	**9.1%**
Associates	128	174	201	201	201	128	174	201	201	201	0.0%	0.0%	0.0%	0.0%	0.0%
Net Interest	(42)	(30)	(35)	(35)	(35)	(42)	(30)	(35)	(35)	(35)	0.0%	0.0%	0.0%	0.0%	0.0%
Income from investments	38	38	38	41	44	38	38	38	41	44	0.0%	0.0%	0.0%	0.0%	0.0%
Tax	(259)	(314)	(373)	(416)	(445)	(258)	(311)	(361)	(394)	(415)	0.3%	1.0%	3.3%	5.6%	7.3%
Minorities	(30)	(32)	(34)	(36)	(38)	(30)	(32)	(34)	(36)	(38)	0.0%	0.0%	0.0%	0.0%	0.0%
Adjusted Net Income (continued)	**709**	**977**	**1,170**	**1,290**	**1,372**	**707**	**969**	**1,136**	**1,228**	**1,287**	**0.3%**	**0.9%**	**3.0%**	**5.1%**	**6.7%**
Adjusted EPS (continued)	**0.56**	**0.77**	**0.92**	**1.01**	**1.08**	**0.56**	**0.76**	**0.89**	**0.96**	**1.01**	**0.3%**	**0.9%**	**3.0%**	**5.1%**	**6.7%**

Source: Goldman Sachs Global Investment Research.

Exhibit 127: Sony: changes to our estimates

JPY, mn	New					Old					% change				
	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E
Revenue	7,823,182	8,199,058	8,471,616	8,705,913	8,978,869	7,821,132	8,182,528	8,435,524	8,654,208	8,905,035	0.03%	0.20%	0.43%	0.60%	0.83%
EBITDA	758,709	952,082	1,018,089	1,065,030	1,144,981	758,554	950,473	1,018,924	1,061,638	1,139,750	0.02%	0.17%	-0.08%	0.32%	0.46%
Operating profit	338,114	527,487	591,244	665,435	759,386	337,959	525,878	592,079	662,043	754,155	0.05%	0.31%	-0.14%	0.51%	0.69%
Net Income	119,087	308,904	344,309	407,551	476,576	119,009	308,100	344,726	405,685	473,698	0.07%	0.26%	-0.12%	0.46%	0.61%
EPS (¥)	94	245	273	323	378	94	244	273	322	375	0.07%	0.26%	-0.12%	0.46%	0.61%
BPS (¥)	2,003	2,198	2,421	2,694	3,022	2,003	2,197	2,420	2,692	3,017	0.00%	0.03%	0.02%	0.07%	0.14%

Source: Goldman Sachs Global Investment Research.

Disclosure Appendix

Reg AC

We, Lisa Yang, Heath P. Terry, CFA, Masaru Sugiyama, Simona Jankowski, CFA, Heather Bellini, CFA, Robert D. Boroujerdi, Piyush Mubayi, Brett Feldman, Drew Borst, Mark Grant, Otilia Bologan, Stephen Laszczyk, Yusuke Noguchi and Matthew Cabral, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

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The Goldman Sachs Investment Profile provides investment context for a security by comparing key attributes of that security to its peer group and market. The four key attributes depicted are: growth, returns, multiple and volatility. Growth, returns and multiple are indexed based on composites of several methodologies to determine the stocks percentile ranking within the region's coverage universe.

The precise calculation of each metric may vary depending on the fiscal year, industry and region but the standard approach is as follows:

Growth is a composite of next year's estimate over current year's estimate, e.g. EPS, EBITDA, Revenue. **Return** is a year one prospective aggregate of various return on capital measures, e.g. CROCI, ROACE, and ROE. **Multiple** is a composite of one-year forward valuation ratios, e.g. P/E, dividend yield, EV/FCF, EV/EBITDA, EV/DACF, Price/Book. **Volatility** is measured as trailing twelve-month volatility adjusted for dividends.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

GS SUSTAIN

GS SUSTAIN is a global investment strategy aimed at long-term, long-only performance with a low turnover of ideas. The GS SUSTAIN focus list includes leaders our analysis shows to be well positioned to deliver long term outperformance through sustained competitive advantage and superior returns on capital relative to their global industry peers. Leaders are identified based on quantifiable analysis of three aspects of corporate performance: cash return on cash invested, industry positioning and management quality (the effectiveness of companies' management of the environmental, social and governance issues facing their industry).

Disclosures

Coverage group(s) of stocks by primary analyst(s)

Lisa Yang: Europe-Media. Heath P. Terry, CFA: America-Internet. Masaru Sugiyama: Japan Internet and Games, Japan-Consumer Electronics, Japan-Media. Simona Jankowski, CFA: America-Consumer Hardware & Mobility, America-IT Hardware, America-Telecom Equipment. Heather Bellini, CFA: America-Software. Piyush Mubayi: Asia Pacific Media, Asia Pacific Telecoms. Brett Feldman: America-Telco, Cable & Satellite, America-Towers. Drew Borst: America-Media and Entertainment. Matthew Cabral: America-IT Hardware.

America-Consumer Hardware & Mobility: Apple Inc., BlackBerry Ltd., BlackBerry Ltd., Corning Inc., Garmin Ltd., GoPro Inc., Qualcomm Inc..

America-IT Hardware: Aerohive Networks Inc., Arista Networks Inc., Brocade Communications Systems, CDW Corp., Cisco Systems Inc., F5 Networks Inc., Hewlett Packard Enterprise Co., HP Inc., Motorola Solutions Inc., NetApp Inc., Nimble Storage Inc., Pure Storage Inc., Xerox Corp., Zebra Technologies Corp.

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America-Telco, Cable & Satellite: AT&T Inc., CenturyLink Inc., Charter Communications Inc., Comcast Corp., Communications Sales & Leasing Inc., DISH Network Corp., Frontier Communications Corp., Intelsat SA, Level 3 Communications Inc., Sirius XM Holdings, Sprint Corp., T-Mobile US Inc., Verizon Communications, Windstream Holdings, Zayo Group.

America-Telecom Equipment: Acacia Communications Inc., ADTRAN Inc., ARRIS International Plc, Ciena Corp., Finisar Corp., Infinera Corp., Juniper Networks Inc., Lumentum Holdings.

America-Towers: American Tower Corp., Crown Castle International Corp., SBA Communications Corp..

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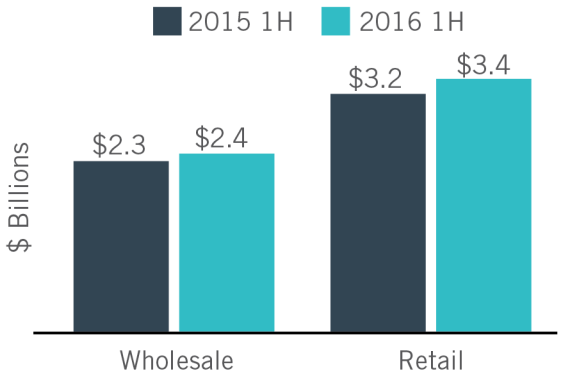
News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics

Joshua P. Friedlander | Senior Vice President, Strategic Data Analysis, RIAA

For the first half of 2016, strong growth in revenues from subscription streaming services more than offset declines in unit based sales of physical and digital music download products. Overall revenues at retail increased 8.1% on a year-over-year basis to $3.4 billion, the strongest industry growth since the late 1990's. At wholesale, value increased 5.7% to $2.4 billion.

Figure 1

U.S. Music Industry Mid-Year Revenues
Source: RIAA

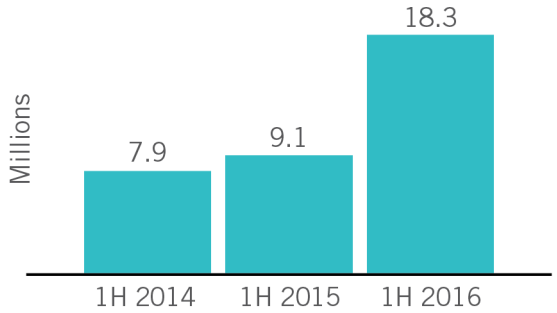


Revenues from streaming services continued to grow strongly both in dollars and share of total revenues. First half (1H) 2016 streaming music revenues totaled $1.6 billion, up 57% year-over-year, and accounted for 47% of industry revenues compared with 32% in 1H 2015. This category includes revenues from subscription services (such as Apple Music, TIDAL and paid versions of Spotify, among others), streaming radio service revenues that are distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and other non-subscription on-demand streaming services (such as YouTube, Vevo, and ad-supported Spotify).

Paid subscriptions experienced massive growth in the first half of 2016. The entrance of new services like Apple Music and TIDAL, and growth from services like Spotify Premium, helped both revenues and the number of paid subscriptions more than double versus the prior year. First half revenues from subscription music streaming services surpassed $1 billion for the first time, growing 112% to $1.01 billion.

Figure 2

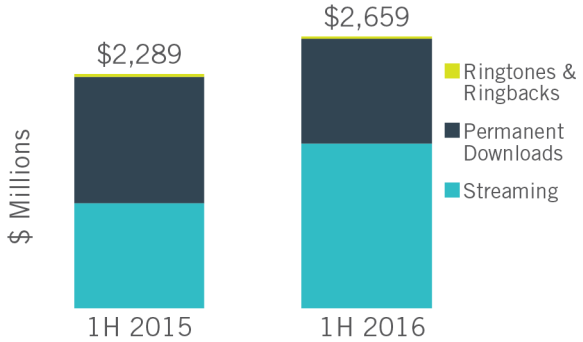
U.S. Paid Subscriptions, 1H Average
Source: RIAA



Subscriptions alone accounted for 30% of industry revenues for the first half of 2016, and the number of paid subscriptions grew 101% to average 18.3 million for the same period. The revenue growth from subscriptions alone more than offset the declines from physical sales and permanent digital downloads.

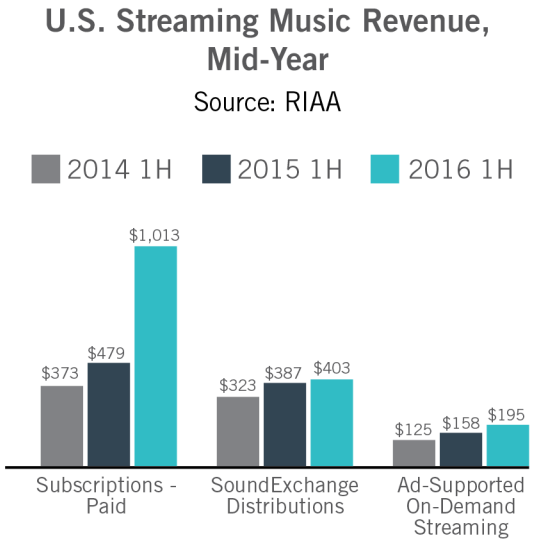
Figure 3

U.S. Digital Music Revenues Mid-Year
Source: RIAA



All three formats of streaming music had revenue growth in the first half of 2016. SoundExchange distributions grew 4% to $403 million, an all-time high for the first half of the year. On-demand ad-supported streaming grew 24% y-o-y to $195 million.

Figure 4



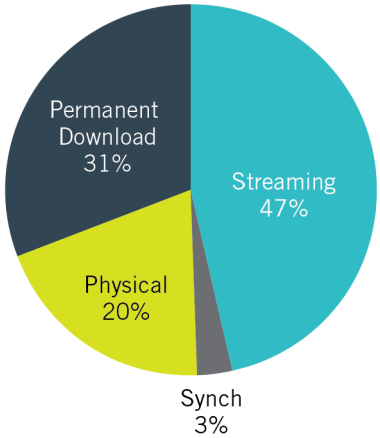
The total value of digitally distributed formats was $2.7 billion – up 16% compared to the 1H of 2015. Digital accounted for 80% of the overall market by value, compared with 74% for 1H 2015 (note Synchronization excluded from this figure).

Revenues from permanent digital downloads (including albums, single tracks, videos, and kiosk sales) declined 17% to $1.0 billion for the first half of 2016. Digital albums continued the trend of outperforming individual tracks. The total value of digital albums was $500 million, down 11% versus the same period the prior year, and digital album units were down 15% to 48.2 million. Digital track sales declined by value 22% to $520 million, with sales volume down 22% to 432 million units.

The total value of shipments in physical formats was $672 million, down 14% versus 1H 2015. CDs made up 66% of total physical shipments by value. Vinyl albums were down 6% by value for the first half of the year, and accounted for 31% of physical shipments by value. Synchronization royalties were $100 million for the first half of the year, virtually flat versus 1H 2015.

These first half 2016 results illustrate the emergence of paid subscriptions as a primary revenue driver for the United States music industry. For the first time, paid subscriptions were virtually on-par with paid downloads as the biggest single format revenue source. Streaming became the overall largest revenue contributor by a wide margin.

Figure 5



Note – 2015 data has been updated.

Please note that the RIAA presents the most up-to-date information available in its industry revenue reports and online statistics database: https://www.riaa.com/u-s-sales-database.

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202-775-0101

2016 Mid-Year Industry Shipment and Revenue Statistics

202-775-0101

United States Unit Shipments and Estimated Retail Dollar Value (In Millions, net after returns)

DIGITAL PERMANENT DOWNLOAD

		1H 2015	1H 2016	% CHANGE 2015-2016
(Units Shipped) (Dollar Value)	**Download Single**	554.5 $665.2	432.0 $519.5	-22.1% -21.9%
	Download Album	56.4 $564.7	48.2 $500.1	-14.5% -11.4%
	Kiosk[1]	1.2 $2.0	1.0 $1.7	-19.2% -18.1%
	Music Video	1.8 $3.6	1.4 $2.8	-23.0% -23.0%
	Ringtones & Ringbacks	11.8 $29.3	9.1 $22.7	-22.6% -22.6%

DIGITAL SUBSCRIPTION & STREAMING

SoundExchange Distributions[2]	$387.2	$403.4	4.2%
Paid Subscription[3]	9.1 $478.6	18.3 $1,013.1	100.7% 111.7%
On-Demand Streaming (Ad-Supported)[4]	$158.2	$195.4	23.6%
TOTAL DIGITAL VALUE	$2,288.9	$2,658.7	16.2%

Synchronization Royalties[5]	$101.0	$100.4	-0.6%

PHYSICAL

(Units Shipped) (Dollar Value)	**CD**	43.8 $531.0	38.9 $443.9	-11.2% -16.4%
	CD Single	0.3 $0.8	0.0 -$0.1	-109.1% -116.4%
	LP/EP	9.2 $221.1	8.4 $207.1	-9.1% -6.3%
	Vinyl Single	0.4 $4.2	0.3 $3.2	-28.2% -23.9%
	Music Video	1.2 $23.9	0.8 $15.8	-32.8% -34.0%
	DVD Audio	0.1 $2.4	0.0 $1.5	-47.1% -39.6%
	SACD	0.0 $0.4	0.0 $0.5	13.8% 39.5%
	Total Physical Units **Total Physical Value**	**55.0** **$783.9**	**48.4** **$671.9**	**-12.0%** **-14.3%**

Total Retail Units **Total Retail Value**	**47.4** **$727.4**	**41.0** **$631.5**	**-13.5%** **-13.2%**

TOTAL DIGITAL AND PHYSICAL

Total Units[6] **Total Value**	**680.6** **$3,173.8**	**540.0** **$3,431.0**	**-20.7%** **8.1%**
% of Shipments[7] Physical Digital	**1H 2015** 26% 74%	**1H 2016** 20% 80%	

Retail Value is the value of shipments at recommended or estimated list price
Formats with no retail value equivalent included at wholesale value

Historical data updated for 2015

[1] Includes Singles and Albums
[2] Estimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses
[3] Streaming, tethered, and other paid subscription services not operating under statutory licenses
Subscription volume is average number of subscriptions for subscription services
[4] Ad-supported audio and music video services not operating under statutory licenses
[5] Includes fees and royalties from synchronization of sound recordings with other media
[6] Units total includes both albums and singles, and does not include subscriptions or royalties
[7] Synchronization Royalties excluded from calculation

For a list of authorized services see **www.whymusicmatters.com**

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CO EX. R-12

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-13

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Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-14

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

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http://www.wsj.com/articles/spotify-raises-1-billion-in-debt-financing-1459284467

TECH

Spotify Raises $1 Billion in Debt Financing

TPG and Dragoneer Investment Group lead the Spotify debt deal

Spotify, by raising debt instead of equity, adds to its war chest without the possibility of setting a lower price for its stock. Above, Katy Perry arrives at a Spotify party last month. *PHOTO: ASSOCIATED PRESS*

By **DOUGLAS MACMILLAN**, **MATT JARZEMSKY** and **MAUREEN FARRELL**

Updated March 29, 2016 6:50 p.m. ET

Music-streaming site Spotify AB has raised $1 billion in convertible debt from investors, a deal that extends the money-losing company's runway but comes with some strict guarantees, people familiar with the matter said.

Private-equity firm TPG, hedge fund Dragoneer Investment Group and clients of Goldman Sachs Group Inc. participated in the deal, which has been signed and is expected to close at the end of this week, these people said.

Tech startups are increasingly turning to convertible debt—bonds that can be exchanged for stock—as investors push back on rich valuations amid a volatile stock market and economic uncertainty.

By raising debt instead of equity, Spotify adds to its war chest without the possibility of setting a lower price for its stock, which can sap momentum and hamper recruiting.

In June 2015, Spotify was valued at $8.5 billion.

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In return for the financing, Spotify promised its new investors strict guarantees tied to an IPO. If Spotify holds a public offering in the next year, TPG and Dragoneer will be able to convert the debt into equity at a 20% discount to the share price of the public offering, according to two people briefed on the deal. After a year, that discount increases by 2.5 percentage points every six months, the people said.

Spotify also agreed to pay annual interest on the debt that starts at 5% and increases by 1 percentage point every six months until the company goes public, or until it hits 10%, the people said. This interest—also called a “coupon” and in this case paid in the form of additional debt, rather than cash—is commonly used in private-equity deals but rarely seen in venture funding.

In addition, TPG and Dragoneer are permitted to cash out their shares as soon as 90 days after an IPO, instead of the 180-day period “lockup” employees and other shareholders are forced to wait before selling shares, the people said.

TPG and Dragoneer will buy $750 million worth of the deal, with the remainder going to clients of Goldman Sachs Group Inc., which advised on the financing, according to people familiar with the deal.

Spotify indicated to new investors it plans to go public in the next two years, people familiar with the matter said.

Other highly valued tech companies that have raised debt recently include daily fantasy-sports operator DraftKings Inc., which sold nearly $100 million worth of notes in December that could convert to discounted shares, The Wall Street Journal previously reported. DraftKings was valued at $2.1 billion last July before battling regulators over whether its service constitutes illegal gambling.

While Spotify's valuation doesn't technically change with the debt round, one of its mutual-fund investors has marked down its stake. Fidelity Investments held its Spotify shares at $1,643 a share in January, down 27% from last August, according to regulatory filings. Another mutual fund, Vanguard International Growth, paid $2,229 a share for a stake in Spotify and still held it at that price as of December.

Before raising the convertible debt, Spotify had more than $600 million left on its balance sheet, a person familiar with the company said. It has previously raised a total of more than $1 billion from investors including Founders Fund, Accel Partners, Technology Crossover Ventures and Kleiner Perkins Caufield & Byers.

Spotify, which invests heavily in music royalties, posted a net loss of €162 million in 2014, the last year for which it has disclosed financials. Revenue rose 45% to €1.08 billion, from €747 million in the same period in 2013.

The company is under increasing pressure from a growing set of challengers including Apple Inc., which last year launched a subscription-based streaming-music service and a 24-hour global Internet radio station.

Spotify is valued at more than three times market value of Pandora Media Inc., the radio-streaming company whose stock has lost more than one third of its value during the past 12 months. Pandora said Monday it was replacing its chief executive with its founder, Tim Westergren, who will lead the company's effort to expand overseas and to launch a subscription, on-demand tier that could increase revenue.

TPG is investing from a private-equity fund focused on fast-growing companies, as well as from its credit and special situations arm. The latter group, led by former Goldman Sachs partner Alan Waxman, has recently focused on providing capital for large, fast-growing pre-IPO companies that offers some protection, particularly as the tech financing has cooled, according to people familiar with the firm's thinking.

TPG has invested in Uber Technologies Inc. and Airbnb Inc., two of the most highly-valued private tech companies. Uber last year raised $1.6 billion in convertible debt from wealthy clients of Goldman Sachs, people familiar with the deal told The Wall Street Journal.

—Telis Demos and Rolfe Winkler contributed to this article.

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P 10-Q 9/30/2016

Section 1: 10-Q (10-Q)

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2016

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 001-35198

Pandora Media, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**94-3352630**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2101 Webster Street, Suite 1650 Oakland, CA	**94612**
(Address of principal executive offices)	(Zip Code)

(510) 451-4100
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted to its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
(Do not check if a smaller reporting company)	

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The number of shares of registrant's common stock outstanding as of October 25, 2016 was: 233,335,503.

Pandora Media, Inc.

FORM 10-Q Quarterly Report

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

Pandora Media, Inc.
Condensed Consolidated Balance Sheets
(in thousands, except share and per share amounts)
(unaudited)

	As of December 31, 2015	As of September 30, 2016
Assets		
Current assets		
Cash and cash equivalents	$ 334,667	$ 207,695
Short-term investments	35,844	50,052
Accounts receivable, net of allowance of $2,165 at December 31, 2015 and $3,023 at September 30, 2016	277,075	282,802
Prepaid content acquisition costs	2,099	102,623
Prepaid expenses and other current assets	33,821	34,166
Total current assets	683,506	677,338
Long-term investments	46,369	6,273
Property and equipment, net	66,370	118,453
Goodwill	303,875	306,706
Intangible assets, net	110,745	95,565
Other long-term assets	29,792	32,528
Total assets	$ 1,240,657	$ 1,236,863
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	$ 17,897	$ 13,983
Accrued liabilities	37,185	33,968
Accrued content acquisition costs	97,390	106,275
Accrued compensation	43,788	52,089
Deferred revenue	19,939	31,971
Other current liabilities	15,632	20,739
Total current liabilities	231,831	259,025
Long-term debt, net	234,577	337,429
Other long-term liabilities	30,862	33,402
Total liabilities	497,270	629,856
Stockholders' equity		
Common stock: 224,970,412 shares issued and outstanding at December 31, 2015 and 233,312,446 at September 30, 2016	23	23
Additional paid-in capital	1,110,539	1,227,197
Accumulated deficit	(366,658)	(619,627)
Accumulated other comprehensive loss	(517)	(586)
Total stockholders' equity	743,387	607,007
Total liabilities and stockholders' equity	$ 1,240,657	$ 1,236,863

The accompanying notes are an integral part of the condensed consolidated financial statements.

Pandora Media, Inc.
Condensed Consolidated Statements of Operations
(in thousands, except per share amounts)
(unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
Revenue				
Advertising	$ 254,656	$ 273,716	$ 664,316	$ 759,150
Subscription and other	56,906	56,100	163,570	165,957
Ticketing service	—	22,085	—	67,121
Total revenue	311,562	351,901	827,886	992,228
Cost of revenue				
Cost of revenue - Content acquisition costs	211,272	174,334	467,429	522,231
Cost of revenue - Other	21,414	25,556	57,690	71,388
Cost of revenue - Ticketing service	—	15,318	—	45,223
Total cost of revenue	232,686	215,208	525,119	638,842
Gross profit	78,876	136,693	302,767	353,386
Operating expenses				
Product development	21,849	33,657	56,466	103,311
Sales and marketing	107,286	116,475	285,595	357,909
General and administrative	35,603	41,768	111,169	128,626
Total operating expenses	164,738	191,900	453,230	589,846
Loss from operations	(85,862)	(55,207)	(150,463)	(236,460)
Interest expense	(131)	(6,494)	(386)	(18,916)
Other income, net	95	579	803	1,696
Total other income (expense), net	(36)	(5,915)	417	(17,220)
Loss before benefit from (provision for) income taxes	(85,898)	(61,122)	(150,046)	(253,680)
Benefit from (provision for) income taxes	(32)	(412)	(206)	711
Net loss	$ (85,930)	$ (61,534)	$ (150,252)	$ (252,969)
Weighted-average common shares outstanding used in computing basic and diluted net loss per share	212,760	232,139	211,487	229,524
Net loss per share, basic and diluted	$ (0.40)	$ (0.27)	$ (0.71)	$ (1.10)

The accompanying notes are an integral part of the condensed consolidated financial statements.

Pandora Media, Inc.
Condensed Consolidated Statements of Comprehensive Loss
(in thousands)
(unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
Net loss	$ (85,930)	$ (61,534)	$ (150,252)	$ (252,969)
Change in foreign currency translation adjustment	(127)	(129)	(274)	(417)
Change in net unrealized gains (loss) on marketable securities	50	(45)	324	348
Other comprehensive income (loss)	(77)	(174)	50	(69)
Total comprehensive loss	$ (86,007)	$ (61,708)	$ (150,202)	$ (253,038)

The accompanying notes are an integral part of the condensed consolidated financial statements.

Pandora Media, Inc.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Nine months ended September 30,	
	2015	2016
Operating activities		
Net loss	$ (150,252)	$ (252,969)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities		
Depreciation and amortization	15,194	43,480
Stock-based compensation	79,473	103,841
Amortization of premium on investments, net	1,712	339
Other operating activities	1,610	2,884
Amortization of debt discount	—	13,587
Changes in operating assets and liabilities		
Accounts receivable	(45,796)	(8,338)
Prepaid content acquisition costs	(167)	(100,524)
Prepaid expenses and other assets	(6,397)	(12,655)
Accounts payable, accrued and other current liabilities	29,601	(4,990)
Accrued content acquisition costs	89,423	8,875
Accrued compensation	4,333	10,370
Other long-term liabilities	1,500	598
Deferred revenue	7,689	12,032
Reimbursement of cost of leasehold improvements	1,014	4,397
Net cash provided by (used in) operating activities	28,937	(179,073)
Investing activities		
Purchases of property and equipment	(21,336)	(46,400)
Internal-use software costs	(5,997)	(22,339)
Changes in restricted cash	—	(250)
Purchases of investments	(138,721)	(12,413)
Proceeds from maturities of investments	179,799	34,816
Proceeds from sale of investments	41,317	3,507
Payments related to acquisitions, net of cash acquired	(23,028)	(676)
Net cash provided by (used in) investing activities	32,034	(43,755)
Financing activities		
Borrowings under debt arrangements	—	90,000
Proceeds from employee stock purchase plan	5,089	6,395
Proceeds from exercise of stock options	3,718	3,011
Payment of debt issuance costs	—	(32)
Tax payments from net share settlements of restricted stock units	(2,295)	(3,126)
Net cash provided by financing activities	6,512	96,248
Effect of exchange rate changes on cash and cash equivalents	(459)	(392)
Net increase (decrease) in cash and cash equivalents	67,024	(126,972)
Cash and cash equivalents at beginning of period	175,957	334,667
Cash and cash equivalents at end of period	$ 242,981	$ 207,695
Supplemental disclosures of cash flow information		
Cash paid during the period for interest	$ 343	$ 3,336
Purchases of property and equipment recorded in accounts payable and accrued liabilities	$ 1,328	$ 8,321

The accompanying notes are an integral part of the condensed consolidated financial statements.

Pandora Media, Inc.
Notes to Condensed Consolidated Financial Statements
(unaudited)

1. Description of Business and Basis of Presentation

Pandora

Pandora is the world's most powerful music discovery platform, offering a personalized experience for each of our listeners wherever and whenever they want to listen to music—whether through earbuds, car speakers or live on stage. Our vision is to be the definitive source of music discovery and enjoyment for billions. The majority of our listener hours occur on mobile devices, with the majority of our revenue generated from advertising on these devices. We offer both local and national advertisers the opportunity to deliver targeted messages to our listeners using a combination of audio, display and video advertisements. We also generate revenue by offering an advertising-free subscription service which we call Pandora Plus. We were incorporated as a California corporation in January 2000 and reincorporated as a Delaware corporation in December 2010. Our principal operations are located in the United States, and we also operate in Australia, New Zealand and Canada.

Ticketing Service

Ticketfly is a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America. Ticketfly's ticketing, digital marketing and analytics software helps promoters book talent, sell tickets and drive in-venue revenue, while Ticketfly's consumer tools help fans find and purchase tickets to events. Ticketfly's revenue primarily consists of service and merchant processing fees from ticketing operations. We completed the acquisition of Ticketfly on October 31, 2015.

As used herein, "Pandora," "we," "our," "the Company" and similar terms include Pandora Media, Inc. and its subsidiaries, unless the context indicates otherwise.

Basis of Presentation

The interim unaudited condensed consolidated financial statements and accompanying notes have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP") along with the instructions to Form 10-Q and Article 10 of Securities and Exchange Commission ("SEC") Regulation S-X, and include the accounts of Pandora and our wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. In the opinion of our management, the interim unaudited condensed consolidated financial statements include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of our financial position for the periods presented. These interim unaudited condensed consolidated financial statements are not necessarily indicative of the results expected for the full fiscal year or for any subsequent period and should be read in conjunction with the audited consolidated financial statements and related notes included in our Annual Report on Form 10-K for the year ended December 31, 2015.

Certain changes in presentation have been made to conform the prior period presentation to current period reporting. We have reclassified certain amounts from the accounts payable, accrued and other current liabilities line item to the long-term liabilities line item of our condensed consolidated statements of cash flows. We have also reclassified internal-use software costs from the purchases of property and equipment line item to the internal-use software costs line item of our condensed consolidated statements of cash flows. We have also reclassified prepaid content acquisition costs from the prepaid expenses and other assets line item to the prepaid content acquisition costs line item of our condensed consolidated balance sheets and our condensed consolidated statements of cash flows. Lastly, we have reclassified interest expense from the other income (expense), net line item to the interest expense line item of our condensed consolidated statements of operations.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the related disclosures at the date of the financial statements, as well as the reported amounts of revenue and expenses during the periods presented. Estimates are used in several areas including, but not limited to determining accrued content acquisition costs, amortization of minimum guarantees under content acquisition agreements, selling prices for elements sold in multiple-element arrangements, the allowance for doubtful accounts, the fair value of stock options, market stock units ("MSUs"), stock-settled performance-based RSUs ("PSUs") and the Employee Stock Purchase Plan ("ESPP"), the provision for (benefit from) income taxes and the impact of forfeitures on stock-based compensation. To the extent there are material differences between these estimates, judgments

or assumptions and actual results, our financial statements could be affected. In many cases, the accounting treatment of a particular transaction is specifically dictated by U.S. GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result.

2. Summary of Significant Accounting Policies

Other than discussed below, there have been no material changes to our significant accounting policies as compared to those described in our Annual Report on Form 10-K for the year ended December 31, 2015.

Prepaid Content Acquisition Costs

Prepaid content acquisition costs are primarily comprised of minimum guarantees under content acquisition agreements. From November 2015 through September 2016, we signed direct license agreements for recorded music with major and independent labels, distributors and publishers. Certain of these license agreements include minimum guarantee payments, some of which are paid in advance. These minimum guarantees may take the form of either a contractually obligated minimum over a specified period of time that requires a true-up payment at the end of the specified period if the cumulative payments have not met or exceeded the specified minimum, or cash advance payments made at the beginning of, or at intervals during, the specified period, which cash payments are then recoupable against content acquisition costs over the specified period. On a quarterly basis, we record the greater of the cumulative actual content acquisition costs incurred or the cumulative minimum guarantee based on forecasted usage for the minimum guarantee period. The minimum guarantee period is the period of time that the minimum guarantee relates to, as specified in each agreement, which may be annual or a longer period. The cumulative minimum guarantee, based on forecasted usage considers factors such as listening hours, revenue, subscribers and other terms of each agreement that impact our expected attainment or recoupment of the minimum guarantees on a non-straight line basis.

Concentration of Credit Risk

For the three and nine months ended September 30, 2015 and 2016, we had no customers that accounted for more than 10% of our total revenue. As of December 31, 2015 and September 30, 2016, we had no customers that accounted for more than 10% of our total accounts receivable.

Recently Issued Accounting Standards

In March 2016, the Financial Accounting Standards Board ("the FASB") issued Accounting Standards Update No. 2016-09, *Compensation - Stock Compensation (Topic 718)* ("ASU 2016-09"). ASU 2016-09 requires all income tax effects of awards to be recognized in the income statement when the awards vest or are settled. Additionally, it allows an employer to repurchase more of an employee's shares for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. The guidance is effective for fiscal years beginning after December 15, 2016, and interim periods within that fiscal year, although early adoption is permitted. We are currently evaluating implementation methods and the effect that implementation of this standard will have on our consolidated financial statements upon adoption.

In August 2014, the FASB issued Accounting Standards Update No. 2014-15, *Going Concern (Subtopic 205-40)* ("ASU 2014-15"). ASU 2014-15 requires management of all entities to evaluate whether there are conditions and events that raise substantial doubt about the entity's ability to continue as a going concern within one year after the financial statements are issued (or available to be issued when applicable). The guidance is effective for fiscal years beginning after December 15, 2016 and for interim periods within that fiscal year. We do not expect the adoption of this guidance to have a material effect on our consolidated financial statements.

In May 2014, the FASB issued Accounting Standards Update No. 2014-9, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-9"). ASU 2014-9 outlines a single comprehensive model for entities to use in accounting for revenue. Under the guidance, revenue is recognized when a company transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The standard may be effective for public entities with annual and interim reporting periods beginning after December 15, 2017. Entities have the option of using either a full retrospective or a modified retrospective approach to adopt the guidance. We are

currently evaluating implementation methods and the effect that implementation of this standard will have on our consolidated financial statements upon adoption.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases (Topic 842)* ("ASU 2016-02"). ASU 2016-02 requires lessees to put most leases on their balance sheets but recognize expenses on their income statement and eliminates the real estate-specific provisions for all entities. The guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. We are currently evaluating implementation methods and the effect that implementation of this standard will have on our consolidated financial statements upon adoption.

3. Cash, Cash Equivalents and Investments

Cash, cash equivalents and investments consisted of the following:

	As of December 31, 2015	As of September 30, 2016
	(in thousands)	
Cash and cash equivalents		
Cash	$ 104,361	$ 130,132
Money market funds	180,021	33,446
Commercial paper	31,089	35,904
Corporate debt securities	2,000	8,213
U.S. government and government agency debt securities	17,196	—
Total cash and cash equivalents	$ 334,667	$ 207,695
Short-term investments		
Commercial paper	$ 4,792	$ 1,000
Corporate debt securities	31,052	49,052
Total short-term investments	$ 35,844	$ 50,052
Long-term investments		
Corporate debt securities	$ 46,369	$ 6,273
Total long-term investments	$ 46,369	$ 6,273
Cash, cash equivalents and investments	$ 416,880	$ 264,020

Our short-term investments have maturities of twelve months or less and are classified as available-for-sale. Our long-term investments have maturities of greater than twelve months and are classified as available-for-sale.

The following tables summarize our available-for-sale securities' adjusted cost, gross unrealized gains, gross unrealized losses and fair value by significant investment category as of December 31, 2015 and September 30, 2016.

	As of December 31, 2015			
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 180,021	$ —	$ —	$ 180,021
Commercial paper	35,881	—	—	35,881
Corporate debt securities	79,760	8	(347)	79,421
U.S. government and government agency debt securities	17,198	—	(2)	17,196
Total cash equivalents and marketable securities	$ 312,860	$ 8	$ (349)	$ 312,519

Pandora Media, Inc.
Notes to Condensed Consolidated Financial Statements - Continued
(unaudited)

	As of September 30, 2016			
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 33,446	$ —	$ —	$ 33,446
Commercial paper	36,904	—	—	36,904
Corporate debt securities	63,531	26	(19)	63,538
Total cash equivalents and marketable securities	$ 133,881	$ 26	$ (19)	$ 133,888

The following table presents available-for-sale investments by contractual maturity date as of December 31, 2015 and September 30, 2016.

	As of December 31, 2015	
	Adjusted Cost	Fair Value
	(in thousands)	
Due in one year or less	$ 266,205	$ 266,150
Due after one year through three years	46,655	46,369
Total	$ 312,860	$ 312,519

	As of September 30, 2016	
	Adjusted Cost	Fair Value
	(in thousands)	
Due in one year or less	$ 127,629	$ 127,615
Due after one year through three years	6,252	6,273
Total	$ 133,881	$ 133,888

The following tables summarize our available-for-sale securities' fair value and gross unrealized losses aggregated by investment category and length of time that the individual securities have been in a continuous unrealized loss position as of December 31, 2015 and September 30, 2016.

	As of December 31, 2015					
	Twelve Months or Less		More than Twelve Months		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	(in thousands)					
Corporate debt securities	$ 64,804	$ (293)	$ 8,531	$ (54)	$ 73,335	$ (347)
U.S. government and government agency debt securities	16,241	(2)	—	—	16,241	(2)
Total	$ 81,045	$ (295)	$ 8,531	$ (54)	$ 89,576	$ (349)

Pandora Media, Inc.
Notes to Condensed Consolidated Financial Statements - Continued
(unaudited)

	As of September 30, 2016					
	Twelve Months or Less		More than Twelve Months		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	(in thousands)					
Corporate debt securities	$ 33,240	$ (12)	$ 8,843	$ (7)	$ 42,083	$ (19)
Total	$ 33,240	$ (12)	$ 8,843	$ (7)	$ 42,083	$ (19)

Our investment policy requires investments to be investment grade, primarily rated "A1" by Standard & Poor's or "P1" by Moody's or better for short-term investments and rated "A" by Standard & Poor's or "A2" by Moody's or better for long-term investments, with the objective of minimizing the potential risk of principal loss. In addition, the investment policy limits the amount of credit exposure to any one issuer.

The unrealized losses on our available-for-sale securities as of September 30, 2016 were primarily a result of unfavorable changes in interest rates subsequent to the initial purchase of these securities. As of September 30, 2016, we owned 32 securities that were in an unrealized loss position. Based on our cash flow needs, we may be required to sell a portion of these securities prior to maturity. However, we expect to recover the full carrying value of these securities. As a result, no portion of the unrealized losses at September 30, 2016 is deemed to be other-than-temporary and the unrealized losses are not deemed to be credit losses. When evaluating the investments for other-than-temporary impairment, we review factors such as the length of time and extent to which fair value has been below cost basis, the financial condition of the issuer and any changes thereto, and our intent to sell, or whether it is more likely than not we will be required to sell, the investment before recovery of the investment's amortized cost basis. During the three and nine months ended September 30, 2016, we did not recognize any impairment charges. During the three and nine months ended September 30, 2016, we had proceeds from the sale of available-for-sale securities of $3.0 million and $3.5 million. We did not recognize a realized gain or loss in connection with these sales.

Pandora Media, Inc.
Notes to Condensed Consolidated Financial Statements - Continued
(unaudited)

4. Fair Value

We record cash equivalents and short-term investments at fair value. Fair value is an exit price, representing the amount that would be received from the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. Fair value measurements are required to be disclosed by level within the following fair value hierarchy:

Level 1 — Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2 — Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3 — Inputs lack observable market data to corroborate management's estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

When determining fair value, whenever possible we use observable market data and rely on unobservable inputs only when observable market data is not available.

The fair value of these financial assets and liabilities was determined using the following inputs at December 31, 2015 and September 30, 2016:

	As of December 31, 2015		
	Fair Value Measurement Using		
	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Total
		(in thousands)	
Assets			
Money market funds	$ 180,021	$ —	$ 180,021
Commercial paper	—	35,881	35,881
Corporate debt securities	—	79,421	79,421
U.S. government and government agency debt securities	—	17,196	17,196
Total assets measured at fair value	$ 180,021	$ 132,498	$ 312,519

	As of September 30, 2016		
	Fair Value Measurement Using		
	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Total
		(in thousands)	
Assets			
Money market funds	$ 33,446	$ —	$ 33,446
Commercial paper	—	36,904	36,904
Corporate debt securities	—	63,538	63,538
Total assets measured at fair value	$ 33,446	$ 100,442	$ 133,888

Our money market funds are classified as Level 1 within the fair value hierarchy because they are valued primarily using quoted market prices. Our other cash equivalents and short-term investments are classified as Level 2 within the fair value hierarchy because they are valued using professional pricing sources for identical or comparable instruments, rather than direct observations of quoted prices in active markets. As of December 31, 2015 and September 30, 2016, we held no Level 3 assets or liabilities.

Refer to Note 7, "Debt Instruments," for the carrying amount and estimated fair value of our convertible senior notes, which are not recorded at fair value as of September 30, 2016.

5. Commitments and Contingencies

Minimum Guarantees - Content Acquisition Costs

Certain of our content acquisition agreements contain minimum guarantees, and require that we make upfront minimum guarantee payments. As of September 30, 2016, we have future minimum guarantee commitments of $780.1 million, of which $18.1 million will be paid in the three months ended December 31, 2016, $354.9 million will be paid in 2017 and the remainder will be paid thereafter. On a quarterly basis, we record the greater of the cumulative actual content acquisition costs incurred or the cumulative minimum guarantee based on forecasted usage for the minimum guarantee period. The minimum guarantee period is the period of time that the minimum guarantee relates to, as specified in each agreement, which may be annual or a longer period. The cumulative minimum guarantee, based on forecasted usage considers factors such as listening hours, revenue, subscribers and other terms of each agreement that impact our expected attainment or recoupment of the minimum guarantees on a non-straight line basis.

Legal Proceedings

We have been in the past, and continue to be, a party to various legal proceedings, which have consumed, and may continue to consume, financial and managerial resources. We record a liability when we believe that it is both probable that a loss has been incurred and the amount can be reasonably estimated. Our management periodically evaluates developments that could affect the amount, if any, of liability that we have previously accrued and make adjustments as appropriate. Determining both the likelihood and the estimated amount of a loss requires significant judgment, and management’s judgment may be incorrect. We do not believe the ultimate resolution of any pending legal matters is likely to have a material adverse effect on our business, financial position, results of operations or cash flows.

Pre-1972 copyright litigation

On April 17, 2014, UMG Recordings, Inc., Sony Music Entertainment, Capitol Records, LLC, Warner Music Group Corp. and ABKCO Music and Records, Inc. filed suit against Pandora Media Inc. in the Supreme Court of the State of New York. The complaint claims common law copyright infringement and unfair competition arising from allegations that Pandora owes royalties for the public performance of sound recordings recorded prior to February 15, 1972.

In October 2015, the parties reached an agreement ("pre-1972 settlement") whereby we agreed to pay the plaintiffs a total of $90 million. The settlement resolves all past claims as to our use of pre-1972 recordings owned or controlled by the plaintiffs and enables us, without any additional payment, to reproduce, perform and broadcast such recordings in the United States through December 31, 2016. This agreement was approved by our board of directors and executed on October 21, 2015. Pursuant to this settlement, we paid the plaintiffs $60 million in October 2015 and the plaintiffs dismissed the case with prejudice. As a result, cost of revenue - content acquisition costs increased by $65.4 million in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to pre-1972 spins played through September 30, 2015. The remaining charge of $24.6 million will be recorded in cost of revenue - content acquisition costs in 2016 based on the allocation of pre-1972 listening throughout the remainder of the settlement period. The pre-72 settlement further required that we make four additional installment payments of $7.5 million each. The first was paid in December 2015, the second was paid in March 2016, the third was paid in June 2016 and the final installment was paid in September 2016.

On October 2, 2014, Flo & Eddie Inc. filed a class action suit against Pandora Media Inc. in the federal district court for the Central District of California. The complaint alleges misappropriation and conversion in connection with the public performance of sound recordings recorded prior to February 15, 1972. On December 19, 2014, Pandora filed a motion to strike

the complaint pursuant to California's Anti-Strategic Lawsuit Against Public Participation ("Anti-SLAPP") statute. This motion was denied, and we have appealed the ruling to the Ninth Circuit Court of Appeals. As a result, the district court litigation has been stayed pending the Ninth Circuit's review. The Ninth Circuit has scheduled oral argument on December 8, 2016.

On September 14, 2015, Arthur and Barbara Sheridan, et al. filed a class action suit against Pandora Media, Inc. in the federal district court for the Northern District of California. The complaint alleges common law misappropriation, unfair competition, conversion, unjust enrichment and violation of California rights of publicity arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On October 28, 2015, the Court granted the parties' stipulation to stay the district court action pending the Ninth Circuit's review of Pandora's appeal in Flo & Eddie et al. v. Pandora Media, Inc., which involves similar allegations.

On September 16, 2015, Arthur and Barbara Sheridan, et al. filed a second class action suit against Pandora Media, Inc. in the federal district court for the Southern District of New York. The complaint alleges common law copyright infringement, violation of New York right of publicity, unfair competition and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On October 28, 2015 the Court granted the parties' stipulation to stay the district court action pending the Second Circuit's review of Sirius XM's appeal in the Flo & Eddie et al. v. Sirius XM matter, which involves similar allegations.

On October 17, 2015, Arthur and Barbara Sheridan, et al. filed a third class action suit against Pandora Media, Inc. in the federal district court for the Northern District of Illinois. The complaint alleges common law copyright infringement, violation of the Illinois Uniform Deceptive Trade Practices Act, conversion, and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On December 29, 2015, Pandora filed a motion to dismiss and a motion to stay the case pending the Second Circuit's decision. The motion to stay was denied, and the motion to dismiss remains pending.

On October 19, 2015, Arthur and Barbara Sheridan, et al. filed a fourth class action suit against Pandora Media, Inc. in the federal district court for the District of New Jersey. The complaint alleges common law copyright infringement, unfair competition and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On December 29, 2015, Pandora filed a motion to dismiss and motion to stay the case pending the Second Circuit's decision. On March 16, 2016, the district court granted the motion to stay. The motion to dismiss remains pending.

On September 7, 2016, Ponderosa Twins Plus One et al. filed a class action suit against Pandora Media, Inc. in the federal district court for the Southern District of California. The complaint alleges common law copyright infringement, violation of the California Civil Code, misappropriation, unfair business practices and conversion arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On October 5, 2016, the district court transferred the case to the federal district court for the Northern District of California. On October 21, 2016, the Court granted the parties' stipulation to stay the district court action pending the Ninth Circuit's review of Pandora's appeal in Flo & Eddie et al. v. Pandora Media, Inc., which involves similar allegations.

The outcome of any litigation is inherently uncertain. Except as noted above, we do not believe it is probable that the final outcome of the matters discussed above will, individually or in the aggregate, have a material adverse effect on our business, financial position, results of operations or cash flows; however, in light of the uncertainties involved in such matters, there can be no assurance that the outcome of each case or the costs of litigation, regardless of outcome, will not have a material adverse effect on our business. In particular, rate court proceedings could take years to complete, could be very costly and may result in current and past rates for content acquisition costs that are materially less favorable than rates we currently pay or have paid in the past.

Indemnification Agreements, Guarantees and Contingencies

In the ordinary course of business, we are party to certain contractual agreements under which we may provide indemnifications of varying scope, terms and duration to customers, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, services to be provided by us or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with directors and certain officers and employees that will require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. Such

indemnification provisions are accounted for in accordance with guarantor's accounting and disclosure requirements for guarantees, including indirect guarantees of indebtedness of others. To date, we have not incurred, do not anticipate incurring and therefore have not accrued for, any costs related to such indemnification provisions.

While the outcome of these matters cannot be predicted with certainty, we do not believe that the outcome of any claims under indemnification arrangements will have a material adverse effect on our financial position, results of operations or cash flows.

6. Goodwill and Intangible Assets

During the nine months ended September 30, 2016, we completed a business combination that was not material to our condensed consolidated financial statements. During the nine months ended September 30, 2016, we made an adjustment to goodwill and deferred tax liabilities as a result of the impact of final pre-acquisition Ticketfly income tax returns filed. The changes in the carrying amount of goodwill for the nine months ended September 30, 2016, are as follows:

	Goodwill
	(in thousands)
Balance as of December 31, 2015	$ 303,875
Goodwill resulting from business combination and purchase price adjustments	2,831
Balance as of September 30, 2016	$ 306,706

The following summarizes information regarding the gross carrying amounts and accumulated amortization of intangible assets.

	As of December 31, 2015			As of September 30, 2016		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
		(in thousands)			(in thousands)	
Finite-lived intangible assets						
Patents	$ 8,030	$ (1,824)	$ 6,206	$ 8,030	$ (2,373)	$ 5,657
Developed technology	56,050	(1,265)	54,785	56,165	(10,515)	45,650
Customer relationships - clients	37,300	(777)	36,523	37,399	(4,309)	33,090
Customer relationships - users	1,940	(318)	1,622	1,940	(1,046)	894
Trade names	11,720	(304)	11,416	11,735	(1,654)	10,081
Total finite-lived intangible assets	$ 115,040	$ (4,488)	$ 110,552	$ 115,269	$ (19,897)	$ 95,372
Indefinite-lived intangible assets						
FCC license - Broadcast Radio	$ 193	$ —	$ 193	$ 193	$ —	$ 193
Total intangible assets	$ 115,233	$ (4,488)	$ 110,745	$ 115,462	$ (19,897)	$ 95,565

Amortization expense of intangible assets was $0.4 million and $5.1 million for the three months ended September 30, 2015 and 2016. Amortization expense of intangible assets was $0.8 million and $15.4 million for the nine months ended September 30, 2015 and 2016.

The following is a schedule of future amortization expense related to finite-lived intangible assets as of September 30, 2016.

	As of September 30, 2016
	(in thousands)
Remainder of 2016	$ 5,138
2017	20,116
2018	17,654
2019	17,129
2020	15,896
Thereafter	19,439
Total future amortization expense	$ 95,372

7. Debt Instruments

Long-term debt, net consisted of the following:

	As of December 31, 2015	As of September 30, 2016
	(in thousands)	
1.75% convertible senior notes due 2020	$ 345,000	$ 345,000
Credit facility	—	90,000
Unamortized discount and deferred issuance costs	(110,423)	(97,571)
Long-term debt, net	$ 234,577	$ 337,429

Convertible Debt Offering

On December 9, 2015, we completed an unregistered Rule 144A offering for the issuance of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020 (the "Notes"). In connection with the issuance of the Notes, we entered into capped call transactions with the initial purchaser of the Notes and an additional financial institution ("capped call transactions").

The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchasers' fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions.

The Notes are unsecured, senior obligations of Pandora, and interest is payable semi-annually at a rate of 1.75% per annum. The Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms prior to such date. Prior to July 1, 2020, the Notes are convertible at the option of holders only upon the occurrence of specified events or during certain periods as further described below; thereafter, until the second scheduled trading day prior to maturity, the Notes will be convertible at the option of holders at any time.

The conversion rate for the Notes is initially 60.9050 shares of common stock per $1,000 principal amount of the Notes, which is equivalent to an initial conversion price of approximately $16.42 per share of our common stock, and is subject to adjustment in certain circumstances.

We will not have the right to redeem the Notes prior to December 5, 2018. We may redeem all or any portion of the Notes for cash at our option on or after December 5, 2018 if the last reported sale price of our common stock is at least 130% of the conversion price then in effect for at least 20 trading days, whether or not consecutive, during any 30 consecutive trading day period, including the last trading day of such period, ending on, and including, any of the five trading days immediately preceding the date on which we provide notice of redemption. Any optional redemption of the Notes will be at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. The maximum number of shares of common stock the Notes are convertible into is approximately

27.3 million, and is subject to adjustment under certain circumstances.

The Notes will be convertible at the option of holders only under the following circumstances:

- Prior to the close of business on the business day immediately preceding July 1, 2020, during any calendar quarter commencing after the calendar quarter ending on March 31, 2016 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive), during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

- Prior to the close of business on the business day immediately preceding July 1, 2020, during the five business day period after any ten consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day;

- Prior to the business day immediately preceding July 1, 2020, upon the occurrence of specified corporate events; or

- At any time on or after July 1, 2020 until the close of business on the second scheduled trading day immediately preceding the December 1, 2020 maturity date.

Upon the occurrence of a make-whole fundamental change or if we call all or any portion of the Notes for redemption prior to July 1, 2020, we will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert its Notes in connection with such make-whole fundamental change or during the related redemption period.

The Notes were separated into debt and equity components and assigned a fair value. The value assigned to the debt component is the estimated fair value as of the issuance date of similar debt without the conversion feature. The difference between the cash proceeds and this estimated fair value represents the value which has been assigned to the equity component and recorded as a debt discount. The debt discount is being amortized using the effective interest method over the period from the date of issuance through the December 1, 2020 maturity date.

The initial debt component of the Notes was valued at $233.5 million, based on the contractual cash flows discounted at an appropriate market rate for non-convertible debt at the date of issuance. The carrying value of the permanent equity component reported in additional paid-in-capital was initially valued at $103.0 million, which is net of $2.6 million of fees and expenses allocated to the equity component.

The following table outlines the effective interest rate, contractually stated interest expense and costs related to the amortization of the discount for the Notes:

	Three months ended September 30,	Nine months ended September 30,
	2016	
	(in thousands except for effective interest rate)	
Effective interest rate	10.18%	10.18%
Contractually stated interest expense	$ 1,505	$ 4,536
Amortization of discount	$ 4,649	$ 13,587

The capped call transactions are expected to reduce the potential dilution to our common stock and/or offset the cash payments we would be required to make in excess of the principal amount of the converted Notes in the event that the market price of our common stock, as measured under the terms of the capped call transaction, is greater than the strike price of the capped call transaction, with such reduction and/or offset subject to a cap based on the cap price of the capped call transactions.

The strike price of the capped call transactions corresponds to the initial conversion price of the Notes and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have an initial cap price of $25.26 per share and are subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have been included as a net reduction to additional paid-in capital within stockholders' equity.

The total estimated fair value of the Notes as of September 30, 2016 was $362.1 million. The fair value was determined using a methodology that combines direct market observations with quantitative pricing models to generate evaluated prices. We consider the fair value of the Notes to be a Level 2 measurement due to the limited trading activity of the Notes.

The closing price of our common stock was $14.33 on September 30, 2016, which was less than the initial conversion price for the Notes of approximately $16.42 per share. As such, the if-converted value of the Notes was less than the principal amount of $345.0 million.

Credit Facility

We are party to a $120.0 million credit facility with a syndicate of financial institutions, which expires on September 12, 2018. In September 2016, we borrowed $90.0 million from the credit facility to enhance our working capital position. The amount borrowed is included in long-term debt on our balance sheet. Interest is payable quarterly at the applicable annual interest rate of 3.81% through September 2017. The applicable interest rate will be adjusted in September 2017.

As of September 30, 2016, we had $1.2 million in letters of credit outstanding and $28.8 million of available borrowing capacity under the credit facility. We are in compliance with all financial covenants associated with the credit facility as of September 30, 2016.

8. Stock-based Compensation Plans and Awards

ESPP

The ESPP allows eligible employees to purchase shares of our common stock through payroll deductions of up to 15% of their eligible compensation. The ESPP provides for six-month offering periods, commencing in February and August of each year.

We estimate the fair value of shares to be issued under the ESPP on the first day of the offering period using the Black-Scholes valuation model. The determination of the fair value is affected by our stock price on the first date of the offering period, as well as other assumptions including the risk-free interest rate, the estimated volatility of our stock price over the term of the offering period, the expected term of the offering period and the expected dividend rate. Stock-based compensation expense related to the ESPP is recognized on a straight-line basis over the offering period, net of estimated forfeitures.

The following assumptions for the Black-Scholes option pricing model were used to determine the per-share fair value of shares to be granted under the ESPP:

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
Expected life (in years)	0.5	0.5	0.5	0.5
Risk-free interest rate	0.07 - 0.24%	0.41 - 0.44%	0.05 - 0.24%	0.24 - 0.44%
Expected volatility	29 - 42%	41 - 52%	29 - 42%	41 - 52%
Expected dividend yield	0%	0%	0%	0%

During the three months ended September 30, 2015 and 2016, we withheld $1.8 million and $2.6 million in contributions from employees and recognized $0.6 million and $0.9 million of stock-based compensation expense related to the ESPP, respectively. During the nine months ended September 30, 2015 and 2016, we withheld $5.1 million and $6.4 million in contributions from employees and recognized $1.9 million and $2.3 million of stock-based compensation expense related to the ESPP, respectively. In the three months ended September 30, 2015 and 2016, 255,432 and 643,562 shares of common stock

were issued under the ESPP. In the nine months ended September 30, 2015 and 2016, 538,398 and 1,254,910 shares of common stock were issued under the ESPP.

Employee Stock-Based Awards

Our 2011 Equity Incentive Plan (the "2011 Plan") provides for the issuance of stock options, restricted stock units and other stock-based awards to our employees. The 2011 Plan is administered by the compensation committee of our board of directors.

Stock options

We measure stock-based compensation expense for stock options at the grant date fair value of the award and recognize expense on a straight-line basis over the requisite service period, which is generally the vesting period. We estimate the fair value of stock options using the Black-Scholes option-pricing model. During the three months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from stock options of approximately $2.3 million and $2.2 million. During the nine months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from stock options of approximately $7.5 million and $11.3 million.

There were no options granted in the three and nine months ended September 30, 2016.

Restricted stock units ("RSUs")

The fair value of RSUs is expensed ratably over the vesting period. RSUs typically have an initial annual cliff vest and then vest quarterly thereafter over the service period, which is generally four years. During the three months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from RSUs of approximately $25.4 million and $28.2 million. During the nine months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from RSUs of approximately $69.1 million and $87.2 million.

MSUs

In March 2015, the compensation committee of the board of directors granted performance awards consisting of market stock units to certain key executives under our 2011 Plan.

MSUs granted in March 2015 are earned as a function of Pandora’s total stock return ("TSR") measured against that of the Russell 2000 Index across three performance periods:

- One-third of the target MSUs are eligible to be earned for a performance period that is the first calendar year of the MSU grant (the "One-Year Performance Period");
- One-third of the target MSUs are eligible to be earned for a performance period that is the first two calendar years of the MSU grant (the "Two-Year Performance Period"); and
- Any remaining portion of the total potential MSUs are eligible to be earned for a performance period that is the entire three calendar years of the MSU grant (the "Three-Year Performance Period").

For each performance period, a "performance multiplier" is calculated by comparing Pandora’s TSR for the period to the Russell 2000 Index TSR for the same period, using the average adjusted closing stock price of Pandora stock, and the Russell 2000 Index, for ninety calendar days prior to the beginning of the performance period and the last ninety calendar days of the performance period. In each period, the target number of shares will vest if the Pandora TSR is equal to the Russell 2000 Index TSR. For each percentage point that the Pandora TSR falls below the Russell 2000 Index TSR for the period, the performance multiplier is decreased by three percentage points. The performance multiplier is capped at 100% for the One-Year and Two-Year Performance Periods. However, the full award is eligible for a payout up to 200% of target, less any shares earned in prior periods, in the Three-Year Performance Period. Specifically, for each percentage point that the Pandora TSR exceeds the Russell 2000 Index TSR for the Three-Year Performance Period, the performance multiplier is increased by 2%. As such, the ability to exceed the target number of shares is determined exclusively with respect to Pandora's three-year TSR during the term of the award.

We have determined the grant-date fair value of the MSUs using a Monte Carlo simulation performed by a third-party valuation firm. We recognize stock-based compensation for the MSUs over the requisite service period, which is approximately three years, using the accelerated attribution method.

During the nine months ended September 30, 2015 we granted 776,000 MSUs at a total grant-date fair value of $4.3 million. There were no MSUs granted in the three or nine months ended September 30, 2016. During the three months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from MSUs of approximately $0.5 million and $0.2 million. During the nine months ended September 30, 2015 and 2016, we recorded stock-based compensation expense from MSUs of approximately $1.0 million and $0.6 million.

In February 2016, the compensation committee of the board of directors certified the results of the One-Year Performance Period of the 2015 MSU grant, which concluded December 31, 2015. During the One-Year Performance Period, our relative TSR declined 26 percentage points relative to the Russell 2000 Index TSR for the period, which resulted in the vesting of the One-Year Performance Period at 22% of the one-third vesting opportunity for the period.

PSUs

In April 2016, the compensation committee of the board of directors granted 2016 Performance Awards consisting of stock-settled performance-based RSUs to certain key executives under our 2011 Plan.

PSUs granted in April 2016 have a vesting period that includes a four year service period, during which one fourth of the awards will vest after one year and the remainder will vest quarterly thereafter. The PSUs are earned when our trailing average ninety-day stock price is equal to or greater than $20.00. If the trailing average ninety-day stock price does not equal or exceed $20.00 on the applicable vesting date, then the portion of the award that was scheduled to vest on such vesting date shall not vest but shall vest on the next vesting date on which the trailing average ninety-day stock price equals or exceeds $20.00. Any portion of the award that remains unvested as of the final vesting date shall be canceled and forfeited.

We have determined the grant-date fair value of the PSUs granted in April 2016 using a Monte Carlo simulation performed by a third-party valuation firm. We recognize stock-based compensation for the PSUs over the requisite service period, which is approximately four years, using the accelerated attribution method.

During the nine months ended September 30, 2016 we granted 1,725,000 PSUs at a total grant-date fair value of $8.7 million. There were no PSUs granted in the three or nine months ended September 30, 2015. During the three and nine months ended September 30, 2016, we recorded stock-based compensation expense from PSUs of approximately $1.3 million and $2.4 million. There was no stock-based compensation expense from PSUs in the three or nine months ended September 30, 2015.

Stock-based Compensation Expense

Stock-based compensation expense related to all employee and non-employee stock-based awards was as follows:

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
	(in thousands)		(in thousands)	
Stock-based compensation expense				
Cost of revenue - Other	$ 1,427	$ 1,538	$ 4,040	$ 4,559
Cost of revenue - Ticketing service	—	27	—	154
Product development	6,189	7,347	16,148	23,091
Sales and marketing	13,732	14,932	38,403	43,673
General and administrative	7,446	8,910	20,882	32,364
Total stock-based compensation expense	$ 28,794	$ 32,754	$ 79,473	$ 103,841

In the nine months ended September 30, 2016, we recorded stock-based compensation expense of $6.8 million related to accelerated awards in connection with executive severance. This amount is included in the general and administrative line item of our condensed consolidated statements of operations.

9. Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period.

Diluted net loss per share is computed by giving effect to all potential shares of common stock, including stock options, restricted stock units, market stock units and performance-based RSUs, to the extent dilutive. Basic and diluted net loss per share were the same for the three and nine months ended September 30, 2015 and 2016, as the inclusion of all potential common shares outstanding would have been anti-dilutive.

The following table sets forth the computation of historical basic and diluted net loss per share:

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
	(in thousands except per share amounts)		(in thousands except per share amounts)	
Numerator				
Net loss	$ (85,930)	$ (61,534)	$ (150,252)	$ (252,969)
Denominator				
Weighted-average common shares outstanding used in computing basic and diluted net loss per share	212,760	232,139	211,487	229,524
Net loss per share, basic and diluted	$ (0.40)	$ (0.27)	$ (0.71)	$ (1.10)

The following potential common shares outstanding were excluded from the computation of diluted net loss per share because including them would have been anti-dilutive:

	As of September 30,	
	2015	2016
	(in thousands)	
Options to purchase common stock	10,492	9,665
Restricted stock units	16,653	23,554
Performance awards*	776	2,315
Total common stock equivalents	27,921	35,534

*Includes potential common shares outstanding for MSUs and PSUs

On December 9, 2015, we completed an offering of our 1.75% convertible senior notes due 2020. Under the treasury stock method, the Notes will generally have a dilutive impact on earnings per share if our average stock price for the period exceeds approximately $16.42 per share of our common stock, the conversion price of the Notes. For the period from the issuance of the offering of the Notes through September 30, 2016, the conversion feature of the Notes was anti-dilutive.

In connection with the pricing of the Notes, we entered into capped call transactions which increase the effective conversion price of the Notes, and are designed to reduce potential dilution upon conversion of the Notes. Since the beneficial impact of the capped call is anti-dilutive, it is excluded from the calculation of earnings per share. Refer to Note 7 "Debt Instruments" for further details regarding our Notes.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A")

You should read the following discussion of our financial condition and results of operations in conjunction with the condensed consolidated financial statements and the notes thereto included elsewhere in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K for the year ended December 31, 2015 filed with the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act").

This Quarterly Report on Form 10-Q contains "forward-looking statements" that involve substantial risks and uncertainties. The statements contained in this Quarterly Report on Form 10-Q that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Exchange Act, including, but not limited to, statements regarding our expectations, beliefs, intentions, strategies, future operations, future financial position, future revenue, projected expenses, plans and objectives of management and economic, competitive and technological trends. In some cases, you can identify forward-looking statements by terms such as "anticipate," "believe," "estimate," "expect," "intend," "may," "might," "plan," "project," "will," "would," "should," "could," "can," "predict," "potential," "continue," "objective," or the negative of these terms, and similar expressions intended to identify forward-looking statements. However, not all forward-looking statements contain these identifying words. These forward-looking statements reflect our current views about future events and involve known risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievement to be materially different from those expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed in the section titled "Risk Factors" included in this Quarterly Report on Form 10-Q and our Annual Report on Form 10-K for the year ended December 31, 2015. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements. We qualify all of our forward-looking statements by these cautionary statements. These and other factors could cause our results to differ materially from those expressed in this Quarterly Report on Form 10-Q.

Some of the industry and market data contained in this Quarterly Report on Form 10-Q are based on independent industry publications, including those generated by Triton Digital Media ("Triton") or other publicly available information. This information involves a number of assumptions and limitations. Although we believe that each source is reliable as of its respective date, we have not independently verified the accuracy or completeness of this information.

As used herein, "Pandora," the "Company," "we," "our," and similar terms refer to Pandora Media, Inc., unless the context indicates otherwise.

"Pandora" and other trademarks of ours appearing in this report are our property. This report may contain additional trade names and trademarks of other companies. We do not intend our use or display of other companies' trade names or trademarks to imply an endorsement or sponsorship of us by such companies, or any relationship with any of these companies.

Overview

Pandora - Internet Radio Service

Pandora is the world's most powerful music discovery platform, offering a personalized experience for each of our listeners wherever and whenever they want to listen to music—whether through earbuds, car speakers or live on stage. Our vision is to be the definitive source of music discovery and enjoyment for billions. The majority of our listener hours occur on mobile devices, with the majority of our revenue generated from advertising on these devices. We offer both local and national advertisers the opportunity to deliver targeted messages to our listeners using a combination of audio, display and video advertisements. Founded by musicians, Pandora also empowers artists with valuable data and tools to help grow their careers and connect with their fans.

For the three months ended September 30, 2016, we streamed 5.40 billion hours of radio, and as of September 30, 2016, we had 77.9 million active users during the prior 30-day period. Since we launched our non-subscription, ad-supported radio service in 2005 our listeners have created over 10 billion stations.

At the heart of our service is our set of proprietary personalization technologies, including the Music Genome Project and our playlist generating algorithms. The Music Genome Project is a database of over 1,000,000 uniquely analyzed songs from over 150,000 artists, spanning over 600 genres and sub-genres, which we develop one song at a time by evaluating and cataloging each song's particular attributes. When a listener enters a single song, artist, comedian or genre to start a station, the Pandora service instantly generates a station that plays music or comedy we think that listener will enjoy. Based on listener

reactions to the recordings we pick, we further tailor the station to match the listener's preferences. Listeners also have the ability to add variety to and rename stations, which further allows for the personalization of our service.

We currently provide the Pandora service through two models:

- *Ad-Supported Service.* Our advertising-supported service allows listeners to access our music and comedy catalogs and personalized playlist generating system for free across all of our delivery platforms.

- *Subscription Service.* Our new subscription service, Pandora Plus, launched on September 15, 2016. Prior to September 15, 2016, our subscription service was Pandora One. Our subscription service is a premium monthly or annual paid version of the Pandora service, which currently includes advertisement-free access, higher quality audio on supported devices and longer timeout-free listening. Pandora Plus also includes additional features such as replays, unlimited skips and offline listening.

A key element of our strategy is to make the Pandora service available everywhere that there is internet connectivity. To this end, we make the Pandora service available through a variety of distribution channels. In addition to streaming our service to computers, we have developed Pandora mobile device applications ("apps") for smartphones and mobile operating systems, such as the iPhone, Android and the Windows Phone and for tablets including the iPad and Android tablets. We distribute those mobile apps free to listeners via app stores.

Our new subscription service, Pandora Plus, launched on September 15, 2016 and we intend to unveil a subscription-based on-demand music streaming service in the coming months. The development and launch of our recent and planned new service offerings have and will continue to require significant engineering effort, as well as marketing, and other resources. In addition, to support the launch of these services we have entered into direct license agreements with the major and independent record labels, some of which include substantial minimum guarantee payments. To successfully launch such additional service offerings, we will need to attract subscribers to these new service offerings. The market for subscription-based music services, including on-demand services, is intensely competitive, and our ability to realize a return on our investments in these new service offerings will depend on our ability to leverage the existing audience of our ad-supported service, our brand awareness and deliver differentiated subscription services with features and functionality that listeners find attractive. Refer to our discussion of these matters in Item 1A - "Risk factors".

Ticketing Service

Our ticketing service consists of Ticketfly, a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America. Ticketfly's ticketing, digital marketing and analytics software helps promoters book talent, sell tickets and drive in-venue revenue, while Ticketfly's consumer tools help fans find and purchase tickets to events. Tickets are primarily sold through the Ticketfly platform but are also sold through other channels such as box offices. In the three months ended September 30, 2016, Ticketfly had approximately 40 thousand live events on sale, for which approximately 3.9 million tickets, excluding box office sales, were sold to approximately 1.7 million unique ticket buyers, which resulted in more than $155 million in gross transaction value, excluding box office sales. We completed the acquisition of Ticketfly on October 31, 2015.

Ticketfly's platform provides ticketing and marketing services for venues and event promoters across North America and makes it easy for fans to find and purchase tickets to events, and also gives artists a means to more effectively promote their events. We intend to expand our ticketing service by connecting our listeners to events through our internet radio service.

Recent Events

Content Acquisition License Agreements

From November 2015 to September 2016, we signed direct license agreements for recorded music with major and independent labels, distributors and publishers. These agreements allow us to provide new and improved products to the market that include enhanced features such as replays, offline stations and on-demand listening. Certain of these license agreements include minimum guarantee payments, some of which are paid in advance. These minimum guarantee payments resulted in a material impact to the prepaid content acquisition costs line item in our condensed consolidated balance sheets. Refer to Note 2 "Summary of Significant Accounting Policies" in the Notes to Condensed Consolidated Financial Statements for further details on our prepaid content acquisition costs policy and minimum guarantees.

Pandora Plus and New Ad-Supported Service Features

On September 15, 2016, we announced the launch of Pandora Plus, an updated version of our subscription service. The updated service includes replays, additional skipping and offline listening. In addition, new features were also added to our ad-supported service, allowing listeners to skip more songs and replay songs by viewing a video ad.

Factors Affecting our Business Model

Content Acquisition Costs

Prior to the launch of Pandora Plus on September 15, 2016, we paid performance rates for the sound recordings we streamed on our ad-supported service and our Pandora One subscription service according to the Web IV rates set by the Copyright Royalty Board on December 16, 2015. The rates for non-subscription services were set at $0.0017 per play and the rates for subscription services were set at $0.0022 per play for 2016.

During the three and nine months ended September 30, 2016, we entered into direct license agreements with major and independent music labels. Subsequent to the launch of Pandora Plus on September 15, 2016, we began paying content acquisition costs based on the terms of these license agreements for the significant majority of the sound recordings we stream on our ad-supported service and Pandora Plus. These agreements are structured so that content acquisition costs for our ad-supported service are based on the number of sound recordings we transmit or a percentage of advertising revenue, subject to certain discounts, and content acquisition costs for our subscription service are determined as the greater of a percentage of subscription revenue or a per subscriber minimum amount, subject to certain discounts. Certain of these license agreements require minimum guarantee payments, some of which are paid in advance. Refer to Note 2 "Summary of Significant Accounting Policies" in the Notes to Condensed Consolidated Financial Statements for further details on our prepaid content acquisition costs policy and minimum guarantees.

If we have not entered into a license agreement with the copyright owner of a particular sound recording that is streamed on our ad-supported service or our subscription service, our content acquisition costs for such sound recordings are calculated based on the number of sound recordings streamed at the per-performance rates that apply to commercial webcasters under the Web IV rates set by the Copyright Royalty Board on December 16, 2015.

Content acquisition costs for musical works are most often negotiated with and paid to performing rights organizations ("PROs") such as ASCAP, BMI, SESAC and Global Music Rights ("GMR") and directly to publishing companies. During the twelve months ended December 31, 2015 and the nine months ended September 30, 2016, we entered into direct licenses with ASCAP, BMI, SESAC and thousands of music publishers. These licenses are structured so that, for our ad-supported service, each publisher or PRO receives its usage-based share of a content acquisition cost pool equal to 20% of the content acquisition costs paid by us for sound recordings. Prior to the launch of Pandora Plus on September 15, 2016, these licenses were structured so that, for our subscription service, each publisher or PRO receives its usage-based share of a content acquisition cost pool equal to 20% of the content acquisition costs paid by us for sound recordings. Subsequent to the launch of Pandora Plus, content acquisition costs for our subscription services are determined in accordance with the statutory license set forth in 17 U.S.C. Sec. 115 based on a percentage of revenue or a per subscriber minimum amount.

Ad-Supported Service

Our ad-supported service is monetized through the sale of display, audio and video advertisements to national, regional and local advertisers. We compete with digital advertising networks such as Google and Facebook, other digital media companies and local broadcast radio stations in our advertising business.

Our total number of listener hours is a key driver for both advertising revenue generation opportunities and content acquisition costs, which are the largest component of our expenses.

- *Advertising Revenue.* Listener hours define the number of opportunities we have to sell advertisements, which we refer to as inventory. Our ability to attract advertisers depends in large part on our ability to offer sufficient inventory within desired demographics.

- *Cost of Revenue—Content Acquisition Costs—Ad-Supported Service.* We pay content acquisition costs to the copyright owners and performers, or their agents, of each sound recording that we stream, as well as to the publishers and songwriters, or their agents, for the musical works embodied in each of those sound recordings, subject to certain exclusions. Subsequent to the launch of Pandora Plus on September 15, 2016, the majority of the content acquisition costs related to our ad-supported service are driven by license agreements that require us to pay fees based on the number of sound recordings we transmit to users of the Pandora service or a percentage of advertising revenue, subject to certain discounts. These license agreements include minimum guarantee payments of content acquisition costs, some of which are paid in advance. Refer to Note 2 "Summary of Significant

Accounting Policies" in the Notes to Condensed Consolidated Financial Statements for further details on our prepaid content acquisition costs policy and minimum guarantees.

Given the per-play cost structure of our license agreements for our ad-supported service, our content acquisition costs related to our ad-supported service increase with each additional listener hour, regardless of whether we are able to generate more revenue. As such, our ability to achieve and sustain profitability and operating leverage on our ad-supported service depends on our ability to increase our revenue per hour of streaming through increased advertising revenue across all of our delivery platforms.

Subscription Service

We monetize our subscription service through subscription payments made by users of the service. We drive subscriber growth in our subscription service by providing the world's most powerful music discovery platform, offering a personalized experience for each of our listeners. In addition, we invest in marketing and free-trials to promote our service.

Our total number of paid subscriptions is a key driver for both subscription revenue and, subsequent to the launch of Pandora Plus on September 15, 2016, for content acquisition costs related to our subscription service, which is the largest component of our subscription-related expenses. In order to drive greater subscription revenue, we must increase the number of new subscribers to our subscription service and minimize the number of current subscribers who discontinue their subscriptions.

- *Subscription Revenue*. Our subscription revenue depends upon the number of paid subscriptions we are able to sell and the price that our subscribers pay for those subscriptions. Our ability to attract subscribers depends in large part on our ability to offer features and functionality on our subscription service that are valued by consumers within desired demographics, on terms that are attractive to those consumers, and still enable us to maintain adequate gross margins.

- *Cost of Revenue—Content Acquisition Costs—Subscription Service*. We pay content acquisition costs to the copyright owners, performers, songwriters, or their agents, subject to certain exclusions. Subsequent to the launch of Pandora Plus on September 15, 2016, the majority of our content acquisition costs for our subscription service are calculated based on subscription revenue earned and subject to per subscriber minimum amounts, both of which are subject to certain discounts. These license agreements include minimum guarantee payments, some of which are paid in advance. Refer to Note 2 "Summary of Significant Accounting Policies" in the Notes to Condensed Consolidated Financial Statements for further details on our prepaid content acquisition costs policy and minimum guarantees.

Given the structure of our license agreements for our subscription service, the majority of our content acquisition costs increase as subscription revenue increases and are subject to minimum guarantee payments. As such, our ability to achieve and sustain profitability and operating leverage on our subscription service depends on our ability to increase our revenue through increased paid subscriptions on terms that maintain an adequate gross margin. Refer to our discussion of these matters in Item 1A - "Risk factors".

Key Metrics

The below key metrics do not include amounts related to our ticketing service, unless otherwise specifically stated.

Listener Hours

We track listener hours because it is a key indicator of the growth of our business. Beginning with the listener hours disclosed in our Annual Report on Form 10-K for the year ended December 31, 2015, we include listener hours related to our non-radio content offerings in the definition of listener hours. These offerings include non-music content such as podcasts, as well as custom music content such as Pandora Premiers and artist mixtapes. Historically, listener hours related to non-radio content represented a negligible number of listener hours. Including non-radio content in the listener hours we have previously reported for the three and nine months ended September 30, 2015 would not have changed the reported listener hours. We calculate listener hours based on the total bytes served for each track that is requested and served from our servers, as measured by our internal analytics systems, whether or not a listener listens to the entire track. For non-music content such as podcasts, episodes are divided into approximately track-length parts, which are treated as tracks under this definition. To the extent that third-party measurements of listener hours are not calculated using a similar server-based approach, the third-party measurements may differ from our measurements.

The table below sets forth our total listener hours for the three and nine months ended September 30, 2015 and 2016.

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
	(in billions)		(in billions)	
Listener hours	5.14	5.40	15.74	16.57

Active Users

We track the number of active users as an additional indicator of the breadth of audience we are reaching at a given time. We define active users as the number of distinct registered users, including subscribers, that have requested audio from our servers within the trailing 30 days to the end of the final calendar month of the period. The number of active users may overstate the number of unique individuals who actively use our service within a month as one individual may register for, and use, multiple accounts. Beginning with the active users disclosed in our Annual Report on Form 10-K for the year ended December 31, 2015, we are also including active users who only request non-radio content offerings in the definition of active users. Including users who only request non-radio content in the calculation of active users would not have materially changed the reported active users as of September 30, 2015.

The table below sets forth our total active users as of September 30, 2015 and 2016.

	As of September 30,	
	2015	2016
	(in millions)	
Active users	78.1	77.9

We define advertising-based active users ("ad-based active users") as the number of users, excluding subscribers, that have requested audio from our servers within the trailing 30 days to the end of the final calendar month of the period. We define subscribers as the number of distinct users at the end of the period that have paid for our service. Inactive subscribers are included as they contribute towards RPMs, which are described in further detail below.

The table below sets forth our users on an advertising and subscription basis as of September 30, 2015 and 2016.

	As of September 30,	
	2015	2016
User type	Users (in millions)	
Ad-based active users	74.7	74.5
Subscribers*	3.9	4.0
Total	78.6	78.5

* Includes subscribers that have not used our service within the trailing 30 days to the end of the final calendar month of the period.

The table below sets forth our listener hours on an advertising and subscription basis for the three and nine months ended September 30, 2015 and 2016.

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
User type	Listener hours (in billions)		Listener hours (in billions)	
Ad-based active users	4.48	4.71	13.77	14.53
Subscribers	0.66	0.69	1.97	2.04
Total	5.14	5.40	15.74	16.57

Advertising Revenue per Thousand Listener Hours ("ad RPMs")

We track ad RPMs for our ad-supported service because it is a key indicator of our ability to monetize advertising inventory created by our listener hours. We believe ad RPMs to be the central top-line indicator for evaluating the results of our monetization efforts. Ad RPMs are calculated by dividing advertising revenue by the number of thousands of listener hours of our advertising-based service.

Subscription and Other Revenue per Thousand Listener Hours ("subscription RPMs")

We track subscription RPMs because it is a key indicator of the performance of our subscription service. Subscription RPMs are calculated by dividing subscription and other revenue by the number of thousands of listener hours of our subscription service.

Total Revenue per Thousand Listener Hours ("total RPMs")

We track total RPMs for our service, which includes ad and subscription RPMs, because it is a key indicator of our ability to monetize our listener hours. Total RPMs compare advertising and subscription and other revenue in a given period to total listener hours in the period. We calculate total RPMs by dividing the total revenue by the number of thousands of listener hours.

LPMs

Prior to the launch of Pandora Plus on September 15, 2016, LPMs were relatively fixed content acquisition costs with scheduled annual rate adjustments, per thousands of listener hours. Subsequent to September 15, 2016, LPMs are our content acquisition costs as calculated either under the rates set by our license agreements with record labels, PROs and music publishers or under the Web IV rates if we have not entered into a license agreement with the copyright owner of a particular sound recording, in each case per thousands of listener hours.

Historically, we provided estimates of disaggregated ad RPMs, subscription RPMs, total RPMs and related LPMs for our computer platform as well as our mobile and other connected devices platforms. Starting in the three months ended March 31, 2016, we no longer present disaggregated RPMs or LPMs for our computer or mobile and other connected devices platforms. Previously, we had provided this information in order to demonstrate the potential monetization expansion opportunity as mobile and other connected devices markets matured. Revenue and listener hours for mobile and other connected devices have since grown to represent the significant majority of our total revenue and listener hours. In addition, we currently manage the business to optimize revenue across our device platforms and thus we no longer assess our performance on a disaggregated basis. As such, we no longer believe this disaggregation is relevant.

Period-to-period results should not be regarded as precise nor can they be relied upon as indicative of results for future periods. In addition, as our business matures and in response to technological evolutions, we anticipate that the relevant indicators we monitor for evaluating our business may change.

The table below sets forth our RPMs and LPMs on an ad, subscription and total basis for the three months ended September 30, 2015 and 2016.

	Three months ended September 30,			
	2015		2016	
	RPM	LPM	RPM	LPM
Advertising	$ 56.84	$ 36.46	$ 58.10	$ 31.60
Subscription	85.28	72.10	81.69	37.16
Total	$ 60.52	$ 41.06	$ 61.09	$ 32.31

The table below sets forth our RPMs and LPMs on an ad, subscription and total basis for the nine months ended September 30, 2015 and 2016.

	Nine months ended September 30,			
	2015		2016	
	RPM	LPM	RPM	LPM
Advertising	$ 48.24	$ 26.79	$ 52.26	$ 30.90
Subscription	82.84	49.95	80.98	35.88
Total	$ 52.57	$ 29.69	$ 55.80	$ 31.52

Advertising RPMs

For the three months ended September 30, 2016 compared to 2015, the increase in advertising RPMs was primarily due to the growth in advertising revenue outpacing the growth in advertising listener hours as a result of an increase in the number of ads sold.

For the nine months ended September 30, 2016 compared to 2015, the increase in advertising RPMs was primarily due to the growth in advertising revenue outpacing the growth in advertising listener hours as a result of an increase in the average price per ad.

Subscription RPMs

For the three months ended September 30, 2016 compared to 2015, the decrease in subscription RPMs was due to growth in subscription listening hours and a decrease in subscription and other revenue.

For the nine months ended September 30, 2016 compared to 2015, the decrease in subscription RPMs was due to the growth in subscription listening hours outpacing the growth in subscription and other revenue.

Advertising LPMs

For the three months ended September 30, 2016 compared to 2015, advertising LPMs decreased as a result of the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management's decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015, offset by an increase in the rate for content acquisition costs of 21% on our advertising-supported platform related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015 and increases in content acquisition costs paid to PROs and publishers due to the cost structure of our new publishing licenses.

For the nine months ended September 30, 2016 compared to 2015, advertising LPMs increased as a result of royalty rate increases of 21% on our advertising-supported platform related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015 and increases in content acquisition costs paid to PROs and publishers due to the cost structure of our new publishing licenses. This increase was offset by the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management's decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015.

Subscription LPMs

For the three and nine months ended September 30, 2016 compared to 2015, subscription LPMs decreased as a result of the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management's decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015 and a decrease in the rate for content acquisition costs of 12% on our subscription-supported platform related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015, offset by increases in content acquisition costs paid to PROs and publishers under the content acquisition cost structure of our new publishing licenses.

Basis of Presentation and Results of Operations

The following table presents our results of operations for the periods indicated as a percentage of total revenue. The period-to-period comparisons of results are not necessarily indicative of results for future periods.

	Three months ended September 30,		Nine months ended September 30,	
	2015	2016	2015	2016
Revenue				
Advertising	82 %	78 %	80 %	77 %
Subscription and other	18	16	20	17
Ticketing service	—	6	—	7
Total revenue	100	100	100	100
Cost of revenue				
Cost of revenue — Content acquisition costs	68	50	56	53
Cost of revenue — Other (1)	7	7	7	7
Cost of revenue — Ticketing service (1)	—	4	—	5
Total cost of revenue	75	61	63	64
Gross profit	25	39	37	36
Operating expenses				
Product development (1)	7	10	7	10
Sales and marketing (1)	34	33	34	36
General and administrative (1)	11	12	13	13
Total operating expenses	53	55	55	59
Loss from operations	(28)	(16)	(18)	(24)
Interest expense	—	(2)	—	(2)
Other income, net	—	—	—	—
Total other expense, net	—	(2)	—	(2)
Loss before provision for income taxes	(28)	(17)	(18)	(26)
Provision for income taxes	—	—	—	—
Net loss	(28)%	(17)%	(18)%	(25)%

(1) Includes stock-based compensation as follows:				
Cost of revenue - Other	0.5%	0.4%	0.5%	0.5%
Cost of revenue - Ticketing service	—	—	—	—
Product development	2.0	2.1	2.0	2.3
Sales and marketing	4.4	4.2	4.6	4.4
General and administrative	2.4	2.5	2.5	3.3
Note: Amounts may not recalculate due to rounding				

Revenue

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Revenue						
Advertising	$ 254,656	$ 273,716	$ 19,060	$ 664,316	$ 759,150	$ 94,834
Subscription and other	56,906	56,100	(806)	163,570	165,957	2,387
Ticketing service	—	22,085	22,085	—	67,121	67,121
Total revenue	$ 311,562	$ 351,901	$ 40,339	$ 827,886	$ 992,228	$ 164,342

Advertising revenue

We generate advertising revenue primarily from audio, display and video advertising, which is typically sold on a cost-per-thousand impressions, or CPM, basis. Advertising campaigns typically range from one to twelve months, and advertisers generally pay us based on the number of delivered impressions or the satisfaction of other criteria, such as click-throughs. We also have arrangements with advertising agencies under which these agencies sell advertising inventory on our service directly to advertisers. We report revenue under these arrangements net of amounts due to agencies. For the three months ended September 30, 2015 and 2016 and the nine months ended September 30, 2015 and 2016, advertising revenue accounted for 82%, 78%, 80% and 77%, of our total revenue, respectively. We expect that advertising will comprise a substantial majority of our revenue for the foreseeable future.

For the three months ended September 30, 2016 compared to 2015, advertising revenue increased $19.1 million or 7%, primarily due to an approximate 5% increase in the number of ads sold.

For the nine months ended September 30, 2016 compared to 2015, advertising revenue increased $94.8 million or 14%, primarily due to an approximate 15% increase in the average price per ad due in part to our increase in relative volume of local ad sales and our focus on monetizing mobile inventory.

Subscription and other revenue

Prior to the launch of Pandora Plus on September 15, 2016, subscription and other revenue was generated primarily through the sale of Pandora One. Subsequent to September 15, 2016, subscription and other revenue is generated primarily through the sale of Pandora Plus. Pandora Plus is an enhanced version of the Pandora service, which currently includes enhanced product features such as replays, additional skipping and offline listening, together with our advertisement-free access and higher audio quality on the devices that support it. Subscription revenue is recognized on a straight-line basis over the duration of the subscription period. For the three months ended September 30, 2015 and 2016 and the nine months ended September 30, 2015 and 2016, subscription and other revenue accounted for 18%, 16%, 20% and 17% of our total revenue, respectively.

For the three months ended September 30, 2016 compared to 2015, subscription and other revenue decreased $0.8 million or 1%, primarily due to an agreement for which the term expired in December 2015, which was recorded in other revenue, offset by an increase in the average price per subscriber.

For the nine months ended September 30, 2016 compared to 2015, subscription and other revenue increased $2.4 million or 1%, primarily due to an increase in the average price per subscriber, offset by an agreement for which the term expired in December 2015, which was recorded in other revenue.

Ticketing service

Ticketing service revenue is generated primarily from service and merchant processing fees generated on ticket sales through the Ticketfly platform. Ticketfly sells tickets to fans for events on behalf of clients and charges a fee per ticket, which generally increases as the face value of the ticket increases, or a percentage of the total convenience charge and order processing fee, for its services at the time the ticket for an event is sold. Ticketing service revenue is recorded net of the face value of the ticket at the time of the sale, as Ticketfly generally acts as the agent in these transactions.

For the three and nine months ended September 30, 2016, ticketing service revenue was $22.1 million and $67.1 million and accounted for approximately 6% and 7% of our total revenue. In the three months ended September 30, 2016, Ticketfly had approximately 40 thousand live events on sale, for which approximately 3.9 million tickets, excluding box office sales, were sold to approximately 1.7 million unique ticket buyers, which resulted in more than $155 million in gross transaction value, excluding box office sales. In the nine months ended September 30, 2016, Ticketfly had approximately 113 thousand live events on sale, for which approximately 11.4 million tickets, excluding box office sales, were sold to approximately 4.9 million unique ticket buyers, which resulted in more than $485 million in gross transaction value, excluding box office sales. We had no ticketing service revenue in the three and nine months ended September 30, 2015, given that the acquisition of Ticketfly was completed on October 31, 2015.

Deferred revenue

Our deferred revenue consists principally of both prepaid but unrecognized subscription revenue and advertising fees received or billed in advance of the delivery or completion of the delivery of services. Deferred revenue is recognized as revenue when the services are provided and all other revenue recognition criteria have been met.

In addition, subscription revenue derived from sales through certain mobile devices may be subject to refund or cancellation terms which may affect the timing or amount of the subscription revenue recognition. When refund rights exist, we recognize revenue when services have been provided and the rights lapse or when we have developed sufficient transaction history to estimate a return reserve.

Costs and Expenses

Cost of revenue consists of cost of revenue—content acquisition costs, cost of revenue—other and cost of revenue— ticketing. Our operating expenses consist of product development, sales and marketing and general and administrative costs. Cost of revenue—content acquisition costs are the most significant component of our costs and expenses, followed by employee-related costs, which include stock-based compensation expenses. We expect to continue to hire additional employees in order to support our anticipated growth and our product development initiatives. In any particular period, the timing of additional hires could materially affect our cost of revenue and operating expenses, both in absolute dollars and as a percentage of revenue. We anticipate that our costs and expenses will increase in the future.

Cost of revenue—Content acquisition costs

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Cost of revenue - Content acquisition costs	$ 211,272	$ 174,334	$ (36,938)	$ 467,429	$ 522,231	$ 54,802

Cost of revenue—content acquisition costs principally consist of royalties paid for streaming music or other content to our listeners. Content acquisition costs are currently calculated using negotiated rates documented in direct license agreements with major and independent record labels, music publishers and PROs. Prior to the launch of Pandora Plus on September 15, 2016, the majority of our content acquisition costs for sound recordings were based on a fee per public performance of a sound recording, and the majority of our content acquisition costs for the underlying musical works were based on a percentage of content acquisition costs paid for sound recordings. Subsequent to September 15, 2016, content acquisition costs for our ad-supported service are determined in the same way as described in the preceding sentence, though the fee per public performance of sound recordings is now determined by our direct licenses, rather than by the Web IV rate. The majority of the content acquisition costs for the sound recordings streamed on our subscription service are determined as the greater of a percentage of subscription revenue or a per subscriber minimum amount, subject to certain discounts, and the content acquisition costs for the underlying musical works are determined in the same manner as they were prior to September 15, 2016. Certain of our direct license agreements are also subject to minimum guarantee payments, some of which are paid in advance and amortized over the minimum guarantee period. For certain content acquisition arrangements, we accrue for estimated content acquisition costs based on the available facts and circumstances and adjust these estimates as more information becomes available.

For the three months ended September 30, 2016 compared to 2015, content acquisition costs decreased $36.9 million or 17% and content acquisition costs as a percentage of total revenue decreased from 68% to 50%, primarily due to the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management’s decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015. The decrease was offset by blended sound recording royalty rate increases of 15% related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015, an approximate 5% increase in listener hours and an increase in content acquisition costs paid to publishers and PROs due to the cost structure of our publishing licenses.

For the nine months ended September 30, 2016 compared to 2015, content acquisition costs increased $54.8 million or 12% and content acquisition costs as a percentage of total revenue decreased from 56% to 53%, primarily due to the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management’s decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015. The decrease was offset by blended sound recording royalty rate increases of 15% related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015, an approximate 5% increase in listener hours and an increase in content acquisition costs paid to publishers and PROs due to the cost structure of our publishing licenses.

Cost of revenue—Other

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Cost of revenue — Other	$ 21,414	$ 25,556	$ 4,142	$ 57,690	$ 71,388	$ 13,698

Cost of revenue—other consists primarily of ad and music serving costs, employee-related and facilities and equipment costs and other costs of ad sales. Ad and music serving costs consist of content streaming, maintaining our internet radio service and creating and serving advertisements through third-party ad servers. We make payments to third-party ad servers for the period the advertising impressions are delivered or click-through actions occur, and accordingly, we record this as a cost of revenue in the related period. Employee-related costs include salaries and benefits associated with supporting music and ad serving functions. Other costs of ad sales include costs related to music events that are sold as part of advertising arrangements.

For the three months ended September 30, 2016 compared to 2015, cost of revenue—other increased $4.1 million or 19%, primarily due to a $1.9 million increase in employee-related and facilities and equipment costs driven by an approximate 10% increase in headcount and a $1.8 million increase in hosting and ad serving costs driven by an increase in advertising revenue.

For the nine months ended September 30, 2016 compared to 2015, cost of revenue—other increased $13.7 million or 24%, primarily due to an $7.7 million increase in employee-related and facilities and equipment costs driven by an approximate 10% increase in headcount, a $4.4 million increase in hosting and ad serving costs driven by an increase in advertising revenue and a $1.3 million increase in costs related to music events that are sold as part of advertising arrangements.

Cost of revenue - Ticketing service

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Cost of revenue — Ticketing service	$ —	$ 15,318	$ 15,318	$ —	$ 45,223	$ 45,223

Cost of revenue—ticketing service consists primarily of ticketing revenue share costs, credit card fees and other cost of revenue and intangible amortization expense. The majority of these costs are related to revenue share costs, which consist of fees paid to clients for their share of convenience and order processing fees. Intangible amortization expense is related to amortization of developed technology acquired in connection with the Ticketfly acquisition.

For the three months ended September 30, 2016, cost of revenue—ticketing service was $15.3 million and consisted primarily of $10.2 million in ticketing revenue share costs, $3.3 million in credit card fees and other cost of revenue and $1.4 million in intangible amortization expense. We had no cost of revenue—ticketing service in the three months ended September 30, 2015, given that the acquisition of Ticketfly was completed on October 31, 2015.

For the nine months ended September 30, 2016, cost of revenue—ticketing service was $45.2 million and consisted primarily of $30.3 million in ticketing revenue share costs, $9.5 million in credit card fees and other cost of revenue and $4.3 million in intangible amortization expense. We had no cost of revenue—ticketing service in the nine months ended September 30, 2015, given that the acquisition of Ticketfly was completed on October 31, 2015.

Gross profit

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Gross profit						
Total revenue	$ 311,562	$ 351,901	$ 40,339	$ 827,886	$ 992,228	$ 164,342
Total cost of revenue	232,686	215,208	(17,478)	525,119	638,842	113,723
Gross profit	$ 78,876	$ 136,693	$ 57,817	$ 302,767	$ 353,386	$ 50,619
Gross margin	25%	39%		37%	36%	

For the three months ended September 30, 2016 compared to 2015, gross profit increased by $57.8 million or 73% and gross margin increased from 25% to 39% as the growth in revenue outpaced the growth in content acquisition costs, primarily due to the one-time cumulative charges in the three months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management's decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015, offset by blended royalty rate increases of 15% related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015, an approximate 5% increase in listener hours and an increase in content acquisition costs paid to publishers and PROs under the cost structure of our publishing licenses.

For the nine months ended September 30, 2016 compared to 2015, gross profit increased by $50.6 million or 17% and gross margin decreased from 37% to 36% as the growth in revenue outpaced the growth in content acquisition costs, primarily due to the one-time cumulative charges in the nine months ended September 30, 2015 of $57.9 million for the pre-1972 sound recordings settlement and $23.9 million as a result of management's decision to forgo the application of the RMLC publisher royalty from June 2013 to September 2015, offset by blended royalty rate increases of 15% related to the Web IV rates set by the Copyright Royalty Board on December 16, 2015, an approximate 5% increase in listener hours and an increase in content acquisition costs paid to publishers and PROs under the cost structure of our publishing licenses.

Product development

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Product development	$ 21,849	$ 33,657	$ 11,808	$ 56,466	$ 103,311	$ 46,845

Product development consists primarily of employee-related and facilities and equipment costs, including salaries and benefits related to employees in software engineering, music analysis and product management departments, information technology, costs associated with supporting consumer connected-device manufacturers in implementing our service in their products and amortization expense related to acquired intangible assets. We incur product development expenses primarily for improvements to our website and the Pandora app, development of new services and enhancement of existing services, development of new advertising products and development and enhancement of our personalized playlisting system. We have generally expensed product development as incurred. These amounts are offset by costs that we capitalize to develop software for internal use. Certain website development and internal use software development costs are capitalized when specific criteria are met. In such cases, the capitalized amounts are amortized over the useful life of the related application once the application is placed in service. We expect these capitalized costs to increase during the remainder of 2016 as we develop an on-demand streaming service. We intend to substantially increase investments in developing new products and enhancing the functionality of our existing products.

For the three months ended September 30, 2016 compared to 2015, product development expense increased by $11.8 million or 54%, primarily due to a $15.0 million increase in employee-related and facilities and equipment costs driven by an approximate 65% increase in headcount and a $1.6 million increase in intangible amortization expense, offset by a $5.7 million increase in costs that we capitalized to develop software for internal use.

For the nine months ended September 30, 2016 compared to 2015, product development expenses increased $46.8 million or 83%, primarily due to a $55.3 million increase in employee-related and facilities and equipment costs driven by an approximate 65% increase in headcount, a $5.2 million increase in intangible amortization expense and an increase of $3.2 million in professional fees, offset by a $17.0 million increase in costs that we capitalized to develop software for internal use.

Sales and marketing

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
Sales and marketing	$ 107,286	$ 116,475	$ 9,189	$ 285,595	$ 357,909	$ 72,314

Sales and marketing consists primarily of employee-related and facilities and equipment costs, including salaries, commissions and benefits related to employees in sales, sales support, marketing, advertising and music maker group departments. In addition, sales and marketing expenses include transaction processing commissions on subscription purchases through mobile app stores, external sales and marketing expenses such as brand marketing, advertising, direct response and search engine marketing costs, public relations expenses, costs related to music events, agency platform and media measurement expenses, infrastructure costs and amortization expense related to acquired intangible assets.

We are substantially increasing sales and marketing expenses to drive growth as we hire additional personnel to build out our sales and sales support teams, particularly as we continue to build out our local market sales team. In 2015, we launched advertising campaigns to increase the awareness of our brand. We anticipate that we will continue to utilize these types of advertising campaigns in the future. As such, we anticipate higher overall levels of sales and marketing expense going forward.

For the three months ended September 30, 2016 compared to 2015, sales and marketing expenses increased $9.2 million or 9%, primarily due to a $15.4 million increase in employee-related and facilities and equipment costs driven by an approximate 20% increase in headcount and a $1.7 million increase in intangible amortization expense, offset by a $7.7 million decrease in brand marketing, advertising, direct response and search engine marketing costs driven by a decrease in advertising campaigns and a $1.8 million decrease in transaction processing commissions on subscription purchases through mobile app stores due to reduced commission rates from our third-party subscription platform providers.

For the nine months ended September 30, 2016 compared to 2015, sales and marketing expenses increased $72.3 million or 25%, primarily due to a $47.9 million increase in employee-related and facilities and equipment costs driven by an approximate 20% increase in headcount, a $15.2 million increase in brand marketing, advertising, direct response and search engine marketing costs driven by our advertising campaigns launched in the nine months ended September 30, 2016, a $5.1 million increase in intangible amortization expense, a $1.6 million increase in costs related to music events and a $1.2 million increase in agency platform fees and media measurement.

General and administrative

	Three months ended September 30,			Nine months ended September 30,		
	2015	2016	$ Change	2015	2016	$ Change
	(in thousands)			(in thousands)		
General and administrative	$ 35,603	$ 41,768	$ 6,165	$ 111,169	$ 128,626	$ 17,457

General and administrative consists primarily of employee-related and facilities and equipment costs, including salaries, benefits and severance expense for finance, accounting, legal, internal information technology and other administrative personnel. In addition, general and administrative expenses include professional services costs for outside legal and accounting services, infrastructure costs, credit card fees and sales and other tax expense. We expect general and administrative expenses to increase in future periods as we continue to invest in corporate infrastructure, including adding personnel and systems to our administrative functions.

For the three months ended September 30, 2016 compared to 2015, general and administrative expenses increased $6.2 million or 17%, primarily due to an increase of $7.1 million in employee-related and facilities and equipment costs driven by an approximate 25% increase in headcount, offset by a $2.9 million decrease in professional fees related to content acquisition and other legal matters.

For the nine months ended September 30, 2016 compared to 2015, general and administrative expenses increased $17.5 million or 16%, primarily due to a $29.1 million increase in employee-related and facilities and equipment costs driven by

executive severance and an approximate 25% increase in headcount and a $2.5 million increase in sales and other tax expense, offset by a $16.9 million decrease in professional fees related to content acquisition and other legal matters.

Interest expense

Interest expense in the three and nine months ended September 30, 2016 consists primarily of interest expense on our 1.75% Convertible Senior Notes due 2020. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details on our Notes.

Provision for (benefit from) income taxes

We have historically been subject to income taxes in the United States and various foreign jurisdictions. As we expand our operations to other foreign locations, we become subject to taxation based on the applicable foreign statutory rates and our effective tax rate could fluctuate accordingly.

Our provision for (benefit from) income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted statutory income tax rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce net deferred tax assets to the amount expected to be realized.

As a result of acquisitions, deferred tax liabilities were established for the book-tax basis difference related to acquired intangible assets. The net deferred tax liabilities provided an additional source of income to support the realizability of pre-existing deferred tax assets. During the three months ended June 30, 2016, we made an adjustment to goodwill and deferred tax liabilities as a result of the impact of final pre-acquisition Ticketfly income tax returns filed. As a result, during the nine months ended September 30, 2016, we released $1.9 million of our valuation allowance and recorded an income tax benefit.

Off-Balance Sheet Arrangements

Our liquidity is not dependent on the use of off-balance sheet financing arrangements and as of September 30, 2016 we had no such arrangements.

Contractual Obligations

There has been no material change in our contractual obligations other than in the ordinary course of business since the year ended December 31, 2015.

Quarterly Trends

Our operating results fluctuate from quarter to quarter as a result of a variety of factors. We expect our operating results to continue to fluctuate in future quarters.

Pandora

Our results reflect the effects of seasonal trends in listener and advertising behavior. We expect to experience both higher advertising sales due to greater advertiser demand during the holiday season and increased usage due to the popularity of holiday music during the last three months of each calendar year. In addition, we expect to experience lower advertising sales in the first three months of each calendar year due to reduced advertiser demand and increased usage due to increased use of media-streaming devices received as gifts during the holiday season. We believe these seasonal trends have affected, and will continue to affect our operating results, particularly as increases in content acquisition costs from increased usage are not offset by increases in advertising sales in the first calendar quarter.

In addition, expenditures by advertisers tend to be cyclical and discretionary in nature, reflecting overall economic conditions, the economic prospects of specific advertisers or industries, budgeting constraints and buying patterns and a variety of other factors, many of which are outside our control. As a result of these and other factors, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

Ticketing Service

Ticketfly's results reflect the effects of seasonality related to the timing of events. Tickets for festivals typically go on sale during the first half of the year. As such, the Ticketfly business has historically experienced an increase in revenue in the first half of each year relative to the fourth quarter of the prior year. We expect these seasonal trends to continue to affect our operating results.

Liquidity and Capital Resources

As of September 30, 2016, we had cash, cash equivalents and investments totaling $264.0 million, which primarily consisted of cash and money market funds held at major financial institutions, commercial paper and investment-grade corporate debt securities.

Our principal uses of cash during the three and nine months ended September 30, 2016 were funding our operations, as described below, and capital expenditures.

Sources of Funds

We believe, based on our current operating plan, that our existing cash and cash equivalents and available borrowings under our credit facility will be sufficient to meet our anticipated cash needs for at least the next twelve months.

From time to time, we may explore additional financing sources and means to lower our cost of capital, which could include equity, equity-linked and debt financing. In addition, in connection with any future acquisitions, we may require additional funding which may be provided in the form of additional debt, equity or equity-linked financing or a combination thereof. There can be no assurance that any additional financing will be available to us on acceptable terms.

Our Indebtedness

Credit Facility

We are party to a $120.0 million credit facility with a syndicate of financial institutions, which expires on September 12, 2018. In September 2016, we borrowed $90.0 million from the credit facility to enhance our working capital position. The amount borrowed is included in long-term debt on our balance sheet. Interest is payable quarterly at the applicable annual interest rate of 3.81% through September 2017. The applicable interest rate will be adjusted in September 2017.

As of September 30, 2016, we had $1.2 million in letters of credit outstanding and $28.8 million of available borrowing capacity under the credit facility. We are in compliance with all financial covenants associated with the credit facility as of September 30, 2016.

1.75% Convertible Senior Notes Due 2020

On December 9, 2015, we completed an unregistered Rule 144A offering of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020. The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchaser’s fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details on our Notes.

The Notes are unsecured, senior obligations of Pandora, and interest is payable semi-annually at a rate of 1.75% per annum. The Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms prior to such date. Prior to July 1, 2020, the Notes are convertible at the option of holders only upon the occurrence of specified events or during certain periods; thereafter, until the second scheduled trading day prior to maturity, the Notes will be convertible at the option of holders at any time.

The conversion rate for the Notes is initially 60.9050 shares of common stock per $1,000 principal amount of the Notes, which is equivalent to an initial conversion price of approximately $16.42 per share of our common stock, and is subject to adjustment in certain circumstances.

The Notes were separated into debt and equity components and assigned a fair value. The value assigned to the debt component is the estimated fair value as of the issuance date of similar debt without the conversion feature. The difference between the cash proceeds and this estimated fair value represents the value which has been assigned to the equity component and recorded as a debt discount. The debt discount is being amortized using the effective interest method.

The capped call transactions are expected generally to reduce the potential dilution to our common stock and/or offset the cash payments we would be required to make in excess of the principal amount of the converted Notes in the event that the market price of our common stock, as measured under the terms of the capped call transaction, is greater than the strike price of the capped call transaction, with such reduction and/or offset subject to a cap based on the cap price of the capped call transactions. The strike price of the capped call transactions corresponds to the initial conversion price of the Notes and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have an initial cap price of $25.26 per share and are subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have been included as a net reduction to additional paid-in capital within stockholders' equity.

Capital Expenditures

Consistent with previous periods, future capital expenditures will primarily focus on acquiring additional hosting and general corporate infrastructure. Our access to capital is adequate to meet our anticipated capital expenditures for our current plans.

Historical Trends

The following table summarizes our cash flow data for the nine months ended September 30, 2015 and 2016.

	Nine months ended September 30,	
	2015	**2016**
	(in thousands)	
Net cash provided by (used in) operating activities	$ 28,937	$ (179,073)
Net cash provided by (used in) investing activities	32,034	(43,755)
Net cash provided by financing activities	6,512	96,248

Operating activities

In the nine months ended September 30, 2016, net cash used in operating activities was $179.1 million and primarily consisted of our net loss of $253.0 million, which was partially offset by non-cash charges of $164.1 million, primarily related to $103.8 million in stock-based compensation charges and $43.5 million in depreciation and amortization expense. Net cash used in operating activities also included an increase in prepaid content acquisition costs related to minimum guarantee payments of $100.5 million and an increase in prepaid expenses and other assets of $12.7 million, offset by an increase in deferred revenue of $12.0 million and an increase in accrued compensation of $10.4 million. Net cash used in operating activities increased by $208.0 million from the nine months ended September 30, 2015, primarily due to an increase in our net loss of $102.7 million and an increase in prepaid content acquisition costs of $100.4 million.

Investing activities

In the nine months ended September 30, 2016, net cash used in investing activities was $43.8 million and included $46.4 million of capital expenditures for leasehold improvements and server equipment, $22.3 million of capital expenditures for internal-use software and $12.4 million in purchases of investments, offset by $38.3 million in proceeds from sales and maturities of investments. Net cash used in investing activities increased by $75.8 million from the nine months ended September 30, 2015, primarily due to a decrease in proceeds from sales and maturities of investments of $182.8 million, an increase in capital expenditures for leasehold improvements and server equipment of $25.1 million and an increase in capital expenditures for internal-use software of $16.3 million, offset by a decrease in purchases of investments of $126.3 million.

Financing activities

In the nine months ended September 30, 2016, net cash provided by financing activities was $96.2 million and included $90.0 million in borrowings under debt arrangements, $6.4 million in proceeds from our employee stock purchase plan and $3.0 million in proceeds from the exercise of stock options, offset by $3.1 million in tax payments from net share settlements of RSUs. Net cash provided by financing activities increased $89.7 million from the nine months ended September 30, 2015, primarily due to borrowings under debt arrangements of $90.0 million.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our condensed consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses and the related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Our estimates form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

An accounting policy is considered to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, and if different estimates that reasonably could have been used, or changes in the accounting estimate that are reasonably likely to occur, could materially impact the condensed consolidated financial statements. We believe that our critical accounting policies reflect the more significant estimates and assumptions used in the preparation of the condensed consolidated financial statements.

Other than those discussed below, there have been no material changes to our critical accounting policies and estimates as compared to those described in our Annual Report on Form 10-K for the year ended December 31, 2015 under the caption "Management’s Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates."

Prepaid Content Acquisition Costs

Prepaid content acquisition costs are primarily comprised of minimum guarantees under content acquisition agreements. From November 2015 through September 2016, we signed direct license agreements for recorded music with major and independent labels, distributors and publishers. Certain of these license agreements include minimum guarantee payments, some of which are paid in advance. These minimum guarantees may take the form of either a contractually obligated minimum over a specified period of time that requires a true-up payment at the end of the specified period if the cumulative payments have not met or exceeded the specified minimum, or cash advance payments made at the beginning of, or at intervals during, the specified period, which cash payments are then recoupable against content acquisition costs over the specified period. On a quarterly basis, we record the greater of the cumulative actual content acquisition costs incurred or the cumulative minimum guarantee based on forecasted usage for the minimum guarantee period. The minimum guarantee period is the period of time that the minimum guarantee relates to, as specified in each agreement, which may be annual or a longer period. The cumulative minimum guarantee, based on forecasted usage considers factors such as listening hours, revenue, subscribers and other terms of each agreement that impact our expected attainment or recoupment of the minimum guarantees on a non-straight line basis. If we are unable to accurately estimate the forecasted usage for the minimum guarantee period, our content acquisition costs could increase and materially adversely affect our business, financial condition and results of operations.

Item 3. Quantitative and Qualitative Disclosure About Market Risk

Interest Rate Fluctuation Risk

There have been no material changes in our primary market risk exposures or how those exposures are managed from the information disclosed in Part II, Item 7A of our Annual Report on Form 10-K for the year ended December 31, 2015. For further discussion of quantitative and qualitative disclosures about market risk, reference is made to our Annual Report on Form 10-K.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) under the Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognizes that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. Based on their evaluation at the end of the period covered by this Quarterly Report on Form 10-Q, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of September 30, 2016.

Changes in Internal Control over Financial Reporting

There have been no other changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the period covered by this Quarterly Report on Form 10-Q that has materially affected, or is reasonably likely to materially affect our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

The material set forth in Note 5 in the Notes to Condensed Consolidated Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q is incorporated herein by reference.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Before deciding to invest in our common stock, you should carefully consider each of the risk factors described below, which include any material changes to, and supersede the description of, risk factors associated with the Company's business previously disclosed in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2015. The below risks, and other risks described in this Quarterly Report on Form 10-Q, including in the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations," could materially harm our business, financial condition, operating results, cash flow and prospects. If that occurs, the trading price of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Business

Our ability to offer interactive features in our services depends upon maintaining commercially viable direct licenses with copyright owners of the music we play. If we are not able to maintain these direct licenses, we could lose the right to provide interactive features in our current services, or launch an on-demand music service. If we are not able to renew these direct licenses on similar terms when they expire, our profitability may be negatively affected.

Prior to September 15, 2016, we obtained the right to publicly perform music sound recordings on our services in the U.S. primarily through a statutory license at rates set by the Copyright Royalty Board. From November 2015 to September 2016, we entered into direct license agreements with dozens of music sound recording copyright owners, commonly known as "record labels", with thousands of musical work copyright owners, commonly known as "publishers", and with ASCAP, BMI and SESAC, the three largest performing rights organizations, commonly known as "PROs". In total, these agreements give us the right to add interactive features such as replays, additional skips and offline play to our current ad-supported and subscription radio services in the U.S., which features we introduced on September 15, 2016, and they also give us the right to launch an on-demand music service in the U.S., which we intend to do in the future. We continue to rely on the U.S. statutory license to publicly perform music sound recordings that are not covered by our direct licenses with record labels, but those recordings now constitute a small portion of the music that we stream. The direct licenses we have entered into with record labels and publishers are complex and require significant on-going efforts to operationalize, and there is risk that we may not be able to comply with the terms of these licenses, which could result in the loss of some or all of these licenses and some or all of the rights they convey. Similarly, many of these licenses provide that if the licensor loses rights in a portion of the content licensed under the agreement, that content may be removed from the license going-forward. In addition, if we are acquired, certain terms of our direct licenses, including favorable rates for content acquisition costs that currently apply to us, may not be available to an acquiror. If we were to fail to maintain any of these direct licenses, or if rights to certain music were no longer available under these licenses, then we may have to remove the affected music from our services, or discontinue certain interactive features for such music, or it might become commercially impractical for us to launch an on-demand music service. Any of these occurrences could have a material adverse effect on our business, financial condition and results of operations.

Several of these direct licenses also include so-called "most favored nations" provisions, which, if triggered, could cause our payments under those agreements to escalate substantially. In addition, record labels, publishers and PROs with whom we have entered into direct licenses have the right to audit our content acquisition payments, and any such audit could result in disputes over whether we have paid the proper content acquisition costs. If such a dispute were to occur, we could be required to pay additional content acquisition costs, audit fees and interest or penalties, and the amounts involved could materially and adversely affect our business, financial condition and results of operations. Pursuant to the statutory license under which we streamed most of our sound recordings prior to September 15, 2016, and under which we will stream a small portion of our sound recordings going forward, SoundExchange, Inc. ("SoundExchange") has the right to audit our content acquisition payments thereunder. SoundExchange is currently conducting audits of our payments for the years 2010 to 2014.

Further, there is no guarantee that the direct licenses we have now will be renewed in the future or that such licenses will be available at the rates for content acquisition costs associated with the current licenses. If we are unable to secure and maintain direct licenses for the rights to provide music on our services at rates that are similar to those under our current direct licenses, or other commercially viable rates, our content costs could rise and materially adversely affect our business, financial condition and results of operations.

The rates we must pay for "mechanical rights" to use musical works on our services are set by the Copyright Royalty Board, which is currently in the process of determining these rates for the five-year period beginning January 1, 2018. If these rates increase significantly, it will adversely affect our business.

Our direct licenses with thousands of music publishers provide that the content acquisition payments for the so-called "mechanical rights"—which are implicated in the interactive features that we introduced on September 15, 2016 to our current ad-supported and subscription radio services, and will similarly apply to our forthcoming on-demand music service—are determined in accordance with the rate formula set by the Copyright Royalty Board for the compulsory license made available by Section 115 of the Copyright Act. Further, these rates are also applicable to our use of musical works for which we do not have a direct license with the copyright owners. The current rate structure for the Section 115 compulsory license expires at the end of 2017. The Copyright Royalty Board has commenced a proceeding to set the rates for the Section 115 compulsory license for calendar years 2018 to 2022 (the "115 Proceedings"), and we are a participant in the 115 Proceedings. The trial under this proceeding will begin in March 2017. The rates established by the Copyright Royalty Board in the 115 Proceedings may be higher, lower or the same as the rates currently in effect. If the 115 Proceedings yield rates that exceed the rates that are currently in place, our content acquisition costs may significantly increase, which could materially harm our financial condition and hinder our ability to provide interactive features in our services, or make an on-demand music service not economically viable.

If our efforts to attract and retain subscribers or convert ad-supported listeners into subscribers of our subscription offerings are not successful, our business will be adversely affected.

Our ability to continue to attract and retain users of our paid subscription services will depend in part on our ability to consistently provide our subscribers with a quality experience through Pandora Plus and our on-demand music service that we intend to launch. If Pandora Plus subscribers do not perceive that offering to be of value, or if we introduce new or adjust existing features or pricing in a manner that is not favorably received by them, we may not be able to attract and retain subscribers or be able to convince listeners to become subscribers of such additional service offerings. Subscribers may cancel their subscription to our service for many reasons, including a perception that they do not use the service sufficiently, the need to cut household expenses, competitive services that provide a better value or experience or as a result in changes in pricing. Further, in a number of cases, the rates that we pay pursuant to our direct license agreements with record labels are significantly affected by the number of subscribers we are able to attract and retain. If our efforts to attract and retain subscribers are not successful, our business, operating results and financial condition may be adversely affected.

If we are unsuccessful at launching our on-demand subscription offering our business may be adversely affected.

Our acquisition of certain assets of Rdio in December 2015 was intended to facilitate our launch of new subscription offerings that provide additional functionality, including our Pandora Plus service, launched on September 15, 2016, and an on-demand offering. In addition to the cost of the Rdio assets, the development and launch of such additional service offerings has required and will continue to require significant engineering as well as marketing and other resources. In addition, to support the launch of these services we have entered into direct license agreements with the major record labels, which agreements entail substantial minimum guaranteed content acquisition cost payments by us. There is no assurance that we will be able to successfully develop and launch our on-demand subscription offering, obtain and maintain the content license rights to enable the offering of such services. Further, in a number of cases, our direct license agreements with record labels require that we launch an on-demand subscription service, and the rates for content acquisition costs payable under certain of our direct license agreements with record labels are significantly affected by the number of subscribers we are able to attract and retain to our subscription services, including our planned on-demand subscription service. If we fail to accomplish any of the foregoing and the additional service offerings are unsuccessful, we will not realize the benefits of the Rdio asset acquisition or the substantial investment made in the development of such additional product offerings.

Our inability to obtain accurate and comprehensive information necessary to identify the ownership of sound recordings and musical works used on our services may impact our ability to perform our obligations under our licenses from the copyright holders, may require us to remove or decrease the number of performances of certain music on our services, and may subject us to potential copyright infringement claims and difficulties in controlling content acquisition costs.

We currently rely on the assistance of third parties to determine comprehensive and accurate rightsholder information for the sound recordings and the musical works underlying the sound recordings that we use on our services. If the information provided to us does not comprehensively or accurately identify which labels, artists, composers, songwriters or publishers own or administer sound recordings or musical works, or if we are unable to determine which musical works correspond to specific sound recordings, it may be difficult to identify the appropriate rightsholders to pay under our direct licenses, and it may also

be difficult to comply with other obligations under those agreements. Further, our inability to accurately identify rights holders may prevent us from obtaining necessary additional licenses, which could lead to a reduction in the music available to stream on our service, adversely impacting our ability to retain and expand our listener base. Such a lack of ownership data may also make it difficult to identify the sound recordings that we should remove from our service, which may subject us to significant liability for copyright infringement.

We also rely on the assistance of third parties to provide notices of intent ("NOIs") for a compulsory license under Section 115 of the Copyright Act to those copyright owners with whom we do not have a direct license agreement or whose contact information is unavailable or unknown. If the third parties on which we rely do not provide NOIs to the correct parties (including the United States Copyright Office for unknown copyright owners), or to all parties who should receive an NOI, or do not serve the NOI in a timely manner, we may be subject to significant liability for copyright infringement.

Minimum guarantees required under certain of our music license agreements may limit our operating flexibility and could adversely affect our liquidity and results of operations.

As described in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Note 5, Commitments and Contingencies", certain of our music license agreements contain minimum guarantees and require that we make upfront minimum guarantee payments. As of September 30, 2016, we have future minimum guarantee commitments of $780.1 million. Such minimum guarantees related to our content acquisition costs are not tied to our number of subscribers, active users or the number of sound recordings used on our services. As such, our ability to achieve and sustain profitability and operating leverage on our services depends on our ability to increase our revenue through increased paid subscriptions and advertising sales on terms that maintain an adequate gross margin. Given the multiple-year duration and largely fixed cost nature of these minimum guarantees, if subscriber acquisition and retention or advertising sales do not meet our expectations, our margins may be materially and adversely affected. To the extent subscriber and subscription revenue growth or advertising sales do not meet our expectations, our liquidity and results of operations could also be adversely affected as a result of such minimum guarantees. In addition, the long-term and fixed cost nature of these minimum guarantees may limit our flexibility in planning for, or reacting to, changes in our business and the market segments in which we operate.

We rely on estimates of the market share of licenseable content controlled by each content provider to forecast whether such minimum guarantees will be recoupable against our actual content acquisition costs incurred over the duration of the license agreement. To the extent that these market share estimates are incorrect and our actual content acquisition costs for a particular content provider is less than the amount of the minimum guarantee, our margins may be materially and adversely affected.

We are not able to obtain licenses for the underlying literary works for the sound recordings of spoken-word comedy content that we stream. Third parties could assert copyright claims against us as a result.

We stream spoken word comedy content, for which the underlying literary works are not currently entitled to eligibility for licensing by any performing rights organization in the United States. Rather, pursuant to industry-wide custom and practice, this content is performed absent a specific license from any such performing rights organization or individual rights owners, although content acquisition costs are paid to SoundExchange for the public performance of the sound recordings in which such literary works are embodied. There can be no assurance that this industry custom will not change or that we will not otherwise become subject to additional licensing costs for spoken word comedy content imposed by performing rights organizations or individual copyright owners in the future or be subject to claims of copyright infringement.

If we are unable to maintain revenue growth from our advertising products, particularly in mobile advertising, our results of operations will be materially adversely affected.

Our number of listener hours on mobile devices comprised approximately 86% of our total listener hours for the nine months ended September 30, 2016, and we expect that mobile listener hours will continue to grow more quickly than computer listener hours. The percentage of advertising spending allocated to digital advertising on mobile devices still lags behind that allocated to traditional online advertising. According to eMarketer, the percentage of U.S. advertising spending allocated to advertising on mobile devices was approximately 23% in 2016, compared to approximately 37% for all online advertising. We must therefore continue to convince advertisers of the capabilities of mobile digital advertising opportunities so that they migrate their advertising spend toward demographics and ad solutions that more effectively utilize mobile inventory.

We continue to build our sales capability to penetrate local advertising markets, which we view as a key challenge to monetizing our listener hours, including listener hours on mobile and other connected devices. Our audio advertising capability also places us in direct competition with terrestrial radio, as many advertisers that purchase audio ads focus their spending on

terrestrial radio stations who traditionally have strong connections with local advertisers. We cannot foresee whether we will be able to continue to capture local and audio advertising revenue at the current rate of growth, which may have an adverse impact on future revenue and income.

We continue to work on initiatives that, if successfully implemented, would increase our number of listener hours on mobile and other connected devices, including efforts to expand the reach of our service by making it available on an increasing number of devices, such as smartphones and devices connected to or installed in automobiles. In order to effectively monetize such increased listener hours, we must, among other things, convince advertisers to migrate spending to nascent advertising markets, penetrate local advertising markets and develop compelling ad product solutions. We may not be able to effectively monetize inventory generated by listeners using mobile and connected devices, or do so in a time frame that supports our business plans.

Advertising spending is increasingly being placed through new data-driven channels, such as the programmatic buying ecosystem, where mobile offerings are not as mature as their web-based equivalents. Because the substantial majority of our listener hours occur on mobile devices, our growth prospects and revenue may be adversely affected if the advertising ecosystem is slow to adopt data-driven mobile advertising offerings.

As new advertising buying technologies, such as programmatic buying, develop around data-driven technologies and advertising products, an increasing percentage of advertising spend is likely to shift to such channels and products. These data-driven advertising products and programmatic buying technologies allow publishers to use data to target advertising toward specific groups of consumers who are more likely to be interested in the advertising message delivered. These advertising products and programmatic technologies are currently more developed in terms of ad technology and industry adoption on the web than they are on mobile. Due to the fact that the substantial majority of our listener hours occur on mobile devices, our ability to attract advertising spend, and ultimately our ad revenue, may be adversely affected by this shift. We have no reliable way to predict how significantly or how quickly advertisers will shift buying to programmatic technologies and data-driven advertising products.

We have developed a data-driven, programmatic advertising capability for mobile in an effort to take advantage of this trend. However, we only released this capability to the market in the second quarter of 2015, and we have no reliable way to predict how significantly or how quickly advertisers will shift buying toward such data-driven ad products and programmatic channels on mobile. If advertising spend continues to be reallocated to web-based programmatic technologies and mobile programmatic adoption lags, our ability to grow revenue may be adversely affected.

Emerging industry trends in digital advertising measurement and pricing may pose challenges for our ability to forecast and optimize our advertising inventory which may adversely impact our advertising revenue.

The digital advertising marketplace is introducing new ways to measure and price advertising inventory. Specifically, the Media Ratings Council released the Viewable Ad Impression Measurement Guidelines in 2014 pursuant to which web display and web video advertising inventory will be transacted upon based on the number of "viewable" impressions delivered in connection with an applicable advertising campaign (instead of the number of ads served by the applicable ad server). The industry is in the early stages of this transition and we are still determining its potential impact on our inventory, operational resources, pricing, and revenue. In addition, the current measurement solutions are limited to web display and web video inventory and do not include mobile and audio inventory. Nonetheless, advertisers have been aggressively pushing to transact advertising purchases for audio advertising and mobile placement on a measured "viewable" basis. As these trends in the industry continue to evolve, our advertising revenue may be adversely affected by the availability, accuracy and utility of the available analytics and measurement technologies.

Our failure to convince advertisers of the benefits of our ad-supported service in the future could harm our business.

For the nine months ended September 30, 2016, we derived 77% of our revenue from the sale of advertising and expect to continue to derive a substantial majority of our revenue from the sale of advertising in the future. Our ability to attract and retain advertisers, and ultimately to sell our advertising inventory to generate advertising revenue, depends on a number of factors, including:

- increasing the number of listener hours, particularly within desired demographics;
- keeping pace with changes in technology and our competitors;
- competing effectively for advertising dollars from other online marketing and media companies;

- penetrating the market for local radio advertising;
- demonstrating the value of advertisements to reach targeted audiences across all of our delivery platforms, including the value of mobile digital advertising;
- continuing to develop and diversify our advertising platform, which currently includes delivery of display, audio and video advertising products through multiple delivery channels, including computers, mobile and other connected devices; and
- coping with ad blocking technologies that have been developed and are likely to continue to be developed that can block the display of our ads.

Our agreements with advertisers are generally short-term or may be terminated at any time by the advertiser. Advertisers that are spending only a small amount of their overall advertising budget on our service may view advertising with us as experimental and unproven and may leave us for competing alternatives at any time. We may never succeed in capturing a greater share of our advertisers' core advertising spending, particularly if we are unable to achieve the scale and industry penetration necessary to demonstrate the effectiveness of our advertising platforms, or if our advertising model proves ineffective or not competitive when compared to alternatives. Failure to demonstrate the value of our service would result in reduced spending by, or loss of, existing or potential future advertisers, which would materially harm our revenue and business.

Unavailability of, or fluctuations in, third-party measurements of our audience may adversely affect our ability to grow advertising revenue.

Selling ads, locally and nationally, requires that we demonstrate to advertisers that our service has substantial reach and usage. Third-party measurements may not reflect our true listening audience and their underlying methodologies are subject to change at any time. In addition, the methodologies we apply to measure the key metrics that we use to monitor and manage our business may differ from the methodologies used by third-party measurement service providers. For example, we calculate listener hours based on the total bytes served for each track that is requested and served from our servers, as measured by our internal analytics systems, whether or not a listener listens to the entire track. By contrast, certain third-party measurement service providers may calculate and report the number of listener hours using a client-based approach, which measures time elapsed during listening sessions. Measurement technologies for mobile and consumer electronic devices may be even less reliable in quantifying the reach, usage and location of our service, and it is not clear whether such technologies will integrate with our systems or uniformly and comprehensively reflect the reach, usage and location of our service. While we have been working with third-party measurement service providers and certain of their measurements have earned Media Ratings Council accreditation, some providers have not yet developed uniform measurement systems that comprehensively measure the reach, usage and location of our service. In order to demonstrate to potential advertisers the benefits of our service, we supplement third-party measurement data with our internal research, which may be perceived as less valuable than third-party numbers. If third-party measurement providers report lower metrics than we do, or if there is wide variance among reported metrics, our ability to attract advertisers to our service could be adversely affected.

The lack of accurate cross-platform measurements for internet radio and broadcast radio may adversely affect our ability to grow advertising revenue.

We have invested substantial resources to create accurate cross-platform measurements for internet radio and broadcast radio in the major automated media-buying platforms, attempting to create a one-stop shop that enables media buyers to compare internet radio audience reach with terrestrial radio audience reach using traditional broadcast radio metrics.

Media buying agencies receive measurement metrics from third parties, such as Triton for internet radio and Nielsen for more traditional media like terrestrial radio and television. Media buying agencies may choose not to show, or may be prohibited by contract from showing, internet radio metrics alongside traditional terrestrial metrics. Despite our efforts to achieve parity within the tools available to media buying agencies, a lack of comparable internet radio metrics in these buying tools could have a materially negative effect on our ability to sell advertising on our service and achieve our revenue goals.

If we fail to detect click fraud or other invalid clicks on ads, we could lose the confidence of our advertisers, which would cause our business to suffer.

Our business relies on delivering positive results to our advertising customers. We are exposed to the risk of fraudulent and other invalid clicks or conversions that advertisers may perceive as undesirable. A major source of invalid clicks could

result from click fraud where a listener intentionally clicks on ads for reasons other than to access the underlying content of the ads. If fraudulent or other malicious activity is perpetrated by others and we are unable to detect and prevent it, or if we choose to manage traffic quality in a way that advertisers find unsatisfactory, the affected advertisers may experience or perceive a reduced return on their investment in our advertising products, which could lead to dissatisfaction with our advertising programs, refusals to pay, refund demands or withdrawal of future business. This could damage our brand and lead to a loss of advertisers and revenue.

If we are unable to continue to make our technology compatible with the technologies of third-party distribution partners who make our service available to our listeners through mobile devices, consumer electronic products and automobiles, we may not remain competitive and our business may fail to grow or decline.

In order to deliver music everywhere our listeners want to hear it, our service must be compatible with mobile, consumer electronic, automobile and website technologies. Our service is accessible in part through both Pandora-developed and third-party developed apps that hardware manufacturers embed in, and distribute through, their devices. Most of our agreements with makers of mobile operating systems and devices through which our service may be accessed, including Apple, Google and Microsoft, are short-term or can be canceled at any time with little or no prior notice or penalty. The loss of these agreements, or the renegotiation of these agreements on less favorable economic or other terms, could limit the reach of our service and its attractiveness to advertisers. Some of these mobile device makers and operating system providers, including Apple, Amazon, Samsung and Google, are now, or may in the future become, competitors of ours, and could stop allowing or supporting access to our service through their products for competitive reasons.

Connected devices and their underlying technologies are constantly evolving. As internet connectivity of automobiles, mobile devices and other consumer electronic products expands and as new internet-connected products are introduced, we must constantly adapt our technology. It is challenging to keep pace with the continual release of new devices and technological advances in digital media delivery. If manufacturers fail to make products that are interoperable with our technology or we fail to adapt our technology to their evolving requirements, our ability to grow or sustain the reach of our service, increase listener hours and sell advertising could be adversely affected.

Consumer tastes and preferences can change in rapid and unpredictable ways and consumer acceptance of these products depends on the marketing, technical and other efforts of third-party manufacturers, which is beyond our control. If consumers fail to accept the products of the companies with whom we partner or if we fail to establish relationships with makers of leading consumer products, our business could be adversely affected.

If our efforts to attract prospective listeners and to retain existing listeners are not successful, our growth prospects and revenue will be adversely affected.

Our ability to grow our business and generate advertising revenue depends on retaining and expanding our listener base and increasing listener hours. We must convince prospective listeners of the benefits of our service and existing listeners of the continuing value of our service. The more listener hours we stream, the more ad inventory we have to sell. Further, growth in our listener base increases the size of demographic pools targeted by advertisers, which improves our ability to deliver advertising in a manner that maximizes our advertising customers' return on investment and, ultimately, to demonstrate the effectiveness of our advertising solutions and justify a pricing structure that is profitable for us. If we fail to grow our listener base and listener hours, particularly in key demographics such as young adults, we will be unable to grow advertising revenue, and our business will be materially and adversely affected.

Our ability to increase the number of our listeners and listener hours will depend on effectively addressing a number of challenges. Some of these challenges include:

- providing listeners with a consistent high quality, user-friendly and personalized experience;
- successfully expanding our share of listening in cars;
- continuing to build and maintain availability of catalogs of music and comedy and other content that our listeners enjoy;
- continuing to innovate and keep pace with changes in technology and our competitors;
- maintaining and building our relationships with makers of consumer products such as mobile devices and other consumer electronic products to make our service available through their products;

- maintaining positive listener perception of our service while managing ad-load to optimize inventory utilization; and
- minimizing listener churn and attracting lapsed listeners back to the service.

In addition, we have historically relied heavily on the success of viral marketing to expand consumer awareness of our service. We recently began supplementing our viral marketing strategy with larger, more costly marketing campaigns, and this increase in marketing expenses could fail to achieve expected returns and therefore have an adverse effect on our results of operations. We cannot guarantee that we will be successful in maintaining or expanding our listener base and failure to do so would materially and adversely affect our business, operating results and financial condition.

Further, although we use our number of active users as a key indicator of our brand awareness and the growth of our business, the number of active users exceeds the number of unique individuals who register for, or actively use, our service. We define active users as the number of distinct users that have requested audio from our servers within the trailing 30 days from the end of each calendar month. To establish an account, a person does not need to provide personally unique information. For this reason, a person may have multiple accounts. If the number of actual listeners does not result in an increase in listener hours, then our business may not grow as quickly as we expect, which may harm our business, operating results and financial condition.

If we fail to accurately predict and play music, comedy or other content that our listeners enjoy, we may fail to retain existing and attract new listeners.

We believe that a key differentiating factor between the Pandora service and other music content providers is our ability to predict music that our listeners will enjoy. Our personalized playlist generating system, based on the Music Genome Project and our proprietary algorithms, is designed to enable us to predict listener music preferences and select music content tailored to our listeners' individual music tastes. We have invested, and will continue to invest, significant resources in refining these technologies; however, we cannot guarantee that such investments will produce the intended results. The effectiveness of our personalized playlist generating system depends in part on our ability to gather and effectively analyze large amounts of listener data and listener feedback and we have no assurance that we will continue to be successful in enticing listeners to give a thumbs-up or thumbs-down to enough songs for our database to effectively predict and select new and existing songs. In addition, our ability to offer listeners songs that they have not previously heard and impart a sense of discovery depends on our ability to acquire and appropriately categorize additional tracks that will appeal to our listeners' diverse and changing tastes. While we have over 1,000,000 analyzed songs in our library, we must continuously identify and analyze additional tracks that our listeners will enjoy and we may not effectively do so. Further, many of our competitors currently have larger catalogs than we offer and they may be more effective in providing their listeners with a more appealing listener experience.

We also provide comedy content on Pandora, and for that content we also try to predict what our listeners will enjoy, using technology similar to the technology that we use to generate personalized playlists for music. The risks that apply to predicting our listeners' musical tastes apply to comedy and other content to an even greater extent, particularly as we lack experience with content other than music, do not yet have as large a data set on listener preferences for comedy and other content, and have a much smaller catalog as compared to music. Our ability to predict and select music, comedy and other content that our listeners enjoy is critical to the perceived value of our service among listeners and failure to make accurate predictions would adversely affect our ability to attract and retain listeners, increase listener hours and sell advertising.

We face, and will continue to face, competition with other content providers for listener hours and advertising spending.

We compete for the time and attention of our listeners with other content providers on the basis of a number of factors, including quality of experience, relevance, acceptance and perception of content quality, ease of use, price, accessibility, perception of ad load, brand awareness and reputation. Such competition affects the amount of quality advertising inventory available which we can offer to advertisers on our ad-supported service.

Many of our competitors may leverage their existing infrastructure, brand recognition and content collections to augment their services by offering competing internet radio features within a more comprehensive digital music streaming service. We face increasing competition for listeners from a growing variety of music services that deliver music content through mobile phones and other wireless devices. Our direct competitors in the internet radio segment include iHeart Radio, iTunes Radio, Beats 1 Radio, LastFM and other companies in the traditional broadcast and internet radio market. We also directly compete with the non-interactive, Internet radio offerings provided by digital music streaming services such as Spotify, Google Play Music and Slacker, and we compete more broadly with the interactive music services offered by these companies and others, such as Apple Music, YouTube and Amazon Music Unlimited.

Our competitors also include terrestrial radio and satellite radio services, many of which also broadcast on the internet. Terrestrial radio providers offer their content for free, are well established and accessible to listeners and offer content, such as news, sports, traffic, weather and talk that we currently do not offer. In addition, many terrestrial radio stations have begun broadcasting digital signals, which provide high-quality audio transmission. Satellite radio providers may offer extensive and oftentimes exclusive news, comedy, sports and talk content, national signal coverage and long-established automobile integration. In addition, terrestrial radio pays no content acquisition costs for its use of sound recordings and satellite radio pays a much lower percentage of revenue, 10% in 2015 and 10.5% in 2016, than internet radio providers for use of sound recordings, giving broadcast and satellite radio companies a significant cost advantage. We also compete directly with other emerging non-interactive internet radio providers, which may offer more extensive content libraries than we offer and some of which may be accessed internationally.

We compete for the time and attention of our listeners with providers of other forms of in-home and mobile entertainment. To the extent existing or potential listeners choose to watch cable television, stream video from on-demand services or play interactive video games on their home-entertainment system, computer or mobile phone rather than listen to the Pandora service, these content services pose a competitive threat. We also compete with many other forms of media and services for the time and attention of our listeners, including non-music competitors such as Facebook, Google, MSN, Yahoo!, ABC, CBS, FOX, NBC, The New York Times and the Wall Street Journal, among others.

We believe that companies with a combination of financial resources, technical expertise and digital media experience also pose a significant threat. For example, Apple, Amazon and Google have recently launched competing services. These and other competitors may devote greater resources than we have available, have a more accelerated time frame for deployment, be willing to absorb significant costs to acquire customers through free trials or other initiatives, operate their music services at a loss in order to drive their other profitable businesses, and leverage their existing user base and proprietary technologies to provide products and services that our listeners and advertisers may view as superior or more cost effective. Our current and future competitors may have more well established brand recognition, more established relationships with music content companies and consumer product manufacturers, greater financial, technical and other resources, more sophisticated technologies or more experience in the markets, both domestic and international, in which we compete.

We also compete for listeners on the basis of the presence and visibility of our app, which is distributed via the largest app stores operated by Apple, Google, Amazon and Microsoft. Such distribution is subject to an application developer license agreement in each case. We face significant competition for listeners from these companies, who are also promoting their own digital music and content online through their app stores. Search engines and app stores rank responses to search queries based on the popularity of a website or mobile application, as well as other factors that are outside of our control. Additionally, app stores often offer users the ability to browse applications by various criteria, such as the number of downloads in a given time period, the length of time since a mobile app was released or updated, or the category in which the application is placed. The websites and mobile applications of our competitors may rank higher than our website and our Pandora app, and our app may be difficult to locate in app stores, which could draw potential listeners away from our service and toward those of our competitors. In addition, our competitors' products may be pre-loaded or integrated into consumer electronics products or automobiles, creating an initial visibility advantage. If we are unable to compete successfully for listeners against other digital media providers by maintaining and increasing our presence and visibility online, in app stores and in consumer electronics products and automobiles, our listener hours may fail to increase as expected or decline and our business may suffer. Additionally, should any of these parties reject our app from their app store or amend the terms of their license in such a way that inhibits our ability to distribute our apps, or negatively affects our economics in such distribution, our ability to increase listener hours and sell advertising would be adversely affected, which would reduce our revenue and harm our operating results.

To compete effectively, we must continue to invest significant resources in the development of our service to enhance the user experience of our listeners.

Additionally, in order to compete successfully for advertisers against new and existing competitors, we must continue to invest resources in developing and diversifying our advertisement platform, harnessing listener data and ultimately proving the effectiveness and relevance of our advertising products. There can be no assurance that we will be able to compete successfully for listeners and advertisers in the future against existing or new competitors, and failure to do so could result in loss of existing or potential listeners, loss of current or potential advertisers or a reduced share of our advertisers' overall marketing budget, which could adversely affect our pricing and margins, lower our revenue, increase our research and development and marketing expenses, diminish our brand strength and prevent us from achieving or maintaining profitability.

If we are not successful in operating and growing our recently acquired Ticketfly business, we will not realize the benefits anticipated when we acquired the business.

We acquired Ticketfly in October 2015, which was our first major acquisition and represents an entirely new line of business for us. Ticketfly's business is highly sensitive to rapidly changing public tastes and is dependent on the availability of popular artists and events. Ticketfly's revenue is derived from ticketing services under client contracts with venues and event promoters across North America, which consist primarily of per ticket convenience fees, credit card processing and shipping fees as well as per order "order processing" fees. If Ticketfly's clients fail to anticipate the tastes of consumers and to offer events that appeal to them, the business may not grow or succeed. We cannot provide assurances that Ticketfly will be able to maintain or expand arrangements with clients and other third parties on acceptable terms, if at all. Furthermore, a decline in attendance at or reduction in the number of live entertainment, sporting and leisure events for any reason may have an adverse effect on our Ticketfly business. If we fail to successfully operate and grow our Ticketfly business, we will not realize the benefits anticipated when we acquired the business, and any such failure could result in substantial impairment charges.

Our ability to expand our services into countries outside the United States is dependent on our ability to obtain necessary licenses from content owners, which we currently do not have.

We currently operate our services in the United States, Australia and New Zealand. In Australia and New Zealand, we have licenses from copyright owners to provide our ad-supported and subscription radio services without the additional interactive features that we introduced in the U.S. on September 15, 2016, and we do not yet have the necessary licenses from copyright owners to launch an on-demand music service in Australia or New Zealand. Therefore, in order to introduce interactive features into our existing services in Australia and New Zealand, or to launch an on-demand music service there, or to launch any interactive or non-interactive music streaming service anywhere else in the world, we will need to negotiate and execute license agreements with the necessary rights holders. We may not be able to obtain all of the necessary rights to expand our service offerings on commercially viable terms, or at all. If we are not able to obtain the necessary licenses on commercially viable terms, then we will not be able to proceed with our international service expansion plans, and our growth could suffer materially. This could adversely affect our business, financial condition and results of operations.

We face many risks associated with our long-term plan to further expand our operations outside of the United States, including difficulties obtaining rights to music and other content on favorable terms.

Expanding our operations into international markets is an element of our long-term strategy. For example, in June 2012 we began providing our service in New Zealand, Australia and their associated territories. However, offering our service outside of the United States involves numerous risks and challenges. Most importantly, while United States copyright law provides a statutory licensing regime for the public performance of sound recordings to listeners within the United States, there is no equivalent statutory licensing regime available outside of the United States, and direct licenses from rights organizations and other content owners may not be available on commercially viable terms. Addressing licensing structure and issues with the rate for content acquisition costs in the United States required us to make very substantial investments of time, capital and other resources, and our business could have failed if such investments had not succeeded. Addressing these issues in foreign jurisdictions may require a commensurate investment by us, and there can be no assurance that we would succeed or achieve any return on this investment.

In addition, international expansion exposes us to other risks such as:

- the need to modify our technology and market our service in non-English speaking countries;
- the need to localize our service to foreign customers' preferences and customs;
- the need to conform our operations, and our marketing and advertising efforts, with the laws and regulations of foreign jurisdictions, including, but not limited to, the use of any personal information about our listeners;
- the need to amend existing agreements and to enter into new agreements with automakers, automotive suppliers, consumer electronics manufacturers with products that integrate our service, and others in order to provide that service in foreign countries;
- difficulties in managing operations due to language barriers, distance, staffing, cultural differences and business infrastructure constraints and domestic laws regulating corporations that operate internationally;

- our lack of experience in marketing, and encouraging viral marketing growth without incurring significant marketing expenses, in foreign countries;
- application of foreign laws and regulations to us;
- fluctuations in currency exchange rates;
- reduced or ineffective protection of our intellectual property rights in some countries; and
- potential adverse tax consequences associated with foreign operations and revenue.

Furthermore, in most international markets, we would not be the first entrant, and our competitors may be better positioned than we are to succeed. In addition, in jurisdictions where copyright protection has been insufficient to protect against widespread music piracy, achieving market acceptance of our service may prove difficult as we would need to convince listeners to stream our service when they could otherwise download the same music for free. As a result of these obstacles, we may find it impossible or prohibitively expensive to enter or sustain our presence in foreign markets, or entry into foreign markets could be delayed, which could hinder our ability to grow our business.

Expansion of our operations into content beyond pre-recorded music, including comedy, live events and podcasts, subjects us to additional business, legal, financial and competitive risks.

Expansion of our operations into delivery of content beyond pre-recorded music involves numerous risks and challenges, including increased capital requirements, new competitors and the need to develop new strategic relationships. Growth into these new areas may require changes to our existing business model and cost structure, modifications to our infrastructure and exposure to new regulatory and legal risks, including infringement liability, any of which may require additional expertise that we currently do not have. There is no guarantee that we will be able to generate sufficient revenue from advertising sales associated with comedy, live events, podcasts or other non-prerecorded-music content to offset the costs of maintaining these stations or the content acquisition costs paid for such stations. Further, we have established a reputation as a music format internet radio provider and our ability to gain acceptance and listenership for comedy, live events, podcasts or other non-music content stations, and thus our ability to attract advertisers on these stations, is not certain. Failure to obtain or retain rights to comedy, live events, podcasts or other non-music content on acceptable terms, or at all, to successfully monetize and generate revenues from such content, or to effectively manage the numerous risks and challenges associated with such expansion could adversely affect our business and financial condition.

We have acquired, and may continue to acquire, other companies or technologies, which could divert our management's attention, result in additional dilution to our stockholders and otherwise disrupt our operations and harm our operating results.

We have recently acquired and may in the future seek to acquire or invest in businesses, products or technologies that we believe could complement or expand our service, enhance our technical capabilities or otherwise offer growth opportunities. For example, in 2015, we acquired Next Big Sound, Ticketfly and certain assets of Rdio. These acquisitions, and our pursuit of future potential acquisitions, may divert the attention of management and cause us to incur various expenses in identifying, investigating and pursuing suitable acquisitions, whether or not they are consummated. In addition, we have limited experience acquiring and integrating other businesses. We may be unsuccessful in integrating our recently acquired businesses or any additional business we may acquire in the future. For instance, our acquisition in December 2015 of certain assets of Rdio in order to facilitate our intention to launch an on-demand service, will require time and resources. There is no assurance that we will be able to successfully launch an on-demand service, if at all, and if we fail to launch an on-demand service or a new service is unsuccessful, we will not realize the benefits of this acquisition.

We also may not achieve the anticipated benefits from any acquired business due to a number of factors, including:

- unanticipated costs or liabilities associated with the acquisition;
- incurrence of acquisition-related costs;
- diversion of management's attention from other business concerns;
- regulatory uncertainties;

- harm to our existing business relationships with business partners and advertisers as a result of the acquisition;
- harm to our brand and reputation;
- the potential loss of key employees;
- use of resources that are needed in other parts of our business; and
- use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least annually. In the future, if our acquisitions do not yield expected returns, we may be required to take charges to our operating results based on this impairment assessment process. Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial condition may suffer.

Our ability to increase the number of our listeners will depend in part on our ability to establish and maintain relationships with automakers, automotive suppliers and consumer electronics manufacturers with products that integrate our service.

A key element of our strategy to expand the reach of our service and increase the number of our listeners and listener hours is to establish and maintain relationships with automakers, automotive suppliers and consumer electronics manufacturers that integrate our service into and with their products. Working with certain third-party distribution partners, we currently offer listeners the ability to access our service through a variety of consumer electronics products used in the home and devices connected to or installed in automobiles. We intend to broaden our ability to reach additional listeners, and increase current listener hours, through other platforms and partners over time, including through direct integration into connected cars. However, product design cycles in automotive manufacturing are lengthy and the useful lives of automobiles in service is long, and we may not be able to achieve our goals in our desired timeframe, which could adversely impact our ability to grow our business.

Our existing agreements with partners in the automobile and consumer electronics industries generally do not obligate those partners to offer our service in their products. In addition, some automobile manufacturers or their supplier partners may terminate their agreements with us for convenience. Our business could be adversely affected if our automobile partners and consumer electronics partners do not continue to provide access to our service or are unwilling to do so on terms acceptable to us. If we are forced to amend the business terms of our distribution agreements as a result of competitive pressure, our ability to maintain and expand the reach of our service and increase listener hours would be adversely affected, which would reduce our revenue and harm our operating results.

We rely upon an agreement with DoubleClick, which is owned by Google, for delivering and monitoring most of our ads. Failure to renew the agreement on favorable terms, or termination of the agreement, could adversely affect our business.

We use DoubleClick’s ad-serving platform to deliver and monitor most of the ads for our service. There can be no assurance that our agreement with DoubleClick, which is owned by Google, will be extended or renewed upon expiration, that we will be able to extend or renew our agreement with DoubleClick on terms and conditions favorable to us or that we could identify another alternative vendor to take its place. Our agreement with DoubleClick also allows DoubleClick to terminate our relationship before the expiration of the agreement on the occurrence of certain events, including material breach of the agreement by us, and to suspend provision of the services if DoubleClick determines that our use of its service violates certain security, technology or content standards.

We rely on third parties to provide software and related services necessary for the operation of our business.

We incorporate and include third-party software into and with our apps and service offerings and expect to continue to do so. The operation of our apps and service offerings could be impaired if errors occur in the third-party software that we use. It may be more difficult for us to correct any defects in third-party software because the development and maintenance of the software is not within our control. Accordingly, our business could be adversely affected in the event of any errors in this software. There can be no assurance that any third-party licensors will continue to make their software available to us on acceptable terms, to invest the appropriate levels of resources in their software to maintain and enhance its capabilities, or to remain in business. Any impairment in our relationship with these third-party licensors could harm our ability to maintain and

expand the reach of our service, increase listener hours and sell advertising, each of which could harm our operating results, cash flow and financial condition.

Digital music streaming is an evolving industry, which makes it difficult to evaluate our near- and long-term business prospects.

Digital music streaming continues to develop as an industry and our near- and long-term business prospects are difficult to evaluate. The marketplace for digital music streaming is subject to significant challenges and new competitors. As a result, the future revenue, income and growth potential of our business is uncertain. Investors should consider our business and prospects in light of the risks and difficulties we encounter in this evolving business, which risks and difficulties include, among others, risks related to:

- our evolving business model and new licensing models for content as well as the potential need for additional types of content;
- our ability to develop additional products and services, or products and services in adjacent markets, in order to maintain revenue growth, and the resource requirements of doing so;
- our ability to retain current levels of active listeners, build our listener base and increase listener hours;
- our ability to effectively monetize listener hours by growing our sales of advertising inventory created from developing new and compelling ad product solutions that successfully deliver advertisers' messages across the range of our delivery platforms while maintaining our listener experience;
- our ability to attract new advertisers, retain existing advertisers and prove to advertisers that our advertising platform is effective enough to justify a pricing structure that is profitable for us;
- our ability to maintain relationships with platform providers, makers of mobile devices, consumer electronic products and automobiles;
- our ability to continue to secure the rights to music that attracts listeners to the service on fair and reasonable economic terms.

Failure to successfully address these risks and difficulties and other challenges associated with operating in an evolving marketplace could materially and adversely affect our business, financial condition and results of operations.

We have incurred significant operating losses in the past and may not be able to generate sufficient revenue to be profitable.

Since our inception in 2000, we have incurred significant net operating losses and, as of September 30, 2016, we had an accumulated deficit of $619.6 million. A key element of our strategy is to increase the number of listeners and listener hours to increase our industry penetration, including the number of listener hours on mobile and other connected devices. However, as our number of listener hours increases, the royalties we pay for content acquisition also increase. In addition, we have adopted a strategy to invest in our operations in advance of, and to drive, future revenue growth. This strategy includes recently completed acquisitions and other initiatives. As a result of these trends, we have not in the past generated, and may not in the future generate, sufficient revenue from the sale of advertising and subscriptions, or new revenue sources, to offset our expenses. In addition, we plan to continue to invest heavily in our operations to support anticipated future growth. As a result of these factors, we expect to incur annual net losses in the near term.

Our revenue has increased rapidly in recent periods; however, we do not expect to sustain our high revenue growth rates in the future as a result of a variety of factors, including increased competition and the maturation of our business, and we cannot guarantee that our revenue will continue to grow or will not decline. Investors should not consider our historical revenue growth or operating expenses as indicative of our future performance. If revenue growth is lower than our expectations, or our operating expenses exceed our expectations, our financial performance will be adversely affected. Further, if our future growth and operating performance fail to meet investor or analyst expectations, it could have a material adverse effect on our stock price.

In addition, in our efforts to increase revenue as the number of listener hours has grown, we have expanded and expect to continue to expand our sales force. If our hiring of additional sales personnel does not result in a sufficient increase in revenue, the cost of this additional headcount will not be offset, which would harm our operating results and financial condition.

If we fail to effectively manage our growth, our business and operating results may suffer.

Our rapid growth has placed, and will continue to place, significant demands on our management and our operational and financial infrastructure. In order to attain and maintain profitability, we will need to recruit, integrate and retain skilled and experienced sales personnel who can demonstrate our value proposition to advertisers and increase the monetization of listener hours, particularly on mobile devices, by developing relationships with both national and local advertisers to convince them to migrate advertising spending to online and mobile digital advertising markets and utilize our advertising product solutions. Continued growth could also strain our ability to maintain reliable service levels for our listeners, effectively monetize our listener hours, develop and improve our operational, financial and management controls and enhance our reporting systems and procedures. If our systems do not evolve to meet the increased demands placed on us by an increasing number of advertisers, we may also be unable to meet our obligations under advertising agreements with respect to the timing of our delivery of advertising or other performance obligations. As our operations grow in size, scope and complexity, we will need to improve and upgrade our systems and infrastructure, which will require significant expenditures and allocation of valuable management resources. If we fail to maintain the necessary level of discipline and efficiency and allocate limited resources effectively in our organization as it grows, our business, operating results and financial condition may suffer.

Our business and prospects depend on the strength of our brands and failure to maintain and enhance our brands would harm our ability to expand our base of listeners, advertisers and other partners.

Maintaining and enhancing the "Pandora", "Ticketfly" and "Next Big Sound" brands is critical to expanding our base of listeners, advertisers, venue partners, concertgoers, content owners and other partners. Maintaining and enhancing our brands will depend largely on our ability to continue to develop and provide an innovative and high quality experience for our listeners and concertgoers and attract advertisers, content owners, venue partners and automobile, mobile device and other consumer electronic product manufacturers to work with us, which we may not do successfully.

Our brands may be impaired by a number of other factors, including service outages, data privacy and security issues, listener perception of ad load and exploitation of our trademarks by others without permission. In addition, if our partners fail to maintain high standards for products that integrate our service, or if we partner with manufacturers of products that our listeners reject, the strength of our brand could be adversely affected.

Assertions by third parties of violations under state law with respect to the public performance and reproduction of pre-1972 sound recordings could result in significant costs and substantially harm our business and operating results.

Federal copyright protection does not apply to sound recordings created prior to February 15, 1972 ("pre-1972 sound recordings"). The protection of such recordings is instead governed by a patchwork of state statutory and common laws. Copyright owners of pre-1972 sound recordings have commenced litigation against us in New York, California, Illinois, and New Jersey alleging violations of state statutory and common laws arising from the reproduction and public performance of pre-1972 sound recordings. Despite settling one such suit with the major record labels in October 2015, and entering into direct license agreements for recorded music with major and independent labels, distributors and publishers during the first nine months of 2016 that also permit us to stream certain pre-1972 sound recordings, we still face a number of class-action suits brought by various plaintiffs who seek, among other things, restitution, disgorgement of profits, and punitive damages as well as injunctive relief prohibiting further violation of those copyright owners' alleged exclusive rights.

If we are found liable for the violation of the exclusive rights of any pre-1972 sound recording copyright owners, then we could be subject to liability, the amount of which could be significant. Similarly, any settlements of the remaining litigation could require substantial payments. If we are required to obtain licenses from individual sound recording copyright owners for the reproduction and public performance of pre-1972 sound recordings, then the time, effort and cost of securing such licenses directly from all owners of sound recordings used on our service could be significant and could harm our business and operating results. If we are required to obtain licenses for pre-1972 sound recordings to avoid liability and are unable to secure such licenses, then we may have to remove pre-1972 sound recordings from our service, which could harm our ability to attract and retain users.

We could be adversely affected by regulatory restrictions on the use of mobile and other electronic devices in motor vehicles and legal claims arising from use of such devices while driving.

Regulatory and consumer agencies have increasingly focused on distraction to drivers that may be associated with use of mobile and other devices in motor vehicles. In 2010, the U.S. Department of Transportation identified driver distraction as a top priority, and in April 2013, the National Highway Traffic Safety Administration (the "NHTSA") released voluntary Phase 1

Driver Distraction Guidelines for visual-manual devices not related to the driving task that are integrated into motor vehicles. In March 2014, NHTSA held a public meeting soliciting comments related to its voluntary Phase 2 Driver Distraction Guidelines for portable and aftermarket devices that may be used in motor vehicles, but such guidelines have not yet been issued. If NHTSA or other agencies implemented regulatory restrictions and took enforcement action related to how drivers and passengers in motor vehicles may engage with devices on which our service is broadcast, such restrictions or enforcement actions could inhibit our ability to increase listener hours and generate ad revenue, which would harm our operating results. In addition, concerns over driver distraction due to use of mobile and other electronic devices used to access our service in motor vehicles could result in product liability or personal injury litigation and negative publicity.

Federal, state and industry regulations as well as self-regulation related to privacy and data security concerns pose the threat of lawsuits and other liability, require us to expend significant resources, and may hinder our ability and our advertisers' ability to deliver relevant advertising.

We collect and utilize demographic and other information from and about our listeners and artists as they interact with our service, including information which could fall under a definition of "personally identifiable information" under various state and federal laws. For example, to register for a Pandora account, our listeners must provide the following information: age, gender, zip code and e-mail address. Listeners must also provide their credit card or debit card numbers and other billing information in connection with additional service offerings, such as Pandora One or Ticketfly. We also may collect information from our listeners when they enter information on their profile page, post comments on other listeners' pages, use other community or social networking features that are part of our service, participate in polls or contests or sign up to receive e-mail newsletters. Further, we and third parties use tracking technologies, including "cookies" and related technologies, to help us manage and track our listeners' interactions with our service and deliver relevant advertising. We also collect information from and track artists' activity on our Pandora Artist Marketing Platform. Third parties may, either without our knowledge or consent, or in violation of contractual prohibitions, obtain, transmit or utilize our listeners' or artists' personally identifiable information, or data associated with particular users, devices or artists.

Various federal and state laws and regulations, as well as the laws of foreign jurisdictions in which we may choose to operate, govern the collection, use, retention, sharing and security of the data we receive from and about our listeners. Privacy groups and government authorities have increasingly scrutinized the ways in which companies link personal identities and data associated with particular users or devices with data collected through the internet, and we expect such scrutiny to continue to increase. Alleged violations of laws and regulations relating to privacy and data security, and any relevant claims, may expose us to potential liability and may require us to expend significant resources in responding to and defending such allegations and claims. Claims or allegations that we have violated laws and regulations relating to privacy and data security have resulted and could in the future result in negative publicity and a loss of confidence in us by our listeners and our advertisers.

Existing privacy-related laws and regulations are evolving and subject to potentially differing interpretations, and various federal and state legislative and regulatory bodies, as well as foreign legislative and regulatory bodies, may expand current or enact new laws regarding privacy and data security-related matters. We may find it necessary or desirable to join self-regulatory bodies or other privacy-related organizations that require compliance with their rules pertaining to privacy and data security. We also may be bound by contractual obligations that limit our ability to collect, use, disclose and leverage listener data and to derive economic value from it. New laws, amendments to or re-interpretations of existing laws, rules of self-regulatory bodies, industry standards and contractual obligations, as well as changes in our listeners' expectations and demands regarding privacy and data security, may limit our ability to collect, use and disclose, and to leverage and derive economic value from listener data. We may also be required to expend significant resources to adapt to these changes and to develop new ways to deliver relevant advertising or otherwise provide value to our advertisers. In particular, government regulators have proposed "do not track" mechanisms, and requirements that users affirmatively "opt-in" to certain types of data collection that, if enacted into law or adopted by self-regulatory bodies or as part of industry standards, could significantly hinder our ability to collect and use data relating to listeners. Restrictions on our ability to collect, access and harness listener data, or to use or disclose listener data or any profiles that we develop using such data, could in turn limit our ability to stream personalized music content to our listeners and offer targeted advertising opportunities to our advertising customers, each of which are critical to the success of our business.

We have incurred, and will continue to incur, expenses to comply with privacy and security standards and protocols imposed by law, regulation, self-regulatory bodies, industry standards and contractual obligations. Increased regulation of data utilization and distribution practices, including self-regulation and industry standards, could increase our cost of operation, limit our ability to grow our operations or otherwise adversely affect our business.

Government regulation of the internet is evolving, and unfavorable developments could have an adverse effect on our operating results.

We are subject to general business regulations and laws, as well as regulations and laws specific to the internet. Such laws and regulations cover sales and other taxes and withholding of taxes, user privacy, data collection and protection, copyrights, electronic contracts, sales procedures, automatic subscription renewals, credit card processing procedures, consumer protections, broadband internet access and content restrictions. We cannot guarantee that we have been or will be fully compliant in every jurisdiction, as it is not entirely clear how existing laws and regulations governing issues such as privacy, taxation and consumer protection apply to the internet. Moreover, as internet commerce continues to evolve, increasing regulation by federal, state and foreign agencies becomes more likely. The adoption of any laws or regulations that adversely affect the popularity or growth in use of the internet, including laws limiting network neutrality, could decrease listener demand for our service offerings and increase our cost of doing business. Future regulations, or changes in laws and regulations or their existing interpretations or applications, could also hinder our operational flexibility, raise compliance costs and result in additional historical or future liabilities for us, resulting in adverse impacts on our business and our operating results.

Our operating results may fluctuate, which makes our results difficult to predict and could cause our results to fall short of expectations.

Our revenue and operating results could vary significantly from quarter to quarter and year to year due to a variety of factors, many of which are outside our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful. In addition to other risk factors discussed in this "Risk Factors" section, factors that may contribute to the variability of our quarterly and annual results include:

- costs associated with pursuing licenses or other commercial arrangements;
- costs associated with defending any litigation, including intellectual property infringement litigation, and any associated judgments or settlements;
- our ability to pursue, and the timing of, entry into new geographic or content markets or other strategic initiatives and, if pursued, our management of these initiatives;
- the impact of general economic and competitive conditions on our revenue and expenses; and
- changes in government regulation affecting our business.

Seasonal variations in listener and advertising behavior may also cause fluctuations in our financial results. We expect to experience some effects of seasonal trends in listener behavior due to higher advertising sales during the fourth quarter of each year due to greater advertiser demand during the holiday season and lower advertising sales in the first quarter of the following year. Expenditures by advertisers tend to be cyclical and discretionary in nature, reflecting overall economic conditions, the economic prospects of specific advertisers or industries, budgeting constraints and buying patterns and a variety of other factors, many of which are outside our control. In addition, we expect to experience increased usage during the fourth quarter of each year due to the holiday season, and in the first quarter of each year due to increased use of media-streaming devices received as gifts during the holiday season.

If we are unable to implement and maintain effective internal control over financial reporting in the future, the accuracy and timeliness of our financial reporting may be adversely affected.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we are required to furnish a report by our management on our internal control over financial reporting. The report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of year-end, including a statement as to whether or not our internal control over financial reporting is effective. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management.

While we have determined that our internal control over financial reporting was effective as of September 30, 2016, as indicated in "Controls and Procedures-Evaluation of Disclosure Controls and Procedures", we must continue to monitor and assess our internal control over financial reporting. Additionally, we must implement internal control over the financial reporting of Ticketfly, our subsidiary, that complies with Section 404 of the Sarbanes-Oxley Act of 2002 by the end of 2016. Any material weaknesses in Ticketfly’s internal control over financial reporting that remain uncorrected at year-end must be identified in our management’s report on our internal controls over financial reporting. If our management identifies one or more material weaknesses in our internal control over financial reporting and such weakness remains uncorrected at year-end, we will be unable to assert that such internal control is effective at year-end. If we are unable to assert that our internal control

over financial reporting is effective at year-end, or if our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal controls or concludes that we have a material weakness in our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which could have a material adverse effect on our business and the price of our common stock.

We may require additional capital to pursue our business objectives and respond to business opportunities, challenges or unforeseen circumstances. If capital is not available to us, our business, operating results and financial condition may be harmed.

We may require additional capital to operate or expand our business. In addition, some of our current or future strategic initiatives, or international markets, may require substantial additional capital resources before they begin to generate revenue. Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. For example, our current credit facility contains restrictive covenants relating to our capital raising activities and other financial and operational matters, and any debt financing secured by us in the future could involve further restrictive covenants, which may make it more difficult for us to obtain additional capital and to pursue business opportunities. In addition, volatility in the credit markets may have an adverse effect on our ability to obtain debt financing. If we do not have funds available to enhance our solutions, maintain the competitiveness of our technology and pursue business opportunities, we may not be able to service our existing listeners, acquire new listeners or attract or retain advertising customers, each of which could inhibit the implementation of our business plan and materially harm our operating results.

Failure to protect our intellectual property could substantially harm our business and operating results.

The success of our business depends, in part, on our ability to protect and enforce our trade secrets, trademarks, copyrights and patents and all of our other intellectual property rights, including our intellectual property rights underlying the Pandora service. To establish and protect those proprietary rights, we rely on a combination of patents, patent applications, trademarks, copyrights, trade secrets (including know-how), license agreements, information security procedures, non-disclosure agreements with third parties, employee disclosure and invention assignment agreements, and other contractual obligations. These afford only limited protection. Despite our efforts to protect our intellectual property rights, unauthorized parties may copy or attempt to copy aspects of our technology. Moreover, policing our intellectual property rights is difficult, costly and may not always be effective.

We have filed, and may in the future file, patent applications and from time to time we have purchased patents and patent applications from third parties. It is possible, however, that these innovations may not be protectable. In addition, given the cost, effort, risks and downside of obtaining patent protection, including the requirement to ultimately disclose the invention to the public, we may choose not to seek patent protection for certain innovations. However, such patent protection could later prove to be important to our business. Furthermore, there is always the possibility that our patent applications may not issue as granted patents, that the scope of the protection gained will be insufficient or that an issued patent may be deemed invalid or unenforceable. Moreover, in certain circumstances there are additional risks, including:

- present or future patents or other intellectual property rights could lapse or be invalidated, circumvented, challenged or abandoned;
- our ability to assert our intellectual property rights against potential competitors or to settle current or future disputes may be limited by our relationships with third parties;
- our pending or future patent applications may not have coverage sufficient to provide the desired competitive advantage; and
- our intellectual property rights may not be enforced in jurisdictions where competition may be intense or where legal protection may be weak.

We have registered "Pandora," "Music Genome Project", "Next Big Sound", "Ticketfly" and other marks as trademarks in the United States and other countries. Nevertheless, competitors may adopt service names similar to ours, or purchase confusingly similar terms as keywords in internet search engine advertising programs, thereby impeding our ability to build brand identity and possibly leading to confusion among our listeners or advertising customers. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of the term Pandora or our other trademarks. Any claims or customer confusion related to our trademarks could damage our reputation and brand and substantially harm our business and operating results.

We currently own the www.pandora.com and www.ticketfly.com internet domain names and various other domain names related to our business. The regulation of domain names in the United States and in foreign countries is subject to change. Regulatory bodies continue to establish additional top-level domains, appoint additional domain name registrars and modify the requirements for holding domain names. As a result, we may not be able to acquire or maintain the domain names that utilize our brand names in the United States or other countries in which we may conduct business in the future. If we lose or fail to acquire the right to use any domain name relevant to our current or future business in the United States or other countries, we may incur significant additional expense.

In order to protect our trade secrets and other confidential information, we rely in part on confidentiality agreements with our employees, consultants and third parties with whom we have relationships. These agreements may not effectively prevent disclosure of trade secrets and other confidential information and may not provide an adequate remedy in the event of misappropriation of trade secrets or any unauthorized disclosure of trade secrets and other confidential information. In addition, others may independently discover the same subject matter as that covered by our trade secrets and confidential information, and in some such cases we might not be able to assert any trade secret rights against such parties. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our trade secret rights and related confidentiality and nondisclosure provisions, and failure to obtain or maintain trade secret protection, or our competitors' independent development of technology similar to ours for which we are unable to rely on other forms of intellectual property protection such as patents, could adversely affect our competitive business position.

Litigation or proceedings before the U.S. Patent and Trademark Office or other governmental authorities and administrative bodies in the United States and abroad may be necessary in the future to enforce our intellectual property rights, to protect our patent rights, trademarks, trade secrets and domain names and to determine the validity and scope of the proprietary rights of others. Our efforts to enforce or protect our proprietary rights may be ineffective and could result in substantial costs and diversion of resources and management time, each of which could substantially harm our operating results.

Assertions by third parties of infringement or other violation by us of their intellectual property rights could result in significant costs and substantially harm our business and operating results.

Internet, technology and media companies are frequently subject to litigation based on allegations of infringement, misappropriation or other violations of others' intellectual property rights. Some internet, technology and media companies, including some of our competitors, own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims against us. In addition, we encourage third parties to submit content for our catalog and we cannot be assured that artist representations made in connection with such submissions accurately reflect the legal rights of the submitted content. Third parties have asserted, and may in the future assert, that we have infringed, misappropriated or otherwise violated their intellectual property rights. In addition, various federal and state laws and regulations govern the intellectual property and related rights associated with sound recordings and musical works. Existing laws and regulations are evolving and subject to different interpretations, and various federal and state legislative or regulatory bodies may expand current or enact new laws or regulations. We cannot guarantee that we are not infringing or violating any third-party intellectual property rights.

We cannot predict whether assertions of third-party intellectual property rights or any infringement or misappropriation claims arising from such assertions will substantially harm our business and operating results. When we are forced to defend against any infringement or misappropriation claims, we may be required to expend significant time and financial resources on the defense of such claims, even if without merit, settled out of court, or adjudicated in our favor. Furthermore, an adverse outcome of a dispute may require us to: pay damages (potentially including treble damages and attorneys' fees if we are found to have willfully infringed a party's intellectual property); cease making, licensing or using products or services that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to redesign our services to avoid infringement; enter into potentially unfavorable content acquisition or license agreements in order to obtain the right to use necessary technologies, content or materials; or to indemnify our partners and other third parties. We do not carry broadly applicable patent liability insurance and lawsuits regarding patent rights, regardless of their success, can be expensive to resolve and can divert the time and attention of our management and technical personnel.

Some of our services and technologies may use "open source" software, which may restrict how we use or distribute our service or require that we release the source code of certain services subject to those licenses.

Some of our services and technologies may incorporate software licensed under so-called "open source" licenses. Such open source licenses often require that source code subject to the license be made available to the public and that any modifications or derivative works to open source software continue to be licensed under open source licenses. Few courts have interpreted open source licenses, and the manner in which these licenses may be interpreted and enforced is therefore subject to

some uncertainty. We rely on multiple employee and non-employee software programmers to design our proprietary technologies, and since we may not be able to exercise complete control over the development efforts of all such programmers we cannot be certain that they have not incorporated open source software into our products and services without our knowledge, or that they will not do so in the future. In the event that portions of our proprietary technology are determined to be subject to an open source license, we may be required to publicly release the affected portions of our source code, be forced to re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies, each of which could reduce the value of our services and technologies and materially and adversely affect our ability to sustain and grow our business.

Interruptions or delays in service arising from our own systems or from our third-party vendors could impair the delivery of our service and harm our business.

We rely on systems housed at our own premises and at those of third-party vendors, including network service providers and data center facilities, to enable listeners to stream our content in a dependable and efficient manner. We have experienced and expect to continue to experience periodic service interruptions and delays involving our own systems and those of our third-party vendors. In the event of a service outage at our main site, we maintain a backup site that can function in read-only capacity. We do not currently maintain live fail-over capability that would allow us to instantaneously switch our streaming operations from one facility to another in the event of a service outage. In the event of an extended service outage at our main site, we do maintain and test fail-over capabilities that should allow us to switch our live streaming operations from one facility to another. Both our own facilities and those of our third-party vendors are vulnerable to damage or interruption from earthquakes, floods, fires, power loss, telecommunications failures and similar events. They also are subject to break-ins, hacking, denial of service attacks, sabotage, intentional acts of vandalism, terrorist acts, natural disasters, human error, the financial insolvency of our third-party vendors and other unanticipated problems or events. The occurrence of any of these events could result in interruptions in our service and to unauthorized access to, or alteration of, the content and data contained on our systems and that these third-party vendors store and deliver on our behalf.

We do not exercise complete control over our third-party vendors, which makes us vulnerable to any errors, interruptions, or delays in their operations. Any disruption in the services provided by these vendors could have significant adverse impacts on our business reputation, customer relations and operating results. Upon expiration or termination of any of our agreements with third-party vendors, we may not be able to replace the services provided to us in a timely manner or on terms and conditions, including service levels and cost, that are favorable to us, and a transition from one vendor to another vendor could subject us to operational delays and inefficiencies until the transition is complete.

If our security systems are breached, we may face civil liability and public perception of our security measures could be diminished, either of which would negatively affect our ability to attract and retain listeners and advertisers.

Techniques used to gain unauthorized access to corporate data systems are constantly evolving, and we may be unable to anticipate or prevent unauthorized access to data pertaining to our listeners, including credit card and debit card information and other personally identifiable information. Like all internet services, our service, which is supported by our own systems and those of third-party vendors, is vulnerable to computer malware, Trojans, viruses, worms, break-ins, phishing attacks, denial-of-service attacks, attempts to access our servers to acquire playlists or stream music in an unauthorized manner, or other attacks on and disruptions of our and third-party vendor computer systems, any of which could lead to system interruptions, delays, or shutdowns, causing loss of critical data or the unauthorized access to personally identifiable information. If an actual or perceived breach of security occurs on our systems or a vendor’s systems, we may face civil liability and reputational damage, either of which would negatively affect our ability to attract and retain listeners, which in turn would harm our efforts to attract and retain advertisers. We also would be required to expend significant resources to mitigate the breach of security and to address related matters. Unauthorized access to music or playlists would potentially create additional content acquisition cost obligations with no corresponding revenue.

We may not be able to effectively control the unauthorized actions of third parties who may have access to the listener data we collect. The integration of the Pandora service with apps provided by third parties represents a significant growth opportunity for us, but we may not be able to control such third parties’ use of listeners’ data, ensure their compliance with the terms of our privacy policies, or prevent unauthorized access to, or use or disclosure of, listener information, any of which could hinder or prevent our efforts with respect to growth opportunities.

Any failure, or perceived failure, by us to maintain the security of data relating to our listeners and employees, to comply with our posted privacy policy, laws and regulations, rules of self-regulatory organizations, industry standards and contractual provisions to which we may be bound, could result in the loss of confidence in us, or result in actions against us by

governmental entities or others, all of which could result in litigation and financial losses, and could potentially cause us to lose listeners, artists, advertisers, revenue and employees.

We are subject to a number of risks related to credit card and debit card payments we accept.

We accept subscription payments through credit and debit card transactions. For credit and debit card payments, we pay interchange and other fees, which may increase over time. An increase in those fees would require us to either increase the prices we charge for our products, which could cause us to lose subscribers and subscription revenue, or absorb an increase in our operating expenses, either of which could harm our operating results.

If we or any of our processing vendors have problems with our billing software, or the billing software malfunctions, it could have an adverse effect on our subscriber satisfaction and could cause one or more of the major credit card companies to disallow our continued use of their payment products. In addition, if our billing software fails to work properly and, as a result, we do not automatically charge our subscribers' credit cards on a timely basis or at all, or there are issues with financial insolvency of our third-party vendors or other unanticipated problems or events, we could lose subscription revenue, which would harm our operating results.

We are also subject to payment card association operating rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted to make it more difficult for us to comply. We are currently accredited against, and in compliance with, the Payment Card Industry Data Security Standard, or PCI DSS, the payment card industry's security standard for companies that collect, store or transmit certain data regarding credit and debit cards, credit and debit card holders and credit and debit card transactions. Currently we comply with PCI DSS version 3.2 as a Level 2 merchant. Ticketfly is a Level 2 merchant and has been given an extension until January 2017 to recertify that they are in compliance with PCI DSS. There is no guarantee that Pandora or Ticketfly will maintain PCI DSS compliance. Our failure to comply fully with PCI DSS in the future could violate payment card association operating rules, federal and state laws and regulations and the terms of our contracts with payment processors and merchant banks. Such failure to comply fully also could subject us to fines, penalties, damages and civil liability, and could result in the loss of our ability to accept credit and debit card payments. Further, there is no guarantee that PCI DSS compliance will prevent illegal or improper use of our payment systems or the theft, loss, or misuse of data pertaining to credit and debit cards, credit and debit card holders and credit and debit card transactions.

If we fail to adequately control fraudulent credit card transactions, we may face civil liability, diminished public perception of our security measures and significantly higher credit card-related costs, each of which could adversely affect our business, financial condition and results of operations. If we are unable to maintain our chargeback rate or refund rates at acceptable levels, credit card and debit card companies may increase our transaction fees or terminate their relationships with us. Any increases in our credit card and debit card fees could adversely affect our results of operations, particularly if we elect not to raise our rates for our service to offset the increase. The termination of our ability to process payments on any major credit or debit card would significantly impair our ability to operate our business.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

At December 31, 2015, we had federal net operating loss carryforwards of approximately $613.0 million and tax credit carryforwards of approximately $9.7 million. At December 31, 2015, we had state net operating loss carryforwards of approximately $480.0 million and tax credit carryforwards of approximately of $15.6 million. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, ("the Code"), if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes, such as research tax credits, to offset its post-change income may be limited. In general, an "ownership change" will occur if there is a cumulative change in our ownership by "5-percent shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. As a result of prior equity issuances and other transactions in our stock, we have previously experienced "ownership changes" under section 382 of the Code and comparable state tax laws. We may also experience ownership changes in the future as a result of other future transactions in our stock. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards or other pre-change tax attributes to offset United States federal and state taxable income may be subject to limitations.

We could be subject to additional income tax liabilities.

We are subject to income taxes in the United States and in certain foreign jurisdictions. As we expand our operations globally, we become subject to taxation based on the applicable foreign statutory rates and our effective tax rate could fluctuate accordingly. Significant judgment is required in evaluating and estimating our worldwide provision for income taxes and

accruals for these taxes. For example, our effective tax rates could be adversely affected by earnings being lower than anticipated in countries where we have lower statutory tax rates and higher than anticipated in countries where we have higher statutory tax rates, by losses incurred in jurisdictions for which we are not able to realize the related tax benefit, by changes in foreign currency exchange rates, by changes in the valuation of our deferred tax assets and liabilities, or by changes in the relevant tax, accounting and other laws, regulations, principles and interpretations. We are also subject to tax audits in various jurisdictions, and such jurisdictions may assess additional income tax liabilities against us.

Our Ticketfly business and venue partners may be subject to sales tax and other taxes.

The application of indirect taxes (such as sales, use, excise, admissions, amusement, entertainment or other transaction-based taxes) to internet-based live entertainment ticketing businesses such as Ticketfly is a complex and evolving area. Many of the fundamental statutes and regulations that impose these taxes were established before the adoption and growth of the internet and ecommerce. In many cases, it is not clear how existing statutes apply to the internet or ecommerce. In addition, governments are increasingly looking for ways to increase revenues, which has resulted in discussions about tax reform and other legislative action to increase tax revenues, including through indirect taxes. Changes in these tax laws could adversely affect our business.

Ticketfly is not the seller of tickets sold on the Ticketfly platform. Instead it facilitates the transaction between our venue partners and customers. If a taxing jurisdiction were to treat Ticketfly as the seller and liable for the tax of the venue partners or customers, it could result in a material liability.

Ticketfly does not currently calculate all applicable indirect taxes on the fees charged when a customer purchases tickets on the Ticketfly platform. Some jurisdictions may interpret their law in a manner that would require Ticketfly to calculate, collect and remit the applicable indirect taxes on the entire charges. Such an interpretation could negatively impact our customers and our business.

We depend on key personnel to operate our business, and if we are unable to retain, attract and integrate qualified personnel, our ability to develop and successfully grow our business could be harmed.

We believe that our success depends on the contributions of our executive officers as well as our ability to attract and retain qualified sales, technical and other personnel. All of our employees, including our executive officers, are free to terminate their employment relationship with us at any time, and their knowledge of our business and industry may be difficult to replace. Qualified individuals are in high demand, particularly in the digital media industry and in the San Francisco Bay Area, where our headquarters is located, and in New York, and we may incur significant costs to attract them. If we are unable to attract and retain our executive officers and key employees, we may not be able to achieve our strategic objectives, and our business could be harmed. We use share-based and other performance-based incentive awards such as restricted stock units and cash bonuses to help attract, retain, and motivate qualified individuals. If our share-based or other compensation programs cease to be viewed as competitive and valuable benefits, our ability to attract, retain, and motivate employees could be weakened, and our business could be harmed.

If we cannot maintain our corporate culture as we grow, we could lose the innovation, teamwork and focus that contribute crucially to our business.

We believe that a critical component of our success is our corporate culture, which we believe fosters innovation, encourages teamwork, cultivates creativity and promotes focus on execution. We have invested substantial time, energy and resources in building a highly collaborative team that works together effectively in a non-hierarchical environment designed to promote openness, honesty, mutual respect and pursuit of common goals. As we continue to develop the infrastructure of a public company and grow, we may find it difficult to maintain these valuable aspects of our corporate culture. Any failure to preserve our culture could negatively impact our future success, including our ability to attract and retain employees, encourage innovation and teamwork and effectively focus on and pursue our corporate objectives.

The impact of worldwide economic conditions, including the effect on advertising budgets and discretionary entertainment spending behavior, may adversely affect our business and operating results.

Our financial condition is affected by worldwide economic conditions and their impact on advertising spending. Expenditures by advertisers generally tend to reflect overall economic conditions, and reductions in spending by advertisers could have a serious adverse impact on our business. In addition, we provide an entertainment service, and payment for our Pandora One subscription service may be considered discretionary on the part of some of our current and prospective subscribers or listeners who may choose to use a competing free service or to listen to Pandora without subscribing. To the

extent that overall economic conditions reduce spending on discretionary activities, our ability to retain current and obtain new subscribers could be hindered, which could reduce our subscription revenue and negatively impact our business.

Our business is subject to the risks of earthquakes, fires, floods and other natural catastrophic events and to interruption by man-made problems such as cybersecurity incidents or terrorism.

Our systems and operations are vulnerable to damage or interruption from earthquakes, fires, floods, power losses, telecommunications failures, terrorist attacks, acts of war, human errors, break-ins or similar events. For example, a significant natural disaster, such as an earthquake, fire or flood, could have a material adverse effect on our business, operating results and financial condition, and our insurance coverage may be insufficient to compensate us for losses that may occur. Our principal executive offices are located in the San Francisco Bay Area, a region known for seismic activity. In addition, acts of terrorism could cause disruptions in our business or the economy as a whole. Our servers may also be vulnerable to computer viruses, cybersecurity incidents and similar disruptions caused by unauthorized tampering with our computer systems, which could lead to interruptions, delays, loss of critical data or the unauthorized disclosure of confidential customer data. Our business interruption insurance may be insufficient to compensate us for all such losses. As we rely heavily on our servers and the internet to conduct our business and provide high quality service to our listeners, such disruptions could negatively impact our ability to run our business, resulting in a loss of existing or potential listeners and advertisers and increased maintenance costs, which would adversely affect our operating results and financial condition.

We may not have sufficient cash flow from our business to make payments on our indebtedness.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including our 1.75% convertible senior notes due 2020 (the "Notes"), depends on our performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

The conditional conversion feature of the Notes, if triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Notes is triggered, holders of Notes will be entitled to convert the Notes at any time during specified periods at their option. See ‘‘Note 7-Debt Instruments-Convertible Debt Offering.’’ If one or more holders elect to convert their Notes, we may elect to satisfy our conversion obligation in whole or in part through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

The accounting method for convertible debt securities that may be settled in cash, such as the Notes, could have a material effect on our reported financial results.

Accounting Standards Codification Subtopic 470-20 (ASC 470-20), Debt with Conversion and Other Options, requires an entity to separately account for the liability and equity components of convertible debt instruments (such as the Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer’s economic interest cost. The effect of ASC 470-20 on the accounting for the Notes is that the equity component of the Notes is required to be included in the additional paid-in capital section of stockholders’ equity on our consolidated balance sheet, and the value of the equity component is treated as original issue discount for purposes of accounting for the debt component of the Notes. As a result, we will be required to recognize a greater amount of non-cash interest expense current and future periods presented as a result of the amortization of the discounted carrying value of the Notes to their principal amount over the term of the Notes. We will report lower net income (or greater net losses) in our consolidated financial results because ASC 470-20 will require interest to include both the current period’s amortization of the original issue discount and the instrument’s coupon interest, which could adversely affect our reported or future consolidated financial results, the trading price of our common stock and the trading price of the Notes.

In addition, under certain circumstances, in calculating earnings per share, convertible debt instruments (such as the Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares of common stock issuable upon conversion of the Notes, if any, are not included in the calculation of

diluted earnings per share except to the extent that the conversion value of the Notes exceeds their principal amount. Under the treasury stock method, diluted earnings per share is calculated as if the number of shares of common stock that would be necessary to settle such excess, if we were to elect to settle such excess in shares, were issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Notes (if any) then, to the extent we generate positive net income, our diluted consolidated earnings per share would be adversely affected.

Risks Related to Owning Our Common Stock

Our stock price has been and will likely continue to be volatile, and the value of an investment in our common stock may decline.

The trading price of our common stock has been and is likely to continue to be volatile. In addition to the risk factors described in this section, and elsewhere in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K for the year ended December 31, 2015, additional factors that may cause the price of our common stock to fluctuate include, but are not limited to:

- our actual or anticipated operating performance and the operating performance of similar companies in the internet, radio or digital media spaces;
- our ability to grow active users and listener hours;
- competitive conditions and developments;
- our actual or anticipated achievement of financial and non-financial key operating metrics;
- general economic conditions and their impact on advertising spending;
- the overall performance of the equity markets;
- threatened or actual litigation or regulatory proceedings, including the recently concluded rate proceedings in the CRB;
- changes in laws or regulations relating to our service;
- any major change in our board of directors or management;
- publication of research reports about us or our industry or changes in recommendations or withdrawal of research coverage by securities analysts; and
- sales or expected sales of shares of our common stock by us, and our officers, directors and significant stockholders.

In addition, the stock market has experienced extreme price and volume fluctuations that often have been unrelated or disproportionate to the operating performance of affected companies. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in substantial costs, divert our management's attention and resources and harm our business, operating results and financial condition.

If securities or industry analysts cease publishing research about our business, publish inaccurate or unfavorable research about our business, or make projections that exceed our actual results, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If securities or industry analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline. Furthermore, such analysts publish their own projections regarding our actual results. These projections may vary widely from one another and may not accurately predict the results we actually achieve. Our stock price may decline if we fail to meet securities and industry analysts' projections.

Our charter documents, Delaware law and certain terms of our music licensing arrangements could discourage takeover attempts and lead to management entrenchment.

Our certificate of incorporation and bylaws contain provisions that could delay or prevent a change in control of the Company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of our board of directors, our president, our secretary, or a majority vote of our board of directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 2⁄3% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our certificate of incorporation relating to the issuance of preferred stock and management of our business or our bylaws, which may inhibit the ability of an acquiror to effect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our board of directors, by majority vote, to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquiror to amend the bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

Section 203 of the Delaware General Corporation Law governs us. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

In addition, if we are acquired, certain terms of our music licensing arrangements, including favorable rates for content acquisition costs that currently apply to us, may not be available to an acquiror. These terms may discourage a potential acquiror from making an offer to buy us or may reduce the price such a party may be willing to offer.

Item 6. Exhibits

Exhibit No.	Exhibit Description	Incorporated by Reference					Filed Herewith
		Form	File No.	Exhibit	Filing Date	Filed By	
3.01	Amended and Restated Certificate of Incorporation	S-1/A	333-172215	3.1	4/4/2011		
3.02	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	10-Q	001-35198	3.02	7/26/2016		
3.03	Amended and Restated Bylaws	S-1/A	333-172215	3.2	4/4/2011		
3.04	Certificate of Amendment to the Amended and Restated Bylaws	10-Q	001-35198	3.04	7/26/2016		
31.01	Certification of the Principal Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
31.02	Certification of the Principal Financial Officer Pursuant to Rule 13a-14 (a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
32.01	Certification of the Principal Executive Officer and Principal Financial Officer Pursuant to 8 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
101. INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document						X
101. SCH	XBRL Taxonomy Schema Linkbase Document						X
101.CAL	XBRL Taxonomy Calculation Linkbase Document						X
101. DEF	XBRL Taxonomy Definition Linkbase Document						X
101.LAB	XBRL Taxonomy Labels Linkbase Document						X
101.PRE	XBRL Taxonomy Presentation Linkbase Document						X

† Indicates management contract or compensatory plan.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, Pandora Media, Inc. has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PANDORA MEDIA, INC.

Date: October 27, 2016

By: /s/ Michael S. Herring

Michael S. Herring
President and Chief Financial Officer
(Duly Authorized Officer and Principal Financial and Accounting Officer)

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Section 2: EX-31.01 (EXHIBIT 31.01)

Exhibit 31.01

Certification of Principal Executive Officer
Pursuant to Rule 13a-14(a)/15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Tim Westergren, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Pandora Media, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report, based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are

reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

October 27, 2016

/s/ Tim Westergren

Name: Tim Westergren

Title: *Chief Executive Officer (Principal Executive Officer)*

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Section 3: EX-31.02 (EXHIBIT 31.02)

Exhibit 31.02

Certification of Principal Financial Officer
Pursuant to Rule 13a-14(a)/15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Michael S. Herring, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Pandora Media, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report, based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

October 27, 2016

/s/ Michael S. Herring

Name:	Michael S. Herring
Title:	*President and Chief Financial Officer (Principal Financial Officer)*

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Section 4: EX-32.01 (EXHIBIT 32.01)

Exhibit 32.01

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF SARBANES-OXLEY ACT OF 2002

The certification set forth below is being submitted in connection with this Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 (the "Report") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Each of the undersigned certifies that, to his knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Pandora Media, Inc.

October 27, 2016

/s/ Tim Westergren

Name:	Tim Westergren
Title:	*Chief Executive Officer (Principal Executive Officer)*

/s/ Michael S. Herring

Name:	Michael S. Herring
Title:	*President and Chief Financial Officer (Principal Financial Officer)*

This certification accompanying the Report is not deemed filed with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities such Section, and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before, on or after the date of the Report), irrespective of any general incorporation language contained in such filing.

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Spotify – Growth is accelerating

September 2016

GP.Bullhound

SPOTIFY – GROWTH IS ACCELERATING

Our updated valuation thesis by 2020

"BASE CASE: 100M PAYING USERS $20 BN VALUATION"
"BEST CASE: 100M PAYING USERS $53 BN VALUATION"

UPDATE

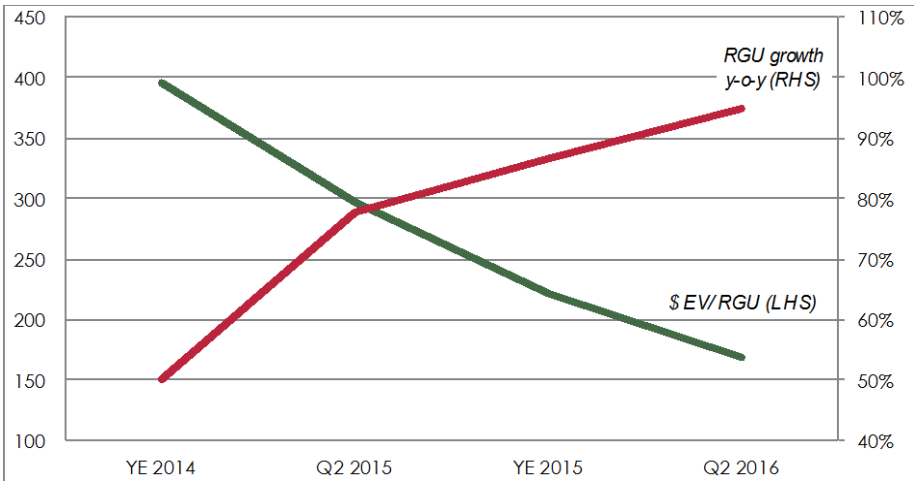
- Spotify is trending towards 50m paying users in 2017, our previous Base Case
- We believe Spotify will have more than 100m paying users before 2020, our new Base Case
- We think a US IPO in 2017 is likely but also don't discard the possibility of a sale to Facebook
- In September 2015 we said "Apple music launch will increase growth of streaming industry"
    - US streaming music revenues accelerated to +46% growth in 2015 vs +27% growth in 2014
- In September 2015 we said "Spotify likely to benefit from Apple's halo effect"
    - Spotify's paying user base now grows with 2m/month, previously 1m/month
    - The growth in paying users has accelerated to almost 100% while valuation has not moved
- Spotify has maintained its position as the best-of-class streaming service globally, therefore we view Netflix as the best comparable, trading at +5x LTM sales
- At a 2017 IPO, Spotify is likely to have 5 BUSD in annualized revenue with more than 50m paying and more than 100m non-paying users
- Our target 2017 IPO valuation range for Spotify is between 15-20 BUSD
- Our new Best and Base case both factor in 100m paying users but different margins and valuations
- The long-term case for Spotify is now more about profitability and valuation multiples
- Short term margin uplift hinges on outcome of current label negotiations
- Growing the video content business and implementing best-of-class social features is key to reaching our Best Case scenario

Scenario overview

	Base	Best
IMPLIED MARKET CAP	**$20 Bn**	**$53 Bn**
Paying users (M)	100	100
Revenue per paying user ($/year)	89	89
Paying user revenue ($ M)	8,864	8,864
Revenue non-paying user ($/year)	10	14
Non-paying users (M)	200	200
Ad revenues ($ M)	2,000	2,800
Ad revenue %	18.4%	24.0%
TOTAL REVENUES	**10,864**	**11,664**
COGS paying users	-6,825	-6,763
COGS ad revenueus	-1,000	-1,400
TOTAL COGS	**-7,825**	**-8,163**
Gross margin	*28%*	*30%*
EBIT	**866**	**1,984**
EBIT %	*8.0%*	*17.0%*
EBITDA	**975**	**2,101**
EBITDA %	*9.0%*	*18.0%*
EV/EBITDA multiple	20x	25x
Enterprise Value	19,491	52,528
Net debt	-200	-200
Market cap	19,691	52,728
NOSO FD (M)	4.2	4.2
Share price	4,636	12,415
Return from $1800	2.6x	6.9x
Implied EV/Revenue	1.8x	4.5x
Implied EV/Gross profit multiple	6.4x	15.0x
Implied EV/EBIT multiple	22.5x	26.5x

Source: annual reports, CapitalIQ, GP Bullhound analysis

Revenue generating user (RGU) overview



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How Spotify ceo Daniel Ek failed his way to success

RSS (/blog/rss.xml)

15 December 2016

Written by Frederik Tibau (/team/frederik-tibau/13)

Spotify's misjudgment about the impact of mobile could have driven the company out of business in 2013. At Slush, founder and ceo Daniel Ek spoke freely about the mistakes he made over the last decade. "Making mistakes is ok, if you make them quick and cheap."

Spotify (https://www.spotify.com/be-nl/) ceo Daniel Ek rarely gives public interviews, so he's session at Slush (http://www.slush.org/) in Helsinki drew a lot of attention. Ek took part in a 'Failing Forward' - themed panel alongside Ilkka Paananen of mobile games specialist Supercell and Niklas Zennström, the Skype co-founder turned investor. Our very own Robin Wauters (Tech.eu (https://data.startups.be/actors/AVZiTuiKPkYizcTKqqa8)) got to ask the questions.

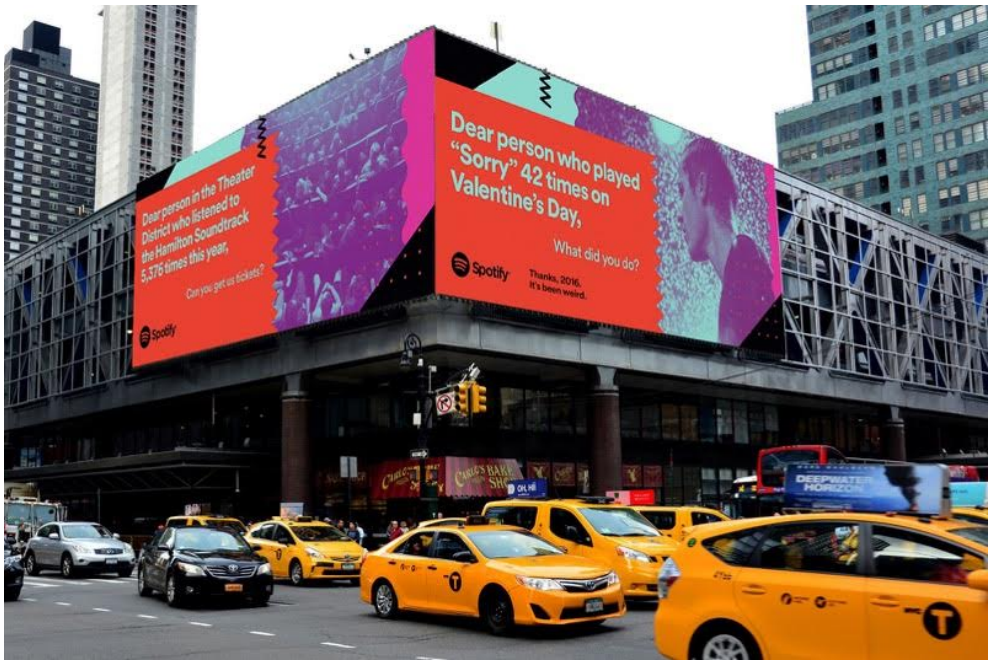
Here are eight key takeaways from Ek's part in the panel.

1. Face your strategic mistakes, and move fast to fix things

Daniel Ek: "For a very long time, Spotify disregarded the impact of mobile. Desktop was king and we hadn't even licensed a mobile product other than a premium one. That's because **we looked at the world as a place where everyone would use desktop and smartphone together.** We figured it was a great idea to 'upsell' the mobile product."

"For a long period, that was great because whenever people wanted to use Spotify on a mobile device, they had to pay for the product. But because we adopted a freemium model, we're highly dependent on also having free users engage with the service. As the world moved towards mobile, obviously that free part of the funnel disappeared."

"Most of our investors saw our revenue numbers and conversion rate go through the roof, while we were realizing that **we made a strategic mistake and we had to reinvent the entire company to fix it.** It took us 18 months, as we had to go back to the music industry and tell them that the thing we used to charge money for needed to be given for free as well. That was not an easy sell. We told our partners that we would figure out a new way for people to pay for this product."



"It was like switching out the engines mid-flight. **But if we wouldn't have done it, six months later we might have died as a company**. That really was a defining moment and that was as late as 2013. For what it's worth: I think that every great company has at least three near-death experiences."

"Many people talk about the willingness to have failures, but I hate failures. I don't think you should strike to make failures. I think it's ok to make mistakes, but by the time they become real failures, you probably should have discovered them."

"The way I think about this is that we constantly must make bets where we could be wrong about the tactics, but hopefully we wouldn't be wrong about the goal. If we are quick and agile, we can move fast to fix things. So, we did make mistakes along the way but the whole project didn't end up becoming a failure."

2. Make a few strategic bets instead of doing 100 things and hope for the best

"As you become bigger, one of the problems you are going to face is that you need to be growing at 100% or more for multiple years, especially when you have VC's investing in you."

"What is going to happen if you get any kind of traction is that the law of gravity will start pulling you down. It gets harder and harder to grow fast. So actually, you are going to make bigger and bigger bets to even have a remote chance of making that growth number."

"After a while you might start making lots of small bets in the hope that some of them turn out big, or you just make substantially bigger bets in size but make fewer of them. There are quite a few companies that do a lot of small bets - and some of them play out - and then there are some, like Amazon, who say, 'Hey, India is a big bet for us' and then put in a couple of billion dollars and hope for the best in a couple of years' time."

"I think we are definitely trying to find our way, but **we never liked doing 100 things at once and hope for the best. I can't even come up with even 100 different goals**, so I'd rather make a few strategic bets and make sure that we don't fail on those."

"That, I think, is a very important distinction that I don't see startup entrepreneurs getting. Failure is not something you should strive for. Making mistakes is ok, if you make them quick and cheap."

3. Try to cope with your low-variance problems

"I look at the choices that an entrepreneur has to make and I segment them into low-variance problems and high-variance problems. One of the mistakes entrepreneurs make is this: as a larger company, the easiest thing to invest in is the low-variance problems. Low-variance problems are the ones which bring relatively little benefits when you're best in class, but there is a tremendous amount of downside if you don't do them well enough."

"The perfect example is paying salaries. If you are the best in the world at paying salaries, the benefits in being the best versus being just ok are not that high. People just expect to get paid on a certain date. But if you miss that date, then you are screwed. It is really, really bad and you have a severe morale issue."

"I find that most entrepreneurs are pretty good in the high-variance bucket, but it's the low-variance part that we under-invest in. As an example, **until recently - and I didn't pay much attention to this - we were running on an ERP system that stopped being supported by Microsoft in 2001**. We are still running that thing even to this day."

"We are probably 10 times bigger now than anyone who has ever used that thing, so the cost for us to switch are very high. 200 people are working on this for a while now. What was a pretty trivial decision back then now turns into this multi-year thing where we have to migrate everyone over to this new system and keep the two systems running in parallel."

4. Never underestimate HR

"Another issue for us has been HR. For a long time, I was the only HR person at Spotify, and I didn't see the value in it - despite having hundreds of employees. So, you under-invest in that stuff."

"You can see on Glassdoor that our ratings as a company were pretty terrible until we started investing in HR to formalize some of those processes and get better at how we set salaries to be fair and just to people. That's when our scores started to increase. If you miss your window, those things can go wrong terribly and become very expensive."

5. A ceo must change jobs every two years

"There are different skill sets for every phase of a company. One for when you have just started the company, one for when you are 50 people, one for when you are 150 people, one for when you are 1,000 people and one for when you are 10,000 people."

"I usually tell people that I change jobs every two years. **I started as the janitor, then I became the product guy, then I became the HR person, then I became the content person** who negotiated all the deals. There are many phases through a company's existence where you, as the founder, must wear many different hats, and that's really hard. You must be versatile as a person to be able to do that. I think this is what people get wrong."

6. The best projects come from people who click

"We have to cut through all the bullshit and focus on what is important, which is creating the best possible product and creating the best possible value for our customers. Those things *and* building a team to do it."

(Photograph: Andrew Matthews/PA (https://www.theguardian.com/technology/2016/oct/06/spotify-hit-by-malvertising-in-app))

"I acquire companies now, and part of my innovation - and part of the things you see that you probably love most about Spotify - comes from companies we have acquired. What I look for is a team, three or four people, who are tightly knit and have worked together before. Whatever projects we do, **the best-performing projects inside of the company come from three or four people who click**. Ideally they have worked together before."

7. Your first employees are the most important hires you'll make

"In the early days, you typically hire people that you know that are good. You don't put vacancies on a job board. If you chose the first people you hire very carefully, you'll pass the first 'life or death'-faze of your company. That is the most important thing that we look for when we acquire companies and pull them in: getting the right team."

"The second thing is getting that team to fulfill the right mission. 'Mission' would probably be translated into 'being stubborn on the vision and the problem you are trying to solve, but being flexible on the details of how you are solving that problem'. Those are the two most important things for us."

"You have to screen for factors like passion when recruiting. I am not saying that everyone in Spotify is hardcore into music. That's not important. Sometimes the mission itself can be interpreted differently by individuals, it could be a subset of the mission that is super-appealing to someone."

"If you are a data scientist, you may not care that much about music, but you care about how people interact with music, and that becomes the thing that latches you on and makes you feel that this is something you need to understand."

8. Grow up and get your priorities right!

"People talk a lot about the culture, and they talk about the culture when it changes or want the culture to remain like what was when it began. That is not the culture we have at Spotify. I was 23 when I started our company; I am 33 now. **I was single and 23 and spraying champagne on people in bars in downtown Stockholm. Today I am semi-**

boring. I have two kids at home, I go home and watch Homeland and do emails, fall asleep and start over again. The point being is that I am a different person. I think I roughly have the same values but I have grown and matured."

"I used to think that people who went and picked up their kids from daycare were losers and were checking out too early. That's the truth. Whereas today I have a totally different appreciation for how and why that is important and why a rich life/work balance is super-important. The company culture changes over time as you, as a founder or a CEO, also change with the company."

"**Eventually you realize that Silicon Valley has its priorities all wrong and the Nordics have theirs right.** The things that were necessarily important to Spotify at the beginning aren't identically important to the company today. It is not important that we have people sleeping under their desks. In fact, we say that's the culture we don't want. People do better things and are more creative when their life is balanced."

"That is a very big difference from where we were in the beginning, as it was super-important then as we only had so many people that everyone put in 12-hour work days and we were inspired by things we saw in San Francisco."

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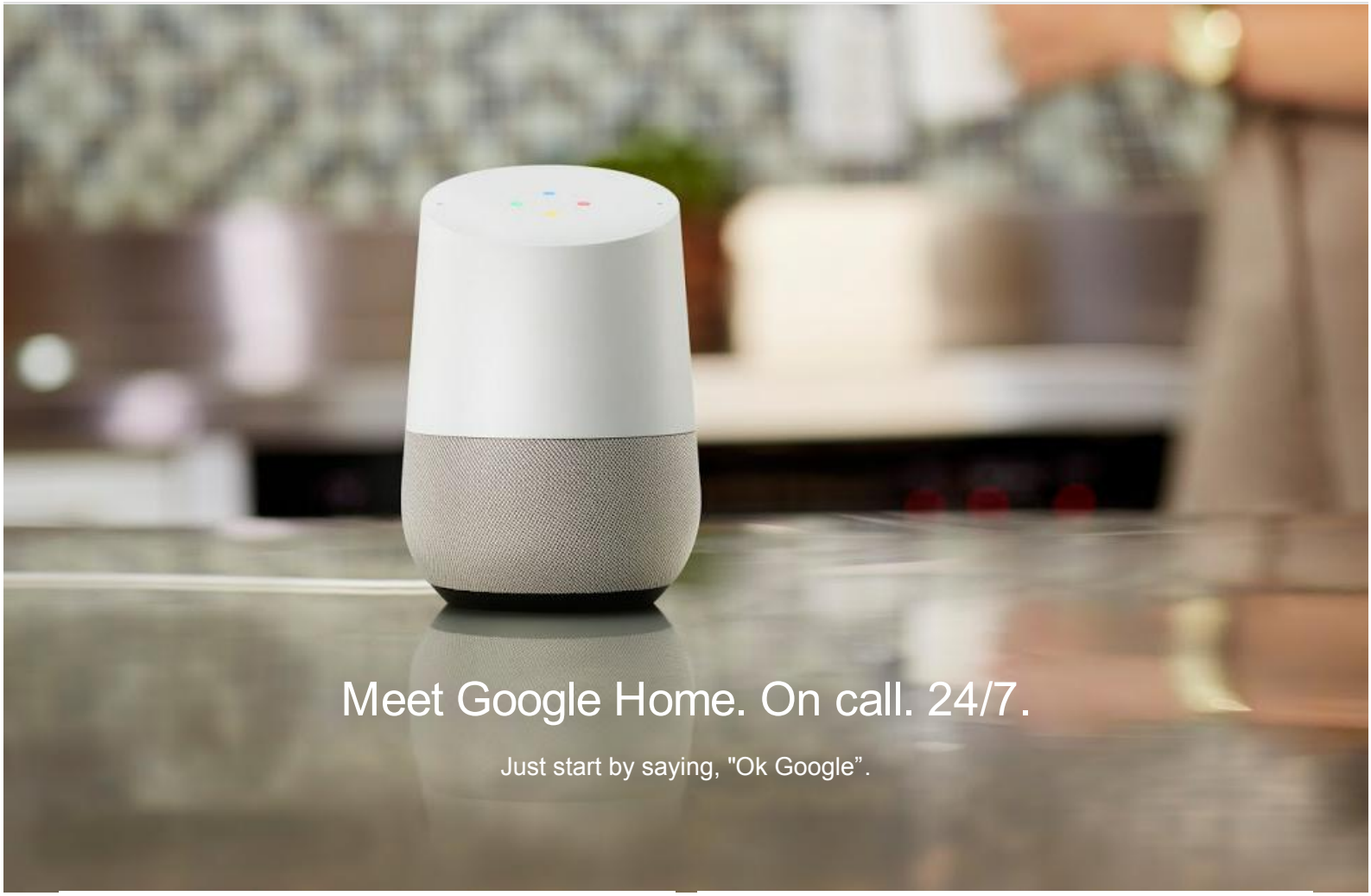

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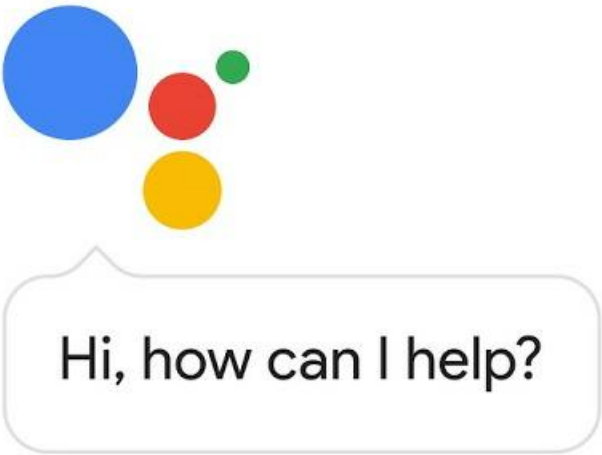

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“Ok Google, play music by

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“Ok Google, what’s ‘good morning’ in French?”

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"Ok Google, what is 18% of 92?" to finish up last-minute homework, or "Ok Google, how many teaspoons in a cup?" when you have flour-covered hands in the kitchen.

"Ok Google, how long will it take to get to work?"

Manage your everyday tasks with Google Home — get your daily schedule, traffic, and flight info. Set an alarm by saying, "Ok Google, wake me up tomorrow at 6:30am," or tell it to add things to your shopping list, start a timer, and more.

“Ok Google, set the thermostat to 68 degrees”

Google Home seamlessly connects with smart home technologies like Nest thermostats, Philips Hue, and Samsung SmartThings. So you can say things like, “Ok Google, dim the lights in the kitchen” without interrupting what you’re doing. You can also tell it to stream entertainment to your TV with Chromecast.

Superior sound and voice technology

Google Home works over Wi-Fi and its integrated high-excursion speaker delivers crystal-clear highs and rich bass for hi-fi sound. It can also hear you reliably when you say “Ok Google" — even while playing music — thanks to far-field microphones and sophisticated natural language processing.

Versatile by design

Google Home is crafted to fit naturally in many areas of your home. You can customize the base with different colors and finishes to reflect your personal style. Slate fabric base included; additional colors sold separately.

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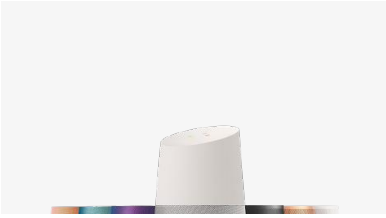

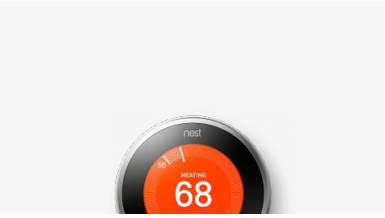

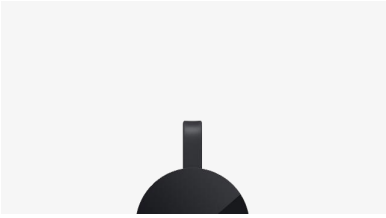

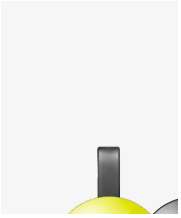

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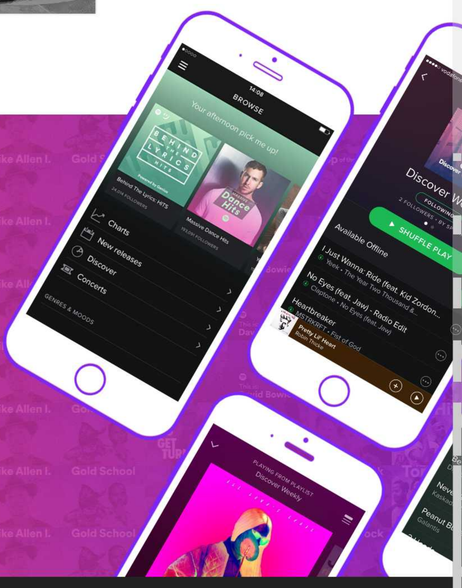

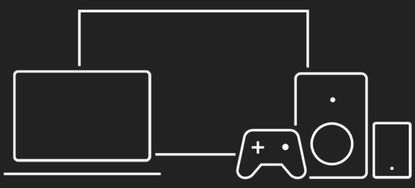

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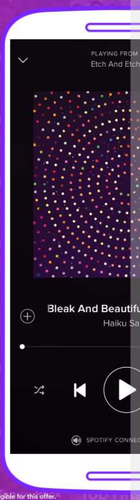

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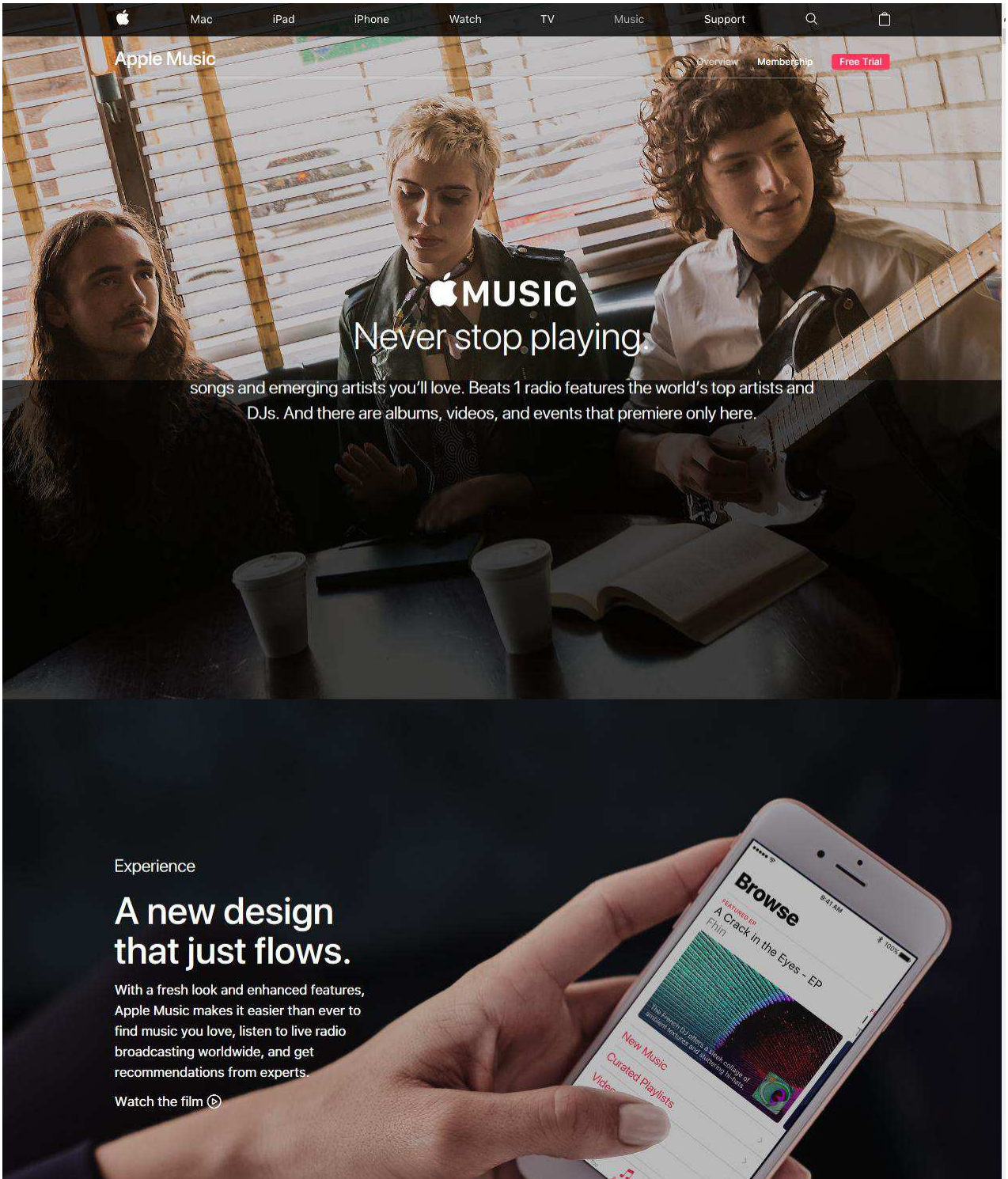
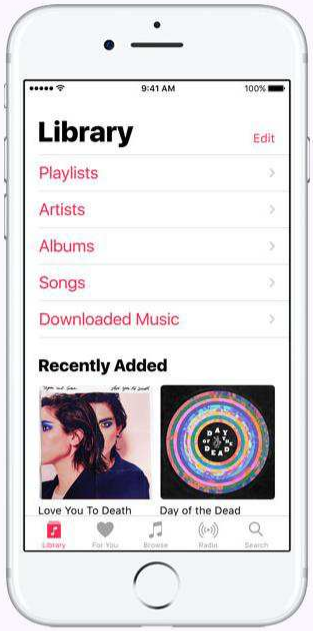

Mac
iPad
iPhone
Watch
TV
Music
Support
Apple Music
Overview
Membership
Free Trial
MUSIC
Never stop playing.
songs and emerging artists you'll love. Beats 1 radio features the world's top artists and DJs. And there are albums, videos, and events that premiere only here.
Experience
A new design that just flows.
With a fresh look and enhanced features, Apple Music makes it easier than ever to find music you love, listen to live radio broadcasting worldwide, and get recommendations from experts.
Watch the film
Browse
A Crack in the Eyes - EP
New Music
Curated Playlists



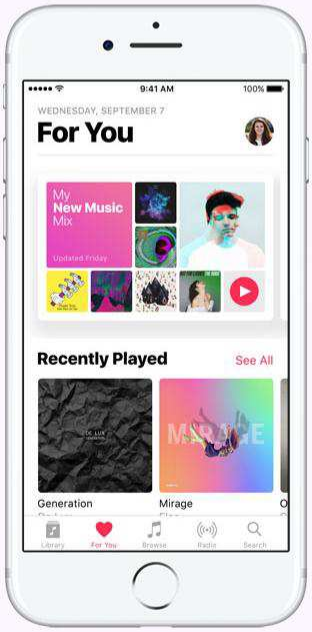
Library

All your music, old and new, lives in your Apple Music library. The songs and albums you've collected, the playlists you've created, the artists and tracks you discover in the huge Apple Music catalog — it's all here, clearly arranged by category.

Downloaded music
Even when you're offline, you can still listen to your music. Simply download the songs or playlists you want, and they'll appear in their own category.

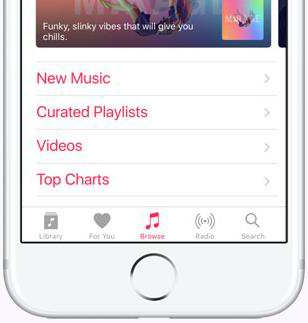
For You

Discover albums and playlists curated by our team of experts to match your musical tastes, updated daily. You'll also see what you've been playing recently, as well as posts from your favorite artists.



Browse

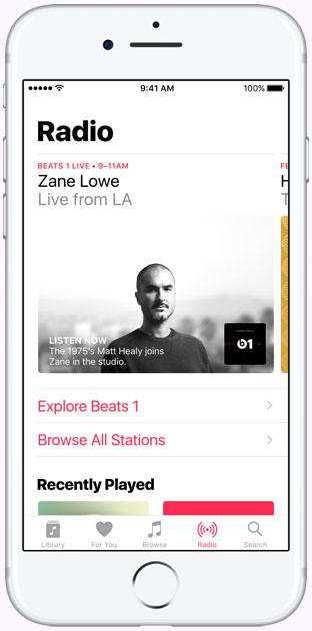
Here's your ticket to the best of Apple Music. An

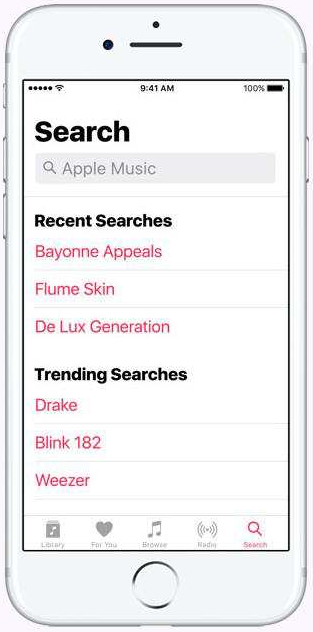


intuitive layout lets you quickly find new releases, chart-toppers, and exclusive content. Or listen to playlists that match your mood and activity.

Radio

Tune in to Beats 1, an innovative radio station hosted by the world's best artists and DJs. Listen live for free or join Apple Music and hear any past show on demand. Explore the wide range of our curated radio stations. Or create your own stations built around your favorite songs or artists.

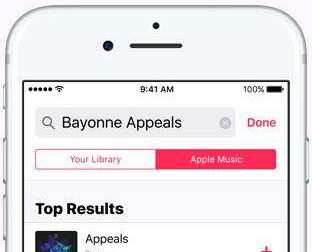




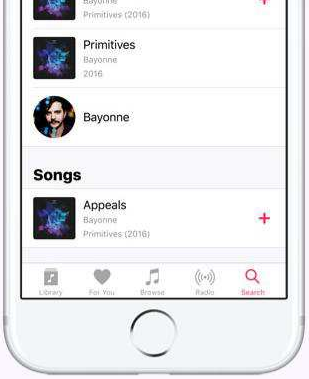
Search

Seek and you shall find — and more easily than ever, because you can quickly switch between searching your own library and the Apple Music catalog. You'll see recent searches too, along with what's trending.

Now Playing



The redesigned music player has been simplified to include just the commands you use most often. Whatever you want to know or do is just a tap or click away.



Lyrics

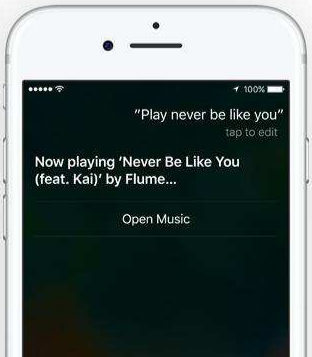
You no longer have to leave Apple Music to find the lyrics to a song. Just swipe up while a track plays and you'll see them. Feel free to sing — or shout, rap, belt, croon, or whisper — along.

Siri. Your personal DJ.

You already ask Siri for all kinds of things like directions and information. Now Siri takes your music requests, too.

"What's the top song right now?"

"Who sings Elastic Heart?"



"Play something from my heavy rotation"

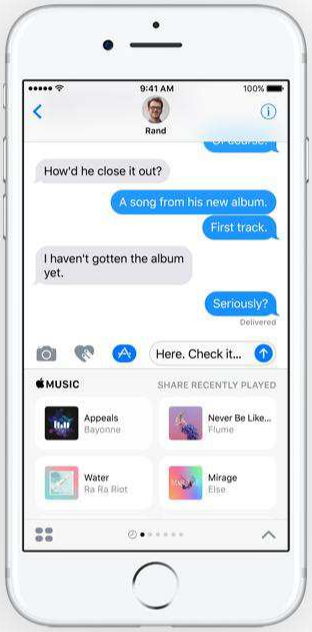
"Play the live version of this song"

"Play something that's just for me"

"Tell me about this album"

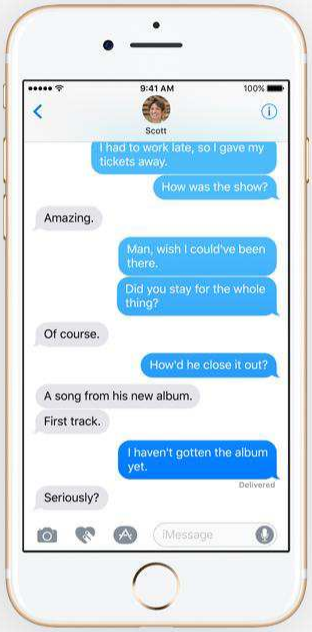
"When was this released?"

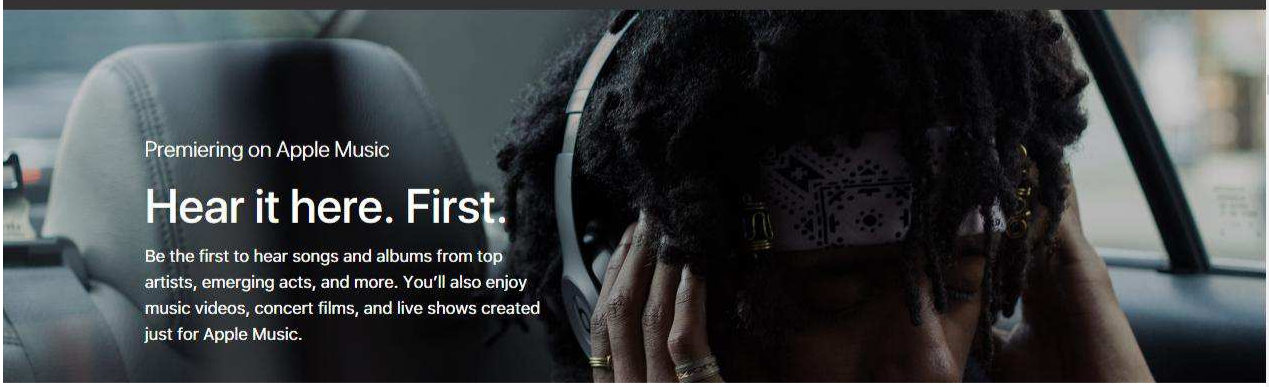
"How many songs are on this album?"



Say it with a song.

Make a great discovery? Share it with friends through email, social media, or text messages. And if they're Apple Music members, they can play it right on their devices.

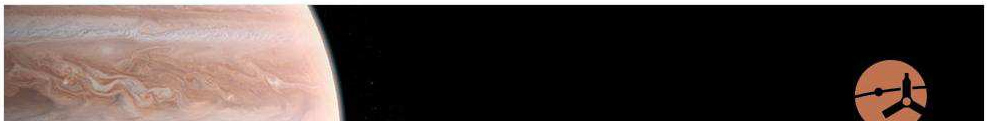




Premiering on Apple Music

Hear it here. First.

Be the first to hear songs and albums from top artists, emerging acts, and more. You'll also enjoy music videos, concert films, and live shows created just for Apple Music.



Celebrating

Juno (Destination Jupiter)

Learn more ↗

Curiosity. It's the spark that ignites extraordinary art and visionary science. Apple is collaborating with NASA to provide education and inspiration throughout the Juno Mission's historic journey to Jupiter.

Album

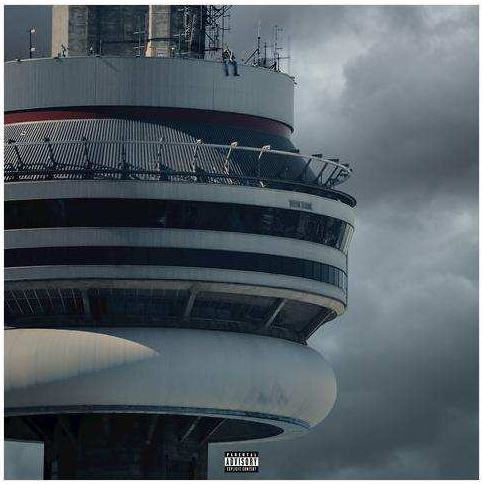
DJ Khaled - Major Key

Play it now with your free trial ↗

Single

Katy Perry - Rise

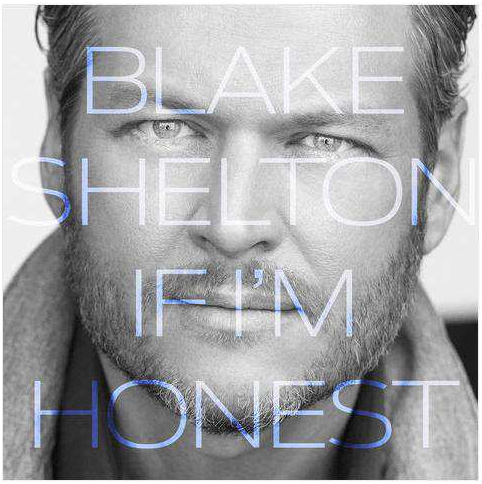
Play it now with your free trial ↗



Album

Drake - Views

Play it now with your free trial ↗



Album

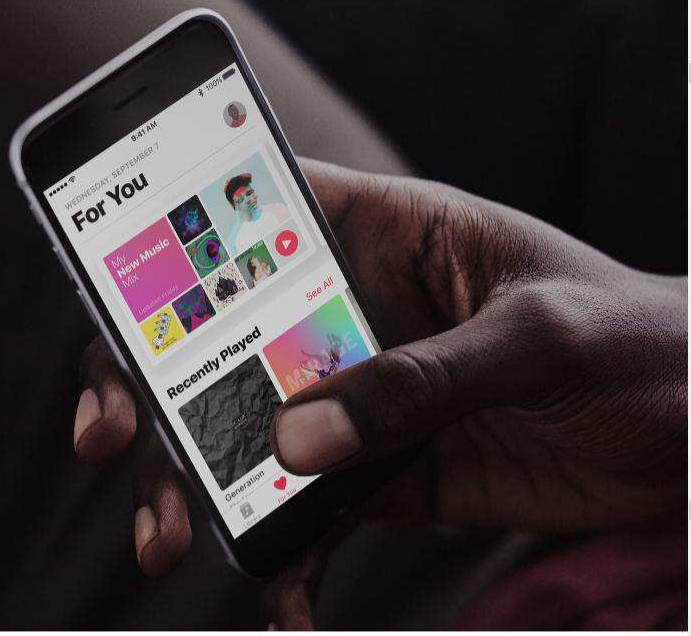
Blake Shelton - If I'm Honest

Play it now with your free trial ↗

Songs and Playlists

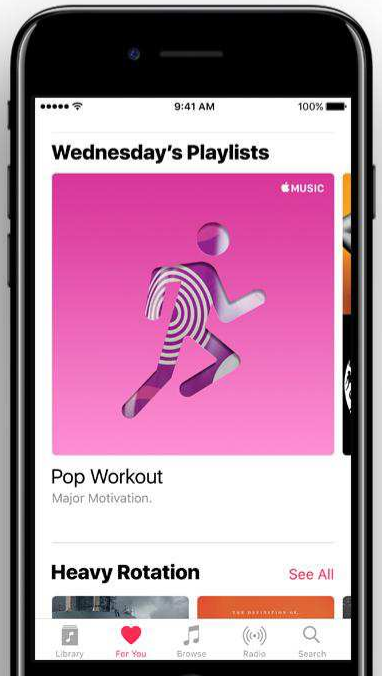
The music you love now. The music you'll love next.

All your music, no matter where it came from, lives in your Apple Music library. And we've made it easier than ever to search, explore, and listen to all of it. But we've also made it easy to find new music. Our team of experts — people who live and breathe music — scour the globe to find the artists, songs, and albums you'll love tomorrow.



Your songs and playlists come with you.

Every song, album, and playlist you've ever added to your iTunes library is in your Apple Music library — whether it was purchased from the iTunes Store, imported from a CD, or downloaded from a music blog.



Playlists curated by experts.

Our team of music experts is constantly creating playlists with great new music they've discovered, along with hidden gems from your old favorites.

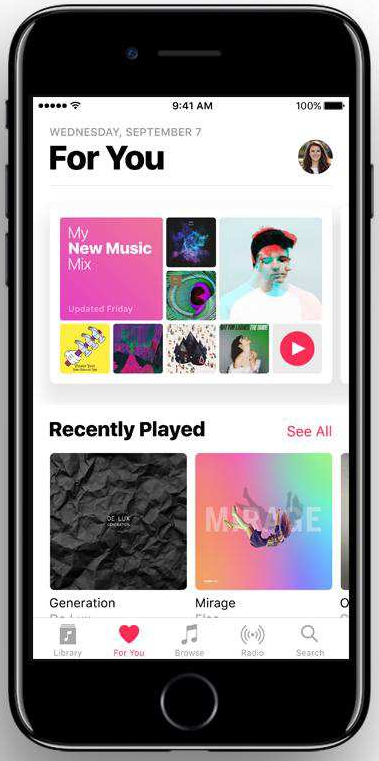
New Artists
A rehearsal studio in Williamsburg. A dive bar in Deep Ellum. A basement in Toronto. Our team is out there discovering the next great talents. And Apple Music is where you'll hear them first.

The A-Lists
Our editors create handpicked playlists with the best new music in each genre, updated frequently and always surprising.

Themes
Want to listen to all the songs that sample Nina Simone? Or tracks from bands that contain the original members of Blur? Our editors have found them, and you can hear them.

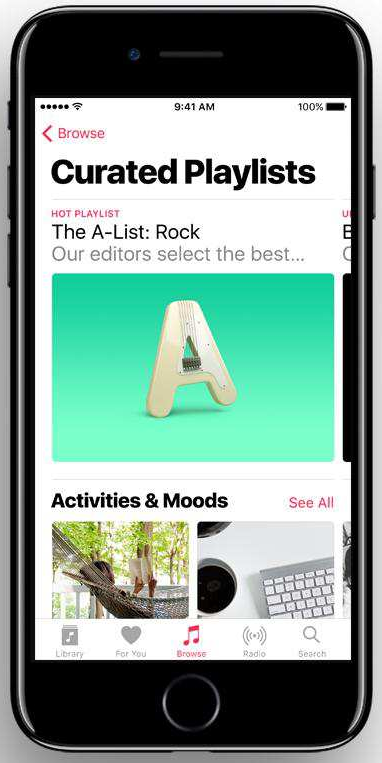
Playlists created just for you.

Your taste in music is constantly evolving, and Apple Music keeps up with it. Every week we create a specially tailored playlist with songs inspired by the music you listen to.



My New Music Mix

Discover new music from artists we think you'll like. Every Friday you'll get a fresh playlist of great and unexpected tracks that you may not have otherwise discovered.



Playlists for every moment.

Get the perfect playlist for any activity and any mood. Every mix is carefully compiled, and each song flows naturally from the one before.

Activities

Everything deserves a soundtrack. And now everything has one — whether it's cooking, running, dancing, working out, or kicking back.

Moods

Listen to music that matches your feelings, from relaxing to celebrating and everything in between.

Listen to original shows hosted by some of the biggest artists and DJs from around the world — all for free. Miss a show? If you're a member, you can listen to any past program on demand. Into a specific genre? Members can choose from a wide range of music-only stations, each expertly curated and free of ads.

The top DJs are on Beats 1.

Zane Lowe

Zane's flagship show on Beats 1 combines an unparalleled music knowledge with headline interviews and the best new music in the world.

Ebro Darden

Ebro represents the sound of NYC — an urgent mix of hip-hop music and culture.

Julie Adenuga

London's influential voice of the underground, Julie celebrates the UK's restless music culture.

More Beats 1 shows.

Rocket Hour
with Elton John

The Pharmacy
with Dr. Dre

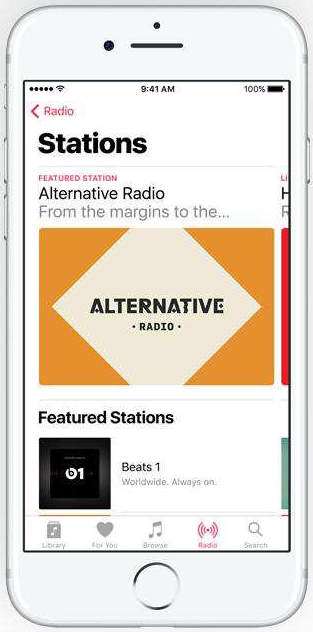
OTHERtone
with Pharrell Williams

Real Talk
with Mary J. Blige

See the full schedule ↗

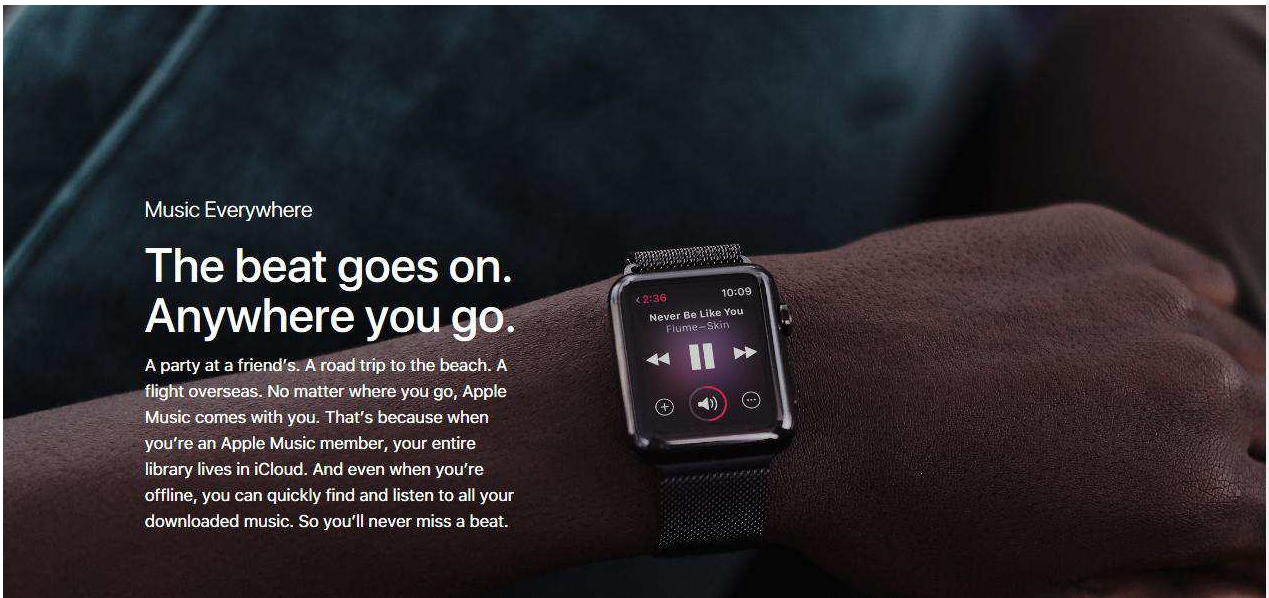
every genre.

You'll find a wide range of music stations curated by experts in their fields, covering every style from indie rock to classical. Each station digs deep into the Apple Music catalog and offers a thoughtful mix of a genre's best.



Be your own station manager.

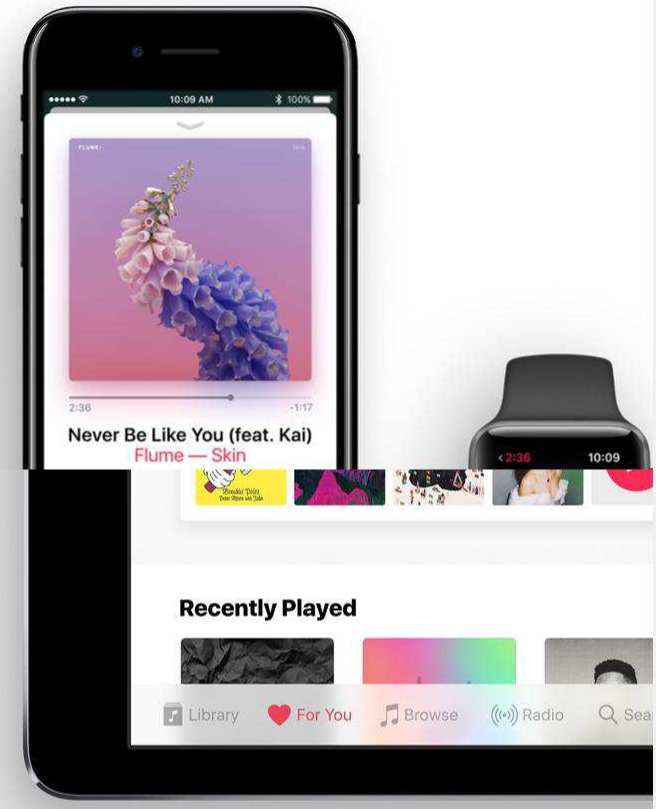
Select any song or artist and Apple Music can automatically create a station built around what you like. Then personalize it even more by choosing "play less like this" or "play more like this" for each song.



Music Everywhere

The beat goes on. Anywhere you go.

A party at a friend's. A road trip to the beach. A flight overseas. No matter where you go, Apple Music comes with you. That's because when you're an Apple Music member, your entire library lives in iCloud. And even when you're offline, you can quickly find and listen to all your downloaded music. So you'll never miss a beat.



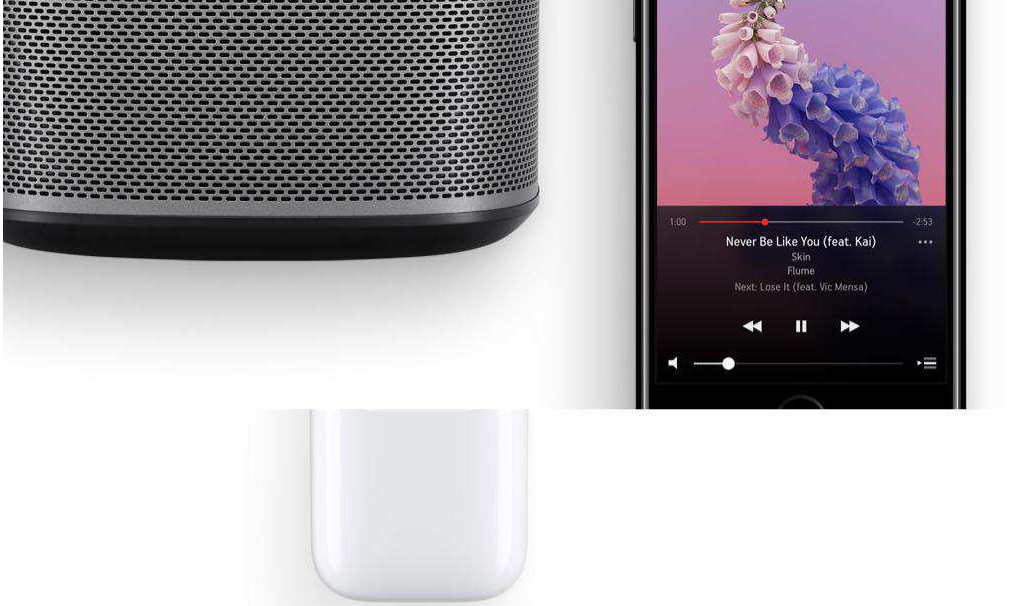
Play on. Even offline.

Go ahead and stream. But if you're in a place where a signal isn't readily available, you can easily see and play all your downloaded music. If you know you won't have a connection, simply download your songs and playlists in advance.

Apple Music and Sonos? Sounds good.

All your Apple Music playlists, artists, albums, and songs are right there in the Sonos app. Stream your favorite music to any room and fill your home with pure, immersive sound.

Download the Sonos app ↗



* New members only. Sign-up required. Membership automatically renews monthly after trial.

Music › Apple Music

Shop and Learn
Mac
iPad
iPhone
Watch
TV
Music
iTunes
iPod
Accessories
Gift Cards

Apple Store
Find a Store
Genius Bar
Workshops and Learning
Youth Programs
Apple Store App
Refurbished and Clearance
Financing
Reuse and Recycling
Order Status
Shopping Help

For Education
Apple and Education
Shop for College

For Business
Apple and Business
Shop for Business

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Manage Your Apple ID
Apple Store Account
iCloud.com

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Education
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More ways to shop: Visit an Apple Store, call 1-800-MY-APPLE, or find a reseller.

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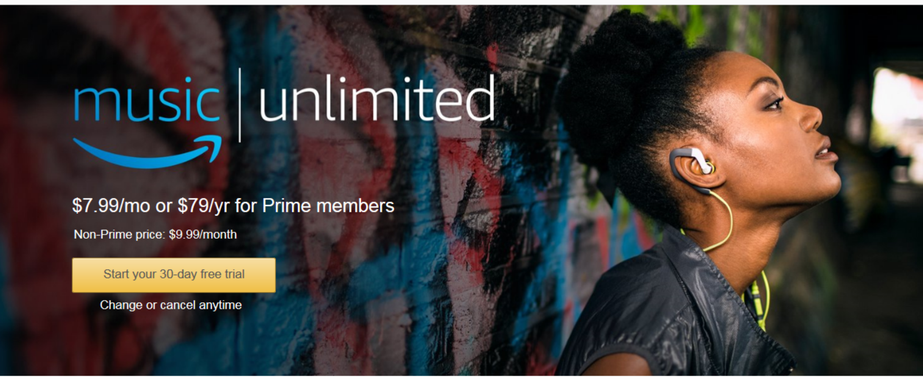

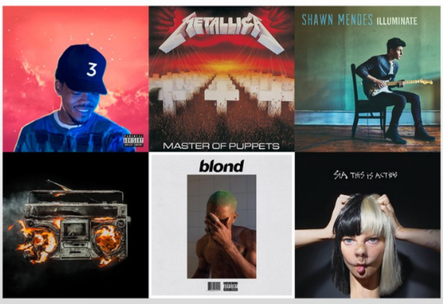

Any song, anywhere

Tens of millions of songs with new releases from today's most popular artists. Listen ad-free with unlimited skips. Download for offline listening.

Already using Prime Music?

Upgrade to Amazon Music Unlimited now to unlock tens of millions of songs, including the hottest new releases. Only $7.99/month or $79/year (12 months for the price of 10).

Better with Echo - Just ask

Play your favorite music with innovative Alexa voice controls, exclusive to Amazon Music.

- "Alexa, play the song with the lyrics..."
- "Alexa, play the song of the day."
- "Alexa, play happy pop music."
- "Alexa, play Rihanna's latest single."

Want Amazon Music Unlimited just on your Echo? Learn More

music

Choose the right Amazon Music plan for you

Prime Music
Over two million songs, always ad-free and on-demand.

Included with Prime

Learn More

Amazon Music Unlimited Echo plan
Tens of millions of songs on a single Echo, Dot, or Tap. Sign up only with Alexa. Just ask.

$3.99/mo

"Alexa, try Amazon Music Unlimited."

Learn More

Most popular

Amazon Music Unlimited Individual plan
Tens of millions of songs on one account, on all your devices.

$7.99/mo or $79/yr
for Prime members
(Non-Prime price: $9.99/mo)

Start free trial

Best value

Amazon Music Unlimited Family plan
All the benefits of the individual plan for up to six family members.

$14.99/mo or $149/yr
for Prime members
(Non-Prime price: $14.99/mo)

Learn More

Questions? See our FAQ.

CO EX. R-58

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Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-59

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Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-60

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Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-61

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

Help & Customer Service

About Amazon Prime

Receive all the benefits of Amazon Prime including FREE Two-Day Shipping for eligible purchases, unlimited streaming of movies and TV shows with Prime Video, and the ability to borrow books from the Kindle Owners' Lending Library for $99 a year or $10.99 a month. We also offer a Prime Video membership for $8.99 a month that only includes Prime Video as a benefit.

The benefits include:

- **FREE Two-Day Shipping** on eligible items to addresses in the contiguous U.S. and other shipping benefits. For more information, go to Amazon Prime Shipping Benefits.
- **FREE Same-Day Delivery** in eligible zip codes. For more information, go to Order with Prime FREE Same-Day Delivery.
- **Prime Now:** Get FREE two-hour delivery or scheduled delivery on over 10,000 items, from groceries to electronics and more. Plus, get free delivery from your favorite local stores. Available in eligible zip codes only. For more information go to Prime Now.
- **Restaurant Delivery:** Get FREE one-hour delivery from popular restaurants with Prime Now. Available in eligible zip codes only. For more information, go to Prime Now.
- **FREE Release-Date Delivery:** FREE Release-Date Delivery on eligible pre-order items delivered on their release date to ZIP codes within the continental U.S. For more information, go to Release-Date Delivery.
- **Prime Video**: unlimited streaming of movies and TV episodes for paid or free trial members in the U.S. and Puerto Rico. For more information, go to About Prime Video.
- **Prime Music**: unlimited, ad-free access to hundreds of Prime Playlists and more than a million songs for members in the U.S. and Puerto Rico. For more information, go to About Prime Music.
- **Prime Photos**: Secure unlimited photo storage and enhanced search and organization features in Amazon Drive for you and the members of your Family Vault. For more information, go to About Prime Photos.
- **Prime Pantry**: Access to Prime Pantry, where members can purchase and ship to addresses in the contiguous U.S. low priced grocery, household, and pet care items for a flat delivery fee of $5.99 for each Prime Pantry box. Prime Pantry orders cannot be shipped to addresses in Alaska, Hawaii, and Puerto Rico.
- **Amazon Elements**: Access to Amazon Elements products, Amazon's own line of everyday essentials.
- **Amazon Dash for Prime**: Never run out of your favorite products with Amazon Dash Button. For more information, go to Amazon Dash Button.
- **Prime Early Access**: Get 30-minute early access to Lightning Deals on Amazon.com. For more information, go to About Prime Early Access.
- **Kindle Owners' Lending Library**: access to members in the U.S. For more information, go to Kindle Owners' Lending Library
- **Prime Reading:** You can borrow books, magazines, and more from the Prime Reading catalog and read them on your Fire tablet, Kindle e-reader, or the Kindle reading apps for iOS and Android. For more information, go to Borrow Books from Amazon Prime Reading.
- **Kindle First**: Early access for members in the U.S. to download a new book for free every month from the Kindle First picks. For more information, go to Kindle First.
- **Audible Channels for Prime**: Get access to Audible Channels, a $60/year value, for free. Audible Channels includes unlimited listening to original audio series and playlists handcrafted for every interest. You'll also receive access to Prime Exclusive Audiobooks, a collection of streaming audiobooks including best sellers, family favorites, celebrity-narrated classics and more. Just download the free Audible app and sign in with your Amazon account to start listening.
- **Amazon Music Unlimited:** Prime members can get discounted Amazon Music Unlimited monthly plans and there are annual plans available exclusively to Prime members. For more information, go to Amazon Music Unlimited.
- **Video Add-On Subscriptions**: Members can purchase Video Add-on Subscriptions to premium content providers. Browse available Video Add-on Subscriptions, or manage your existing subscriptions.
- **Deals and Discounts, Compliments of Amazon Family:** These include 20% off diapers through Subscribe & Save and 15% off eligible products from your baby registry. For more information go to Get 20% off Diaper Subscriptions or About the Completion Discount.

Returns & Refunds
Exchange or return items

Manage Prime
Cancel or view benefits

Payment Settings
Add or edit payment methods

Carrier Info
Shipping carrier information

Account Settings
Change email or password

Ask the Kindle Help Community

Contact Us

- **Twitch Prime:** Members get exclusive discounts on physical games pre-orders and new releases. Twitch.tv users who link their Amazon Prime account get ad-free viewing on Twitch, a free Twitch channel subscription every month, and exclusive access to free game content. For more information, go to Twitch.tv.
- **Membership Sharing**: Two adults living in the same household can create an Amazon Household to share certain Amazon Prime benefits. For more information, go to About Amazon Households. If you have a paid Prime membership under your personal account you can share your shipping benefits with your Amazon Business user account. Go to Amazon Prime and Business Accounts.

Note:

- Amazon Prime isn't available for customers who purchase products for the purpose of resale or use Amazon Prime to ship products to their customers or potential customers.
- Some items are not available for Two-Day Shipping due to special shipping characteristics and instead will receive free standard shipping, which delivers in 4-5 business days.
- Your Prime Membership may be subject to sales tax in some states.
- Customers who receive a Prime free trial through Amazon Student or are guests of another membership aren't eligible for the following benefits unless they are eligible through their Amazon Household: membership sharing, Kindle Owners' Lending Library, Prime Video, Prime Music, and shopping discounts provided by Amazon Family such as 20% off diapers and 15% Baby Registry Completion discount. Customers who are guests of another membership aren't eligible for Prime Photos.
- To use Kindle Owners' Lending Library, the Kindle device must be associated with the Prime account that's eligible for the benefit.
- We may change these benefits occasionally as provided in the Prime Terms & Conditions.

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Yes No

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100M fans are waiting for you.

How can you build your career on Spotify?

Get your music out there.

Reach the world's most passionate and diverse community of music fans. No matter what kind of music you make, your audience is here.

GET STARTED (/GUIDE)

Discover new audiences.

We use a special blend of human and machine curation to deliver your music to the perfect set of Spotify listeners.

LEARN MORE (/GUIDE/YOUR-FANS)

See who's listening.

Spotify Fan Insights connects you with your Spotify data. So you can get to know your global audience.

ACCESS YOUR DATA (/FANINSIGHTS/REQUESTACCESS)

Spotify Fan Insights

Get the intel you need to promote your single, craft your setlist or route your tour. Let Spotify help you understand your audience and reach new fans all over the world.

REQUEST ACCESS (/FANINSIGHTS/REQUESTACCESS)

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 001-35727

Netflix, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**77-0467272**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

100 Winchester Circle Los Gatos, California 95032
(Address and zip code of principal executive offices)
(408) 540-3700
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of Exchange on which registered
Common stock, $0.001 par value	**NASDAQ Stock Market LLC**
	(NASDAQ Global Select Market)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ (do not check if smaller reporting company) Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

As of June 30, 2016, the aggregate market value of voting stock held by non-affiliates of the registrant, based upon the closing sales price for the registrant's common stock, as reported in the NASDAQ Global Select Market System, was $38,059,122,667. Shares of common stock beneficially owned by each executive officer and director of the Registrant and by each person known by the Registrant to beneficially own 10% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for any other purpose.

As of January 26, 2017, there were 430,411,593 shares of the registrant's common stock, par value $0.001, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Parts of the registrant's Proxy Statement for Registrant's 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

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NETFLIX, INC.

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws. These forward-looking statements include, but are not limited to, statements regarding: our core strategy; operating income and margin; the decline in our DVD memberships and the resources allocated to our DVD segment; seasonality; contribution margins; contribution profits (losses); liquidity, including cash flows from operations, available funds and access to financing sources; free cash flows; revenues; net income; profitability; stock price volatility; pricing changes; the impact of, and the company's response to, new accounting standards; action by competitors; risk of material impairment of current investment portfolio; reinvestment of earnings in foreign subsidiaries; membership growth; timing of relocation to new facilities; nature of our content agreements; member viewing patterns; payment of future dividends; obtaining additional capital; our content and marketing investments, including investments in original programming; amortization; significance and timing of contractual obligations; and realization of deferred tax assets. These forward-looking statements are subject to risks and uncertainties that could cause actual results and events to differ. A detailed discussion of these and other risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included throughout this filing and particularly in Item 1A: "Risk Factors" section set forth in this Annual Report on Form 10-K. All forward-looking statements included in this document are based on information available to us on the date hereof, and we assume no obligation to revise or publicly release any revision to any such forward-looking statement, except as may otherwise be required by law.

Item 1. Business

ABOUT US

Netflix, Inc. ("Netflix", "the Company", "we", or "us") is the world's leading internet television network with over 93 million streaming members in over 190 countries enjoying more than 125 million hours of TV shows and movies per day, including original series, documentaries and feature films. Our members can watch as much as they want, anytime, anywhere, on nearly any internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments. Additionally, in the United States ("U.S."), our members can receive DVDs delivered quickly to their homes.

We are a pioneer in the internet delivery of TV shows and movies, launching our streaming service in 2007. Since this launch, we have developed an ecosystem for internet-connected screens and have added increasing amounts of content that enable consumers to enjoy TV shows and movies directly on their internet-connected screens. As a result of these efforts, we have experienced growing consumer acceptance of, and interest in, the delivery of TV shows and movies directly over the internet.

Our core strategy is to grow our streaming membership business globally within the parameters of our profit margin targets. We are continuously improving our members' experience by expanding our streaming content with a focus on a programming mix of content that delights our members. In addition, we are perpetually enhancing our user interface and extending our streaming service to more internet-connected screens. Our members can now download a selection of titles for offline viewing.

We continue to grow our streaming service both domestically and internationally. We began our international expansion with Canada in 2010 and have since launched our service globally, with the exception of The People's Republic of China and territories where U.S. companies are not allowed to operate. We have also expanded our streaming content offering to include more exclusive and original programming, including several Emmy, Golden Globe and Academy Award nominated original series and documentaries. Our original programming increasingly includes content that we produce.

BUSINESS SEGMENTS

The Company has three reportable segments: Domestic streaming, International streaming and Domestic DVD. The Domestic streaming segment derives revenues from monthly membership fees for services consisting solely of streaming content to our members in the United States. The International streaming segment derives revenues from monthly membership fees for services consisting solely of streaming content to our members outside the United States. The Domestic DVD segment derives revenues from monthly membership fees for services consisting solely of DVD-by-mail. For additional information regarding our segments, including information about our financial results by geography, see Note 11 of Item 8, *Financial Statements and Supplementary Data*.

COMPETITION

The market for entertainment video is intensely competitive and subject to rapid change. We compete against other entertainment video providers, such as multichannel video programming distributors ("MVPDs"), internet-based movie and TV content providers (including those that provide pirated content), video gaming providers and DVD rental outlets and more broadly against other sources of entertainment that our members could choose in their moments of free time. We also compete against entertainment video providers in obtaining content that our members love, both for licensed streaming content and for original content projects.

While consumers may maintain simultaneous relationships with multiple entertainment sources, we strive for consumers to choose us in their moments of free time. We have often referred to this choice as our objective of "winning moments of truth." In attempting to win these moments of truth with our members, we are continually improving our service, including both our technology and our content, which is increasingly exclusive and curated, and includes our own original programming.

SEASONALITY

Our membership growth exhibits a seasonal pattern that reflects variations when consumers buy internet-connected screens and when they tend to increase their viewing. Historically, the first and fourth quarters (October through March)represent our greatest membership growth across our Domestic and International streaming segments. Our membership growth may be impacted by the release of certain high-profile original content. Internationally, we expect each market to demonstrate more predictable seasonal patterns as our service offering in each market becomes more established and we have a longer history to assess such patterns.

INTELLECTUAL PROPERTY

We regard our trademarks, service marks, copyrights, patents, domain names, trade dress, trade secrets, proprietary technologies and similar intellectual property as important to our success. We use a combination of patent, trademark, copyright and trade secret laws and confidentiality agreements to protect our proprietary intellectual property. Our ability to protect and enforce our intellectual property rights is subject to certain risks and from time to time we encounter disputes over rights and obligations concerning intellectual property. We cannot provide assurance that we will prevail in any intellectual property disputes.

EMPLOYEES

As of December 31, 2016, we had approximately 4,700 total employees. Of these employees, approximately 4,500 were full-time, including approximately 1,300 categorized as temporary.

OTHER INFORMATION

We were incorporated in Delaware in August 1997 and completed our initial public offering in May 2002. Our principal executive offices are located at 100 Winchester Circle, Los Gatos, California 95032, and our telephone number is (408) 540-3700.

We maintain a Web site at *www.netflix.com*. The contents of our Web site are not incorporated in, or otherwise to be regarded as part of, this Annual Report on Form 10-K. In this Annual Report on Form 10-K, “Netflix,” the “Company,” “we,” “us,” “our” and the “registrant” refer to Netflix, Inc. We make available, free of charge on our Web site, access to our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after we file or furnish them electronically with the Securities and Exchange Commission ("SEC").

Investors and others should note that we announce material financial information to our investors using our investor relations Web site (*http://ir.netflix.com*), SEC filings, press releases, public conference calls and webcasts. We use these channels as well as social media to communicate with our members and the public about our company, our services and other issues. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on the social media channels listed on our investor relations Web site.

Item 1A. Risk Factors

If any of the following risks actually occur, our business, financial condition and results of operations could be harmed. In that case, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Business

If our efforts to attract and retain members are not successful, our business will be adversely affected.

We have experienced significant membership growth over the past several years. Our ability to continue to attract members will depend in part on our ability to consistently provide our members with compelling content choices, as well as a quality experience for selecting and viewing TV shows and movies. Furthermore, the relative service levels, content offerings, pricing and related features of competitors to our service may adversely impact our ability to attract and retain memberships. Competitors include other entertainment video providers, such as MVPDs, internet-based movie and TV content providers (including those that provide pirated content) and DVD rental outlets. If consumers do not perceive our service offering to be of value, including if we introduce new or adjust existing features, adjust pricing or service offerings, or change the mix of content in a manner that is not favorably received by them, we may not be able to attract and retain members. In addition, many of our members rejoin our service or originate from word-of-mouth advertising from existing members. If our efforts to satisfy our existing members are not successful, we may not be able to attract members, and as a result, our ability to maintain and/or grow our business will be adversely affected. Members cancel our service for many reasons, including a perception that they do not use the service sufficiently, the need to cut household expenses, availability of content is unsatisfactory, competitive services provide a better value or experience and customer service issues are not satisfactorily resolved. We must continually add new memberships both to replace canceled memberships and to grow our business beyond our current membership base. If we do not grow as expected, given, in particular that our content costs are largely fixed in nature and contracted over several years, we may not be able to adjust our expenditures or increase our (per membership) revenues commensurate with the lowered growth rate such that our margins, liquidity and results of operation may be adversely impacted. If we are unable to successfully compete with current and new competitors in both retaining our existing memberships and attracting new memberships, our business will be adversely affected. Further, if excessive numbers of members cancel our service, we may be required to incur significantly higher marketing expenditures than we currently anticipate to replace these members with new members.

Changes in competitive offerings for entertainment video, including the potential rapid adoption of piracy-based video offerings, could adversely impact our business.

The market for entertainment video is intensely competitive and subject to rapid change. Through new and existing distribution channels, consumers have increasing options to access entertainment video. The various economic models underlying these channels include subscription, transactional, ad-supported and piracy-based models. All of these have the potential to capture meaningful segments of the entertainment video market. Piracy, in particular, threatens to damage our business, as its fundamental proposition to consumers is so compelling and difficult to compete against: virtually all content for free. Furthermore, in light of the compelling consumer proposition, piracy services are subject to rapid global growth. Traditional providers of entertainment video, including broadcasters and cable network operators, as well as internet based e-commerce or entertainment video providers are increasing their internet-based video offerings. Several of these competitors have long operating histories, large customer bases, strong brand recognition and significant financial, marketing and other resources. They may secure better terms from suppliers, adopt more aggressive pricing and devote more resources to product development, technology, infrastructure, content acquisitions and marketing. New entrants may enter the market or existing providers may adjust their services with unique offerings or approaches to providing entertainment video. Companies also may enter into business combinations or alliances that strengthen their competitive positions. If we are unable to successfully or profitably compete with current and new competitors, our business will be adversely affected, and we may not be able to increase or maintain market share, revenues or profitability.

The long-term and fixed cost nature of our content commitments may limit our operating flexibility and could adversely affect our liquidity and results of operations.

In connection with obtaining streaming content, we typically enter into multi-year commitments with studios and other content providers, the payment terms of which are not tied to member usage or the size of our membership base (“fixed cost”) but which may be tied to such factors as titles licensed and/or theatrical exhibition receipts. Such commitments are included in the Contractual Obligations section of Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* and Note 5, *Commitments and Contingencies* in Item 8. Given the multiple-year duration and largely fixed cost nature of content commitments, if membership acquisition and retention do not meet our expectations, our margins may be

adversely impacted. Payment terms for certain content commitments, such as programming that is initially available in the applicable territory on our service ("original programming"), will typically require more up-front cash payments than other licensing agreements. To the extent membership and/or revenue growth do not meet our expectations, our liquidity and results of operations could be adversely affected as a result of content commitments and accelerated payment requirements of certain agreements. In addition, the long-term and fixed cost nature of our content commitments may limit our flexibility in planning for, or reacting to changes in our business and the market segments in which we operate. If we license content that is not favorably received by consumers in a territory, or is unable to be shown in a territory, acquisition and retention may be adversely impacted and given the long-term and fixed cost nature of our content commitments, we may not be able to adjust our content offering quickly and our results of operation may be adversely impacted.

We are devoting more resources toward the development, production, marketing and distribution of original programming, including TV series and movies. We believe that original programming can help differentiate our service from other offerings, enhance our brand and otherwise attract and retain members. To the extent our original programming does not meet our expectations, in particular, in terms of costs, viewing and popularity, our business, including our brand and results of operations may be adversely impacted.

If we are not able to manage change and growth, our business could be adversely affected.

We are expanding our operations internationally, scaling our streaming service to effectively and reliably handle anticipated growth in both members and features related to our service, ramping up our ability to produce original content, as well as continuing to operate our DVD service within the U.S. As our international offering evolves, we are managing and adjusting our business to address varied content offerings, consumer customs and practices, in particular those dealing with e-commerce and internet video, as well as differing legal and regulatory environments. As we scale our streaming service, we are developing technology and utilizing third-party "cloud" computing services. As we ramp up our original content production, we are building out expertise in a number of disciplines, including creative, marketing, legal, finance and other resources related to the development and physical production of content. If we are not able to manage the growing complexity of our business, including improving, refining or revising our systems and operational practices related to our streaming operations and original content, our business may be adversely affected.

We could be subject to economic, political, regulatory and other risks arising from our international operations.

Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks that may be different from or incremental to those in the U.S. In addition to the risks that we face in the U.S., our international operations involve risks that could adversely affect our business, including:

- the need to adapt our content and user interfaces for specific cultural and language differences, including licensing a certain portion of our content assets before we have developed a full appreciation for its performance within a given territory;
- difficulties and costs associated with staffing and managing foreign operations;
- management distraction;
- political or social unrest and economic instability;
- compliance with U.S. laws such as the Foreign Corrupt Practices Act, export controls and economic sanctions, and local laws prohibiting corrupt payments to government officials;
- difficulties in understanding and complying with local laws, regulations and customs in foreign jurisdictions;
- regulatory requirements or government action against our service, whether in response to enforcement of actual or purported legal and regulatory requirements or otherwise, that results in disruption or non-availability of our service or particular content in the applicable jurisdiction;
- less favorable foreign intellectual property laws;
- adverse domestic or international tax consequences such as those related to repatriation of cash from foreign jurisdictions into the United States, non-income related taxes such as value-added tax or other indirect taxes, changes in tax laws or tax rates or their interpretations and the related application of judgment in determining our global provision for income taxes, deferred tax assets or liabilities or other tax liabilities given the ultimate tax determination is uncertain;
- fluctuations in currency exchange rates, which we do not use foreign exchange contracts or derivatives to hedge against and which could impact revenues and expenses of our international operations and expose us to foreign currency exchange rate risk;

- profit repatriation and other restrictions on the transfer of funds;
- differing payment processing systems as well as consumer use and acceptance of electronic payment methods, such as payment cards;
- new and different sources of competition;
- censorship requirements that cause us to remove or edit popular content, leading to consumer disappointment or dissatisfaction with our service;
- low usage and/or penetration of internet-connected consumer electronic devices;
- different and more stringent user protection, data protection, privacy and other laws;
- availability of reliable broadband connectivity and wide area networks in targeted areas for expansion;
- integration and operational challenges as well as potential unknown liabilities in connection with companies we may acquire or control; and
- differing, and often more lenient, laws and consumer understanding/attitudes regarding the illegality of piracy.

Our failure to manage any of these risks successfully could harm our international operations and our overall business, and results of our operations.

If we fail to maintain or, in newer markets establish, a positive reputation with consumers concerning our service, including the content we offer, we may not be able to attract or retain members, and our operating results may be adversely affected.

We believe that a positive reputation with consumers concerning our service is important in attracting and retaining members who have a number of choices from which to obtain entertainment video. To the extent our content, in particular, our original programming, is perceived as low quality, offensive or otherwise not compelling to consumers, our ability to establish and maintain a positive reputation may be adversely impacted. Furthermore, to the extent our marketing, customer service and public relations efforts are not effective or result in negative consumer reaction, our ability to establish and maintain a positive reputation may likewise be adversely impacted. With newer markets, we also need to establish our reputation with consumers and to the extent we are not successful in creating positive impressions, our business in these new markets may be adversely impacted.

Changes in how we market our service could adversely affect our marketing expenses and membership levels may be adversely affected.

We utilize a broad mix of marketing and public relations programs, including social media sites such as Facebook and Twitter, to promote our service to potential new members. We may limit or discontinue use or support of certain marketing sources or activities if advertising rates increase or if we become concerned that members or potential members deem certain marketing practices intrusive or damaging to our brand. If the available marketing channels are curtailed, our ability to attract new members may be adversely affected.

If companies that promote our service decide that we negatively impact their business, that they want to compete more directly with our business or enter a similar business or decide to exclusively support our competitors, we may no longer have access to such marketing channels. We also acquire a number of members who rejoin our service having previously cancelled their membership. If we are unable to maintain or replace our sources of members with similarly effective sources, or if the cost of our existing sources increases, our member levels and marketing expenses may be adversely affected

We face risks, such as unforeseen costs and potential liability in connection with content we acquire, produce, license and/or distribute through our service.

As a distributor of content, we face potential liability for negligence, copyright and trademark infringement, or other claims based on the nature and content of materials that we acquire, produce, license and/or distribute. We also may face potential liability for content used in promoting our service, including marketing materials and features on our Web site such as member reviews. As we expand our original programming, we have become responsible for production costs and other expenses, such as ongoing guild payments. We also take on risks associated with production, such as completion and key talent risk. Negotiations or renewals related to entertainment industry collective bargaining agreements could negatively impact timing and costs associated with our productions. To the extent we do not accurately anticipate costs or mitigate risks, including for content that we obtain but ultimately does not appear on our service, or if we become liable for content we acquire, produce, license and/or distribute, our business may suffer. Litigation to defend these claims could be costly and the expenses and

damages arising from any liability or unforeseen production risks could harm our results of operations. We may not be indemnified against claims or costs of these types and we may not have insurance coverage for these types of claims.

If studios, content providers or other rights holders refuse to license streaming content or other rights upon terms acceptable to us, our business could be adversely affected.

Our ability to provide our members with content they can watch depends on studios, content providers and other rights holders licensing rights to distribute such content and certain related elements thereof, such as the public performance of music contained within the content we distribute. The license periods and the terms and conditions of such licenses vary. If the studios, content providers and other rights holders are not or are no longer willing or able to license us content upon terms acceptable to us, our ability to stream content to our members will be adversely affected and/or our costs could increase. Many of the licenses for content provide for the studios or other content providers to withdraw content from our service relatively quickly. Because of these provisions as well as other actions we may take, content available through our service can be withdrawn on short notice. As competition increases, we may see the cost of programming increase. As we seek to differentiate our service, we are increasingly focused on securing certain exclusive rights when obtaining content, including original content. We are also focused on programming an overall mix of content that delights our members in a cost efficient manner. Within this context, we are selective about the titles we add and renew to our service. If we do not maintain a compelling mix of content, our membership acquisition and retention may be adversely affected.

Music contained within content we distribute may require us to obtain licenses for such distribution. In this regard, we engage in negotiations with collection management organizations (“CMOs”) that hold certain rights to music interests in connection with streaming content into various territories. If we are unable to reach mutually acceptable terms with these organizations, we could become involved in litigation and/or could be enjoined from distributing certain content, which could adversely impact our business. Additionally, pending and ongoing litigation as well as negotiations between certain CMOs and other third parties in various territories could adversely impact our negotiations with CMOs, or result in music publishers represented by certain CMOs unilaterally withdrawing rights, and thereby adversely impact our ability to reach licensing agreements reasonably acceptable to us. Failure to reach such licensing agreements could expose us to potential liability for copyright infringement or otherwise increase our costs.

We rely upon a number of partners to make our service available on their devices.

We currently offer members the ability to receive streaming content through a host of internet-connected screens, including TVs, digital video players, television set-top boxes and mobile devices. We have agreements with various cable, satellite and telecommunications operators to make our service available through the television set-top boxes of these service providers. We intend to continue to broaden our capability to instantly stream TV shows and movies to other platforms and partners over time. If we are not successful in maintaining existing and creating new relationships, or if we encounter technological, content licensing, regulatory or other impediments to delivering our streaming content to our members via these devices, our ability to grow our business could be adversely impacted. Our agreements with our device partners are typically between one and three years in duration and our business could be adversely affected if, upon expiration, a number of our partners do not continue to provide access to our service or are unwilling to do so on terms acceptable to us, which terms may include the degree of accessibility and prominence of our service. Furthermore, devices are manufactured and sold by entities other than Netflix and while these entities should be responsible for the devices' performance, the connection between these devices and Netflix may nonetheless result in consumer dissatisfaction toward Netflix and such dissatisfaction could result in claims against us or otherwise adversely impact our business. In addition, technology changes to our streaming functionality may require that partners update their devices. If partners do not update or otherwise modify their devices, our service and our members' use and enjoyment could be negatively impacted.

Any significant disruption in or unauthorized access to our computer systems or those of third parties that we utilize in our operations, including those relating to cybersecurity or arising from cyber-attacks, could result in a loss or degradation of service, unauthorized disclosure of data, including member and corporate information, or theft of intellectual property, including digital content assets, which could adversely impact our business.

Our reputation and ability to attract, retain and serve our members is dependent upon the reliable performance and security of our computer systems and those of third parties that we utilize in our operations. These systems may be subject to damage or interruption from earthquakes, adverse weather conditions, other natural disasters, terrorist attacks, power loss, telecommunications failures, and cybersecurity risks. Interruptions in these systems, or with the internet in general, could make our service unavailable or degraded or otherwise hinder our ability to deliver streaming content or fulfill DVD selections. Service interruptions, errors in our software or the unavailability of computer systems used in our operations could diminish the overall attractiveness of our membership service to existing and potential members.

Our computer systems and those of third parties we use in our operations are vulnerable to cybersecurity risks, including cyber-attacks such as computer viruses, denial of service attacks, physical or electronic break-ins and similar disruptions. These systems periodically experience directed attacks intended to lead to interruptions and delays in our service and operations as well as loss, misuse or theft of data. Any attempt by hackers to obtain our data (including member and corporate information) or intellectual property (including digital content assets), disrupt our service, or otherwise access our systems, or those of third parties we use, if successful, could harm our business, be expensive to remedy and damage our reputation. We have implemented certain systems and processes to thwart hackers and protect our data and systems. To date hackers have not had a material impact on our service or systems however this is no assurance that hackers may not be successful in the future. Our insurance does not cover expenses related to such disruptions or unauthorized access. Efforts to prevent hackers from disrupting our service or otherwise accessing our systems are expensive to implement and may limit the functionality of or otherwise negatively impact our service offering and systems. Any significant disruption to our service or access to our systems could result in a loss of memberships and adversely affect our business and results of operation.

We utilize our own communications and computer hardware systems located either in our facilities or in that of a third-party Web hosting provider. In addition, we utilize third-party “cloud” computing services in connection with our business operations. We also utilize our own and third-party content delivery networks to help us stream TV shows and movies in high volume to Netflix members over the internet. Problems faced by us or our third-party Web hosting, "cloud" computing, or other network providers, including technological or business-related disruptions, as well as cybersecurity threats, could adversely impact the experience of our members.

We rely upon Amazon Web Services to operate certain aspects of our service and any disruption of or interference with our use of the Amazon Web Services operation would impact our operations and our business would be adversely impacted.

Amazon Web Services ("AWS") provides a distributed computing infrastructure platform for business operations, or what is commonly referred to as a "cloud" computing service. We have architected our software and computer systems so as to utilize data processing, storage capabilities and other services provided by AWS. Currently, we run the vast majority of our computing on AWS. Given this, along with the fact that we cannot easily switch our AWS operations to another cloud provider, any disruption of or interference with our use of AWS would impact our operations and our business would be adversely impacted. While the retail side of Amazon competes with us, we do not believe that Amazon will use the AWS operation in such a manner as to gain competitive advantage against our service.

If the technology we use in operating our business fails, is unavailable, or does not operate to expectations, our business and results of operation could be adversely impacted.

We utilize a combination of proprietary and third party technology to operate our business. This includes the technology that we have developed to recommend and merchandise content to our consumers as well as enable fast and efficient delivery of content to our members and their various consumer electronic devices. For example, we have built and deployed our own content-delivery network (“CDN”). To the extent Internet Service Providers ("ISPs") do not interconnect with our CDN, or if we experience difficulties in its operation, our ability to efficiently and effectively deliver our streaming content to our members could be adversely impacted and our business and results of operation could be adversely affected. Likewise, if our recommendation and merchandising technology does not enable us to predict and recommend titles that our members will enjoy, our ability to attract and retain members may be adversely affected. We also utilize third party technology to help market our service, process payments, and otherwise manage the daily operations of our business. If our technology or that of third parties we utilize in our operations fails or otherwise operates improperly, our ability to operate our service, retain existing members and add new members may be impaired. Also, any harm to our members' personal computers or other devices caused by software used in our operations could have an adverse effect on our business, results of operations and financial condition.

If government regulations relating to the internet or other areas of our business change, we may need to alter the manner in which we conduct our business, or incur greater operating expenses.

The adoption or modification of laws or regulations relating to the internet or other areas of our business could limit or otherwise adversely affect the manner in which we currently conduct our business. In addition, the continued growth and development of the market for online commerce may lead to more stringent consumer protection laws, which may impose additional burdens on us. If we are required to comply with new regulations or legislation or new interpretations of existing regulations or legislation, this compliance could cause us to incur additional expenses or alter our business model.

Changes in laws or regulations that adversely affect the growth, popularity or use of the internet, including laws impacting net neutrality, could decrease the demand for our service and increase our cost of doing business. Certain laws

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intended to prevent network operators from discriminating against the legal traffic that traverse their networks have been implemented in many countries, including the United States and the European Union. In others, the laws may be nascent or non-existent. Given uncertainty around these rules, including changing interpretations, amendments or repeal, coupled with potentially significant political and economic power of local network operators, we could experience discriminatory or anti-competitive practices that could impede our growth, cause us to incur additional expense or otherwise negatively affect our business.

Changes in how network operators handle and charge for access to data that travel across their networks could adversely impact our business.

We rely upon the ability of consumers to access our service through the internet. If network operators block, restrict or otherwise impair access to our service over their networks, our service and business could be negatively affected. To the extent that network operators implement usage based pricing, including meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our membership acquisition and retention could be negatively impacted. Furthermore, to the extent network operators create tiers of internet access service and either charge us for or prohibit us from being available through these tiers, our business could be negatively impacted.

Most network operators that provide consumers with access to the internet also provide these consumers with multichannel video programming. As such, many network operators have an incentive to use their network infrastructure in a manner adverse to our continued growth and success. While we believe that consumer demand, regulatory oversight and competition will help check these incentives, to the extent that network operators are able to provide preferential treatment to their data as opposed to ours or otherwise implement discriminatory network management practices, our business could be negatively impacted. In some international markets, these same incentives apply however, the consumer demand, regulatory oversight and competition may not be as strong as in our domestic market.

Privacy concerns could limit our ability to collect and leverage our membership data and disclosure of membership data could adversely impact our business and reputation.

In the ordinary course of business and in particular in connection with merchandising our service to our members, we collect and utilize data supplied by our members. We currently face certain legal obligations regarding the manner in which we treat such information. Other businesses have been criticized by privacy groups and governmental bodies for attempts to link personal identities and other information to data collected on the internet regarding users' browsing and other habits. Increased regulation of data utilization practices, including self-regulation or findings under existing laws that limit our ability to collect, transfer and use data, could have an adverse effect on our business. In addition, if we were to disclose data about our members in a manner that was objectionable to them, our business reputation could be adversely affected, and we could face potential legal claims that could impact our operating results. Internationally, we may become subject to additional and/or more stringent legal obligations concerning our treatment of customer and other personal information, such as laws regarding data localization and/or restrictions on data export. Failure to comply with these obligations could subject us to liability, and to the extent that we need to alter our business model or practices to adapt to these obligations, we could incur additional expenses.

Our reputation and relationships with members would be harmed if our membership data, particularly billing data, were to be accessed by unauthorized persons.

We maintain personal data regarding our members, including names and billing data. This data is maintained on our own systems as well as that of third parties we use in our operations. With respect to billing data, such as credit card numbers, we rely on licensed encryption and authentication technology to secure such information. We take measures to protect against unauthorized intrusion into our members' data. Despite these measures we, our payment processing services or other third party services we use such as AWS, could experience an unauthorized intrusion into our members' data. In the event of such a breach, current and potential members may become unwilling to provide the information to us necessary for them to become members. Additionally, we could face legal claims or regulatory fines or penalties for such a breach. The costs relating to any data breach could be material, and we currently do not carry insurance against the risk of a data breach. For these reasons, should an unauthorized intrusion into our members’ data occur, our business could be adversely affected.

We are subject to payment processing risk.

Our members pay for our service using a variety of different payment methods, including credit and debit cards, gift cards, direct debit and online wallets. We rely on internal systems as well as those of third parties to process payment. Acceptance and processing of these payment methods are subject to certain rules and regulations and require payment of interchange and other fees. To the extent there are disruptions in our payment processing systems, increases in payment processing fees, material changes in the payment ecosystem, such as large re-issuances of payment cards, delays in receiving payments from payment processors and/or changes to rules or regulations concerning payment processing, our revenue, operating expenses and results of operation could be adversely impacted. In addition, from time to time, we encounter fraudulent use of payment methods, which could impact our results of operation and if not adequately controlled and managed could create negative consumer perceptions of our service.

If our trademarks and other proprietary rights are not adequately protected to prevent use or appropriation by our competitors, the value of our brand and other intangible assets may be diminished, and our business may be adversely affected.

We rely and expect to continue to rely on a combination of confidentiality and license agreements with our employees, consultants and third parties with whom we have relationships, as well as trademark, copyright, patent and trade secret protection laws, to protect our proprietary rights. We may also seek to enforce our proprietary rights through court proceedings. We have filed and we expect to file from time to time for trademark and patent applications. Nevertheless, these applications may not be approved, third parties may challenge any copyrights, patents or trademarks issued to or held by us, third parties may knowingly or unknowingly infringe our intellectual property rights, and we may not be able to prevent infringement or misappropriation without substantial expense to us. If the protection of our intellectual property rights is inadequate to prevent use or misappropriation by third parties, the value of our brand and other intangible assets may be diminished, competitors may be able to more effectively mimic our service and methods of operations, the perception of our business and service to members and potential members may become confused in the marketplace, and our ability to attract members may be adversely affected.

We currently hold various domain names relating to our brand, including Netflix.com. Failure to protect our domain names could adversely affect our reputation and brand and make it more difficult for users to find our Web site and our service. We may be unable, without significant cost or at all, to prevent third parties from acquiring domain names that are similar to, infringe upon or otherwise decrease the value of our trademarks and other proprietary rights.

Intellectual property claims against us could be costly and result in the loss of significant rights related to, among other things, our Web site, streaming technology, our recommendation and merchandising technology, title selection processes and marketing activities.

Trademark, copyright, patent and other intellectual property rights are important to us and other companies. Our intellectual property rights extend to our technology, business processes and the content on our Web site. We use the intellectual property of third parties in merchandising our products and marketing our service through contractual and other rights. From time to time, third parties allege that we have violated their intellectual property rights. If we are unable to obtain sufficient rights, successfully defend our use, or develop non-infringing technology or otherwise alter our business practices on a timely basis in response to claims against us for infringement, misappropriation, misuse or other violation of third-party intellectual property rights, our business and competitive position may be adversely affected. Many companies are devoting significant resources to developing patents that could potentially affect many aspects of our business. There are numerous patents that broadly claim means and methods of conducting business on the internet. We have not searched patents relative to our technology. Defending ourselves against intellectual property claims, whether they are with or without merit or are determined in our favor, results in costly litigation and diversion of technical and management personnel. It also may result in our inability to use our current Web site, streaming technology, our recommendation and merchandising technology or inability to market our service or merchandise our products. As a result of a dispute, we may have to develop non-infringing technology, enter into royalty or licensing agreements, adjust our merchandising or marketing activities or take other actions to resolve the claims. These actions, if required, may be costly or unavailable on terms acceptable to us.

We are engaged in legal proceedings that could cause us to incur unforeseen expenses and could occupy a significant amount of our management's time and attention.

From time to time, we are subject to litigation or claims that could negatively affect our business operations and financial position. As we have grown, we have seen a rise in the number of litigation matters against us. These matters have included patent infringements as well as consumer and securities class actions, each of which are typically expensive to defend. Litigation disputes could cause us to incur unforeseen expenses, could occupy a significant amount of our management's time and attention and could negatively affect our business operations and financial position.

We may seek additional capital that may result in stockholder dilution or that may have rights senior to those of our common stockholders.

From time to time, we may seek to obtain additional capital, either through equity, equity-linked or debt securities. The decision to obtain additional capital will depend on, among other things, our business plans, operating performance and condition of the capital markets. If we raise additional funds through the issuance of equity, equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our common stock, and our stockholders may experience dilution.

We have a substantial amount of indebtedness and other obligations, including streaming content obligations, which could adversely affect our financial position.

We have a substantial amount of indebtedness and other obligations, including streaming content obligations. As of December 31, 2016, we had $3.4 billion aggregate principal amount of senior notes outstanding ("Notes"). As of December 31, 2016, we had approximately $6.5 billion of total content liabilities as reflected on our consolidated balance sheet. Such amount does not include streaming content commitments that do not meet the criteria for liability recognition, the amounts of which are significant. For more information on our streaming content obligations, including those not on our consolidated balance sheet, see Note 5, Commitments and Contingencies. Our substantial indebtedness and other obligations, including streaming content obligations, may:

- make it difficult for us to satisfy our financial obligations, including making scheduled principal and interest payments on our Notes and our other obligations;
- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;
- limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions or other general business purposes;
- require us to use a substantial portion of our cash flow from operations to make debt service payments and pay our other obligations when due;
- limit our flexibility to plan for, or react to, changes in our business and industry;
- place us at a competitive disadvantage compared to our less leveraged competitors; and
- increase our vulnerability to the impact of adverse economic and industry conditions.

We may not be able to generate sufficient cash to service our debt and other obligations.

Our ability to make payments on our indebtedness, including our Notes, and our other obligations will depend on our financial and operating performance, which is subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness, including the Notes, and other obligations, including amounts due under our streaming content obligations.

If our cash flows and capital resources are insufficient to fund our debt service and other obligations, we may be forced to reduce or delay investments and capital expenditures, or to sell assets, seek additional capital or restructure or refinance our indebtedness, including the Notes and obligations such as our streaming content obligations. These alternative measures may not be successful and may not permit us to meet our scheduled debt service and other obligations. We cannot assure you that we would be able to implement any of these alternatives on satisfactory terms or at all. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate those dispositions or to obtain the proceeds that we could realize from them, and these proceeds may not be adequate to meet any debt service obligations or other obligations then due.

If we are unable to service our debt obligations from cash flows, we may need to refinance all or a portion of our debt obligations prior to maturity. Our ability to refinance or restructure our debt will depend upon the condition of the capital markets and our financial condition at such time. Any refinancing of our debt could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. We may not be able to refinance any of our indebtedness on commercially reasonable terms or at all.

We may lose key employees or may be unable to hire qualified employees.

We rely on the continued service of our senior management, including our Chief Executive Officer and co-founder Reed Hastings, members of our executive team and other key employees and the hiring of new qualified employees. In our industry, there is substantial and continuous competition for highly-skilled business, product development, technical and other personnel. We may not be successful in recruiting new personnel and in retaining and motivating existing personnel, which may be disruptive to our operations.

If our Domestic DVD segment declines faster than anticipated, our business could be adversely affected.

The number of memberships to our DVD-by-mail offering is declining, and we anticipate that this decline will continue. We believe, however, that the domestic DVD business will continue to generate significant contribution profit for our business. The contribution profit generated by our domestic DVD business will help provide capital resources to fund our growth internationally. To the extent that the rate of decline in our DVD-by-mail business is greater than we anticipate, our business could be adversely affected. We do not anticipate increasing resources to our DVD operations and the technology used in its operations will not be meaningfully improved. To the extent that we experience service interruptions or other degradations in our DVD-by-mail service, members' satisfaction could be negatively impacted and we could experience an increase in DVD-by-mail member cancellations, which could adversely impact our business.

If the U.S. Postal Service were to increase postal delivery rates or implement other changes to improve its financial position, such as closing mail processing facilities or service reductions, such changes could lead to a decrease in customer satisfaction and our Domestic DVD segment's contribution profit could be adversely affected.

Risks Related to Our Stock Ownership

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable.

Our charter documents may discourage, delay or prevent a merger or acquisition that a stockholder may consider favorable because they:

- authorize our board of directors, without stockholder approval, to issue up to 10,000,000 shares of undesignated preferred stock;
- provide for a classified board of directors;
- prohibit our stockholders from acting by written consent;
- establish advance notice requirements for proposing matters to be approved by stockholders at stockholder meetings; and
- prohibit stockholders from calling a special meeting of stockholders.

As a Delaware corporation, we are also subject to certain Delaware anti-takeover provisions. Under Delaware law, a corporation may not engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Our board of directors could rely on Delaware law to prevent or delay an acquisition of us.

In addition, a merger or acquisition may trigger retention payments to certain executive employees under the terms of our Amended and Restated Executive Severance and Retention Incentive Plan, thereby increasing the cost of such a transaction.

Our stock price is volatile.

The price at which our common stock has traded has fluctuated significantly. The price may continue to be volatile due to a number of factors including the following, some of which are beyond our control:

- variations in our operating results, including our membership acquisition and retention, revenues, contribution profits, net income and free cash flow;
- variations between our actual operating results and the expectations of securities analysts, investors and the financial community;
- announcements of developments affecting our business, systems or expansion plans by us or others;
- competition, including the introduction of new competitors, their pricing strategies and services;
- market volatility in general;

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- the level of demand for our stock, including the amount of short interest in our stock; and
- the operating results of our competitors.

As a result of these and other factors, investors in our common stock may not be able to resell their shares at or above their original purchase price.

Following certain periods of volatility in the market price of our securities, we became the subject of securities litigation. We may experience more such litigation following future periods of volatility. This type of litigation may result in substantial costs and a diversion of management's attention and resources.

Financial forecasting may differ materially from actual results.

Given the dynamic nature of our business, and the inherent limitations in predicting the future, forecasts of our revenues, contribution margins, net income and number of total and paid membership additions and other financial and operating data may differ materially from actual results. Such discrepancies could cause a decline in the trading price of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Los Gatos, California and consist of leased space aggregating approximately 600,000 square feet.

In the United States, we lease other offices in various locations, including Beverly Hills, California for content acquisition, marketing and general and administrative operations and Fremont, California for our DVD operations. In 2017, we expect to relocate from Beverly Hills to Los Angeles in a new leased space of approximately 400,000 square feet. We also lease office space in other countries to support international streaming operations.

We believe that our existing facilities are adequate to meet current requirements, and that suitable additional or substitute space will be available as needed to accommodate any further physical expansion of operations and for any additional offices.

Item 3. Legal Proceedings

Information with respect to this item may be found in Note 5 of Item 8, *Financial Statements and Supplementary Data*, under the caption "Legal Proceedings" which information is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Global Select Market under the symbol "NFLX". The following table sets forth the intraday high and low sales prices per share of our common stock for the periods indicated, as reported by the NASDAQ Global Select Market. The per share amounts are adjusted for our seven-for-one stock split that occurred in July 2015. Further information on the stock split can be found in Note 7 of Item 8, *Financial Statements and Supplementary Data.*

	2016		2015	
	High	Low	High	Low
First quarter	$ 122.18	$ 79.95	$ 69.50	$ 45.26
Second quarter	111.85	84.81	100.89	58.46
Third quarter	101.27	84.50	129.29	85.50
Fourth quarter	129.29	97.63	133.27	96.26

Holders

As of January 26, 2017, there were approximately 290 stockholders of record of our common stock, although there is a significantly larger number of beneficial owners of our common stock.

Dividends

We have not declared or paid any cash dividends, and we have no present intention of paying any cash dividends in the foreseeable future.

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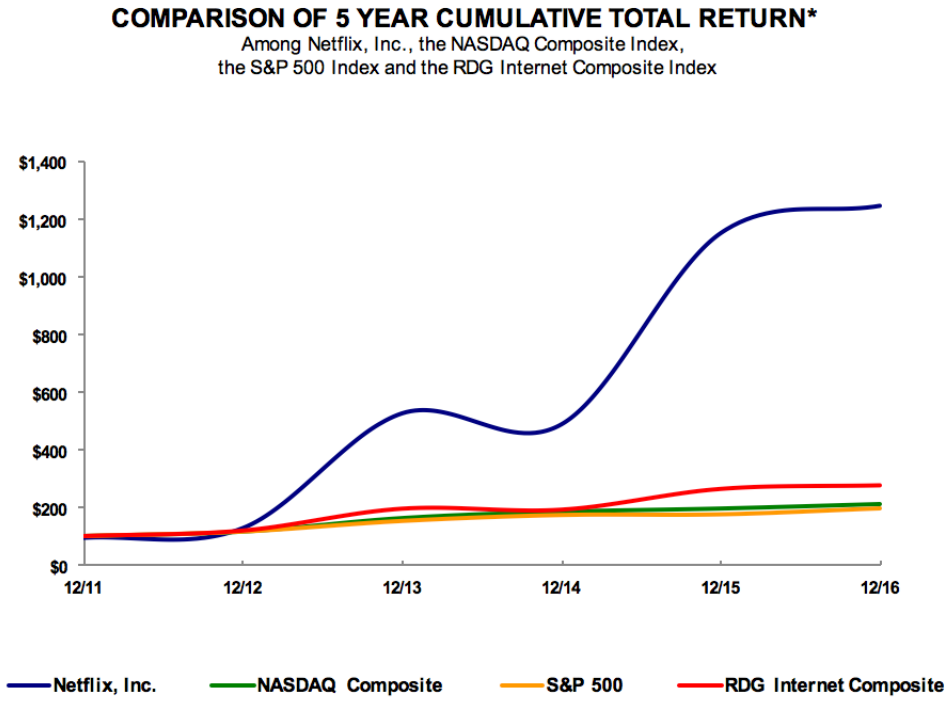
Stock Performance Graph

Notwithstanding any statement to the contrary in any of our previous or future filings with the Securities and Exchange Commission, the following information relating to the price performance of our common stock shall not be deemed "filed" with the Commission or "soliciting material" under the Securities Exchange Act of 1934 and shall not be incorporated by reference into any such filings.

The following graph compares, for the five year period ended December 31, 2016, the total cumulative stockholder return on the Company's common stock, as adjusted for the Stock Split, with the total cumulative return of the NASDAQ Composite Index, the S&P 500 Index and the RDG Internet Composite Index. Measurement points are the last trading day of each of the Company's fiscal years ended December 31, 2011, December 31, 2012, December 31, 2013, December 31, 2014, December 31, 2015 and December 31, 2016. Total cumulative stockholder return assumes $100 invested at the beginning of the period in the Company's common stock, the stocks represented in the NASDAQ Composite Index, the stocks represented in the S&P 500 Index and the stocks represented in the RDG Internet Composite Index, respectively, and reinvestment of any dividends. In prior years, the Company used the S&P North American Technology Internet Index, which was discontinued in March 2016. Accordingly, the Company now uses the RDG Internet Composite Index as a replacement for the discontinued index. Historical stock price performance should not be relied upon as an indication of future stock price performance.



*$100 invested on 12/31/11 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

Item 6. Selected Financial Data

The following selected consolidated financial data is not necessarily indicative of results of future operations and should be read in conjunction with Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* and Item 8, *Financial Statements and Supplementary Data*. The following amounts related to earnings per share and shares outstanding have been adjusted for the Stock Split for all periods reported. See Note 7 of Item 8, *Financial Statements and Supplementary Data* for further detail on the Stock Split.

Consolidated Statements of Operations:

	Year ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands, except per share data)				
Revenues	$ 8,830,669	$ 6,779,511	$ 5,504,656	$ 4,374,562	$ 3,609,282
Operating income	379,793	305,826	402,648	228,347	49,992
Net income	186,678	122,641	266,799	112,403	17,152
Earnings per share:					
Basic	$ 0.44	$ 0.29	$ 0.63	$ 0.28	$ 0.04
Diluted	$ 0.43	$ 0.28	$ 0.62	$ 0.26	$ 0.04
Weighted-average common shares outstanding:					
Basic	428,822	425,889	420,544	407,385	388,648
Diluted	438,652	436,456	431,894	425,327	412,327

Consolidated Statements of Cash Flows:

	Year Ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Net cash (used in) provided by operating activities	$(1,473,984)	$ (749,439)	$ 16,483	$ 97,831	$ 21,586
Free cash flow (1)	(1,659,755)	(920,557)	(126,699)	(16,300)	(58,151)

(1) Free cash flow is defined as net cash (used in) provided by operating and investing activities, excluding the non-operational cash flows from purchases, maturities and sales of short-term investments. See Liquidity and Capital Resources for a reconciliation of "free cash flow" to "net cash (used in) provided by operating activities."

Consolidated Balance Sheets:

	As of December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Cash, cash equivalents and short-term investments	$ 1,733,782	$ 2,310,715	$ 1,608,496	$ 1,200,405	$ 748,078
Total content assets, net	11,000,808	7,218,815	4,939,460	3,838,364	2,934,099
Working capital	1,133,634	1,902,216	1,263,899	883,049	553,887
Total assets	13,586,610	10,202,871	7,042,500	5,404,025	3,961,781
Long-term debt	3,364,311	2,371,362	885,849	491,462	195,782
Long-term debt due to related party	—	—	—	—	198,109
Non-current content liabilities	2,894,654	2,026,360	1,575,832	1,345,590	1,076,622
Total content liabilities	6,527,365	4,815,383	3,693,073	3,121,573	2,443,469
Total stockholders' equity	2,679,800	2,223,426	1,857,708	1,333,561	744,673

Other Data:

	As of / Year Ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Net global streaming membership additions during period (1)	19,034	17,371	13,041	11,083	9,738
Global streaming memberships (1)	93,796	74,762	57,391	44,350	33,267

(1) A membership (also referred to as a subscription or a member) is defined as the right to receive the Netflix service following sign-up and a method of payment being provided. Memberships are assigned to territories based on the geographic location used at time of sign-up as determined by our internal systems, which utilize industry standard geo-location technology. We offer free-trial memberships to new and certain rejoining members. Total members include those who are on a free-trial as long as a method of payment has been provided. A membership is canceled and ceases to be reflected in the above metrics as of the effective cancellation date. Voluntary cancellations become effective at the end of the prepaid membership period, while involuntary cancellation of the service, as a result of a failed method of payment, becomes effective immediately except in limited circumstances where a short grace period is offered to ensure the streaming service is not interrupted for members who are impacted by payment processing delays by our banks or integrated payment partners. The number of members in a grace period at any given point is not material.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview and Results of Operations

The following represents our consolidated performance highlights:

	As of/ Year Ended December 31,			Change	
	2016	2015	2014	2016 vs. 2015	2015 vs. 2014
	(in thousands, except revenue per membership and percentages)				
Global streaming memberships	93,796	74,762	57,391	25%	30 %
Global streaming average monthly revenue per paying membership	$ 8.61	$ 8.15	$ 8.20	6%	(1)%
Revenues	$ 8,830,669	$ 6,779,511	$ 5,504,656	30%	23 %
Operating income	$ 379,793	$ 305,826	$ 402,648	24%	(24)%
Net income	$ 186,678	$ 122,641	$ 266,799	52%	(54)%

Consolidated revenues for the year ended December 31, 2016 increased as compared to the year ended December 31, 2015 due to growth in the average number of paid streaming memberships globally, the majority of which was growth in our international memberships reflecting our expansion and focus on Netflix as a global internet TV network. The impact from membership growth was coupled with an increase in global streaming average monthly revenue per paying membership resulting from price changes and plan mix partially offset by unfavorable foreign currency fluctuations impacting our International streaming segment. The increase in operating income and net income is due primarily to increased revenues partially offset by increased content expenses as we continue to acquire, license and produce content, including more Netflix originals, as well as increased marketing and headcount costs to support our international expansion. Net income was further impacted by the increase in interest expense associated with our debt issuances as well as to an increase in our effective tax rate, slightly offset by gains on foreign currency denominated transactions. We intend to focus on growing our global operating margin in 2017.

We offer three types of streaming membership plans. In the U.S. our "basic" plan is priced at $7.99 per month and includes access to standard definition quality streaming on a single screen at a time. Our "standard" plan is our most popular streaming plan and is priced at $9.99 per month and includes access to high definition quality streaming on two screens concurrently. Our "premium" plan is priced at $11.99 per month and includes access to high definition and ultra-high definition quality content on four screens concurrently. Internationally, the membership plans are structured similarly to the U.S. and range in price from the U.S. dollar equivalent of approximately $5.00 to $18.00 per month.

We expect that from time to time the prices of our membership plans in each country may change. For instance, in May 2014, in the U.S., we increased the price of our standard plan from $7.99 per month to $8.99 per month with existing memberships grandfathered for a two year period. In October 2015, in the U.S., we increased the price of this same standard plan from $8.99 per month to $9.99 per month with existing memberships grandfathered for a one year period. In 2016, we phased out grandfathered pricing, giving members the option of electing the basic streaming plan at $7.99 per month, continuing on the standard streaming plan at the higher price of $9.99 per month, or electing the premium plan at $11.99 per month.

The following represents the key elements to our segment results of operations:

- We define contribution profit (loss) as revenues less cost of revenues and marketing expenses incurred by the segment. We believe this is an important measure of our operating segment performance as it represents each segment's performance before global corporate costs.

- For the Domestic and International streaming segments, content expenses, which include the amortization of the streaming content assets and other expenses associated with the licensing and acquisition of streaming content, represent the vast majority of cost of revenues. Streaming content rights were generally obtained for our current geographic regions. As we expanded internationally, we obtained additional rights for the new geographies. With our global expansion, we now aspire to obtain global rights for our content. We allocate this content between the Domestic and International segments based on estimated fair market value. Other cost of revenues such as streaming delivery expenses, customer service and payment processing fees, including those we pay to our integrated payment partners, tend to be lower as a percentage of total cost of revenues . We have built our own global content delivery network ("Open Connect") to help us efficiently stream a high volume of content to our members over the internet. Streaming

delivery expenses, therefore, include equipment costs related to Open Connect and all third-party costs, such as cloud computing costs, associated with delivering streaming content over the internet. Cost of revenues in the Domestic DVD segment consist primarily of delivery expenses, content expenses, including amortization of DVD content assets and revenue sharing expenses, and other expenses associated with our DVD processing and customer service centers. Delivery expenses for the Domestic DVD segment consist of the postage costs to mail DVDs to and from our members and the packaging and label costs for the mailers.

- For the Domestic and International streaming segments, marketing expenses consist primarily of advertising expenses and payments made to our partners including device partners, MVPD's, mobile platforms and ISP's. Advertising expenses include promotional activities such as digital and television advertising. Payments to our partners include fixed fee and /or revenue sharing payments. Marketing expenses are incurred by our Domestic and International streaming segments given our focus on building consumer awareness of the streaming offerings, and in particular our original content. Marketing expenses incurred by our International streaming segment have been significant and fluctuate dependent upon the number of international territories in which our streaming service is offered and the timing of the launch of new territories.

- We have demonstrated our ability to grow domestic streaming contribution margin as evidenced by the increase in contribution margin from 17% in 2012 to 36% in 2016. As a result of our focus on growing the streaming segments, contribution margins for the Domestic and International streaming segments are lower than for our Domestic DVD segment.

Segment Results

Domestic Streaming Segment

	As of/ Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except revenue per membership and percentages)						
Memberships:							
Net additions	4,693	5,624	5,694	(931)	(17)%	(70)	(1)%
Memberships at end of period	49,431	44,738	39,114	4,693	10 %	5,624	14 %
Paid memberships at end of period	47,905	43,401	37,698	4,504	10 %	5,703	15 %
Average monthly revenue per paying membership	$9.21	$8.50	$8.14	$0.71	8 %	$0.36	4 %
Contribution profit:							
Revenues	$ 5,077,307	$ 4,180,339	$ 3,431,434	$ 896,968	21 %	$ 748,905	22 %
Cost of revenues	2,855,789	2,487,193	2,201,761	368,596	15 %	285,432	13 %
Marketing	382,832	317,646	293,453	65,186	21 %	24,193	8 %
Contribution profit	1,838,686	1,375,500	936,220	463,186	34 %	439,280	47 %
Contribution margin	36%	33%	27%				

Year ended December 31, 2016 as compared to the year ended December 31, 2015

In the Domestic streaming segment, we derive revenues from monthly membership fees for services consisting solely of streaming content to our members in the United States. The increase in our domestic streaming revenues was due to a 12% growth in the average number of paid memberships and an 8% increase in average monthly revenue per paying membership. The average monthly revenue per paying membership for the fourth quarter of 2016 increased by 15% compared to the same quarter in prior year. These increases in average monthly revenue per paying membership resulted from our price changes and plan mix. In 2016, we phased out grandfathered pricing and cancellations by members whose grandfathered pricing expired were not material. Our standard plan continues to be the most popular plan choice for new memberships.

The increase in domestic streaming cost of revenues was primarily due to a $335.4 million increase in content expenses relating to our existing and new streaming content, including more exclusive and original programming. In addition, we had a $33.2 million increase in other costs, such as payment processing fees and customer service call centers, due to our growing member base.

Domestic marketing expenses increased primarily due to an increase in advertising and public relations spending as well as increased payments to our partners.

Our Domestic streaming segment had a contribution margin of 36% for the year ended December 31, 2016, which increased as compared to the contribution margin of 33% for the year ended December 31, 2015 due to growth in paid memberships and revenue, which continued to outpace content and marketing spending.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

The increase in our domestic streaming revenues was due to a 17% growth in the average number of paid memberships and a 4% increase in average monthly revenue per paying membership resulting from our price changes and plan mix.

The increase in domestic streaming cost of revenues was primarily due to a $208.1 million increase in content expenses relating to our existing and new streaming content, including more exclusive and original programming. In addition, we had a $37.9 million increase in streaming delivery expenses and a $39.4 million increase in other costs, such as payment processing fees and customer service call centers, due to our growing member base.

Domestic marketing expenses increased primarily due to an increase in advertising and public relations spending.

Our Domestic streaming segment had a contribution margin of 33% for the year ended December 31, 2015, which increased as compared to the contribution margin of 27% for the year ended December 31, 2014 due to growth in paid memberships and revenue, which continued to outpace content and marketing spending.

International Streaming Segment

	As of Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except revenue per membership and percentages)						
Memberships:							
Net additions	14,341	11,747	7,347	2,594	22 %	4,400	60 %
Memberships at end of period	44,365	30,024	18,277	14,341	48 %	11,747	64 %
Paid memberships at end of period	41,185	27,438	16,778	13,747	50 %	10,660	64 %
Average monthly revenue per paying membership	$7.81	$7.48	$8.34	$0.33	4 %	$(0.86)	(10)%
Contribution loss:							
Revenues	$ 3,211,095	$ 1,953,435	$ 1,308,061	$1,257,660	64 %	$ 645,374	49 %
Cost of revenues	2,911,370	1,780,375	1,154,117	1,130,995	64 %	626,258	54 %
Marketing	608,246	506,446	313,733	101,800	20 %	192,713	61 %
Contribution loss	(308,521)	(333,386)	(159,789)	(24,865)	(7)%	173,597	109 %
Contribution margin	(10)%	(17)%	(12)%				

In the International streaming segment, we derive revenues from monthly membership fees for services consisting solely of streaming content to our members outside the United States. We launched our streaming service in Canada in September 2010 and have expanded our services internationally as shown below.

Year ended December 31, 2016 as compared to the year ended December 31, 2015

The increase in our international revenues was due to the 57% growth in the average number of paid international memberships and a 4% increase in average monthly revenue per paying membership. The average monthly revenue per paying membership for the fourth quarter of 2016 increased by 10% compared to the same quarter in prior year. These increases in average monthly revenue per paying membership were due to price changes and plan mix, offset partially by unfavorable fluctuations in foreign exchange rates. We estimate that international revenues would have been approximately $174 million higher in the year ended December 31, 2016 if foreign exchange rates had remained consistent with those for the year ended December 31, 2015. If foreign currency exchange rates fluctuate more than expected, revenues and average revenue per paying membership may differ from our expectations. Average paid international streaming memberships accounted for 43% of total average paid streaming memberships as of December 31, 2016, as compared to 35% of total average paid streaming memberships as of December 31, 2015.

The increase in international cost of revenues was primarily due to a $998.5 million increase in content expenses relating to our existing and new streaming content, including more exclusive and original programming. Other costs increased $132.5 million primarily due to increases in our streaming delivery expenses, costs associated with our customer service call centers and payment processing fees, all driven by our growing member base, partially offset by decreases resulting from exchange rate

fluctuations.

International marketing expenses increased mainly due to expenses for territories launched in the last eighteen months.

International contribution losses decreased $24.9 million year over year due to growth in paid memberships and revenue, which outpaced the growth in marketing spending.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

The increase in our international revenues was due to the 66% growth in the average number of paid international memberships offset partially by a 10% decrease in average monthly revenue per paying membership. The decrease in average monthly revenue per paying membership was due to the impact of exchange rate fluctuations and to a lesser extent the impact of absorbing higher VAT rates across our European markets beginning January 1, 2015. These decreases were partially offset by our pricing changes and plan mix. We believe international revenues would have been approximately $331 million higher in 2015 if foreign exchange rates had remained consistent with those for the year ended December 31, 2014.

The increase in international cost of revenues was primarily due to a $522.1 million increase in content expenses primarily relating to expenses for territories launched in the last eighteen months, coupled with existing and new streaming content, including more exclusive and original programming. Other costs increased $104.2 million primarily due to increases in our streaming delivery expenses, costs associated with our customer service call centers and payment processing fees, all driven by our growing member base, partially offset by decreases resulting from exchange rate fluctuations. Average paid international streaming memberships accounted for 35% of total average paid streaming memberships as of December 31, 2015, as compared to 27% of total average paid streaming memberships as of December 31, 2014.

International marketing expenses for the year ended December 31, 2015 increased as compared to the year ended December 31, 2014 mainly due to expenses for territories launched in the last eighteen months.

International contribution losses increased $173.6 million year over year due to our increased spending for our international expansion and the impact of foreign currency exchange rate fluctuations.

Domestic DVD Segment

	As of/ Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except revenue per membership and percentages)						
Memberships:							
Net losses	(790)	(863)	(1,163)	(73)	(8)%	(300)	(26)%
Memberships at end of period	4,114	4,904	5,767	(790)	(16)%	(863)	(15)%
Paid memberships at end of period	4,029	4,787	5,668	(758)	(16)%	(881)	(16)%
Average monthly revenue per paying membership	$10.22	$10.30	$10.29	$(0.08)	(1)%	$0.01	— %
Contribution profit:							
Revenues	$ 542,267	$ 645,737	$ 765,161	$ (103,470)	(16)%	$ (119,424)	(16)%
Cost of revenues	262,742	323,908	396,882	(61,166)	(19)%	(72,974)	(18)%
Contribution profit	279,525	321,829	368,279	(42,304)	(13)%	(46,450)	(13)%
Contribution margin	52%	50%	48%				

Year ended December 31, 2016 as compared to the year ended December 31, 2015

In the Domestic DVD segment, we derive revenues from our DVD-by-mail membership services. The price per plan for DVD-by-mail varies from $4.99 to $14.99 per month according to the plan chosen by the member. DVD-by-mail plans differ by the number of DVDs that a member may have out at any given point. Members electing access to high definition Blu-ray discs, in addition to standard definition DVDs, pay a surcharge ranging from $2 to $4 per month for our most popular plans.

The decrease in our domestic DVD revenues was due to a 15% decrease in the average number of paid memberships.

The decrease in domestic DVD cost of revenues was primarily due to a $14.0 million decrease in content expenses and a $32.8 million decrease in delivery expenses resulting from a 18% decrease in the number of DVDs mailed to members. The decrease in

shipments was driven by a decline in the number of DVD memberships coupled with a decrease in usage by these

members. Other costs, primarily those associated with processing and customer service expenses, decreased $14.4 million primarily due to a decrease in hub operation expenses resulting from the decline in DVD shipments.

Our Domestic DVD segment had a contribution margin of 52% for the year ended December 31, 2016, up from 50% for the year ended December 31, 2015 due to the decrease in DVD usage by paying members.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

The decrease in our domestic DVD revenues was due to a 16% decrease in the average number of paid memberships.

The decrease in domestic DVD cost of revenues was primarily due to a $21.0 million decrease in content expenses and a $38.9 million decrease in delivery expenses resulting from a 21% decrease in the number of DVDs mailed to members. The decrease in shipments was driven by a decline in the number of DVD memberships coupled with a decrease in usage by these members. Other costs, primarily those associated with processing and customer service expenses, decreased $13.1 million primarily due to a decrease in hub operation expenses resulting from the decline in DVD shipments.

Our Domestic DVD segment had a contribution margin of 50% for the year ended December 31, 2015, up from 48% for the year ended December 31, 2014 due to the decrease in DVD usage by paying members.

Consolidated Operating Expenses

Technology and Development

Technology and development expenses consist of payroll and related costs incurred in making improvements to our service offerings, including testing, maintaining and modifying our user interface, our recommendation, merchandising and streaming delivery technology and infrastructure. Technology and development expenses also include costs associated with computer hardware and software.

	Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except percentages)						
Technology and development	$ 852,098	$ 650,788	$ 472,321	$ 201,310	31%	$ 178,467	38%
As a percentage of revenues	10%	10%	9%				

Year ended December 31, 2016 as compared to the year ended December 31, 2015

The increase in technology and development expenses was primarily due to a $162.3 million increase in personnel-related costs resulting from an increase in compensation for existing employees and a 20% growth in average headcount supporting continued improvements in our streaming service and our international expansion. In addition, third-party expenses, including costs associated with cloud computing, increased $27.3 million.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

The increase in technology and development expenses was primarily due to a $133.2 million increase in personnel-related costs resulting from an increase in compensation for existing employees and a 20% growth in average headcount supporting continued improvements in our streaming service and our international expansion. In addition, third-party expenses, including costs associated with cloud computing, increased $23.8 million.

General and Administrative

General and administrative expenses consist of payroll and related expenses for corporate personnel, as well as professional fees and other general corporate expenses.

	Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except percentages)						
General and administrative	$ 577,799	$ 407,329	$ 269,741	$ 170,470	42%	$ 137,588	51%
As a percentage of revenues	7%	6%	5%				

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Year ended December 31, 2016 as compared to the year ended December 31, 2015

General and administrative expenses increased primarily due to a $148.9 million increase in personnel-related costs, including stock-based compensation expense, resulting from a 39% increase in average headcount primarily to support our international expansion and increased production of original content, and an increase in compensation for existing employees. In addition, facilities-related costs increased $16.2 million due to the growth in average headcount.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

General and administrative expenses increased primarily due to a $120.1 million increase in personnel-related costs, including stock-based compensation expense, resulting from a 51% increase in average headcount primarily to support our international expansion and increased production of original content, and an increase in compensation for existing employees.

Interest Expense

Interest expense consists primarily of the interest associated with our outstanding long-term debt obligations, including the amortization of debt issuance costs, as well as interest on our lease financing obligations.

	Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except percentages)						
Interest expense	$ (150,114)	$ (132,716)	$ (50,219)	$ 17,398	13%	$ 82,497	164%
As a percentage of revenues	2%	2%	1%				

Year ended December 31, 2016 as compared to the year ended December 31, 2015

Interest expense for the year ended December 31, 2016 consists primarily of $143.3 million of interest on our notes. The increase in interest expense for the year ended December 31, 2016 as compared to the year ended December 31, 2015 is due to the higher aggregate principal of interest bearing notes outstanding.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

Interest expense for the year ended December 31, 2015 consists primarily of $127.1 million of interest on our notes. The increase in interest expense for the year ended December 31, 2015 as compared to the year ended December 31, 2014 is due to the higher aggregate principal of interest bearing notes outstanding.

Interest and Other Income (Expense)

Interest and other income (expense) consists primarily of foreign exchange gains and losses on foreign currency denominated balances and interest earned on cash, cash equivalents and short-term investments.

	Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except percentages)						
Interest and other income (expense)	$ 30,828	$ (31,225)	$ (3,060)	$ 62,053	199%	$ (28,165)	(920)%

Year ended December 31, 2016 as compared to the year ended December 31, 2015

Interest and other income (expense) increased primarily due to foreign exchange. In the year ended December 31, 2016, the foreign exchange gain of $22.8 million was primarily driven by the remeasurement of significant content liabilities denominated in currencies other than functional currencies.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

Interest and other income (expense) decreased primarily due to foreign exchange. In the year ended December 31, 2015, the foreign exchange loss of $37.3 million was primarily driven by the remeasurement of significant content liabilities denominated in currencies other than functional currencies in our European entities coupled with the strengthening of the U.S. dollar.

Provision for Income Taxes

	Year Ended December 31,			Change			
	2016	2015	2014	2016 vs. 2015		2015 vs. 2014	
	(in thousands, except percentages)						
Provision for income taxes	$ 73,829	$ 19,244	$ 82,570	$ 54,585	284%	(63,326)	(77)%
Effective tax rate	28%	14%	24%				

Year ended December 31, 2016 as compared to the year ended December 31, 2015

The increase in our effective tax rate is mainly due to a $13.4 million release of tax reserves in 2015 and an increase in foreign taxes. In 2016, the difference between our 28% effective tax rate and the Federal statutory rate of 35% was $17.3 million primarily due to the 2016 Federal and California research and development ("R&D") credits partially offset by state income taxes, foreign taxes, and nondeductible expenses.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

The decrease in our effective tax rate is mainly due to an increase in R&D credits and a decrease in state and local income taxes. In 2015, the difference between our 14% effective tax rate and the Federal statutory rate of 35% was $30.4 million primarily due to a $13.4 million release of tax reserves on previously unrecognized tax benefits as a result of an IRS audit settlement leading to the reassessment of our reserves for all open years, $16.5 million related to the retroactive reinstatement of the 2015 Federal R&D credit, as well as the California R&D credit; partially offset by state income taxes, foreign taxes and nondeductible expenses. On December 18, 2015, the Protecting Americans from Tax Hikes Act of 2015 (H.R. 2029) was signed into law which retroactively and permanently extended the Federal R&D credit from January 1, 2015. As a result, we recognized the retroactive benefit of the 2015 R&D credit as a discrete item in the fourth quarter of 2015, the period in which the legislation was enacted.

Liquidity and Capital Resources

Cash, cash equivalents and short-term investments decreased $576.9 million from $2,310.7 million as of December 31, 2015 to $1,733.8 million as of December 31, 2016. In October 2016, we issued $1,000.0 million of long-term debt. The decrease in cash, cash equivalents and short-term investments in the year ended December 31, 2016 was primarily driven by an increase in cash used in operations, partially offset by cash received from the issuance of debt. Long-term debt, net of debt issuance costs, was $3,364.3 million and $2,371.4 million as of December 31, 2016 and 2015, respectively. See Note 4 to the consolidated financial statements for additional information.

Our primary uses of cash include the acquisition, licensing and production of content, streaming delivery, marketing programs and personnel-related costs. Investments in original content, and in particular content that we produce and own, require more cash upfront relative to licensed content. We expect to significantly increase our investments in global streaming content, particularly in original content, which will impact our liquidity and may result in future negative free cash flows even after we achieve material global profitability.

We currently anticipate that cash flows from operations, together with available funds and access to financing sources, will continue to be sufficient to meet our cash needs for at least the next twelve months. Our ability to obtain any additional financing that we may choose to, or need to, obtain will depend on, among other things, our development efforts, business plans, operating performance, financial condition and the condition of the capital markets at the time we seek financing. We may not be able to obtain such financing on terms acceptable to us or at all. If we raise additional funds through the issuance of equity, equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our common stock, and our stockholders may experience dilution.

As of December 31, 2016, cash and cash equivalents held by our foreign subsidiaries amounted to $278.5 million. If these funds are needed for our operations in the U.S., we would be required to accrue and pay U.S. income taxes and foreign withholding taxes on the portion associated with undistributed earnings for certain foreign subsidiaries.

Free Cash Flow

We define free cash flow as cash provided by (used in) operating and investing activities excluding the non-operational cash flows from purchases, maturities and sales of short-term investments. We believe free cash flow is an important liquidity metric because it measures, during a given period, the amount of cash generated that is available to repay debt obligations, make investments in content and for certain other activities or the amount of cash used in operations, including investments in global streaming content. Free cash flow is considered a non-GAAP financial measure and should not be considered in isolation

of, or as a substitute for, net income, operating income, cash flow (used in) provided by operating activities, or any other measure of financial performance or liquidity presented in accordance with GAAP.

In assessing liquidity in relation to our results of operations, we compare free cash flow to net income, noting that the three major recurring differences are excess content payments over expense, non-cash stock-based compensation expense and other working capital differences. The excess content payments over expense is variable based on the payment terms of our content agreements and is expected to increase as we enter into more agreements with upfront cash payments, such as licensing and production of original content. In the last 12 months, the ratio of content payments over content expense was 1.4. Working capital differences include deferred revenue, taxes and semi-annual interest payments on our outstanding debt. Our receivables from members generally settle quickly and deferred revenue is a source of cash flow.

	Year Ended December 31,		
	2016	2015	2014
		(in thousands)	
Net cash (used in) provided by operating activities	$ (1,473,984)	$ (749,439)	$ 16,483
Net cash provided by (used in) investing activities	49,765	(179,192)	(42,866)
Net cash provided by financing activities	1,091,630	1,640,277	541,712
Non-GAAP free cash flow reconciliation:			
Net cash (used in) provided by operating activities	(1,473,984)	(749,439)	16,483
Acquisition of DVD content assets	(77,177)	(77,958)	(74,790)
Purchases of property and equipment	(107,653)	(91,248)	(69,726)
Other assets	(941)	(1,912)	1,334
Non-GAAP free cash flow	$ (1,659,755)	$ (920,557)	$ (126,699)

Year ended December 31, 2016 as compared to the year ended December 31, 2015

Cash used in operating activities increased $724.5 million resulting in net cash used in operating activities of $1,474.0 million for the year ended December 31, 2016. The significant net cash used in operations is due primarily to the increase in investments in streaming content that require more upfront payments. The payments for streaming content assets increased $2,271.4 million, from $4,609.2 million to $6,880.6 million, or 49%. In addition, we had increased payments associated with higher operating expenses. The increased use of cash was partially offset by a $2,051.2 million or 30% increase in revenues.

Cash provided by investing activities increased $229.0 million, primarily due to an increase of $243.6 million in the proceeds from sales and maturities of short-term investments, net of purchases, partially offset by a $16.4 million increase in the purchases of property and equipment, primarily driven by the expansion of our Los Gatos, California headquarters, as well as our new office space in Los Angeles, California.

Cash provided by financing activities decreased $548.6 million primarily due to the $1,482.4 million net proceeds from the issuance of the 5.50% Notes and the 5.875% Notes in the year ended December 31, 2015 as compared to the $989.3 million net proceeds from the issuance of the 4.375% Notes in the year ended December 31, 2016.

Free cash flow was $1,846.4 million lower than net income for the year ended December 31, 2016 primarily due to $2,092.1 million of cash payments for streaming content assets over streaming amortization expense partially offset by $173.7 million of non-cash stock-based compensation expense and $72.0 million of favorable other working capital differences.

Year ended December 31, 2015 as compared to the year ended December 31, 2014

Cash provided by operating activities decreased $765.9 million resulting in net cash used in operating activities of $749.4 million for the year ended December 31, 2015. The significant net cash used in operations is due primarily to the increase in investments in streaming content that require more upfront payments. The payments for streaming assets increased $1,429.3 million, from $3,179.9 million to $4,609.2 million or 45%. In addition, we had increased payments associated with higher operating expenses. The increased use of cash was partially offset by a $1,274.9 million or 23% increase in revenues.

Cash used in investing activities increased $136.3 million, primarily due to a decrease of $108.4 million in the proceeds from sales and maturities of short-term investments, net of purchases. In addition, purchases of property and equipment increased by $21.5

million, primarily driven by the expansion of our Los Gatos, California headquarters.

Cash provided by financing activities increased $1,098.6 million primarily due to the $1,482.4 million net proceeds from the issuance of the 5.50% Notes and the 5.875% Notes in the year ended December 31, 2015 as compared to the $392.9 million net proceeds from the issuance of the 5.750% Notes in the year ended December 31, 2014.

Free cash flow was $1,043.2 million lower than net income for the year ended December 31, 2015 primarily due to $1,203.9 million of cash payments for streaming content assets over streaming amortization expense partially offset by $124.7 million of non-cash stock-based compensation expense and $36.0 million of favorable other working capital differences.

Free cash flow was $393.5 million lower than net income for the year ended December 31, 2014 primarily due to $523.6 million of cash payments for streaming content assets over streaming amortization expense partially offset by $115.2 million of non-cash stock-based compensation expense and $14.9 million of favorable other working capital differences.

Contractual Obligations

For the purpose of this table, contractual obligations for purchases of goods or services are defined as agreements that are enforceable and legally binding and that specify all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. The expected timing of the payment of the obligations discussed below is estimated based on information available to us as of December 31, 2016. Timing of payments and actual amounts paid may be different depending on the time of receipt of goods or services or changes to agreed-upon amounts for some obligations. The following table summarizes our contractual obligations at December 31, 2016:

	Payments due by Period				
Contractual obligations (in thousands):	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Streaming content obligations (1)	$ 14,479,487	$ 6,200,611	$ 6,731,336	$ 1,386,934	$ 160,606
Debt (2)	4,730,369	181,556	358,250	844,813	3,345,750
Lease obligations (3)	640,840	64,502	144,766	124,037	307,535
Other purchase obligations (4)	350,366	185,023	81,707	39,278	44,358
Total	$ 20,201,062	$ 6,631,692	$ 7,316,059	$ 2,395,062	$ 3,858,249

(1) As of December 31, 2016, streaming content obligations were comprised of $3.6 billion included in "Current content liabilities" and $2.9 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $8.0 billion of obligations that are not reflected on the Consolidated Balance Sheets as they did not then meet the criteria for recognition.

Streaming content obligations increased $3.6 billion from $10.9 billion as of December 31, 2015 to $14.5 billion as of December 31, 2016 primarily due to multi-year commitments associated with the continued expansion of our exclusive and original programming.

Streaming content obligations include amounts related to the acquisition, licensing and production of streaming content. An obligation for the production of content includes non-cancelable commitments under creative talent and employment agreements. An obligation for the acquisition and licensing of content is incurred at the time we enter into an agreement to obtain future titles. Once a title becomes available, a content liability is recorded on the Consolidated Balance Sheets. Certain agreements include the obligation to license rights for unknown future titles, the ultimate quantity and/or fees for which are not yet determinable as of the reporting date. Traditional film output deals, like the U.S. output deal with Disney, or certain TV series license agreements where the number of seasons to be aired is unknown, are examples of these types of agreements. The contractual obligations table above does not include any estimated obligation for the unknown future titles, payment for which could range from less than one year to more than five years. However, these unknown obligations are expected to be significant and we believe could include approximately $3 billion to $5 billion over the next three years, with the payments for the vast majority of such amounts expected to occur after the next twelve months. The foregoing range is based on considerable management judgments and the actual amounts may differ. Once we know the title that we will receive and the license fees, we include the amount in the contractual obligations table above.

(2) Long-term debt obligations include our Notes consisting of principal and interest payments. See Note 4 to the consolidated financial statements for further details.

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(3) Lease obligations include lease financing obligations of $18.5 million related to our current Los Gatos, California headquarters for which we are the deemed owner for accounting purposes, commitments of $530.2 million for our expanded headquarters in Los Gatos, California, and our new office space in Los Angeles, California and other commitments of $92.1 million for facilities under non-cancelable operating leases. These leases have expiration dates varying through approximately 2027.

(4) Other purchase obligations include all other non-cancelable contractual obligations. These contracts are primarily related to streaming delivery, DVD content acquisition, and miscellaneous open purchase orders for which we have not received the related services or goods.

As of December 31, 2016, we had gross unrecognized tax benefits of $19.7 million which was classified in “Other non-current liabilities” and a reduction to deferred tax assets which was classified as "Other non-current assets" in the consolidated balance sheets. At this time, an estimate of the range of reasonably possible adjustments to the balance of unrecognized tax benefits cannot be made.

Off-Balance Sheet Arrangements

We do not have transactions with unconsolidated entities, such as entities often referred to as structured finance or special purpose entities, whereby we have financial guarantees, subordinated retained interests, derivative instruments, or other contingent arrangements that expose us to material continuing risks, contingent liabilities, or any other obligation under a variable interest in an unconsolidated entity that provides financing, liquidity, market risk, or credit risk support to us.

Indemnifications

The information set forth under Note 6 to the consolidated financial statements under the caption “Indemnification” is incorporated herein by reference.

Critical Accounting Policies and Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reported periods. The Securities and Exchange Commission ("SEC") has defined a company’s critical accounting policies as the ones that are most important to the portrayal of a company’s financial condition and results of operations, and which require a company to make its most difficult and subjective judgments. Based on this definition, we have identified the critical accounting policies and judgments addressed below. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from these estimates.

Streaming Content

We acquire, license and produce content, including original programing, in order to offer our members unlimited viewing of TV shows and films. The content licenses are for a fixed fee and specific windows of availability. Payment terms for certain content licenses and the production of content require more upfront cash payments relative to the amortization expense. Payments for content, including additions to streaming assets and the changes in related liabilities, are classified within "Net cash used in (provided by) operating activities" on the Consolidated Statements of Cash Flows.

For licenses we capitalize the fee per title and record a corresponding liability at the gross amount of the liability when the license period begins, the cost of the title is known and the title is accepted and available for streaming. The portion available for streaming within one year is recognized as “Current content assets, net” and the remaining portion as “Non-current content assets, net” on the Consolidated Balance Sheets.

For productions, we capitalize costs associated with the production, including development cost and direct costs. We include these amounts in "Non-current content assets, net" on the Consolidated Balance Sheets. Participations and residuals are expensed in line with the amortization of production costs.

Based on factors including historical and estimated viewing patterns, we amortize the content assets (licensed and produced) in “Cost of revenues” on the Consolidated Statements of Operations, over the shorter of each title's contractual window of availability or estimated period of use, beginning with the month of first availability. The amortization period typically ranges from six months to five years. For content where we expect more upfront viewing, for instance due to additional merchandising and marketing efforts, we amortize on an accelerated basis. We review factors that impact the

amortization of the content assets on a regular basis. Our estimates related to these factors require considerable management judgment. In the third quarter of 2016, we changed the amortization method of certain content given changes in estimated viewing patterns of this content. The effect of this change in estimate was a $19.8 million decrease in operating income and a $12.3 million decrease in net income for the year ended December 31, 2016. The effect on both basic and diluted earnings per share was a decrease of $0.03 for the year ended December 31, 2016. Changes in our estimates could have a significant impact on our future results of operations.

Our business model is subscription based as opposed to a model generating revenues at a specific title level. Therefore, content assets, both licensed and produced, are reviewed in aggregate at the operating segment level when an event or change in circumstances indicates a change in the expected usefulness or that the fair value may be less than amortized cost. To date, we have not identified any such event or changes in circumstances. If such changes are identified in the future, these aggregated content assets will be stated at the lower of unamortized cost, net realizable value or fair value. In addition, unamortized costs for assets that have been, or are expected to be, abandoned are written off. No material write-down from unamortized cost was recorded in any of the periods presented.

Income Taxes

We record a provision for income taxes for the anticipated tax consequences of our reported results of operations using the asset and liability method. Deferred income taxes are recognized by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases as well as net operating loss and tax credit carryforwards. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The measurement of deferred tax assets is reduced, if necessary, by a valuation allowance for any tax benefits for which future realization is uncertain. There was no significant valuation allowance as of December 31, 2016 or 2015.

Although we believe our assumptions, judgments and estimates are reasonable, changes in tax laws or our interpretation of tax laws and the resolution of any tax audits could significantly impact the amounts provided for income taxes in our consolidated financial statements.

In evaluating our ability to recover our deferred tax assets, in full or in part, we consider all available positive and negative evidence, including our past operating results, and our forecast of future earnings, future taxable income and prudent and feasible tax planning strategies. The assumptions utilized in determining future taxable income require significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses. Actual operating results in future years could differ from our current assumptions, judgments and estimates. However, we believe that it is more likely than not that substantially all deferred tax assets recorded on our Consolidated Balance Sheets will ultimately be realized. In the event we were to determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to earnings in the period in which we make such determination.

We did not recognize certain tax benefits from uncertain tax positions within the provision for income taxes. We may recognize a tax benefit only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. At December 31, 2016, our estimated gross unrecognized tax benefits were $19.7 million of which $17.0 million, if recognized, would favorably impact our future earnings. Due to uncertainties in any tax audit outcome, our estimates of the ultimate settlement of our unrecognized tax positions may change and the actual tax benefits may differ significantly from the estimates. See Note 9 to the consolidated financial statements for further information regarding income taxes.

Stock-Based Compensation

We grant fully vested non-qualified stock options to our employees on a monthly basis. As a result of immediate vesting, stock-based compensation expense is fully recognized on the grant date, and no estimate is required for post-vesting option forfeitures. Stock-based compensation expense at the grant date is based on the total number of options granted and an estimate of the fair value of the awards.

- *Expected Volatility:* The Company calculates expected volatility based solely on implied volatility. We believe that implied volatility of publicly traded options in our common stock is more reflective of market conditions and, given consistently high trade volumes of the options, can reasonably be expected to be a better indicator of expected volatility than historical volatility of our common stock. An increase/decrease of 10% in our computation of expected volatility would increase/decrease the total stock-based compensation expense by approximately $14.4 million for the year ended December 31, 2016.

- *Suboptimal Exercise Factor:* Our computation of the suboptimal exercise factor is based on historical and estimated option exercise behavior. An increase/decrease in the suboptimal exercise factor of 10% would increase/decrease the total stock-based compensation expense by approximately $6.0 million for the year ended December 31, 2016.

Recent Accounting Pronouncements

The information set forth under Note 1 to the consolidated financial statements under the caption "Basis of Presentation and Summary of Significant Accounting Policies" is incorporated herein by reference.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks related to interest rate changes and the corresponding changes in the market values of our investments, debt and foreign currency fluctuations.

Interest Rate Risk

The primary objective of our investment activities is to preserve principal, while at the same time maximizing income we receive from investments without significantly increased risk. To achieve this objective, we follow an established investment policy and set of guidelines to monitor and help mitigate our exposure to interest rate and credit risk. The policy sets forth credit quality standards and limits our exposure to any one issuer, as well as our maximum exposure to various asset classes. We maintain a portfolio of cash equivalents and short-term investments in a variety of securities. These securities are classified as available-for-sale and are recorded at fair value with unrealized gains and losses, net of tax, included in "Accumulated other comprehensive loss" within Stockholders' equity in the Consolidated Balance Sheets.

For the year ended December 31, 2016, we had no impairment charges associated with our short-term investment portfolio. Although we believe our current investment portfolio has very little risk of material impairment, we cannot predict future market conditions or market liquidity and can provide no assurance that our investment portfolio will remain materially unimpaired. Some of the securities we invest in may be subject to market risk due to changes in prevailing interest rates which may cause the principal amount of the investment to fluctuate. For example, if we hold a security that was issued with a fixed interest rate at the then-prevailing rate and the prevailing interest rate later rises, the value of our investment will decline. At December 31, 2016, our cash equivalents were generally invested in money market funds, which are not subject to market risk because the interest paid on such funds fluctuates with the prevailing interest rate. Our short-term investments were comprised of corporate debt securities, government and agency securities and asset backed securities.

Changes in interest rates could adversely affect the market value of the securities we hold that are classified as short-term investments. The table below separates these investments, based on stated maturities, to show the approximate exposure to interest rates as of December 31, 2016.

	(in thousands)
Due within one year	$ 61,833
Due after one year and through 5 years	204,373
Total	$ 266,206

A sensitivity analysis was performed on our investment portfolio as of December 31, 2016. The analysis is based on an estimate of the hypothetical changes in market value of the portfolio that would result from an immediate parallel shift in the yield curve of various magnitudes. This methodology assumes a more immediate change in interest rates to reflect the current economic environment.

The following table presents the hypothetical fair values of our debt securities classified as short-term investments assuming immediate parallel shifts in the yield curve of 50 basis points ("BPS"), 100 BPS and 150 BPS. The analysis is shown as of December 31, 2016:

Fair Value as of December 31, 2016 (in thousands)					
-150 BPS	-100 BPS	-50 BPS	+50 BPS	+100 BPS	+150 BPS
$ 271,745	$ 270,151	$ 268,180	$ 264,234	$ 262,261	$ 260,289

Based on investment positions as of December 31, 2016, a hypothetical 100 basis point increase in interest rates across all maturities would result in a $3.9 million incremental decline in the fair market value of the portfolio. As of December 31, 2015, a similar 100 basis point increase in the yield curve would have resulted in a $6.6 million incremental decline in the fair market value of the portfolio. Such losses would only be realized if the Company sold the investments prior to maturity.

As of December 31, 2016, we had $3.4 billion of debt, consisting of fixed rate unsecured debt in five tranches. Refer to Note 4 to the consolidated financial statements for details about all issuances. The fair value of our debt will fluctuate with movements of interest rates, increasing in periods of declining rates of interest and declining in periods of increasing rates of interest.

Foreign Currency Risk

International revenues and cost of revenues account for 36% and 48%, respectively, of consolidated amounts for the year ended December 31, 2016. The majority of international revenues and a smaller portion of expenses are denominated in currencies other than the U.S. dollar and we therefore have foreign currency risk related to these currencies, which are primarily the euro, the British pound, the Canadian dollar, the Australian dollar and the Brazilian real.

Accordingly, changes in exchange rates, and in particular a weakening of foreign currencies relative to the U.S. dollar may negatively affect our revenue and contribution profit (loss) of our International streaming segment as expressed in U.S. dollars. For the year ended December 31, 2016, we believe our international revenues would have been approximately $174.4 million higher had foreign currency exchange rates remained consistent with those for the year ended December 31, 2015.

We have also experienced and will continue to experience fluctuations in our net income as a result of gains (losses) on the settlement and the remeasurement of monetary assets and liabilities denominated in currencies that are not the functional currency. In the year ended December 31, 2016, we recognized a $22.8 million foreign exchange gain which resulted primarily from the remeasurement of significant content liabilities denominated in currencies other than functional currencies.

We do not use foreign exchange contracts or derivatives to hedge any foreign currency exposures. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. Our continued international expansion increases our exposure to exchange rate fluctuations and as a result such fluctuations could have a significant impact on our future results of operations.

Item 8. Financial Statements and Supplementary Data

The consolidated financial statements and accompanying notes listed in Part IV, Item 15(a)(1) of this Annual Report on Form 10-K are included immediately following Part IV hereof and incorporated by reference herein.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K were effective in providing reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within Netflix have been detected.

(b) Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Securities Exchange Act of 1934 as amended (the Exchange Act)). Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2016. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control—Integrated Framework* (2013 framework). Based on our assessment under the framework in *Internal Control—Integrated Framework* (2013 framework), our management concluded that our internal control over financial reporting was effective as of December 31, 2016. The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report that is included herein.

(c) Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2016 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Netflix, Inc.

We have audited Netflix, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Netflix, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Netflix, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Netflix, Inc. as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2016 of Netflix, Inc. and our report dated January 27, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Jose, California
January 27, 2017

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information regarding our directors and executive officers is incorporated by reference from the information contained under the sections “Proposal One: Election of Directors,” “Section 16(a) Beneficial Ownership Compliance” and “Code of Ethics” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 11. Executive Compensation

Information required by this item is incorporated by reference from information contained under the section “Compensation of Executive Officers and Other Matters” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information required by this item is incorporated by reference from information contained under the sections “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information required by this item is incorporated by reference from information contained under the section “Certain Relationships and Related Transactions” and “Director Independence” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 14. Principal Accounting Fees and Services

Information with respect to principal independent registered public accounting firm fees and services is incorporated by reference from the information under the caption “Proposal Two: Ratification of Appointment of Independent Registered Public Accounting Firm” in our Proxy Statement for the Annual Meeting of Stockholders.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements:

The financial statements are filed as part of this Annual Report on Form 10-K under "Item 8. Financial Statements and Supplementary Data."

(2) Financial Statement Schedules:

The financial statement schedules are omitted as they are either not applicable or the information required is presented in the financial statements and notes thereto under "Item 8. Financial Statements and Supplementary Data."

(3) Exhibits:

See Exhibit Index immediately following the signature page of this Annual Report on Form 10-K.

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Item 16. Form 10-K Summary

None.

NETFLIX, INC.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Netflix, Inc.

We have audited the accompanying consolidated balance sheets of Netflix, Inc. as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Netflix, Inc. at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Netflix, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated January 27, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Jose, California
January 27, 2017

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year ended December 31,		
	2016	2015	2014
Revenues	$ 8,830,669	$ 6,779,511	$ 5,504,656
Cost of revenues	6,029,901	4,591,476	3,752,760
Marketing	991,078	824,092	607,186
Technology and development	852,098	650,788	472,321
General and administrative	577,799	407,329	269,741
Operating income	379,793	305,826	402,648
Other income (expense):			
Interest expense	(150,114)	(132,716)	(50,219)
Interest and other income (expense)	30,828	(31,225)	(3,060)
Income before income taxes	260,507	141,885	349,369
Provision for income taxes	73,829	19,244	82,570
Net income	$ 186,678	$ 122,641	$ 266,799
Earnings per share:			
Basic	$ 0.44	$ 0.29	$ 0.63
Diluted	$ 0.43	$ 0.28	$ 0.62
Weighted-average common shares outstanding:			
Basic	428,822	425,889	420,544
Diluted	438,652	436,456	431,894

See accompanying notes to consolidated financial statements.

NETFLIX, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year ended December 31,		
	2016	2015	2014
Net income	$ 186,678	$ 122,641	$ 266,799
Other comprehensive loss:			
Foreign currency translation adjustments	(5,464)	(37,887)	(7,768)
Change in unrealized gains (losses) on available-for-sale securities, net of tax of $126, $(598), and $(156), respectively	207	(975)	(253)
Total other comprehensive loss	(5,257)	(38,862)	(8,021)
Comprehensive income	$ 181,421	$ 83,779	$ 258,778

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2016	2015	2014
Cash flows from operating activities:			
Net income	$ 186,678	$ 122,641	$ 266,799
Adjustments to reconcile net income to net cash (used in) provided by operating activities:			
Additions to streaming content assets	(8,653,286)	(5,771,652)	(3,773,019)
Change in streaming content liabilities	1,772,650	1,162,413	593,125
Amortization of streaming content assets	4,788,498	3,405,382	2,656,279
Amortization of DVD content assets	78,952	79,380	71,491
Depreciation and amortization of property, equipment and intangibles	57,528	62,283	54,028
Stock-based compensation expense	173,675	124,725	115,239
Excess tax benefits from stock-based compensation	(65,121)	(80,471)	(89,341)
Other non-cash items	40,909	31,628	15,282
Deferred taxes	(46,847)	(58,655)	(30,063)
Changes in operating assets and liabilities:			
Other current assets	46,970	18,693	(9,198)
Accounts payable	32,247	51,615	83,812
Accrued expenses	68,706	48,810	55,636
Deferred revenue	96,751	72,135	58,819
Other non-current assets and liabilities	(52,294)	(18,366)	(52,406)
Net cash (used in) provided by operating activities	(1,473,984)	(749,439)	16,483
Cash flows from investing activities:			
Acquisition of DVD content assets	(77,177)	(77,958)	(74,790)
Purchases of property and equipment	(107,653)	(91,248)	(69,726)
Other assets	(941)	(1,912)	1,334
Purchases of short-term investments	(187,193)	(371,915)	(426,934)
Proceeds from sale of short-term investments	282,484	259,079	385,300
Proceeds from maturities of short-term investments	140,245	104,762	141,950
Net cash provided by (used in) investing activities	49,765	(179,192)	(42,866)
Cash flows from financing activities:			
Proceeds from issuance of debt	1,000,000	1,500,000	400,000
Issuance costs	(10,700)	(17,629)	(7,080)
Proceeds from issuance of common stock	36,979	77,980	60,544
Excess tax benefits from stock-based compensation	65,121	80,471	89,341
Other financing activities	230	(545)	(1,093)
Net cash provided by financing activities	1,091,630	1,640,277	541,712
Effect of exchange rate changes on cash and cash equivalents	(9,165)	(15,924)	(6,686)
Net (decrease) increase in cash and cash equivalents	(341,754)	695,722	508,643
Cash and cash equivalents, beginning of year	1,809,330	1,113,608	604,965
Cash and cash equivalents, end of year	$ 1,467,576	$ 1,809,330	$ 1,113,608
Supplemental disclosure:			
Income taxes paid	$ 26,806	$ 27,658	$ 50,573

Interest paid	138,566	111,761	41,085
Change in investing activities included in liabilities	27,504	(4,978)	12,295

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	As of December 31,	
	2016	2015
Assets		
Current assets:		
Cash and cash equivalents	$ 1,467,576	$ 1,809,330
Short-term investments	266,206	501,385
Current content assets, net	3,726,307	2,905,998
Other current assets	260,202	215,127
Total current assets	5,720,291	5,431,840
Non-current content assets, net	7,274,501	4,312,817
Property and equipment, net	250,395	173,412
Other non-current assets	341,423	284,802
Total assets	$ 13,586,610	$ 10,202,871
Liabilities and Stockholders' Equity		
Current liabilities:		
Current content liabilities	$ 3,632,711	$ 2,789,023
Accounts payable	312,842	253,491
Accrued expenses	197,632	140,389
Deferred revenue	443,472	346,721
Total current liabilities	4,586,657	3,529,624
Non-current content liabilities	2,894,654	2,026,360
Long-term debt	3,364,311	2,371,362
Other non-current liabilities	61,188	52,099
Total liabilities	10,906,810	7,979,445
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized at December 31, 2016 and 2015; no shares issued and outstanding at December 31, 2016 and 2015	—	—
Common stock, $0.001 par value; 4,990,000,000 shares authorized at December 31, 2016 and December 31, 2015, respectively; 430,054,212 and 427,940,440 issued and outstanding at December 31, 2016 and December 31, 2015, respectively	1,599,762	1,324,809
Accumulated other comprehensive loss	(48,565)	(43,308)
Retained earnings	1,128,603	941,925
Total stockholders' equity	2,679,800	2,223,426
Total liabilities and stockholders' equity	$ 13,586,610	$ 10,202,871

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share data)

	Common Stock and Additional Paid-in Capital		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
	Shares	Amount			
Balances as of December 31, 2013	417,249,007	$ 777,501	$ 3,575	$ 552,485	$1,333,561
Net income	—	—	—	266,799	266,799
Other comprehensive income	—	—	(8,021)	—	(8,021)
Issuance of common stock upon exercise of options	5,661,880	61,190	—	—	61,190
Stock-based compensation expense	—	115,239	—	—	115,239
Excess stock option income tax benefits	—	88,940	—	—	88,940
Balances as of December 31, 2014	422,910,887	$ 1,042,870	$ (4,446)	$ 819,284	$1,857,708
Net income	—	—	—	122,641	122,641
Other comprehensive loss	—	—	(38,862)	—	(38,862)
Issuance of common stock upon exercise of options	5,029,553	77,334	—	—	77,334
Stock-based compensation expense	—	124,725	—	—	124,725
Excess stock option income tax benefits	—	79,880	—	—	79,880
Balances as of December 31, 2015	427,940,440	$ 1,324,809	$ (43,308)	$ 941,925	$2,223,426
Net income	—	—	—	186,678	186,678
Other comprehensive loss	—	—	(5,257)	—	(5,257)
Issuance of common stock upon exercise of options	2,113,772	36,979	—	—	36,979
Stock-based compensation expense	—	173,675	—	—	173,675
Excess stock option income tax benefits	—	64,299	—	—	64,299
Balances as of December 31, 2016	430,054,212	$ 1,599,762	$ (48,565)	$1,128,603	$2,679,800

See accompanying notes to consolidated financial statements.

NETFLIX, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Summary of Significant Accounting Policies

Description of Business

Netflix, Inc. (the "Company") was incorporated on August 29, 1997 and began operations on April 14, 1998. The Company is the world's leading internet television network with over 93 million streaming members in over 190 countries enjoying more than 125 million hours of hours of TV shows and movies per day, including original series, documentaries and feature films. Members can watch as much as they want, anytime, anywhere, on nearly any internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments. Additionally, in the United States ("U.S."), members can receive DVDs.

The Company has three reportable segments, Domestic streaming, International streaming and Domestic DVD. A majority of the Company's revenues are generated in the United States, and substantially all of the Company's long-lived tangible assets are held in the United States. The Company's revenues are derived from monthly membership fees.

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Significant items subject to such estimates and assumptions include the amortization policy for the streaming content assets; the recognition and measurement of income tax assets and liabilities; and the valuation of stock-based compensation. The Company bases its estimates on historical experience and on various other assumptions that the Company believes to be reasonable under the circumstances. Actual results may differ from these estimates.

Accounting Guidance Not Yet Adopted

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers (Topic 606)* which amended the existing accounting standards for revenue recognition. ASU 2014-09 establishes principles for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. In July 2015, the FASB deferred the effective date for annual reporting periods beginning after December 15, 2017 (including interim reporting periods within those periods). Early adoption is permitted to the original effective date for annual reporting periods beginning after December 15, 2016 (including interim reporting periods within those periods). The amendments may be applied retrospectively to each prior period (full retrospective) or retrospectively with the cumulative effect recognized as of the date of initial application (modified retrospective). The Company will adopt ASU 2014-09 in the first quarter of 2018 and apply the full retrospective approach. The Company does not expect the impact on its consolidated financial statements to be material.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)* in order to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under previous GAAP. ASU 2016-02 requires that a lessee should recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term on the balance sheet. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018 (including interim periods within those periods) using a modified retrospective approach and early adoption is permitted. The Company will adopt ASU 2016-02 in the first quarter of 2019 and is currently in the process of evaluating the impact of adoption of the ASU on its consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, which amends Accounting Standards Codification ("ASC") Topic 718, *Compensation – Stock Compensation*. ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The Company will adopt ASU 2016-09 in the first quarter of 2017. The Company is unable to estimate the impact of adoption as it is dependent

upon future stock option exercises which can not be predicted. However, the Company is expecting the adoption of the ASU to have a material impact on net income, basic and diluted earnings per share, deferred tax assets and net cash from operations and the effective tax rate may be reduced.

In November 2016, the FASB issued ASU 2016-18, *Restricted Cash*, which requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. ASU 2016-08 is effective for fiscal years beginning after December 15, 2018 (including interim periods within those periods) using a retrospective transition method to each period presented. The Company does not expect the impact on its consolidated financial statements to be material.

Cash Equivalents and Short-term Investments

The Company considers investments in instruments purchased with an original maturity of 90 days or less to be cash equivalents. The Company also classifies amounts in transit from payment processors for customer credit card and debit card transactions as cash equivalents.

The Company classifies short-term investments, which consist of marketable securities with original maturities in excess of 90 days as available-for-sale. Short-term investments are reported at fair value with unrealized gains and losses included in “Accumulated other comprehensive loss” within Stockholders’ equity in the Consolidated Balance Sheets. The amortization of premiums and discounts on the investments, realized gains and losses, and declines in value judged to be other-than-temporary on available-for-sale securities are included in “Interest and other income (expense)” in the Consolidated Statements of Operations. The Company uses the specific identification method to determine cost in calculating realized gains and losses upon the sale of short-term investments.

Short-term investments are reviewed periodically to identify possible other-than-temporary impairment. When evaluating the investments, the Company reviews factors such as the length of time and extent to which fair value has been below cost basis, the financial condition of the issuer, the Company’s intent to sell, or whether it would be more likely than not that the Company would be required to sell the investments before the recovery of their amortized cost basis.

Streaming Content

The Company acquires, licenses and produces content, including original programming, in order to offer members unlimited viewing of TV shows and films. The content licenses are for a fixed fee and specific windows of availability. Payment terms for certain content licenses and the production of content require more upfront cash payments relative to the amortization expense. Payments for content, including additions to streaming assets and the changes in related liabilities, are classified within "Net cash (used in) provided by operating activities" on the Consolidated Statements of Cash Flows.

For licenses, the Company capitalizes the fee per title and records a corresponding liability at the gross amount of the liability when the license period begins, the cost of the title is known and the title is accepted and available for streaming. The portion available for streaming within one year is recognized as “Current content assets, net” and the remaining portion as “Non-current content assets, net” on the Consolidated Balance Sheets.

For productions, the Company capitalizes costs associated with the production, including development costs and direct costs. These amounts are included in "Non-current content assets, net" on the Consolidated Balance Sheets. Participations and residuals are expensed in line with the amortization of production costs.

Based on factors including historical and estimated viewing patterns, the Company amortizes the content assets (licensed and produced) in “Cost of revenues” on the Consolidated Statements of Operations over the shorter of each title's contractual window of availability or estimated period of use, beginning with the month of first availability. The amortization period typically ranges from six months to five years. For content where the Company expects more upfront viewing, for instance due to additional merchandising and marketing efforts, the amortization is on an accelerated basis. The Company reviews factors impacting the amortization of the content assets on a regular basis. The Company's estimates related to these factors require considerable management judgment. In the third quarter of 2016, the Company changed the amortization method of certain content given changes in estimated viewing patterns of this content. The effect of this change in estimate was a $19.8 million decrease in operating income and a $12.3 million decrease in net income for the year ended December 31, 2016. The effect on both basic earnings per share and diluted earnings per share was a decrease of $0.03 for the year ended December 31, 2016. Changes in estimates could have a significant impact on the Company's future results of operations.

The Company's business model is subscription based as opposed to a model generating revenues at a specific title level. Therefore, content assets, both licensed and produced are reviewed in aggregate at the operating segment level when an event or change in circumstances indicates a change in the expected usefulness of the content or that the fair value may be less than amortized cost. To date, we have not identified any such event or changes in circumstances. If such changes are identified in the future, these aggregated content assets will be stated at the lower of unamortized cost, net realizable value or fair value. In

addition, unamortized costs for assets that have been, or are expected to be, abandoned are written off. No material write-down from unamortized cost was recorded in any of the periods presented.

The Company has entered into certain licenses with collective management organizations, and are currently involved in negotiations with others who hold certain rights to music and other entertainment works "publicly performed" in connection with streaming content into various territories. Accruals for estimated license fees are recorded and then adjusted based on any changes in estimates. These amounts are included in the streaming content obligations. The results of these negotiations are uncertain and may be materially different from management's estimates.

DVD Content

The Company acquires DVD content for the purpose of renting such content to its domestic DVD members and earning membership rental revenues, and, as such, the Company considers its direct purchase DVD assets to be a productive asset. Accordingly, the Company classifies its DVD assets in “Non-current content assets, net” on the Consolidated Balance Sheets. The acquisition of DVD content assets, net of changes in related liabilities, is classified within "Net cash provided by (used in) investing activities" on the Consolidated Statements of Cash Flows because the DVD content assets are considered a productive asset. Other companies in the in-home entertainment video industry classify these cash flows as operating activities. The Company amortizes its direct purchase DVDs on an accelerated basis over their estimated useful lives, which range from one year to two years. The Company also obtains DVD content through revenue sharing agreements with studios and other content providers. Revenue sharing obligations are expensed as incurred based on shipments.

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation. Depreciation is calculated using the straight-line method over the shorter of the estimated useful lives of the respective assets, generally up to 30 years, or the lease term for leasehold improvements, if applicable. Leased buildings are capitalized and included in property and equipment when the Company was involved in the construction funding and did not meet the “sale-leaseback” criteria.

Revenue Recognition

Revenues are recognized ratably over each monthly membership period. Revenues are presented net of the taxes that are collected from members and remitted to governmental authorities. Deferred revenue consists of membership fees billed that have not been recognized and gift and other prepaid memberships that have not been redeemed.

Marketing

Marketing expenses consist primarily of advertising expenses and payments made to the Company’s partners, including device partners, MVPD's, mobile platforms and ISP's. Advertising expenses include promotional activities such as digital and television advertising. Advertising costs are expensed as incurred. Advertising expenses were $842.4 million, $714.3 million and $533.1 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Research and Development

Research and development expenses are included within "Technology and Development" on the Company's Consolidated Statements of Operations and primarily consist of payroll and related costs incurred in making improvements to our service offerings. Research and development expenses were $768.3 million, $570.0 million and $398.2 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Income Taxes

The Company records a provision for income taxes for the anticipated tax consequences of the reported results of operations using the asset and liability method. Deferred income taxes are recognized by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases as well as net operating loss and tax credit carryforwards. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The measurement of deferred tax assets is reduced, if necessary, by a valuation allowance for any tax benefits for which future realization is uncertain. There was no significant valuation allowance as of December 31, 2016 or 2015.

The Company did not recognize certain tax benefits from uncertain tax positions within the provision for income taxes. The Company may recognize a tax benefit only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon

settlement. The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. See Note 9 to the consolidated financial statements for further information regarding income taxes.

Foreign Currency

The functional currency for the Company's subsidiaries is determined based on the primary economic environment in which the subsidiary operates. The Company translates the assets and liabilities of its non-U.S. dollar functional currency subsidiaries into U.S. dollars using exchange rates in effect at the end of each period. Revenues and expenses for these subsidiaries are translated using rates that approximate those in effect during the period. Gains and losses from these translations are recognized in cumulative translation adjustment included in "Accumulated other comprehensive loss" in Stockholders' equity on the Consolidated Balance Sheets.

Prior to January 1, 2015, the functional currency of certain of the Company's European entities was the British pound. The Company changed the functional currency of these entities to the euro effective January 1, 2015 following the redomiciliation of the European headquarters and the launch of the Netflix service in several significant European countries. The change in functional currency was applied prospectively from January 1, 2015. Monetary assets and liabilities have been remeasured to the euro at current exchange rates. Non-monetary assets and liabilities have been remeasured to the euro using the exchange rate effective for the period in which the balance arose. As a result of this change of functional currency, the Company recorded a $21.8 million cumulative translation adjustment included in other comprehensive loss for year ended December 31, 2015.

The Company remeasures monetary assets and liabilities that are not denominated in the functional currency at exchange rates in effect at the end of each period. Gains and losses from these remeasurements are recognized in interest and other income (expense). Foreign currency transactions resulted in a gain of $22.8 million for the year ended December 31, 2016 and losses of $37.3 million and $8.2 million for the years ended December 31, 2015 and 2014 respectively.

Earnings Per Share

In June 2015, the Company's Board of Directors declared a seven-for-one stock split in the form of a stock dividend that was paid on July 14, 2015 to all shareholders of record as of July 2, 2015 ("Stock Split").

Outstanding share and per-share amounts disclosed for all periods provided have been retroactively adjusted to reflect the effects of the Stock Split.

Basic earnings per share is computed using the weighted-average number of outstanding shares of common stock during the period. Diluted earnings per share is computed using the weighted-average number of outstanding shares of common stock and, when dilutive, potential common shares outstanding during the period. Potential common shares consist of incremental shares issuable upon the assumed exercise of stock options. The computation of earnings per share is as follows:

	Year ended December 31,		
	2016	2015	2014
	(in thousands, except per share data)		
Basic earnings per share:			
Net income	$ 186,678	$ 122,641	$ 266,799
Shares used in computation:			
Weighted-average common shares outstanding	428,822	425,889	420,544
Basic earnings per share	$ 0.44	$ 0.29	$ 0.63
Diluted earnings per share:			
Net income	$ 186,678	$ 122,641	$ 266,799
Shares used in computation:			
Weighted-average common shares outstanding	428,822	425,889	420,544
Employee stock options	9,830	10,567	11,350
Weighted-average number of shares	438,652	436,456	431,894
Diluted earnings per share	$ 0.43	$ 0.28	$ 0.62

Employee stock options with exercise prices greater than the average market price of the common stock were excluded from the diluted calculation as their inclusion would have been anti-dilutive. The following table summarizes the potential common shares excluded from the diluted calculation:

	Year ended December 31,		
	2016	2015	2014
	(in thousands)		
Employee stock options	1,545	517	917

Stock-Based Compensation

The Company grants fully vested non-qualified stock options to its employees on a monthly basis. As a result of immediate vesting, stock-based compensation expense is fully recognized on the grant date, and no estimate is required for post-vesting option forfeitures. See Note 7 to the consolidated financial statements for further information regarding stock-based compensation.

2. Short-term Investments

The Company's investment policy is consistent with the definition of available-for-sale securities. The Company does not buy and hold securities principally for the purpose of selling them in the near future. The Company's policy is focused on the preservation of capital, liquidity and return. From time to time, the Company may sell certain securities but the objectives are generally not to generate profits on short-term differences in price. The following tables summarize, by major security type, the Company's assets that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy and where they are classified on the Consolidated Balance Sheets.

	As of December 31, 2016						
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Cash and cash equivalents	Short-term investments	Non-current assets (1)
	(in thousands)						
Cash	$ 1,267,523	$ —	$ —	$ 1,267,523	$ 1,264,126	$ —	$ 3,397
Level 1 securities:							
Money market funds	204,967	—	—	204,967	203,450	—	1,517
Level 2 securities:							
Corporate debt securities	199,843	110	(731)	199,222	—	199,222	—
Government securities	35,944	—	(128)	35,816	—	35,816	—
Certificate of deposit	9,833	—	—	9,833	—	9,833	—
Agency securities	21,563	—	(228)	21,335	—	21,335	—
Total	$ 1,739,673	$ 110	$ (1,087)	$ 1,738,696	$ 1,467,576	$ 266,206	$ 4,914

	As of December 31, 2015						
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Cash and cash equivalents	Short-term investments	Non-current assets (1)
	(in thousands)						
Cash	$ 1,708,220	$ —	$ —	$ 1,708,220	$ 1,706,592	$ —	$ 1,628
Level 1 securities:							
Money market funds	107,199	—	—	107,199	102,738	—	4,461
Level 2 securities:							
Corporate debt securities	240,867	154	(409)	240,612	—	240,612	—
Government securities	235,252	—	(1,046)	234,206	—	234,206	—
Agency securities	26,576	—	(9)	26,567	—	26,567	—
Total	$ 2,318,114	$ 154	$ (1,464)	$ 2,316,804	$ 1,809,330	$ 501,385	$ 6,089

(1) Primarily restricted cash that is related to workers compensation deposits and letter of credit agreements.

Fair value is a market-based measurement that should be determined based on the assumptions that market participants would use in pricing an asset or liability. The hierarchy level assigned to each security in the Company's available-for-sale

portfolio and cash equivalents is based on its assessment of the transparency and reliability of the inputs used in the valuation of such instrument at the measurement date. The fair value of available-for-sale securities and cash equivalents included in the Level 1 category is based on quoted prices that are readily and regularly available in an active market. The fair value of available-for-sale securities included in the Level 2 category is based on observable inputs, such as quoted prices for similar assets at the measurement date; quoted prices in markets that are not active; or other inputs that are observable, either directly or indirectly. These values were obtained from an independent pricing service and were evaluated using pricing models that vary by asset class and may incorporate available trade, bid and other market information and price quotes from well-established independent pricing vendors and broker-dealers. The Company's procedures include controls to ensure that appropriate fair values are recorded, such as comparing prices obtained from multiple independent sources. See Note 4 to the consolidated financial statements for further information regarding the fair value of the Company's senior notes.

Because the Company does not intend to sell the investments that are in an unrealized loss position and it is not likely that the Company will be required to sell any investments before recovery of their amortized cost basis, the Company does not consider those investments with an unrealized loss to be other-than-temporarily impaired at December 31, 2016. There were no material other-than-temporary impairments or credit losses related to available-for-sale securities in the years ended December 31, 2016, 2015 or 2014.

There were no material gross realized gains or losses from the sale of available-for-sale investments in the years ended December 31, 2016, 2015 and 2014. Realized gains and losses and interest income are included in "Interest and other income (expense)" on the Consolidated Statements of Operations.

The estimated fair value of short-term investments by contractual maturity as of December 31, 2016 is as follows:

	(in thousands)
Due within one year	$ 61,833
Due after one year and through 5 years	204,373
Total short-term investments	$ 266,206

3. Balance Sheet Components

Content Assets

Content assets consisted of the following:

	As of December 31,	
	2016	2015
	(in thousands)	
Licensed content, net	$ 9,595,315	$ 6,827,119
Produced content, net		
Released, less amortization	335,400	61,515
In production	1,010,463	279,013
In development	34,215	24,651
	1,380,078	365,179
DVD, net	25,415	26,517
Total	$ 11,000,808	$ 7,218,815
Current content assets, net	$ 3,726,307	$ 2,905,998
Non-current content assets, net	$ 7,274,501	$ 4,312,817

Produced content is included in "Non-current content assets, net" on the Consolidated Balance Sheets. Certain original content, such as House of Cards, is licensed and therefore not included in produced content. Of the produced content that has

been released, approximately 28% and 81%, is expected to be amortized over the next twelve and thirty-six months, respectively. The amount of accrued participations and residuals to be paid during the next twelve months is not material.

Property and Equipment, Net

Property and equipment and accumulated depreciation consisted of the following:

	As of December 31, 2016	As of December 31, 2015	Estimated Useful Lives (in Years)
	(in thousands)		
Information technology assets	$ 185,345	$ 194,054	3 years
Furniture and fixtures	32,185	30,914	3 years
Building	40,681	40,681	30 years
Leasehold improvements	107,945	107,793	Over life of lease
DVD operations equipment	70,152	88,471	5 years
Capital work-in-progress	108,296	8,845	
Property and equipment, gross	544,604	470,758	
Less: Accumulated depreciation	(294,209)	(297,346)	
Property and equipment, net	$ 250,395	$ 173,412	

The increase in capital work-in-progress is primarily due to leasehold improvements for the Company's expanded Los Gatos, California headquarters and the Company's new Los Angeles, California facility, both of which will be placed into operation in the first half of 2017.

4. Long-term Debt

As of December 31, 2016, the Company had aggregate outstanding $3,364.3 million, net of $35.7 million of issuance costs, in long-term notes with varying maturities (the "Notes"). Each of the Notes were issued at par and are senior unsecured obligations of the Company. Interest is payable semi-annually at fixed rates.

The following table provides a summary of the Company's outstanding long-term debt and the fair values based on quoted market prices in less active markets as of December 31, 2016 and December 31, 2015:

	Principal Amount at Par	Issuance Date	Maturity	Interest Due Dates	Level 2 Fair Value as of December 31, 2016	Level 2 Fair Value as of December 31, 2015
	(in millions)				(in millions)	
4.375% Senior Notes	1,000	October 2016	2026	May 15 and November 15	$ 975	$ —
5.50% Senior Notes	700	February 2015	2022	April 15 and October 15	758	718
5.875% Senior Notes	800	February 2015	2025	April 15 and October 15	868	820
5.750% Senior Notes	400	February 2014	2024	March 1 and September 1	431	411
5.375% Senior Notes	500	February 2013	2021	February 1 and August 1	539	525

Each of the Notes are repayable in whole or in part upon the occurrence of a change of control, at the option of the holders, at a purchase price in cash equal to 101% of the principal plus accrued interest. The Company may redeem the Notes prior to maturity in whole or in part at an amount equal to the principal amount thereof plus accrued and unpaid interest and an applicable premium. The Notes include, among other terms and conditions, limitations on the Company's ability to create, incur or allow certain liens; enter into sale and lease-back transactions; create, assume, incur or guarantee additional indebtedness of certain of the Company's subsidiaries; and consolidate or merge with, or convey, transfer or lease all or substantially all of the Company's and its subsidiaries assets, to another person. As of December 31, 2016 and December 31, 2015, the Company was in compliance with all related covenants.

5. Commitments and Contingencies

Streaming Content

At December 31, 2016, the Company had $14.5 billion of obligations comprised of $3.6 billion included in "Current content liabilities" and $2.9 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $8.0 billion of obligations that are not reflected on the Consolidated Balance Sheets as they do not yet meet the criteria for asset recognition.

At December 31, 2015, the Company had $10.9 billion of obligations comprised of $2.8 billion included in "Current content liabilities" and $2.0 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $6.1 billion of obligations that are not reflected on the Consolidated Balance Sheets as they do not yet meet the criteria for asset recognition.

The expected timing of payments for these streaming content obligations is as follows:

	As of December 31,	
	2016	2015
	(in thousands)	
Less than one year	$ 6,200,611	$ 4,703,172
Due after one year and through 3 years	6,731,336	5,249,147
Due after 3 years and through 5 years	1,386,934	891,864
Due after 5 years	160,606	58,048
Total streaming content obligations	$ 14,479,487	$ 10,902,231

Streaming content obligations include amounts related to the acquisition, licensing and production of streaming content. Obligations that are in non-U.S. dollar currencies are translated to U.S. dollar at period end rates. An obligation for the production of content includes non-cancelable commitments under creative talent and employment agreements. An obligation for the acquisition and licensing of content is incurred at the time the Company enters into an agreement to obtain future titles. Once a title becomes available, a content liability is generally recorded on the Consolidated Balance Sheets. Certain agreements include the obligation to license rights for unknown future titles, the ultimate quantity and/or fees for which are not yet determinable as of the reporting date. Traditional film output deals, like the U.S. output deal with Disney, or certain TV series license agreements where the number of seasons to be aired is unknown, are examples of such license agreements. The Company does not include any estimated obligation for these future titles beyond the known minimum amount. However, the unknown obligations are expected to be significant.

Lease obligations

The Company leases facilities under non-cancelable operating leases with various expiration dates through 2027. Several lease agreements contain rent escalation clauses or rent holidays. For purposes of recognizing minimum rental expenses on a straight-line basis over the terms of the leases, the Company uses the date of initial possession to begin amortization, which is generally when the Company enters the space and begins to make improvements in preparation for intended use. For scheduled rent escalation clauses during the lease terms or for rental payments commencing at a date other than the date of initial occupancy, the Company records minimum rental expenses on a straight-line basis over the terms of the leases in the Consolidated Statements of Operations. The Company has the option to extend or renew most of its leases which may increase the future minimum lease commitments.

Because the terms of the Company's facilities lease agreements for its original Los Gatos, California headquarters site required the Company's involvement in the construction funding of the buildings, the Company is the "deemed owner" (for accounting purposes only) of these buildings. Accordingly, the Company recorded an asset of $40.7 million, representing the total costs of the buildings and improvements, including the costs paid by the lessor (the legal owner of the buildings), with corresponding liabilities. Upon completion of construction of each building, the Company did not meet the sale-leaseback criteria for de-recognition of the building assets and liabilities. Therefore the leases are accounted for as financing obligations. At December 31, 2016, the lease financing obligation balance was $29.2 million, the majority of which is recorded in "Other non-current liabilities," on the Consolidated Balance Sheets. The remaining future minimum payments under the lease financing obligation are $18.5 million. The lease financing obligation balance at the end of the lease term will be approximately $21.8 million which approximates the net book value of the buildings to be relinquished to the lessor.

In addition to the lease financing obligation, future minimum lease payments include $530.2 million as of December 31, 2016 related to non-cancelable operating leases for the expanded headquarters in Los Gatos, California and the new office space in Los Angeles, California.

Future minimum payments under lease financing obligations and non-cancelable operating leases as of December 31, 2016 are as follows:

Year Ending December 31,	Future Minimum Payments
	(in thousands)
2017	$ 64,502
2018	76,310
2019	68,456
2020	66,603
2021	57,434
Thereafter	307,535
Total minimum payments	$ 640,840

Rent expense associated with the operating leases was $53.1 million, $34.7 million and $26.6 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Legal Proceedings

From time to time, in the normal course of its operations, the Company is subject to litigation matters and claims, including claims relating to employee relations, business practices and patent infringement. Litigation can be expensive and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict and the Company's view of these matters may change in the future as the litigation and events related thereto unfold. The Company expenses legal fees as incurred. The Company records a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. An unfavorable outcome to any legal matter, if material, could have an adverse effect on the Company's operations or its financial position, liquidity or results of operations.

The Company is involved in litigation matters not listed herein but does not consider the matters to be material either individually or in the aggregate at this time. The Company's view of the matters not listed may change in the future as the litigation and events related thereto unfold.

6. Guarantees—Indemnification Obligations

In the ordinary course of business, the Company has entered into contractual arrangements under which it has agreed to provide indemnification of varying scope and terms to business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of the Company’s breach of such agreements and out of intellectual property infringement claims made by third parties. In these circumstances, payment may be conditional on the other party making a claim pursuant to the procedures specified in the particular contract.

The Company’s obligations under these agreements may be limited in terms of time or amount, and in some instances, the Company may have recourse against third parties for certain payments. In addition, the Company has entered into indemnification agreements with its directors and certain of its officers that will require it, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The terms of such obligations vary.

It is not possible to make a reasonable estimate of the maximum potential amount of future payments under these or similar agreements due to the conditional nature of the Company’s obligations and the unique facts and circumstances involved in each particular agreement. No amount has been accrued in the accompanying financial statements with respect to these indemnification guarantees.

7. Stockholders’ Equity

Stock Split

In March 2015, the Company's Board of Directors adopted an amendment to the Company's Certificate of Incorporation, to increase the number of shares of capital stock the Company is authorized to issue from 170,000,000 (160,000,000 shares of common stock and 10,000,000 shares of preferred stock), par value $0.001 to 5,000,000,000 (4,990,000,000 shares of common stock and 10,000,000 shares of preferred stock), par value $0.001. This amendment to the Company's certificate of incorporation was approved by the Company's stockholders at the 2015 Annual Meeting held on June 9, 2015.

On June 23, 2015, the Company's Board of Directors declared a seven-for-one stock split in the form of a stock dividend that was paid on July 14, 2015 to all shareholders of record as of July 2, 2015. Outstanding share and per-share amounts disclosed for all periods presented have been retroactively adjusted to reflect the effects of the Stock Split.

Preferred Stock

The Company has authorized 10,000,000 shares of undesignated preferred stock with a par value of $0.001 per share. None of the preferred shares were issued and outstanding at December 31, 2016 and 2015.

Voting Rights

The holders of each share of common stock shall be entitled to one vote per share on all matters to be voted upon by the Company's stockholders.

Stock Option Plans

In June 2011, the Company adopted the 2011 Stock Plan. The 2011 Stock Plan provides for the grant of incentive stock options to employees and for the grant of non-statutory stock options, stock appreciation rights, restricted stock and restricted stock units to employees, directors and consultants. As of December 31, 2016, 13.3 million shares were reserved for future grants under the 2011 Stock Plan.

A summary of the activities related to the Company's stock option plans, as adjusted for the Stock Split, is as follows:

		Options Outstanding			
	Shares Available for Grant	Number of Shares	Weighted- Average Exercise Price (per Share)	Weighted- Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in Thousands)
Balances as of December 31, 2013	23,844,219	24,688,286	$ 13.61		
Granted	(3,819,011)	3,819,011	57.55		
Exercised	—	(5,661,880)	10.81		
Balances as of December 31, 2014	20,025,208	22,845,417	$ 21.65		
Granted	(3,179,892)	3,179,892	82.67		
Exercised		(5,029,553)	15.38		
Balances as of December 31, 2015	16,845,316	20,995,756	$ 32.39		
Granted	(3,555,363)	3,555,363	102.03		
Exercised	—	(2,113,772)	17.48		
Balances as of December 31, 2016	13,289,953	22,437,347	$ 44.83	6.18	$ 1,772,185
Vested and exercisable at December 31, 2016		22,437,347	$ 44.83	6.18	$ 1,772,185

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (the difference between the Company's closing stock price on the last trading day of 2016 and the exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on the last trading day of 2016. This amount changes based on the fair market value of the Company's common stock. Total intrinsic value of options exercised for the years ended December 31, 2016, 2015 and 2014 was $189.2 million, $368.4 million and $265.1 million, respectively.

Cash received from option exercises for the years ended December 31, 2016, 2015 and 2014 was $37.0 million, $78.0 million and $60.5 million, respectively.

Stock-Based Compensation

Stock options granted are exercisable for the full ten year contractual term regardless of employment status. The following table summarizes the assumptions used to value option grants using the lattice-binomial model and the valuation data:

	Year Ended December 31,		
	2016	2015	2014
Dividend yield	—%	—%	—%
Expected volatility	40% - 50%	36% - 53%	41% - 48%
Risk-free interest rate	1.57% - 2.04%	2.03% - 2.29%	2.39% - 2.83%
Suboptimal exercise factor	2.48	2.47 - 2.48	2.66 - 5.44
Valuation data:			
Weighted-average fair value (per share)	$ 48.85	$ 39.22	$ 30.17
Total stock-based compensation expense (in thousands)	173,675	124,725	115,239
Total income tax impact on provision (in thousands)	65,173	47,125	43,999

The Company considers several factors in determining the suboptimal exercise factor, including the historical and estimated option exercise behavior and the employee groupings. Prior to January 1, 2015, the Company bifurcated its option grants into two employee groupings (executive and non-executive) to determine the suboptimal exercise factor. Beginning on January 1, 2015, the Company began aggregating employee groupings for its determination of the suboptimal exercise factor as the previous bifurcation into two groupings did not have a material impact on the fair value of the options granted.

Prior to January 1, 2015, the Company's computation of expected volatility was based on a blend of historical volatility of its common stock and implied volatility of tradable forward call options to purchase shares of its common stock, as low trade volume of its tradable forward call options prior to 2011 precluded sole reliance on implied volatility. Beginning on January 1, 2015, expected volatility is based solely on implied volatility. The Company believes that implied volatility of publicly traded options in its common stock is more reflective of market conditions, and given consistently high trade volumes of the options, can reasonably be expected to be a better indicator of expected volatility than historical volatility of its common stock.

In valuing shares issued under the Company’s employee stock option plans, the Company bases the risk-free interest rate on U.S. Treasury zero-coupon issues with terms similar to the contractual term of the options. The Company does not anticipate paying any cash dividends in the foreseeable future and therefore uses an expected dividend yield of zero in the option valuation model. The Company does not use a post-vesting termination rate as options are fully vested upon grant date.

8. Accumulated Other Comprehensive Loss

The following table summarizes the changes in accumulated balances of other comprehensive loss, net of tax:

	Foreign currency	Change in unrealized gains on available-for-sale securities	Total
	(in thousands)		
Balances as of December 31, 2014	$ (4,615)	$ 169	$ (4,446)
Other comprehensive loss before reclassifications	(37,887)	(771)	(38,658)
Amounts reclassified from accumulated other comprehensive (loss)income	—	(204)	(204)
Net increase in other comprehensive loss	(37,887)	(975)	(38,862)
Balances as of December 31, 2015	$ (42,502)	$ (806)	$ (43,308)
Other comprehensive (loss) income before reclassifications	(5,464)	310	(5,154)
Amounts reclassified from accumulated other comprehensive (loss)income	—	(103)	(103)
Net (increase) decrease in other comprehensive loss	(5,464)	207	(5,257)
Balances as of December 31, 2016	$ (47,966)	$ (599)	$ (48,565)

As discussed in Note 1, other comprehensive (loss) income for the year ended December 31, 2015 includes the impact of the change in functional currency for certain of the Company's European entities.

All amounts reclassified from accumulated other comprehensive (loss) income related to realized gains on available-for-sale securities. These reclassifications impacted "Interest and other income (expense)" on the Consolidated Statements of Operations.

9. Income Taxes

Income before provision for income taxes was as follows:

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
United States	$ 188,078	$ 95,644	$ 325,081
Foreign	72,429	46,241	24,288
Income before income taxes	$ 260,507	$ 141,885	$ 349,369

The components of provision for income taxes for all periods presented were as follows:

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
Current tax provision:			
Federal	$ 54,315	$ 52,557	$ 86,623
State	5,790	(1,576)	9,866
Foreign	60,571	26,918	16,144
Total current	120,676	77,899	112,633
Deferred tax provision:			
Federal	(24,383)	(37,669)	(10,994)
State	(14,080)	(17,635)	(17,794)
Foreign	(8,384)	(3,351)	(1,275)
Total deferred	(46,847)	(58,655)	(30,063)
Provision for income taxes	$ 73,829	$ 19,244	$ 82,570

U.S. income taxes and foreign withholding taxes associated with the repatriation of earnings of certain foreign subsidiaries were not provided for on a cumulative total of $121.1 million of undistributed earnings for certain foreign subsidiaries as of December 31, 2016. The Company intends to reinvest these earnings indefinitely in its foreign subsidiaries. If these earnings were distributed to the United States in the form of dividends or otherwise, the Company would be subject to additional U.S. income taxes net of available foreign tax credits associated with these earnings. The amount of unrecognized deferred income tax liability related to these earnings is approximately $42.4 million.

A reconciliation of the provision for income taxes, with the amount computed by applying the statutory Federal income tax rate to income before income taxes is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
Expected tax expense at U.S. Federal statutory rate of 35%	$ 91,179	$ 49,658	$ 122,279
State income taxes, net of Federal income tax effect	7,261	4,783	13,274
R&D tax credit	(41,144)	(29,363)	(18,655)
Release of tax reserves on previously unrecognized tax benefits	—	(13,438)	(38,612)
Foreign earnings at other than US rates	14,639	5,310	2,959
Other	1,894	2,294	1,325
Provision for income taxes	$ 73,829	$ 19,244	$ 82,570

The components of deferred tax assets and liabilities were as follows:

	As of December 31,	
	2016	2015
	(in thousands)	
Deferred tax assets (liabilities):		
Stock-based compensation	$ 188,458	$ 131,339
Accruals and reserves	29,231	14,367
Depreciation and amortization	(93,760)	(43,204)
R&D credits	107,283	74,091
Other	(2,363)	3,980
Gross deferred tax assets	228,849	180,573
Valuation allowance	(1,601)	—
Net deferred tax assets	$ 227,248	$ 180,573

All deferred tax assets are classified as “Other non-current assets” on the Consolidated Balance Sheets as of December 31, 2016 and December 31, 2015. In evaluating its ability to realize the net deferred tax assets, the Company considered all available positive and negative evidence, including its past operating results and the forecast of future market growth, forecasted earnings, future taxable income, and prudent and feasible tax planning strategies. As of December 31, 2016 and 2015, it was considered more likely than not that substantially all deferred tax assets would be realized, and no significant valuation allowance was recorded.

As of December 31, 2016, the Company's Federal R&D tax credit and state tax credit carryforwards for tax return purposes were $72.5 million, and $77.7 million, respectively. The Federal R&D tax credit carryforwards expire through 2036. State tax credit carryforwards of $77.3 million can be carried forward indefinitely and $0.4 million expire in 2024.

As of December 31, 2016, the Company’s net operating loss carryforwards for Federal and state tax return purposes were $108.9 million and $100.0 million, respectively, which expire in 2035. These net operating losses were generated as a result of excess stock option deductions. Pursuant to Accounting Standards Codification 718, *Compensation - Stock Compensation*, the Company has not recognized the related $45.1 million tax benefit from the Federal and state net operating losses attributable to excess stock option deductions in gross deferred tax assets. The $45.1 million tax benefit will be credited directly to additional paid-in capital when net operating losses attributable to excess stock option deductions are utilized to reduce taxes payable.

Income tax benefits attributable to the exercise of employee stock options of $64.3 million, $79.9 million and $88.9 million for the years ended December 31, 2016, 2015 and 2014, respectively, were recorded directly to additional paid-in-capital.

The unrecognized tax benefits that are not expected to result in payment or receipt of cash within one year are classified as “Other non-current liabilities” and a reduction of deferred tax assets which is classified as "Other non-current assets" in the Consolidated Balance Sheets. As of December 31, 2016, the total amount of gross unrecognized tax benefits was $19.7 million, of which $17.0 million, if recognized, would favorably impact the Company’s effective tax rate. As of December 31, 2015, the total amount of gross unrecognized tax benefits was $17.1 million, of which $13.5 million, if recognized, would favorably impact the Company’s effective tax rate. The aggregate changes in the Company’s total gross amount of unrecognized tax benefits are summarized as follows (in thousands):

Balances as of December 31, 2014	$ 34,812
Increases related to tax positions taken during prior periods	1,960
Decreases related to tax positions taken during prior periods	(12,334)
Increases related to tax positions taken during the current period	7,077
Decreases related to settlements with taxing authorities	(14,398)
Balances as of December 31, 2015	17,117
Increases related to tax positions taken during prior periods	1,047
Decreases related to tax positions taken during prior periods	(7,105)
Increases related to tax positions taken during the current period	8,713
Decreases related to expiration of statute of limitations	(33)
Balances as of December 31, 2016	$ 19,739

The Company includes interest and penalties related to unrecognized tax benefits within the provision for income taxes and in "Other non-current liabilities" in the Consolidated Balance Sheets. Interest and penalties included in the Company's provision for income taxes were not material in all the periods presented.

The Company files U.S. Federal, state and foreign tax returns. The Company is currently under examination by the IRS for the years 2014 and 2015. The years 2010 through 2015 remain subject to examination by the state of California. The Company has no significant foreign jurisdiction audits underway. The years 2012 through 2015 remain subject to examination by foreign jurisdictions.

Given the potential outcome of the current examinations as well as the impact of the current examinations on the potential expiration of the statute of limitations, it is reasonably possible that the balance of unrecognized tax benefits could significantly change within the next twelve months. However, an estimate of the range of reasonably possible adjustments cannot be made.

10. Employee Benefit Plan

The Company maintains a 401(k) savings plan covering substantially all of its employees. Eligible employees may contribute up to 60% of their annual salary through payroll deductions, but not more than the statutory limits set by the Internal Revenue Service. The Company matches employee contributions at the discretion of the Board. During 2016, 2015 and 2014, the Company's matching contributions totaled $15.7 million, $11.2 million and $8.3 million, respectively.

11. Segment Information

The Company has three reportable segments: Domestic streaming, International streaming and Domestic DVD. Segment information is presented in the same manner that the Company's chief operating decision maker ("CODM") reviews the operating results in assessing performance and allocating resources. The Company's CODM reviews revenue and contribution profit (loss) for each of the reportable segments. Contribution profit (loss) is defined as revenues less cost of revenues and marketing expenses incurred by the segment. The Company has aggregated the results of the International operating segments into one reportable segment because these operating segments share similar long-term economic and other qualitative characteristics.

The Domestic streaming segment derives revenues from monthly membership fees for services consisting solely of streaming content to the members in the United States. The International streaming segment derives revenues from monthly membership fees for services consisting solely of streaming content to members outside of the United States. The Domestic DVD segment derives revenues from monthly membership fees for services consisting solely of DVD-by-mail. Revenues and the related payment card fees are attributed to the operating segment based on the nature of the underlying membership (streaming or DVD) and the geographic region from which the membership originates. There are no internal revenue transactions between the Company's segments.

The vast majority of the cost of revenues relate to content expenses, which include the amortization of streaming content assets and other costs associated with the licensing and acquisition of streaming content. In connection with the Company's global expansion, content acquired, licensed, and produced increasingly includes global rights. The Company allocates this content between the International and Domestic streaming segments based on estimated fair market value. Content expenses for each streaming segment thus includes both expenses directly incurred by the segment as well as an allocation of expenses incurred for global rights. Other costs of revenues such as delivery costs are primarily attributed to the operating segment based on amounts directly incurred by the segment. Marketing expenses consist primarily of advertising expenses and payments made to our device partners, MVPD's, mobile platforms and ISP's which are generally included in the segment in which the expenditures are directly incurred.

The Company's long-lived tangible assets were located as follows:

	As of December 31,	
	2016	2015
	(in thousands)	
United States	$ 236,977	$ 159,566
International	13,418	13,846

The following tables represent segment information for the year ended December 31, 2016:

	As of/Year ended December 31, 2016			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total memberships at end of period (1)	49,431	44,365	4,114	—
Revenues	$ 5,077,307	$ 3,211,095	$ 542,267	$ 8,830,669
Cost of revenues	2,855,789	2,911,370	262,742	6,029,901
Marketing	382,832	608,246	—	991,078
Contribution profit (loss)	$ 1,838,686	$ (308,521)	$ 279,525	1,809,690
Other operating expenses				1,429,897
Operating income				379,793
Other income (expense)				(119,286)
Provision for income taxes				73,829
Net income				$ 186,678

	Year ended December 31, 2016			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Amortization of content assets	$ 2,337,950	$ 2,450,548	$ 78,952	$ 4,867,450

The following tables represent segment information for the year ended December 31, 2015:

	As of/Year ended December 31, 2015			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total memberships at end of period (1)	44,738	30,024	4,904	—
Revenues	$ 4,180,339	$ 1,953,435	$ 645,737	$ 6,779,511
Cost of revenues	2,487,193	1,780,375	323,908	4,591,476
Marketing	317,646	506,446	—	824,092
Contribution profit (loss)	$ 1,375,500	$ (333,386)	$ 321,829	1,363,943
Other operating expenses				1,058,117
Operating income				305,826
Other income (expense)				(163,941)
Provision for income taxes				19,244
Net income				$ 122,641

	Year ended December 31, 2015			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Amortization of content assets	$ 1,905,069	$ 1,500,313	$ 79,380	$ 3,484,762

The following tables represent segment information for the year ended December 31, 2014:

	As of/Year ended December 31, 2014			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total memberships at end of period (1)	39,114	18,277	5,767	—
Revenues	$ 3,431,434	$ 1,308,061	$ 765,161	$ 5,504,656
Cost of revenues	2,201,761	1,154,117	396,882	3,752,760
Marketing	293,453	313,733	—	607,186
Contribution profit (loss)	$ 936,220	$ (159,789)	$ 368,279	1,144,710
Other operating expenses				742,062
Operating income				402,648
Other income (expense)				(53,279)
Provision for income taxes				82,570
Net income				$ 266,799

	Year ended December 31, 2014			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Amortization of content assets	$ 1,657,673	$ 998,606	$ 71,491	$ 2,727,770

(1) A membership (also referred to as a subscription or a member) is defined as the right to receive the Netflix service following sign-up and a method of payment being provided. Memberships are assigned to territories based on the geographic location used at time of sign-up as determined by our internal systems, which utilize industry standard geo-location technology. We offer free-trial memberships to new and certain rejoining members. Total members include those who are on a free-trial as long as a method of payment has been provided. A membership is canceled and ceases to be reflected in the above metrics as of the effective cancellation date. Voluntary cancellations become effective at the end of the prepaid membership period, while involuntary cancellation of the service, as a result of a failed method of payment, becomes effective immediately except in limited circumstances where a short grace period is offered to ensure the streaming service is not interrupted for members who are impacted by payment processing delays by our banks or integrated payment partners. The number of members in a grace period at any given point is not material.

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12. Selected Quarterly Financial Data (Unaudited)

	December 31	September 30	June 30	March 31
	(in thousands, except for per share data)			
2016				
Total revenues	$ 2,477,541	$ 2,290,188	$ 2,105,204	$ 1,957,736
Gross profit	823,122	757,344	632,106	588,196
Net income	66,748	51,517	40,755	27,658
Earnings per share:				
Basic	$ 0.16	$ 0.12	$ 0.10	$ 0.06
Diluted	0.15	0.12	0.09	0.06
2015				
Total revenues	$ 1,823,333	$ 1,738,355	$ 1,644,694	$ 1,573,129
Gross profit	573,968	564,397	522,942	526,728
Net income	43,178	29,432	26,335	23,696
Earnings per share:				
Basic	$ 0.10	$ 0.07	$ 0.06	$ 0.06
Diluted	0.10	0.07	0.06	0.05

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Netflix, Inc.

Dated: January 27, 2017	By:	/S/ REED HASTINGS Reed Hastings Chief Executive Officer *(principal executive officer)*
Dated: January 27, 2017	By:	/S/ DAVID WELLS David Wells Chief Financial Officer *(principal financial and accounting officer)*

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Reed Hastings and David Wells, and each of them, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments to this Report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his substitute or substituted, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities and Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/S/ REED HASTINGS Reed Hastings	President, Chief Executive Officer and Director (principal executive officer)	January 27, 2017
/S/ DAVID WELLS David Wells	Chief Financial Officer (principal financial and accounting officer)	January 27, 2017
/S/ RICHARD BARTON Richard Barton	Director	January 27, 2017
/S/ TIMOTHY M. HALEY Timothy M. Haley	Director	January 27, 2017
/S/ JAY C. HOAG Jay C. Hoag	Director	January 27, 2017
/S/ ANN MATHER Ann Mather	Director	January 27, 2017
/S/ A. GEORGE BATTLE A. George Battle	Director	January 27, 2017
/S/ LESLIE J. KILGORE Leslie J. Kilgore	Director	January 27, 2017
/S/ BRAD SMITH Brad Smith	Director	January 27, 2017
/S/ ANNE SWEENEY Anne Sweeney	Director	January 27, 2017

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EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Restated Certificate of Incorporation	10-Q	001-35727	3.1	July 17, 2015	
3.2	Amended and Restated Bylaws	8-K	000-49802	3.1	March 20, 2009	
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	10-Q	000-49802	3.3	August 2, 2004	
4.1	Form of Common Stock Certificate	S-1/A	333-83878	4.1	April 16, 2002	
4.2	Indenture, dated as of February 1, 2013, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	February 1, 2013	
4.3	Indenture, dated as of February 19, 2014, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	February 19, 2014	
4.4	Indenture, dated as of February 5, 2015, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	February 5, 2015	
4.5	Indenture, dated as of February 5, 2015, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.2	February 5, 2015	
4.6	Indenture, dated as of October 27, 2016, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	October 27, 2016	
10.1†	Form of Indemnification Agreement entered into by the registrant with each of its executive officers and directors	S-1/A	333-83878	10.1	March 20, 2002	
10.2†	Amended and Restated 2002 Stock Plan	Def 14A	000-49802	A	March 31, 2006	
10.3†	2011 Stock Plan	Def 14A	000-49802	A	April 20, 2011	
10.4†	Amended and Restated Executive Severance and Retention Incentive Plan	10-K	000-49802	10.7	February 1, 2013	
10.5†	Registration Rights Agreement, dated as of February 19, 2014, by and among the Company and Morgan Stanley & Co. LLC, as representative of the Initial Purchasers listed in Schedule 1 thereto	8-K	001-35727	10.1	February 19, 2014	
10.6†	Performance Bonus Plan	Def 14A	001-35727	A	April 28, 2014	
10.7	Registration Rights Agreement, dated as of February 5, 2015, by and among the Company and Morgan Stanley & Co. LLC, as representative of the Initial Purchasers listed in Schedule 1 thereto	8-K	001-35727	10.1	February 5, 2015	
10.8	Registration Rights Agreement, dated as of February 5, 2015, by and among the Company and Morgan Stanley & Co. LLC, as representative of the Initial Purchasers listed in Schedule 1 thereto	8-K	001-35727	10.2	February 5, 2015	
10.9	Purchase Agreement between Morgan Stanley & Co. LLC, as representative of several initial purchasers, and Netflix, Inc. dated February 2, 2015	10-Q	001-35727	10.9	April 17, 2015	
10.10	Purchase Agreement, dated as of October 24, 2016, between the Company and Morgan Stanley	8-K	001-35727	10.1	October 24, 2016	

& Co. LLC, as representative of the Initial Purchasers listed in Schedule 1 thereto

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Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.11	Registration Rights Agreement, dated as of October 27, 2016, by and between the Company and Morgan Stanley & Co. LLC, as representative of the Initial Purchasers listed in Schedule 1 thereto	8-K	001-35727	10.2	October 24, 2016	
21.1	List of Significant Subsidiaries					X
23.1	Consent of Ernst & Young LLP					X
24	Power of Attorney (see signature page)					
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certifications of Chief Executive Officer and Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101	The following financial information from Netflix, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC on January 27, 2017, formatted in XBRL includes: (i) Consolidated Statements of Operations for the Years Ended December 31, 2016, 2015 and 2014, (ii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2016, 2015 and 2014, (iii) Consolidated Statements of Cash Flows for the Years Ended December 31, 2016, 2015 and 2014, (iv) Consolidated Balance Sheets as of December 31, 2016 and 2015, (v) Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2016, 2015 and 2014 and (vi) the Notes to Consolidated Financial Statements.					X

* These certifications are not deemed filed by the SEC and are not to be incorporated by reference in any filing we make under the Securities Act of 1933 or the Securities Exchange Act of 1934, irrespective of any general incorporation language in any filings.

† Indicates a management contract or compensatory plan

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2013

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 000-49802

Netflix, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**77-0467272**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

100 Winchester Circle Los Gatos, California 95032
(Address and zip code of principal executive offices)
(408) 540-3700
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of Exchange on which registered
Common stock, $0.001 par value	**The NASDAQ Stock Market LLC**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ (do not check if smaller reporting company) Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

As of June 30, 2013, the aggregate market value of voting stock held by non-affiliates of the registrant, based upon the closing sales price for the registrant's common stock, as reported in the NASDAQ Global Select Market System, was $10,368,444,430. Shares of common stock beneficially owned by each executive officer and director of the Registrant and by each person known by the Registrant to beneficially own 10% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for any other purpose.

As of January 30, 2014, there were 59,807,236 shares of the registrant's common stock, par value $0.001, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Parts of the registrant's Proxy Statement for Registrant's 2014 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

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NETFLIX, INC.

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws. These forward-looking statements include, but are not limited to, statements regarding: our core strategy; the growth of Internet delivery of content; the growth in our streaming memberships; the decline in our DVD memberships and the resources allocated to our DVD segment; the market opportunity for streaming content; contribution margins; contribution profits (losses); liquidity; free cash flows; revenues; net income; legal costs; operating cash flows; stock price volatility; obtaining additional capital; our content library and marketing investments, including investments in original programming; significance of future contractual obligations; realization of deferred tax assets; seasonality; method of content delivery; and international expansion. These forward-looking statements can be identified by our use of words such as "expects", "will", "anticipate", "may", "could", "would", "should", "intend", "continue", and derivatives thereof. These forward-looking statements are subject to risks and uncertainties that could cause actual results and events to differ. A detailed discussion of these and other risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included throughout this filing and particularly in Item 1A: "Risk Factors" section set forth in this Annual Report on Form 10-K. All forward-looking statements included in this document are based on information available to us on the date hereof, and we assume no obligation to revise or publicly release any revision to any such forward-looking statement, except as may otherwise be required by law.

Item 1. Business

ABOUT US

Netflix, Inc. ("Netflix", "the Company", "we", or "us") is the world's leading Internet television network with more than 44 million streaming members in over 40 countries enjoying more than one billion hours of TV shows and movies per month, including original series. Our members can watch as much as they want, anytime, anywhere, on nearly any Internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments. Additionally, in the United States ("U.S."), our members can receive DVDs delivered quickly to their homes.

We are a pioneer in the Internet delivery of TV shows and movies, launching our streaming service in 2007. Since this launch, we have developed an ecosystem for Internet-connected devices and have licensed increasing amounts of content that enable consumers to enjoy TV shows and movies directly on their TVs, computers and mobile devices. As a result of these efforts, we have experienced growing consumer acceptance of and interest in the delivery of TV shows and movies directly over the Internet.

Our core strategy is to grow our streaming subscription business domestically and internationally. We are continuously improving our members' experience - expanding our streaming content, with a focus on programming an overall mix of content that delights our customers, enhancing our user interface and extending our streaming service to even more Internet-connected devices while staying within the parameters of our consolidated net income (loss) and operating segment contribution profit (loss) targets.

We continue to grow our streaming service both domestically and internationally. We began our international expansion with Canada in 2010 and have since launched our service in Latin America and several European territories. We anticipate a substantial expansion of our service in Europe in late 2014. We have also expanded our streaming content offering to include more exclusive and original programming, including several Emmy and Golden Globe nominated original series in 2013.

Prior to July 2011, in the U.S., our streaming and DVD-by-mail operations were combined and members could receive both streaming content and DVDs under a single "hybrid" plan. In July 2011, we separated the combined plans, making it necessary for members who wish to receive both DVDs-by-mail and streaming content to have two separate membership plans.

BUSINESS SEGMENTS

The Company has three operating segments: Domestic streaming, International streaming and Domestic DVD. The Domestic and International streaming segments derive revenues from monthly membership fees for services consisting solely of streaming content. The Domestic DVD segment derives revenues from monthly membership fees for services consisting solely of DVD-by-mail. For additional information regarding our segments, including information about our financial results by geography, see Note 12 of Item 8, *Financial Statements and Supplementary Data*.

COMPETITION

The market for entertainment video is intensely competitive and subject to rapid change. Many consumers maintain simultaneous relationships with multiple entertainment video providers and can easily shift spending from one provider to another. Our principal competitors vary by geographic region and include multichannel video programming distributors providing free on demand content through authenticated Internet applications, Internet-based movie and TV content providers, including both those that provide legal and illegal (or pirated) entertainment video content, DVD rental outlets and kiosk services and entertainment video retail stores.

SEASONALITY

Our member growth exhibits a seasonal pattern that reflects variations when consumers buy Internet-connected devices and when they tend to increase their viewing. Our domestic member growth is generally greatest in our fourth and first quarters (October through March), slowing in our second quarter (April through June) and then accelerating in our third quarter (July through September). We expect each market in our international segment to demonstrate more predictable seasonal patterns as our service offering in each market becomes more established and we have a longer history to assess such patterns. Additionally, the variable expenses associated with shipments of DVDs are highest in the first quarter due to the seasonal nature of DVD usage.

INTELLECTUAL PROPERTY

We regard our trademarks, service marks, copyrights, patents, domain names, trade dress, trade secrets, proprietary technologies and similar intellectual property as important to our success. We use a combination of patent, trademark, copyright and trade secret laws and confidential agreements to protect our proprietary intellectual property. Our ability to protect and enforce our intellectual property rights is subject to certain risks and from time to time we encounter disputes over rights and obligations concerning intellectual property. We cannot provide assurance that we will prevail in any intellectual property disputes.

EMPLOYEES

As of December 31, 2013, we had 2,022 full-time employees. We also utilize part-time and temporary employees, primarily in our DVD fulfillment operations, to respond to the fluctuating demand for DVD shipments. As of December 31, 2013, we had 305 part-time and temporary employees. Our employees are not covered by a collective bargaining agreement, and we consider our relations with our employees to be good.

OTHER INFORMATION

We were incorporated in Delaware in August 1997 and completed our initial public offering in May 2002. Our principal executive offices are located at 100 Winchester Circle, Los Gatos, California 95032, and our telephone number is (408) 540-3700.

We maintain a Web site at *www.netflix.com*. The contents of our Web site are not incorporated in, or otherwise to be regarded as part of, this Annual Report on Form 10-K. In this Annual Report on Form 10-K, “Netflix,” the “Company,” “we,” “us,” “our” and the “registrant” refer to Netflix, Inc. We make available, free of charge on our web site, access to our annual report on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after we file or furnish them electronically with the Securities and Exchange Commission ("SEC").

Investors and others should note that we announce material financial information to our investors using our investor relations website (http://ir.netflix.com), SEC filings, press releases, public conference calls and webcasts. We use these channels as well as social media to communicate with our members and the public about our company, our services and other issues. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on the social media channels listed on our investor relations website.

Item 1A. Risk Factors

If any of the following risks actually occurs, our business, financial condition and results of operations could be harmed. In that case, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Business

If our efforts to attract and retain members are not successful, our business will be adversely affected.

We have experienced significant member growth over the past several years. Our ability to continue to attract members will depend in part on our ability to consistently provide our members with a valuable and quality experience for selecting and viewing TV shows and movies. Furthermore, the relative service levels, content offerings, pricing and related features of competitors to our service may adversely impact our ability to attract and retain members. Competitors include multichannel video programming distributors providing free on demand content through authenticated Internet applications, Internet-based movie and TV content providers, including both those that provide legal and illegal (or pirated) entertainment video content, DVD rental outlets and kiosk services and entertainment video retail stores. If consumers do not perceive our service offering to be of value, or if we introduce new or adjust existing features or change the mix of content in a manner that is not favorably received by them, we may not be able to attract and retain members. In addition, many of our members are rejoining our service or originate from word-of-mouth advertising from existing members. If our efforts to satisfy our existing members are not successful, we may not be able to attract members, and as a result, our ability to maintain and/or grow our business will be adversely affected. Members cancel our service for many reasons, including a perception that they do not use the service sufficiently, the need to cut household expenses, availability of content is unsatisfactory, competitive services provide a better value or experience and customer service issues are not satisfactorily resolved. We must continually add new members both to replace members who cancel and to grow our business beyond our current member base. If too many of our members cancel our service, or if we are unable to attract new members in numbers sufficient to grow our business, our operating results will be adversely affected. If we are unable to successfully compete with current and new competitors in both retaining our existing members and attracting new members, our business will be adversely affected. Further, if excessive numbers of members cancel our service, we may be required to incur significantly higher marketing expenditures than we currently anticipate to replace these members with new members.

If we are unable to compete effectively, our business will be adversely affected.

The market for entertainment video is intensely competitive and subject to rapid change. New technologies and evolving business models for delivery of entertainment video continue to develop at a fast pace. The growth of Internet-connected devices, including TVs, computers and mobile devices has increased the consumer acceptance of Internet delivery of entertainment video. Through these new and existing distribution channels, consumers are afforded various means for consuming entertainment video. The various economic models underlying these differing means of entertainment video delivery include subscription, transactional, ad-supported and piracy-based models. All of these have the potential to capture meaningful segments of the entertainment video market. Several competitors have longer operating histories, large customer bases, strong brand recognition and significant financial, marketing and other resources. They may secure better terms from suppliers, adopt more aggressive pricing and devote more resources to technology, fulfillment, and marketing. New entrants may enter the market with unique service offerings or approaches to providing entertainment video and other companies also may enter into business combinations or alliances that strengthen their competitive positions. If we are unable to successfully or profitably compete with current and new competitors, programs and technologies, our business will be adversely affected, and we may not be able to increase or maintain market share, revenues or profitability.

The long-term and fixed cost nature of our content licenses may limit our operating flexibility and could adversely affect our liquidity and results of operation.

In connection with obtaining streaming content, we typically enter into multi-year licenses with studios and other content providers, the payment terms of which are not tied to member usage or the size of our member base (“fixed cost”) but which may be tied to such factors as titles licensed and/or theatrical exhibition receipts. Such commitments are included in the Contractual Obligations section of Item 7 *Management's Discussion and Analysis of Financial Condition and Results of Operations.* Given the multiple-year duration and largely fixed cost nature of content licenses, if member acquisition and retention do not meet our expectations, our margins may be adversely impacted. Payment terms for streaming licenses, especially programming that is initially available in the applicable territory on our service (“original programming”) or that is considered output content, will typically require more up-front cash payments than other licensing agreements. To the extent member and/or revenue growth do not meet our expectations, our liquidity and results of operations could be adversely affected as a result of content licensing commitments and accelerated payment requirements of certain licenses. In addition, the long-term and fixed cost nature of our content licenses may limit our flexibility in planning for, or reacting to changes in our

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business and the market segments in which we operate. As we expand internationally, we must license content in advance of entering into a new geographical market. If we license content that is not favorably received by consumers in the applicable territory, acquisition and retention may be adversely impacted and given the long-term and fixed cost nature of our content licenses, we may not be able to adjust our content offering quickly and our results of operation may be adversely impacted.

If we are not able to manage change and growth, our business could be adversely affected.

We are expanding our operations internationally, scaling our streaming service to effectively and reliably handle anticipated growth in both members and features related to our service, as well as continuing to operate our DVD service within the U.S. As we expand internationally, we are managing our business to address varied content offerings, consumer customs and practices, in particular those dealing with e-commerce and Internet video, as well as differing legal and regulatory environments. As we scale our streaming service, we are developing technology and utilizing third-party Internet-based or "cloud" computing services. If we are not able to manage the growing complexity of our business, including improving, refining or revising our systems and operational practices related to our streaming operations, our business may be adversely affected.

If our efforts to build strong brand identity and improve member satisfaction and loyalty are not successful, we may not be able to attract or retain members, and our operating results may be adversely affected.

We must continue to build and maintain strong brand identity. We believe that strong brand identity will be important in attracting and retaining members who have a number of choices from which to obtain entertainment video. To build a strong brand we believe we must continue to offer content and service features that our members value and enjoy. We also believe that these must be coupled with effective consumer communications, such as marketing, customer service and public relations. If our efforts to promote and maintain our brand are not successful, our ability to attract and retain members may be adversely affected. Such a result, coupled with the increasingly long-term and fixed cost nature of our content acquisition licenses, may adversely affect our operating results.

With respect to our expansion into international markets, we will also need to establish our brand and to the extent we are not successful, our business in new markets may be adversely impacted.

Changes in our member acquisition sources could adversely affect our marketing expenses and member levels may be adversely affected.

We utilize a broad mix of marketing and public relations programs, including social media sites such as Facebook and Twitter, to promote our service to potential new members. We may limit or discontinue use or support of certain marketing sources or activities if advertising rates increase or if we become concerned that members or potential members deem certain marketing practices intrusive or damaging to our brand. If the available marketing channels are curtailed, our ability to attract new members may be adversely affected.

If companies that currently promote our service decide that we are negatively impacting their business, that they want to compete more directly with our business or enter a similar business or decide to exclusively support our competitors, we may no longer be given access to such marketing channels. We also acquire a number of members who rejoin our service having previously cancelled their membership. If we are unable to maintain or replace our sources of members with similarly effective sources, or if the cost of our existing sources increases, our member levels and marketing expenses may be adversely affected

We face risks, such as unforeseen costs and potential liability in connection with content we produce, license and/or distribute through our service.

As a distributor of content, we face potential liability for negligence, copyright, or trademark infringement or other claims based on the nature and content of materials that we produce, license and/or distribute. We also may face potential liability for content used in promoting our service, including marketing materials and features on our website such as member reviews. As we expand our original programming, we will become responsible for production costs and other expenses, such as ongoing guild payments. We will also take on risks associated with the production, such as completion and key talent risk. To the extent we do not accurately anticipate costs or mitigate risks, or if we become liable for content we produce, license and/or distribute, our business may suffer. Litigation to defend these claims could be costly and the expenses and damages arising from any liability or unforeseen production risks could harm our results of operations. We cannot assure that we are indemnified to cover claims or costs of these types and we may not have insurance coverage for these types of claims.

If studios, content providers or other rights holders refuse to license streaming content or other rights upon terms acceptable to us, our business could be adversely affected.

Our ability to provide our members with content they can watch instantly depends on studios, content providers and other rights holders licensing rights to distribute such content and certain related elements thereof, such as the public performance of music contained within the content we distribute. The license periods and the terms and conditions of such licenses vary. If the studios, content providers and other rights holders are not or are no longer willing or able to license us content upon terms acceptable to us, our ability to stream content to our members will be adversely affected and/or our costs could increase. Many of the licenses for content provide for the studios or other content providers to withdraw content from our service relatively quickly. Because of these provisions as well as other actions we may take, content available through our service can be withdrawn on short notice. As competition increases, we may see the cost of programming increase. As we seek to differentiate our service, we are increasingly focused on securing certain exclusive rights when obtaining content, including original content. We are also focused on programming an overall mix of content that delights our members in a cost efficient manner. Within this context, we are selective about the titles we add and renew to our service. If we do not maintain a compelling mix of content, our member acquisition and retention may be adversely affected.

Music contained within content we distribute may require us to obtain licenses for such distribution. In this regard, we engage in negotiations with performing rights organizations and collection societies (“PROs”) that hold certain rights to music interests when "publicly performed" or “communicated to the public” in connection with streaming content into various territories. If we are unable to reach mutually acceptable terms with these organizations, we could become involved in litigation and/or could be enjoined from distributing certain content, which could adversely impact our business. Additionally, pending and ongoing litigation as well as negotiations between certain PROs and other third parties in various territories could adversely impact our negotiations with PROs, or result in music publishers represented by certain PROs to unilaterally withdraw rights, and thereby adversely impact our ability to reach licensing agreements reasonably acceptable to us. Failure to reach such licensing agreements could expose us to potential liability for copyright infringement or otherwise increase our costs.

We rely upon a number of partners to offer instant streaming of content from Netflix to various devices.

We currently offer members the ability to receive streaming content through a host of Internet-connected devices, including TVs, digital video players, game consoles and mobile devices. We intend to continue to broaden our capability to instantly stream TV shows and movies to other platforms and partners over time. If we are not successful in maintaining existing and creating new relationships, or if we encounter technological, content licensing or other impediments to our streaming content, our ability to grow our business could be adversely impacted. Our agreements with our consumer electronics partners are typically between one and three years in duration and our business could be adversely affected if, upon expiration, a number of our partners do not continue to provide access to our service or are unwilling to do so on terms acceptable to us, which terms may include the degree of accessibility and prominence of our service. Furthermore, devices are manufactured and sold by entities other than Netflix and while these entities should be responsible for the devices' performance, the connection between these devices and Netflix may nonetheless result in consumer dissatisfaction toward Netflix and such dissatisfaction could result in claims against us or otherwise adversely impact our business. In addition, technology changes to our streaming functionality may require that partners update their devices. If partners do not update or otherwise modify their devices, our service and our members' use and enjoyment could be negatively impacted.

Any significant disruption in our computer systems or those of third parties that we utilize in our operations could result in a loss or degradation of service and could adversely impact our business.

Our reputation and ability to attract, retain and serve our members is dependent upon the reliable performance of our computer systems and those of third parties that we utilize in our operations. These systems may be subject to damage or interruption from earthquakes, adverse weather conditions, other natural disasters, terrorist attacks, power loss, telecommunications failures, computer viruses, computer denial of service attacks, or other attempts to harm these systems. Interruptions in these systems, or with the Internet in general, could make our service unavailable or degraded or otherwise hinder our ability to deliver streaming content or fulfill DVD selections. From time to time, we experience service interruptions and have voluntarily provided affected members with a credit during periods of extended outage. Service interruptions, errors in our software or the unavailability of computer systems used in our operations could diminish the overall attractiveness of our membership service to existing and potential members.

Our servers and those of third parties we use in our operations are vulnerable to computer viruses, physical or electronic break-ins and similar disruptions and periodically experience directed attacks intended to lead to interruptions and delays in our service and operations as well as loss, misuse or theft of data. Any attempt by hackers to disrupt our service or otherwise access our systems, if successful, could harm our business, be expensive to remedy and damage our reputation. We have implemented certain systems and processes to thwart hackers and to date hackers have not had a material impact on our service

or systems however this is no assurance that hackers may not be successful in the future. Our insurance does not cover expenses related to such disruptions or unauthorized access. Efforts to prevent hackers from disrupting our service or otherwise accessing our systems are expensive to implement and may limit the functionality of or otherwise negatively impact our service offering and systems. Any significant disruption to our service or access to our systems could result in a loss of members and adversely affect our business and results of operation.

We utilize our own communications and computer hardware systems located either in our facilities or in that of a third-party Web hosting provider. In addition, we utilize third-party Internet-based or “cloud” computing services in connection with our business operations. We also utilize our own and third-party content delivery networks to help us stream TV shows and movies in high volume to Netflix members over the Internet. Problems faced by us or our third-party Web hosting, "cloud" computing, or content delivery network providers, including technological or business-related disruptions, could adversely impact the experience of our members.

We rely upon Amazon Web Services to operate certain aspects of our service and any disruption of or interference with our use of the Amazon Web Services operation would impact our operations and our business would be adversely impacted.

Amazon Web Services ("AWS") provides a distributed computing infrastructure platform for business operations, or what is commonly referred to as a "cloud" computing service. We have architected our software and computer systems so as to utilize data processing, storage capabilities and other services provided by AWS. Currently, we run the vast majority of our computing on AWS. Given this, along with the fact that we cannot easily switch our AWS operations to another cloud provider, any disruption of or interference with our use of AWS would impact our operations and our business would be adversely impacted. While the retail side of Amazon competes with us, we do not believe that Amazon will use the AWS operation in such a manner as to gain competitive advantage against our service.

If we experience difficulties with the operation and implementation of Open Connect, our single-purpose Netflix content delivery network (“CDN”), our business and results of operation could be adversely impacted.

We have built and deployed a single-purpose Netflix content delivery network that we call Open Connect. Given our size and growth, we believe it makes economic sense to have our own specialized CDN. We will continue to work with commercial CDN partners, but we believe that the vast majority of our streaming bits will ultimately be served by Open Connect. To the extent Internet Service Providers ("ISPs") do not interconnect with Open Connect or if we experience difficulties in operating the Open Connect CDN service, our ability to efficiently and effectively deliver our streaming content to our members could be adversely impacted and our business and results of operation could be adversely affected. Failure to implement Open Connect could require us to engage third-party solutions to deliver our content to ISPs, which could increase our costs and negatively affect our operating results.

If we are unable to effectively utilize our recommendation and merchandising technology or develop user interfaces that maintain or increase member engagement with our service, our business may suffer.

Our proprietary recommendation and merchandising technology enables us to predict and recommend titles and effectively merchandise our library to our members. We also develop, test and implement various user interfaces across multiple devices, in an effort to maintain and increase member engagement with our service.

We are continually refining our recommendation and merchandising technology as well as our various user interfaces in an effort to improve the predictive accuracy of our TV show and movie recommendations and the usefulness of and engagement with our service by our members. We may experience difficulties in implementing refinements or other, third-party recommendation or merchandising technology or interfaces may become more popular with or useful to our members. In addition, we cannot assure that we will be able to continue to make and implement meaningful refinements to our recommendation technology.

If our recommendation and merchandising technology does not enable us to predict and recommend titles that our members will enjoy or if we are unable to implement meaningful improvements thereto or otherwise improve our user interfaces, our service may be less useful to our members. Such failures could lead to the following:

- our member satisfaction may decrease, members may perceive our service to be of lower value and our ability to attract and retain members may be adversely affected; and
- our ability to effectively merchandise and utilize our library will be adversely affected.

We rely heavily on our proprietary technology to stream TV shows and movies and to manage other aspects of our operations, and the failure of this technology to operate effectively could adversely affect our business.

We continually enhance or modify the technology used for our operations. We cannot be sure that any enhancements or other modifications we make to our operations will achieve the intended results or otherwise be of value to our members. Future enhancements and modifications to our technology could consume considerable resources. If we are unable to maintain and enhance our technology to manage the streaming of TV shows and movies to our members in a timely and efficient manner and/or the processing of DVDs among our shipping centers, our ability to retain existing members and to add new members may be impaired. In addition, if our technology or that of third parties we utilize in our operations fails or otherwise operates improperly, our ability to retain existing members and to add new members may be impaired. Also, any harm to our members' personal computers or other devices caused by software used in our operations could have an adverse effect on our business, results of operations and financial condition.

If government regulations relating to the Internet or other areas of our business change, we may need to alter the manner in which we conduct our business, or incur greater operating expenses.

The adoption or modification of laws or regulations relating to the Internet or other areas of our business could limit or otherwise adversely affect the manner in which we currently conduct our business. In addition, the continued growth and development of the market for online commerce may lead to more stringent consumer protection laws, which may impose additional burdens on us. If we are required to comply with new regulations or legislation or new interpretations of existing regulations or legislation, this compliance could cause us to incur additional expenses or alter our business model.

The adoption of any laws or regulations that adversely affect the growth, popularity or use of the Internet, including laws impacting Internet neutrality, could decrease the demand for our service and increase our cost of doing business. For example, in late 2010, the Federal Communications Commission (FCC) adopted so-called net neutrality rules intended, in part, to prevent network operators from discriminating against legal traffic that transverse their networks. Recently, the U.S. Court of Appeals for the District of Columbia struck down the FCC's net neutrality rules and it is currently uncertain how the FCC will respond to this decision. To the extent network operators attempt to use this ruling to extract fees from us to deliver our traffic or otherwise engage in discriminatory practices, our business could be adversely impacted. As we expand internationally, government regulation concerning the Internet, and in particular, network neutrality, may be nascent or non-existent. Within such a regulatory environment, coupled with potentially significant political and economic power of local network operators, we could experience discriminatory or anti-competitive practices that could impede our growth, cause us to incur additional expense or otherwise negatively affect our business.

Changes in how network operators handle and charge for access to data that travel across their networks could adversely impact our business.

We rely upon the ability of consumers to access our service through the Internet. To the extent that network operators implement usage based pricing, including meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our member acquisition and retention could be negatively impacted. Furthermore, to the extent network operators were to create tiers of Internet access service and either charge us for or prohibit us from being available through these tiers, our business could be negatively impacted.

Most network operators that provide consumers with access to the Internet also provide these consumers with multichannel video programming. As such, many network operators have an incentive to use their network infrastructure in a manner adverse to our continued growth and success. For example, Comcast exempted certain of its own Internet video traffic (e.g., Streampix videos to the Xbox 360) from a bandwidth cap that applies to all unaffiliated Internet video traffic (e.g., Netflix videos to the Xbox 360). While we believe that consumer demand, regulatory oversight and competition will help check these incentives, to the extent that network operators are able to provide preferential treatment to their data as opposed to ours or otherwise implement discriminatory network management practices, our business could be negatively impacted. In international markets, especially in Latin America, these same incentives apply however, the consumer demand, regulatory oversight and competition may not be as strong as in our domestic market.

Privacy concerns could limit our ability to leverage our member data and our disclosure of member data could adversely impact our business and reputation.

In the ordinary course of business and in particular in connection with merchandising our service to our members, we collect and utilize data supplied by our members. We currently face certain legal obligations regarding the manner in which we treat such information. Other businesses have been criticized by privacy groups and governmental bodies for attempts to link personal identities and other information to data collected on the Internet regarding users' browsing and other habits. Increased regulation of data utilization practices, including self-regulation or findings under existing laws, that limit our ability to use

collected data, could have an adverse effect on our business. In addition, if we were to disclose data about our members in a manner that was objectionable to them, our business reputation could be adversely affected, and we could face potential legal claims that could impact our operating results. As our business evolves and as we expand internationally, we may become subject to additional and/or more stringent legal obligations concerning our treatment of customer information. Failure to comply with these obligations could subject us to liability, and to the extent that we need to alter our business model or practices to adapt to these obligations, we could incur additional expenses.

Our reputation and relationships with members would be harmed if our member data, particularly billing data, were to be accessed by unauthorized persons.

We maintain personal data regarding our members, including names and billing data. With respect to billing data, such as credit card numbers, we rely on licensed encryption and authentication technology to secure such information. We take measures to protect against unauthorized intrusion into our members' data. Despite these measures, we, or our payment processing services, could experience an unauthorized intrusion into our members' data. In the event of such a breach, current and potential members may become unwilling to provide the information to us necessary for them to become members. Additionally, we could face legal claims for such a breach. The costs relating to any data breach could be material, and we currently do not carry insurance against the risk of a data breach. For these reasons, should an unauthorized intrusion into our members' data occur, our business could be adversely affected.

Increases in payment processing fees, changes to operating rules, the acceptance of new types of payment methods or payment fraud could increase our operating expenses and adversely affect our business and results of operations.

Our members pay for our membership services predominately using credit and debit cards (together, "payment cards"). Our acceptance of these payment methods requires our payment of certain fees. From time to time, these fees may increase, either as a result of rate changes by the payment processing companies or as a result of a change in our business practices which increase the fees on a cost-per-transaction basis. Such increases may adversely affect our results of operations.

We are subject to rules, regulations and practices governing our accepted payment methods. These rules, regulations and practices could change or be reinterpreted to make it difficult or impossible for us to comply. If we fail to comply with these rules or requirements, we may be subject to fines and higher transaction fees and lose our ability to accept these payment methods, and our business and results of operations would be adversely affected.

We accept payment methods other than payment cards. As our service continues to evolve and expand internationally, we will likely continue to explore accepting various forms of payment, which may have higher fees and costs than our currently accepted payment methods. If more consumers utilize higher cost payment methods, our payment costs could increase and our results of operations could be adversely impacted.

In addition, we do not obtain signatures from members in connection with their use of payment methods. To the extent we do not obtain members' signatures, we may be liable for fraudulent payment transactions, even when the associated financial institution approves payment of the orders. From time to time, fraudulent payment methods are used to obtain service. While we do have certain safeguards in place, we nonetheless experience some fraudulent transactions. We do not currently carry insurance against the risk of fraudulent payment transactions. A failure to adequately control fraudulent payment transactions would harm our business and results of operations.

If the market segment for online subscription-based entertainment video saturates, our business will be adversely affected.

The market segment for online subscription-based entertainment video has grown significantly. Much of the increasing growth can be attributed to the ability of our members to stream TV shows and movies on their TVs, computers and mobile devices. As we face more competition in our market segment, our rate of growth relative to overall growth in the segment may decline. Further, a decline in our rate of growth could indicate that the market segment for online subscription-based entertainment video is beginning to saturate. While we believe that this segment will continue to grow for the foreseeable future, if this market segment were to saturate, our business would be adversely affected.

If our trademarks and other proprietary rights are not adequately protected to prevent use or appropriation by our competitors, the value of our brand and other intangible assets may be diminished, and our business may be adversely affected.

We rely and expect to continue to rely on a combination of confidentiality and license agreements with our employees, consultants and third parties with whom we have relationships, as well as trademark, copyright, patent and trade secret protection laws, to protect our proprietary rights. We may also seek to enforce our proprietary rights through court proceedings. We have filed and we expect to file from time to time for trademark and patent applications. Nevertheless, these

applications may not be approved, third parties may challenge any patents or trademarks issued to or held by us, third parties may knowingly or unknowingly infringe our patents, trademarks and other proprietary rights, and we may not be able to prevent infringement or misappropriation without substantial expense to us. If the protection of our proprietary rights is inadequate to prevent use or appropriation by third parties, the value of our brand and other intangible assets may be diminished, competitors may be able to more effectively mimic our service and methods of operations, the perception of our business and service to members and potential members may become confused in the marketplace, and our ability to attract members may be adversely affected.

We currently hold various domain names relating to our brand, including Netflix.com. Failure to protect our domain names could adversely affect our reputation and brand and make it more difficult for users to find our Web site and our service. We may be unable, without significant cost or at all, to prevent third parties from acquiring domain names that are similar to, infringe upon or otherwise decrease the value of our trademarks and other proprietary rights.

Intellectual property claims against us could be costly and result in the loss of significant rights related to, among other things, our Web site, streaming technology, our recommendation and merchandising technology, title selection processes and marketing activities.

Trademark, copyright, patent and other intellectual property rights are important to us and other companies. Our intellectual property rights extend to our technology, business processes and the content on our Web site. We use the intellectual property of third parties in merchandising our products and marketing our service through contractual and other rights. From time to time, third parties allege that we have violated their intellectual property rights. If we are unable to obtain sufficient rights, successfully defend our use, or develop non-infringing technology or otherwise alter our business practices on a timely basis in response to claims against us for infringement, misappropriation, misuse or other violation of third-party intellectual property rights, our business and competitive position may be adversely affected. Many companies are devoting significant resources to developing patents that could potentially affect many aspects of our business. There are numerous patents that broadly claim means and methods of conducting business on the Internet. We have not searched patents relative to our technology. Defending ourselves against intellectual property claims, whether they are with or without merit or are determined in our favor, results in costly litigation and diversion of technical and management personnel. It also may result in our inability to use our current Web site, streaming technology, our recommendation and merchandising technology or inability to market our service or merchandise our products. As a result of a dispute, we may have to develop non-infringing technology, enter into royalty or licensing agreements, adjust our merchandising or marketing activities or take other actions to resolve the claims. These actions, if required, may be costly or unavailable on terms acceptable to us.

We are engaged in legal proceedings that could cause us to incur unforeseen expenses and could occupy a significant amount of our management's time and attention.

From time to time, we are subject to litigation or claims that could negatively affect our business operations and financial position. As we have grown, we have seen a rise in the number of litigation matters against us.

Most of these matters relate to patent infringement lawsuits, which are typically expensive to defend. Litigation disputes could cause us to incur unforeseen expenses, could occupy a significant amount of our management's time and attention and could negatively affect our business operations and financial position.

We could be subject to economic, political, regulatory and other risks arising from our international operations.

Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks that may be different from and incremental to those in the U.S. In addition to the risks that we face in the U.S., our international operations involve risks that could adversely affect our business, including:

- the need to adapt our content and user interfaces for specific cultural and language differences, including licensing a certain portion of our content library before we have developed a full appreciation for its performance within a given territory;
- difficulties and costs associated with staffing and managing foreign operations;
- management distraction;
- political or social unrest and economic instability;
- compliance with U.S. laws such as the Foreign Corrupt Practices Act, export controls and economic sanctions, and local laws prohibiting corrupt payments to government officials;
- difficulties in understanding and complying with local laws, regulations and customs in foreign jurisdictions;

- unexpected changes in regulatory requirements;
- less favorable foreign intellectual property laws;
- adverse tax consequences such as those related to repatriation of cash from foreign jurisdictions into the United States, non-income related taxes such as value-added tax or other indirect taxes, such as ISS, PIS, COFINS and CIDE in Brazil, changes in tax laws or their interpretations, or the application of judgment in determining our global provision for income taxes and other tax liabilities given inter-company transactions and calculations where the ultimate tax determination is uncertain;
- fluctuations in currency exchange rates, which could impact revenues and expenses of our international operations and expose us to foreign currency exchange rate risk;
- profit repatriation and other restrictions on the transfer of funds;
- differing payment processing systems as well as consumer use and acceptance of electronic payment methods, such as payment cards;
- new and different sources of competition;
- low usage and/or penetration of Internet connected consumer electronic devices;
- different and more stringent user protection, data protection, privacy and other laws; and
- availability of reliable broadband connectivity and wide area networks in targeted areas for expansion.

Our failure to manage any of these risks successfully could harm our future international operations and our overall business, and results of our operations.

We may seek additional capital that may result in stockholder dilution or that may have rights senior to those of our common stockholders.

From time to time, we may seek to obtain additional capital, either through equity, equity-linked or debt securities. The decision to obtain additional capital will depend, among other things, on our business plans, operating performance and condition of the capital markets. If we raise additional funds through the issuance of equity, equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our common stock, and our stockholders may experience dilution.

We have issued debt offerings and may incur additional debt in the future, which may adversely affect our financial condition and future financial results.

As of December 31, 2013, we had $500 million in 5.375% senior notes. Risks relating to our long-term indebtedness include:

- requiring us to dedicate a portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of cash flow to fund working capital, capital expenditures, acquisitions and investments and other general corporate purposes;
- limiting our flexibility in planning for, or reacting to, changes in our business and the markets in which we operate; and
- limiting our ability to borrow additional funds or to borrow funds at rates or on other terms we find acceptable.

We plan to obtain approximately $400 million in long term debt in the first quarter of 2014 and it is possible that we may incur additional indebtedness in the future in the ordinary course of business. If new debt is added to current debt levels, the risks described above could intensify.

We may lose key employees or may be unable to hire qualified employees.

We rely on the continued service of our senior management, including our Chief Executive Officer and co-founder Reed Hastings, members of our executive team and other key employees and the hiring of new qualified employees. In our industry, there is substantial and continuous competition for highly skilled business, product development, technical and other personnel. We may not be successful in recruiting new personnel and in retaining and motivating existing personnel, which may be disruptive to our operations.

If memberships to our Domestic DVD segment decline faster than anticipated, our business could be adversely affected.

The number of memberships to our DVD-by-mail offering is declining, and we anticipate that this decline will continue. We believe, however, that the domestic DVD business will continue to generate significant contribution profit for our business. The contribution profit generated by our domestic DVD business will help provide capital resources to fund losses arising from our growth internationally. To the extent that the rate of decline in our DVD-by-mail business is greater than we anticipate, our business could be adversely affected. We do not anticipate increasing resources to our DVD operations and the technology used in its operations will not be meaningfully improved. To the extent that we experience service interruptions or other degradations in our DVD-by-mail service, members' satisfaction could be negatively impacted and we could experience an increase in DVD-by-mail member cancellations, which could adversely impact our business.

Changes in U.S. Postal rates or operations could adversely impact our operating results and member satisfaction.

We rely exclusively on the U.S. Postal Service to deliver DVDs from our shipping centers and to return DVDs to us from our members. Increases in postage delivery rates, including those resulting from changes to policies on the requirements of first class mail such as size, weight or machinability, could adversely affect our Domestic DVD segment's contribution profit. If the U.S. Postal Service were to implement other changes to improve its financial position, such as closing mail processing facilities or service reductions, such changes could lead to a decrease in customer satisfaction and our Domestic DVD segment's contribution profit could be adversely affected.

Risks Related to Our Stock Ownership

Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable.

Our charter documents may discourage, delay or prevent a merger or acquisition that a stockholder may consider favorable because they:

- authorize our board of directors, without stockholder approval, to issue up to 10,000,000 shares of undesignated preferred stock;
- provide for a classified board of directors;
- prohibit our stockholders from acting by written consent;
- establish advance notice requirements for proposing matters to be approved by stockholders at stockholder meetings; and
- prohibit stockholders from calling a special meeting of stockholders.

As a Delaware corporation, we are also subject to certain Delaware anti-takeover provisions. Under Delaware law, a corporation may not engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Our board of directors could rely on Delaware law to prevent or delay an acquisition of us.

In addition, a merger or acquisition may trigger retention payments to certain executive employees under the terms of our Executive Severance and Retention Incentive Plan, thereby increasing the cost of such a transaction.

Our stock price is volatile.

The price at which our common stock has traded has fluctuated significantly. The price may continue to be volatile due to a number of factors including the following, some of which are beyond our control:

- variations in our operating results;
- variations between our actual operating results and the expectations of securities analysts, investors and the financial community;
- announcements of developments affecting our business, systems or expansion plans by us or others;
- competition, including the introduction of new competitors, their pricing strategies and services;
- market volatility in general;
- the level of demand for our stock, including the amount of short interest in our stock; and
- the operating results of our competitors.

As a result of these and other factors, investors in our common stock may not be able to resell their shares at or above their original purchase price.

Following certain periods of volatility in the market price of our securities, we became the subject of securities litigation. We may experience more such litigation following future periods of volatility. This type of litigation may result in substantial costs and a diversion of management's attention and resources.

Financial forecasting by us and financial analysts who may publish estimates of our performance may differ materially from actual results.

Given the dynamic nature of our business, the current uncertain economic climate and the inherent limitations in predicting the future, forecasts of our revenues, contribution margins, net income and, number of total and paid member additions and other financial and operating data may differ materially from actual results. Such discrepancies could cause a decline in the trading price of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We do not own any real estate. The following table sets forth the location, approximate square footage, lease expiration and the primary use of each of our principal properties:

Location	Estimated Square Footage	Lease Expiration Date	Primary Use
Los Gatos, California	250,000	March 2018	Global streaming corporate office, general and administrative, marketing and technology and development
Beverly Hills, California	79,000	August 2018	Global content acquisition, marketing and general and administrative
Santa Clara, California	23,000	October 2016	Global streaming customer service center
Columbus, Ohio	90,000	August 2016	Domestic DVD receiving and storage center, processing and shipping center for the Columbus area
Fremont, California	57,000	March 2019	Domestic DVD corporate office, general and administrative and technology and development
Hillsboro, Oregon	49,000	April 2016	Domestic streaming and Domestic DVD customer service center

We operate a nationwide network of distribution centers for our Domestic DVD segment that serve major metropolitan areas throughout the U.S. These fulfillment centers are under lease agreements that expire at various dates through January 2017. We also operate data centers in a leased third-party facility in Santa Clara, California.

In the third quarter of 2013, the Company entered into lease agreements to expand its Los Gatos, California headquarters by 263,000 square feet, not reflected in the table above, with 124 month lease terms commencing after construction of the facilities, which is expected in 2015.

We believe that our current space will be adequate or that additional space will be available on commercially reasonable terms for the foreseeable future.

Item 3. Legal Proceedings

Information with respect to this item may be found in Note 6 of Item 8, *Financial Statements and Supplementary Data*, under the caption "Legal Proceedings" which information is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Global Select Market under the symbol "NFLX". The following table sets forth the intraday high and low sales prices per share of our common stock for the periods indicated, as reported by the NASDAQ Global Select Market.

	2013		2012	
	High	Low	High	Low
First quarter	$ 197.62	$ 90.69	$ 133.43	$ 70.13
Second quarter	248.85	159.00	114.80	60.70
Third quarter	320.39	212.00	86.65	52.81
Fourth quarter	389.16	282.80	97.80	54.34

Holders

As of January 30, 2014, there were approximately 215 stockholders of record of our common stock, although there is a significantly larger number of beneficial owners of our common stock.

Dividends

We have not declared or paid any cash dividends, and we have no present intention of paying any cash dividends in the foreseeable future.

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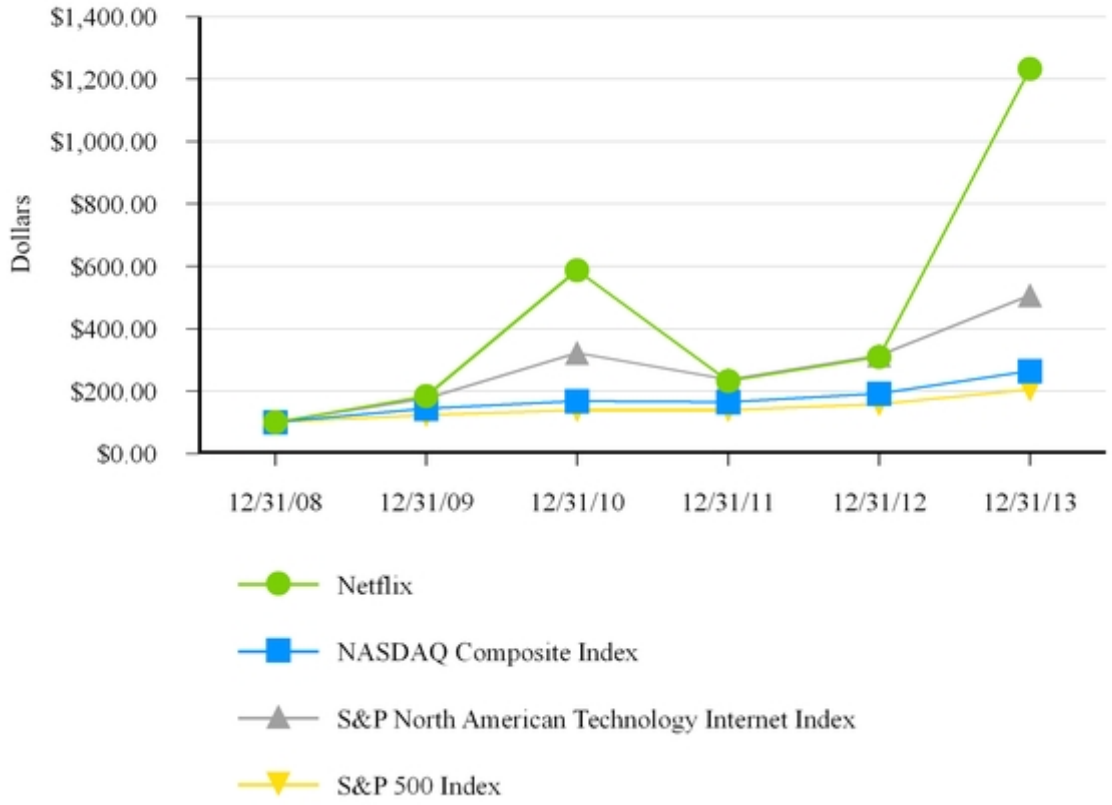
Stock Performance Graph

Notwithstanding any statement to the contrary in any of our previous or future filings with the Securities and Exchange Commission, the following information relating to the price performance of our common stock shall not be deemed "filed" with the Commission or "soliciting material" under the Securities Exchange Act of 1934 and shall not be incorporated by reference into any such filings.

The following graph compares, for the five year period ended December 31, 2013, the total cumulative stockholder return on the Company's common stock with the total cumulative return of the NASDAQ Composite Index, the S&P 500 Index and the S&P North American Technology Internet Index. The Company was added to the S&P 500 Index on December 18, 2010. Measurement points are the last trading day of each of the Company's fiscal years ended December 31, 2008, December 31, 2009, December 31, 2010, December 31, 2011, December 31, 2012 and December 31, 2013. Total cumulative stockholder return assumes $100 invested at the beginning of the period in the Company's common stock, the stocks represented in the NASDAQ Composite Index, the stocks represented in the S&P 500 Index and the stocks represented in the S&P North American Technology Internet Index, respectively, and reinvestment of any dividends. The S&P North American Technology Internet Index is a modified-capitalization weighted index of stocks representing the Internet industry, including Internet content and access providers, Internet software and services companies and e-commerce companies. Historical stock price performance should not be relied upon as an indication of future stock price performance.



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Item 6. Selected Financial Data

The following selected consolidated financial data is not necessarily indicative of results of future operations and should be read in conjunction with Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* and Item 8, *Financial Statements and Supplementary Data*.

Consolidated Statements of Operations:

	Year ended December 31,				
	2013	2012	2011	2010	2009
	(in thousands, except per share data)				
Revenues	$ 4,374,562	$ 3,609,282	$ 3,204,577	$ 2,162,625	$ 1,670,269
Cost of revenues	3,083,256	2,625,866	2,039,901	1,357,355	1,079,271
Operating income	228,347	49,992	376,068	283,641	191,939
Net income	112,403	17,152	226,126	160,853	115,860
Earnings per share:					
Basic	$ 1.93	$ 0.31	$ 4.28	$ 3.06	$ 2.05
Diluted	$ 1.85	$ 0.29	$ 4.16	$ 2.96	$ 1.98
Weighted-average common shares outstanding:					
Basic	58,198	55,521	52,847	52,529	56,560
Diluted	60,761	58,904	54,369	54,304	58,416

Consolidated Statements of Cash Flows:

	Year Ended December 31,				
	2013	2012 (1)	2011	2010	2009
	(in thousands)				
Net cash provided by operating activities	$ 97,831	$ 21,586	$ 317,712	$ 276,401	$ 325,063
Free cash flow (2)	(16,300)	(58,151)	186,550	131,007	97,122

(1) Certain amounts in prior periods have been revised. See Note 2 to Item 8, *Financial Statements and Supplementary Data.*
(2) See "Liquidity and Capital Resources" for a definition of "free cash flow" and a reconciliation of "free cash flow" to "net cash provided by operating activities."

Consolidated Balance Sheets:

	As of December 31,				
	2013	2012	2011	2010	2009
	(in thousands)				
Cash, cash equivalents and short-term investments	$ 1,200,405	$ 748,078	$ 797,811	$ 350,387	$ 320,242
Total content library, net	3,797,492	2,874,170	1,966,643	361,979	146,139
Working capital	904,560	564,865	605,802	248,652	183,577
Total assets	5,412,563	3,967,890	3,069,196	982,067	679,734
Long-term debt	500,000	200,000	200,000	200,000	200,000
Long-term debt due to related party	—	200,000	200,000	—	—
Non-current content liabilities	1,345,590	1,076,622	739,628	48,179	2,227
Total stockholders' equity	1,333,561	744,673	642,810	290,164	199,143

Other Data:

	As of / Year Ended December 31,				
	2013	2012	2011	2010	2009
	(in thousands)				
Net consolidated streaming member additions during period	11,083	9,738	—	—	—
Total consolidated streaming members	44,350	33,267	23,529	—	—

Prior to certain changes to our pricing and plan structure in 2011, we did not separately track streaming memberships.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

We are the world's leading Internet television network with more than 44 million streaming members in over 40 countries enjoying more than one billion hours of TV shows and movies per month, including original series. Our members can watch as much as they want, anytime, anywhere, on nearly any Internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments. Additionally, in the United States ("U.S."), our members can receive DVDs delivered quickly to their homes.

We are a pioneer in the Internet delivery of TV shows and movies, launching our streaming service in 2007. Since this launch, we have developed an ecosystem for Internet-connected devices and have licensed increasing amounts of content that enable consumers to enjoy TV shows and movies directly on their TVs, computers and mobile devices. As a result of these efforts, we have experienced growing consumer acceptance of and interest in the delivery of TV shows and movies directly over the Internet. Historically, our acquisition of new members has been seasonal with the first and fourth quarters representing our strongest net member additions and our second quarter representing the lowest net member additions in a calendar year.

Our core strategy is to grow our streaming subscription business domestically and internationally. We are continuously improving our members' experience - expanding our streaming content, with a focus on programming an overall mix of content that delights our customers, enhancing our user interface and extending our streaming service to even more Internet-connected devices while staying within the parameters of our consolidated net income (loss) and operating segment contribution profit (loss) targets.

Results of Operations

The following represents our consolidated performance highlights:

	Year Ended December 31,			Change	
	2013	2012	2011	2013 vs. 2012	2012 vs. 2011
	(in thousands)				
Revenues	$ 4,374,562	$ 3,609,282	$ 3,204,577	21%	13 %
Operating income	228,347	49,992	376,068	357%	(87)%
Net income	112,403	17,152	226,126	555%	(92)%
Free cash flow (1)	(16,300)	(58,151)	186,550	72%	*NM*

(1) See "Liquidity and Capital Resources" for a definition of "free cash flow" and a reconciliation of "free cash flow" to "net cash provided by operating activities."

Consolidated revenues for 2013 increased as compared to prior years due to growth in international and domestic streaming memberships. Operating income and net income increased as compared to prior year by $178.4 million and $95.3 million, respectively, due to the increase in revenue, partially offset by an increase in the cost of revenues due to continued investments in existing and new streaming content.

Free cash flow was $128.7 million lower than net income for the year ended December 31, 2013. The excess of net income over free cash flow has increased from $75.3 million and $39.6 million in the years ended December 31, 2012 and 2011, respectively. The increases are primarily the result of increased investments in original content or content that is licensed in an earlier window through an output arrangement which will typically, depending upon the terms, require more up-front cash payments relative to the expense.

The following represents the key elements to our segment results of operations:

- We define contribution profit as revenues less cost of revenues and marketing expenses. We believe this is an important measure of our operating segment performance as it represents each segment's performance before discrete global corporate costs.

- For the Domestic and International streaming segments, content licensing expenses, which include the amortization of the streaming content library and other expenses associated with the licensing of streaming content, represent the vast

majority of cost of revenues. Streaming content rights are generally specific to a geographic region and accordingly our international expansion will require us to obtain additional streaming content licenses to support new international markets. Other cost of revenues such as content delivery expenses, customer service and payment processing fees are lower as a percentage of total cost of revenues as compared to content licensing expenses. We utilize both our own and third-party content delivery networks to help us efficiently stream a high volume of content to our members over the Internet. Content delivery expenses, therefore, also include equipment costs related to our streaming content delivery network ("Open Connect") and all third-party costs associated with delivering streaming content over the Internet. Cost of revenues in the Domestic DVD segment consists primarily of content delivery, expenses related to the acquisition of content, including amortization of DVD content library and revenue sharing expenses, and other expenses associated with our DVD processing and customer service centers. Content delivery expenses for the Domestic DVD segment consist of the postage costs to mail DVDs to and from our paying members and the packaging and label costs for the mailers.

- For the Domestic and International streaming segments, marketing expenses consist primarily of advertising expenses and payments made to our affiliates and consumer electronics partners. Advertising expenses include promotional activities such as television and online advertising. Payments to our affiliates and device partners include fixed fee and /or revenue sharing payments. Marketing costs are primarily incurred by our Domestic and International streaming segments given our focus on building consumer awareness of the streaming offerings. Marketing expenses incurred by our International streaming segment have been significant and will fluctuate dependent upon the number of International territories in which our streaming service is offered and the timing of the launch of new territories. Marketing costs are immaterial for the Domestic DVD segment.

- We have demonstrated our ability to grow contribution margin as evidenced by the increase in contribution margin from 12% when we first began separately reporting Domestic streaming results in the fourth quarter of 2011 to 23% in the fourth quarter of 2013. As a result of our focus on growing the streaming segments, contribution margins for the Domestic and International streaming segments are lower than for our Domestic DVD segment. Investments in content and marketing associated with the International streaming segment will continue to fluctuate dependent upon the number of International territories in which our streaming service is offered and the timing of the launch of new territories.

- As we grow our streaming segments, we continue to shift spending away from the Domestic DVD segment to invest more in streaming content and marketing for our streaming services.

2013 Segment Results

Domestic Streaming Segment

	As of/ Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Members:			
Net additions	6,274	5,475	15%
Members at end of period	33,420	27,146	23%
Paid members at end of period	31,712	25,471	25%
Contribution profit:			
Revenues	$ 2,751,375	$ 2,184,868	26%
Cost of revenues	1,849,154	1,558,864	19%
Marketing	279,454	256,995	9%
Contribution profit	622,767	369,009	69%
Contribution margin	23%	17%	

In the Domestic streaming segment, we derive revenues from monthly membership fees for services consisting solely of streaming content offered through a membership plan. Our Domestic streaming membership plans are priced primarily at $7.99 per month. In 2013, we introduced membership plans priced at $11.99 per month under which members can stream content on up to four devices concurrently. New member additions and revenue related to $11.99 membership plans were not material for the year ended December 31, 2013. The $566.5 million increase in our domestic streaming revenues was due to the 26% growth in the average number of paid memberships.

The $290.3 million increase in domestic streaming cost of revenues was primarily due to the $226.3 million increase in content licensing expenses resulting from continued investments in existing and new streaming content including more exclusive and original programming. In addition, content delivery expenses increased by $31.0 million and other costs, such as payment processing fees and customer service call centers, increased $33.0 million due to our growing member base.

Marketing expenses increased $22.5 million primarily due to an increase in advertising partially offset by a decrease in payments to affiliates in the U.S.

Our Domestic streaming segment had a contribution margin of 23% for the year ended December 31, 2013, which increased as compared to the contribution margin of 17% for the year ended December 31, 2012, as a result of growing memberships and revenue faster than content and marketing spending.

International Streaming Segment

	As of/ Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Members:			
Net additions	4,809	4,263	13 %
Members at end of period	10,930	6,121	79 %
Paid members at end of period	9,722	4,892	99 %
Contribution loss:			
Revenues	$ 712,390	$ 287,542	148 %
Cost of revenues	774,753	475,570	63 %
Marketing	211,969	201,115	5 %
Contribution loss	(274,332)	(389,143)	(30)%
Contribution margin	(39)%	(135)%	

In the International streaming segment, we derive revenues from monthly membership fees for services consisting solely of streaming content offered through a membership plan priced at the equivalent of USD $7 to $14 per month. We launched our streaming service in Canada in September 2010 and have continuously expanded our services internationally with launches in Latin America in September 2011, the U.K. and Ireland in January 2012, Finland, Denmark, Sweden and Norway in October 2012 and most recently the Netherlands in September 2013. We plan to continue to expand our services internationally and expect a substantial European expansion in 2014.

The $424.8 million increase in our international revenues was primarily due to the 134% growth in the average number of paid international memberships. International streaming memberships account for 25% of total streaming memberships at the end of 2013.

The $299.2 million increase in international cost of revenues was primarily due to a $272.0 million increase in content licensing expenses. This increase was primarily attributable to continued investments in existing and new streaming content including content to support the launch of our service in the Nordics (launched in the fourth quarter of 2012) and the Netherlands (launched in the third quarter of 2013). Other costs increased $27.2 million due to increases in our content delivery expenses, costs associated with our customer service call centers and payment processing fees, all driven by our growing member base.

International marketing expenses for the year ended December 31, 2013 increased $10.9 million as compared to the year ended December 31, 2012 due to our expansion in the Nordics and the Netherlands offset partially by a decrease in spending in other territories.

International contribution losses improved $114.8 million year over year, as a result of growing memberships and revenues faster than content and marketing spending. Our International streaming segment does not benefit from the established member base that exists for the Domestic segments. As a result of having to build a member base from zero, investments in streaming content and marketing programs for our International segment are larger initially relative to revenues, in particular as new territories are launched. The contribution losses for our International segment have been significant due to investments in streaming content and marketing programs to drive membership growth and viewing in our international markets.

Domestic DVD Segment

	As of/ Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Members:			
Net losses	(1,294)	(2,941)	(56)%
Members at end of period	6,930	8,224	(16)%
Paid members at end of period	6,765	8,049	(16)%
Contribution profit:			
Revenues	$ 910,797	$ 1,136,872	(20)%
Cost of revenues	459,349	591,432	(22)%
Marketing	12,466	7,290	71 %
Contribution profit	438,982	538,150	(18)%
Contribution margin	48%	47%	

In the Domestic DVD segment, we derive revenues from our DVD-by-mail membership services. The price per plan for DVD-by-mail varies from $4.99 to $43.99 per month according to the plan chosen by the member. DVD-by-mail plans differ by the number of DVDs that a member may have out at any given point. Members electing access to high definition Blu-ray discs in addition to standard definition DVDs pay a surcharge ranging from $2 to $4 per month for our most popular plans.

The $226.1 million decrease in our domestic DVD revenues was due to a 20% decrease in the average number of paid memberships.

The $132.1 million decrease in domestic DVD cost of revenues was primarily due to a $63.2 million decrease in content acquisition expenses and a $47.7 million decrease in content delivery expenses resulting from a 21% decrease in the number of DVDs mailed to paying members. The decrease in shipments was driven by a decline in the number of DVD memberships. Other costs, primarily those associated with content processing and customer service center expenses, decreased $21.2 million primarily due to a decrease in hub operation expenses resulting from the decline in DVD shipments.

Our Domestic DVD segment had a contribution margin of 48% for the year ended December 31, 2013, and was relatively flat as compared to the year ended December 31, 2012.

2012 Segment Results

Domestic Segments

	As of /Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Members:			
Domestic Streaming			
Members at end of period	27,146	21,671	25 %
Paid members at end of period	25,471	20,153	26 %
Domestic DVD			
Members at end of period	8,224	11,165	(26)%
Paid members at end of period	8,049	11,039	(27)%
Unique Domestic			
Net additions	4,973	4,894	2 %
Members at end of period	29,368	24,395	20 %
Paid members at end of period	27,613	22,858	21 %
Contribution Profit:			
Revenues	$ 3,321,740	$ 3,121,727	6 %
Cost of revenues	2,150,296	1,932,419	11 %
Marketing	264,285	302,752	(13)%
Contribution profit	907,159	886,556	2 %
Contribution margin	27%	28%	

Prior to July 2011, in the U.S., our streaming and DVDs-by-mail operations were combined and members could receive both streaming content and DVDs under a single “hybrid” plan. In July 2011, we introduced DVD only plans and separated the combined plans, making it necessary for members who wish to receive both streaming services and DVDs-by-mail to have two separate membership plans. As members were able to receive both streaming and DVDs-by-mail under a single hybrid plan prior to the fourth quarter of 2011, it is impracticable to allocate revenues and expenses to the Domestic streaming and Domestic DVD segments prior to the fourth quarter of 2011.

The $200.0 million increase in our domestic revenues in 2012 as compared to 2011 was primarily due to the 15% growth in the domestic average number of unique paying members driven by new streaming memberships. This increase was offset in part by an 8% decline in domestic average monthly revenue per unique paying member, resulting from the decline in DVD memberships.

The $217.9 million increase in domestic cost of revenues in 2012 as compared to 2011 was primarily due to a $397.7 million increase in content licensing expenses. This increase was primarily attributable to continued investments in existing and new streaming content. Content delivery expenses decreased by $162.0 million primarily due to a 41% decrease in the number of DVDs mailed to paying members driven by a decline in the number of DVD memberships. Other costs associated with content processing and customer service center expenses decreased by $13.9 million primarily due to a decrease in hub operation expenses resulting from the declines in DVD shipments, offset partially by increases in customer service center expenses to support our growth in domestic memberships.

Marketing expenses decreased $38.5 million in 2012 as compared to 2011 primarily due to a decrease in marketing program spending in television, radio and direct mail advertising partially offset by increases in online advertising.

The Domestic segment had a contribution margin of 27% for the year ended December 31, 2012, and is relatively flat as compared to December 31, 2011.

International Streaming Segment

	As of /Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Members:			
Net additions	4,263	1,349	216%
Members at end of period	6,121	1,858	229%
Paid members at end of period	4,892	1,447	238%
Contribution profit:			
Revenues	$ 287,542	$ 82,850	247%
Cost of revenues	475,570	107,482	342%
Marketing	201,115	78,517	156%
Contribution loss	(389,143)	(103,149)	277%

The $204.7 million increase in our international revenues in 2012 as compared to 2011 was primarily due to the 260% growth in the international average number of unique paying members driven by a full year of service offering in Latin America as well as our launches in the U.K. and Ireland and Nordic regions. International streaming memberships account for 18% of total streaming memberships at the end of 2012.

International cost of revenues increased by $368.1 million in 2012 as compared to 2011 primarily due to a $347.5 million increase in content licensing costs resulting from the continued investments in streaming content available for viewing in Canada and Latin America and to support our launches in the U.K. and Ireland and Nordic regions.

International marketing expenses increased $122.6 million in 2012 as compared to 2011 primarily due to increases in marketing program spending online and in television and radio advertising to support our launches in the U.K. and Ireland and Nordic regions.

Consolidated Operating Expenses

Technology and Development

Technology and development expenses consist of payroll and related costs incurred in making improvements to our service offerings, including testing, maintaining and modifying our user interface, our recommendation, merchandising and content delivery technology, as well as our telecommunications systems and infrastructures. Technology and development expenses also include costs associated with computer hardware and software.

	Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Technology and development	$ 378,769	$ 329,008	15%
As a percentage of revenues	9%	9%	

The $49.8 million increase in technology and development expenses was primarily the result of a $42.8 million increase in personnel-related costs. These increases are primarily due to increases in employee compensation as well as an 8% growth in average headcount supporting continued improvements in our streaming service and international expansion.

	Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Technology and development	$ 329,008	$ 259,033	27%
As a percentage of revenues	9%	8%	

The $70.0 million increase in technology and development expenses was primarily the result of a $63.4 million increase in personnel-related costs, including a $12.7 million increase in stock-based compensation. These increases are primarily due to a 35% growth in average headcount supporting continued improvements in our streaming service and international expansion.

General and Administrative

General and administrative expenses consist of payroll and related expenses for corporate personnel, as well as professional fees and other general corporate expenses. General and administrative expenses also include the gain on disposal of DVDs.

	Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
General and administrative	$ 180,301	$ 139,016	30%
As a percentage of revenues	4%	4%	

General and administrative expenses increased $41.3 million primarily due to a $22.0 million increase in personnel related costs resulting from a 31% increase in average headcount to support our growth. In addition, expenses related to the use of outside and professional services, taxes and insurance increased $8.9 million. The increase in expenses was further impacted by an $8.0 million decrease in the gain on the disposal of DVDs.

	Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
General and administrative	$ 139,016	$ 148,306	(6)%
As a percentage of revenues	4%	5%	

The $9.3 million decrease in general and administrative expenses was primarily attributable to a $9.0 million expense in 2011 related to the settlement of a legal claim related to our compliance with the Video Privacy Protection Act, a $5.8 million increase in the gain on sale of previously viewed DVDs, and an $8.6 million decrease in miscellaneous expenses related to the use of outside and professional services, taxes, insurance costs and to costs associated with various legal claims against us. These decreases were partially offset by an increase in personnel-related costs of $14.1 million attributed to an 8% increase in average headcount.

Interest Expense

Interest expense consists primarily of the interest associated with outstanding long-term debt obligations, including the amortization of debt issuance costs, as well as interest on our lease financing obligations.

	Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Interest expense	$ (29,142)	$ (19,986)	46%
As a percentage of revenues	1%	1%	

Interest expense for the year ended December 31, 2013 consists primarily of $26.1 million of interest on our notes. The increase in interest expense for the year ended December 31, 2013 as compared the year ended December 31, 2012 is due to the higher aggregate principal of interest bearing notes outstanding, partially offset by the lower interest rate.

	Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Interest expense	$ (19,986)	$ (20,025)	— %
As a percentage of revenues	1%	1%	

Interest expense was relatively flat as compared to the prior year. Interest expense in 2012 consists primarily of $17.0 million of interest due on our 8.50% Notes.

Interest and Other Income (Expense)

Interest and other income (expense) consists primarily of interest earned on cash, cash equivalents and short-term investments and foreign exchange gains and losses on foreign currency denominated balances.

	Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Interest and other income (expense)	$ (3,002)	$ 474	(733)%
As a percentage of revenues	NM	NM	

Interest and other income (expense) decreased due to increased foreign exchange losses on foreign currency denominated balances. The foreign exchange losses were $8.4 million and $4.0 million for the years ended December 31, 2013 and 2012, respectively.

	Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Interest and other income (expense)	$ 474	$ 3,479	(86)%
As a percentage of revenues	NM	NM	

Interest and other income (expense) decreased due to increased foreign exchange losses on foreign currency denominated balances. The foreign exchange loss was $4.0 million for the year ended December 31, 2012 and were immaterial for the year ended December 31, 2011.

Extinguishment of Debt

In connection with the redemption of the outstanding $200.0 million aggregate principal amount of the 8.50% Notes, we recognized a loss on extinguishment of debt of $25.1 million in the year ended December 31, 2013, which consisted of expenses associated with the redemption, including a $19.4 million premium payment pursuant to the make-whole provision in the indenture governing the 8.50% Notes.

Provision for Income Taxes

	Year Ended December 31,		Change
	2013	2012	2013 vs. 2012
	(in thousands, except percentages)		
Provision for income taxes	$ 58,671	$ 13,328	340%
Effective tax rate	34%	44%	

In 2013, the difference between our effective tax rate and the federal statutory rate of 35% was $1.2 million primarily due to the Federal and California research and development ("R&D") credits partially offset by state income taxes and nondeductible expenses. The decrease in our effective tax rate for the year ended December 31, 2013 as compared to the year ended December 31, 2012 was primarily attributable to the retroactive reinstatement of the 2012 Federal R&D credit in January 2013.

On January 2, 2013, the American Taxpayer Relief Act of 2012 (H.R. 8) was signed into law which retroactively extended the Federal R&D credit from January 1, 2012 through December 31, 2013. As a result, we recognized the retroactive benefit of the 2012 Federal R&D credit of approximately $3.1 million as a discrete item in the first quarter of 2013, the period in which the legislation was enacted.

	Year Ended December 31,		Change
	2012	2011	2012 vs. 2011
	(in thousands, except percentages)		
Provision for income taxes	$ 13,328	$ 133,396	(90)%
Effective tax rate	44%	37%	

In 2012, the difference between our effective tax rate and the federal statutory rate of 35% was $2.7 million primarily due to state income taxes and nondeductible expenses partially offset by the California R&D credit. The increase in our effective tax rate for the year ended December 31, 2012 as compared to the year ended December 31, 2011 was primarily attributable to the expiration of the Federal R&D credit on December 31, 2011.

Liquidity and Capital Resources

Cash, cash equivalents and short-term investments were $1,200.4 million and $748.1 million at December 31, 2013 and 2012, respectively. In February 2013, we issued $500.0 million aggregate principal amount of 5.375% Senior Notes due 2021 (the "5.375% Notes"). We used approximately $224.5 million of the net proceeds to redeem our outstanding 8.50% Notes, including a $19.4 million make-whole premium and $5.1 million of accrued and unpaid interest. In November 2011, we issued $200.0 million of Senior Convertible Notes and raised an additional $200.0 million through a public offering of common stock. The Senior Convertible Notes consisted of $200.0 million aggregate principal amount due on December 1, 2018 and did not bear interest. In April 2013, we exercised our option to cause the conversion of the Convertible Notes into shares of our common stock. See Note 5 of Item 8, *Financial Statements and Supplementary Data* for additional information.

Our primary uses of cash include licensing of content, content delivery, marketing programs and payroll. We expect to continue to make significant investments to license streaming content both domestically and internationally and will continue to expand our investments in original content. In 2014, we expect to substantially increase our investment in original content (though still representing less than 10% of our overall global content expense). Original content or content that is licensed in an earlier window through an output arrangement will typically, depending upon the terms, require more up-front cash payments relative to the expense and, therefore, future investments could impact our liquidity and result in a use of operating cash.

We expect to significantly increase our investments in international expansion, including substantial expansion in Europe in 2014, and in original content. As a result, and to take advantage of the current favorable interest rate environment, we plan to obtain approximately $400 million in long term debt in the first quarter of 2014. Our ability to obtain this, or any additional financing that we may choose to or need to obtain, will depend on, among other things, our development efforts, business plans, operating performance and the condition of the capital markets at the time we seek financing. We may not be able to obtain such financing on terms acceptable to us or at all. If we raise additional funds through the issuance of equity or debt securities, those securities may have rights, preferences or privileges senior to the rights of our common stock, and our stockholders may experience dilution.

As of December 31, 2013, $55.8 million of cash and cash equivalents were held by our foreign subsidiaries. If these funds are needed for our operations in the U.S., we would be required to accrue and pay U.S. income taxes and foreign withholding taxes on the amount associated with undistributed earnings for certain foreign subsidiaries. See Note 10 of Item 8, *Financial Statements and Supplementary Data* for additional information.

On June 11, 2010, we announced that our Board of Directors authorized a stock repurchase program allowing us to repurchase $300.0 million of our common stock through the end of 2012. Under this plan, we repurchased $259.0 million. At December 31, 2012, this authorization expired and the remaining $41.0 million was not used.

Free Cash Flow

We define free cash flow as cash provided by operating and investing activities excluding the non-operational cash flows from purchases, maturities and sales of short-term investments. We believe free cash flow is an important liquidity metric because it measures, during a given period, the amount of cash generated that is available to repay debt obligations, make investments and for certain other activities. Free cash flow is considered a non-GAAP financial measure and should not be considered in isolation of, or as a substitute for, net income, operating income, cash flow provided by operating activities, or any other measure of financial performance or liquidity presented in accordance with GAAP.

In assessing liquidity in relation to our results of operations, we compare free cash flow to net income, noting that the three major recurring differences are excess content payments over expenses, non-cash stock-based compensation expense and other working capital differences which include deferred revenue, taxes and semi-annual interest payments on outstanding debt. Our receivables from members settle quickly and deferred revenue is a source of cash flow. For streaming content, we typically enter into multi-year licenses with various content providers that may result in an increase in content library and a corresponding increase in liabilities on the Consolidated Balance Sheets. The payment terms for these license fees may extend over the term of the license agreements, which typically range from six months to five years.

	Year Ended December 31,	
	2013	2012
	(in thousands)	
Net cash provided by operating activities	$ 97,831	$ 21,586
Net cash used in investing activities	(255,968)	(244,740)
Net cash provided by financing activities	476,264	5,589
Non-GAAP free cash flow reconciliation:		
Net cash provided by operating activities	97,831	21,586
Acquisition of DVD content library	(65,927)	(48,275)
Purchases of property and equipment	(54,143)	(40,278)
Other assets	5,939	8,816
Non-GAAP free cash flow	$ (16,300)	$ (58,151)

Cash provided by operating activities increased $76.2 million, primarily due to an increase in revenues of $765.3 million or 21%. This increase was partially offset by increased payments for content acquisition and licensing other than DVD library of $502.6 million or 24% as well as increased payments associated with higher operating expenses. Operating activities were further impacted by increased payments for streaming content delivery, payment processing fees and customer service call centers due to our growing member base.

Cash used in investing activities increased $11.2 million, primarily due to an increase of $17.7 million in the acquisition of DVD content library and a $13.9 million increase in the purchase of property and equipment primarily due to investments in our streaming content delivery network. Cash outflow was offset by a $23.2 million increase in the proceeds from sales and maturities of short-term investments, net of purchases.

Cash provided by financing activities increased $470.7 million. In the first quarter of 2013, we issued $500.0 million of 5.375% Notes, with net proceeds of $490.6 million after payment of debt issuance costs. This was offset by the $219.4 million redemption of our 8.50% Senior Notes. Financing activities were further impacted by $197.6 million of increased cash flows provided by stock option exercises.

Free cash flow was $128.7 million lower than net income for the year ended December 31, 2013 primarily due to $230.4 million of content cash payments over expense, $29.4 million of tax impacts and $13.4 million non-favorable other working capital differences. This was partially offset by $73.1 million non-cash stock-based compensation expense, $46.3 million in deferred revenue and $25.1 million loss on debt extinguishment, the cash impact of which is a financing activity and therefore not included in free cash flow.

Free cash flow was $75.3 million lower than net income for the year ended December 31, 2012 primarily due to $145.2 million of content cash payments over expense and $4.0 million non-favorable other working capital differences partially offset by $73.9 million non-cash stock-based compensation expense.

	Year Ended December 31,	
	2012	2011
	(in thousands)	
Net cash provided by operating activities	$ 21,586	$ 317,712
Net cash used in investing activities	(244,740)	(265,814)
Net cash provided by financing activities	5,589	261,656
Non-GAAP free cash flow reconciliation:		
Net cash provided by operating activities	21,586	317,712
Acquisition of DVD content library	(48,275)	(85,154)
Purchases of property and equipment	(40,278)	(49,682)
Other assets	8,816	3,674
Non-GAAP free cash flow	$ (58,151)	$ 186,550

Cash provided by operating activities decreased $296.1 million, primarily due to increased payments for content acquisition and licensing other than DVD library of $779.5 million or 59%, partially offset by an increase in subscription revenues of $404.7 million or 13%.

Cash used in investing activities decreased $21.1 million primarily due a $36.9 million decrease in the acquisition of DVD content library and a $9.4 million decrease in the purchase of property and equipment due to a decrease in purchases of automation equipment for our various shipping centers. These decreases were partially offset by a $30.4 million increase in the purchases, net of proceeds from sales and maturities, of short-term investments.

Cash provided by financing activities for the year ended December 31, 2012 was $5.6 million primarily related to stock option activity. Cash provided by financing activities for the year ended December 31, 2011 was $261.7 million, which consisted primarily of $199.9 million of proceeds from the public offering of common stock and $198.1 million of proceeds from the issuance of debt. These proceeds were offset by $199.7 million of stock repurchases.

Free cash flow was $39.6 million lower than net income for the year ended December 31, 2011 primarily due to $147.7 million of content cash payments over expense partially offset by $61.6 million non-cash stock-based compensation expense and $46.5 million favorable other working capital differences.

Contractual Obligations

For the purpose of this table, contractual obligations for purchases of goods or services are defined as agreements that are enforceable and legally binding and that specify all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. The expected timing of payment of the obligations discussed below is estimated based on information available to us as of December 31, 2013. Timing of payments and actual amounts paid may be different depending on the time of receipt of goods or services or changes to agreed-upon amounts for some obligations. The following table summarizes our contractual obligations at December 31, 2013:

	Payments due by Period				
Contractual obligations (in thousands):	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Streaming content obligations (1)	$ 7,252,161	$ 2,972,325	$ 3,266,907	$ 929,645	$ 83,284
5.375% Notes (2)	699,323	26,875	53,750	53,750	564,948
Lease obligations (3)	201,422	25,101	52,710	37,432	86,179
Other purchase obligations (4)	214,838	113,134	101,704	—	—
Total	$ 8,367,744	$ 3,137,435	$ 3,475,071	$ 1,020,827	$ 734,411

(1) At December 31, 2013, the Company had $7.3 billion of obligations comprised of $1.8 billion included in "Current content liabilities" and $1.3 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $4.2 billion of obligations that are not reflected on the Consolidated Balance Sheet.

At December 31, 2012, the Company had $5.6 billion of obligations comprised of $1.3 billion included in "Current content liabilities" and $1.1 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $3.2 billion of obligations that are not reflected on the Consolidated Balance Sheet.

A streaming content obligation is incurred at the time we sign a license agreement to obtain future titles. Once a title becomes available, a content liability is generally recorded on the Consolidated Balance Sheet. Certain agreements include the obligation to license rights for unknown future titles, the ultimate quantity and / or fees for which are not yet determinable as of the reporting date. Because the amount is not reasonably estimable, we do not include any estimated obligation for these future titles beyond the known minimum amount. However, the unknown obligations are expected to be significant and the expected timing of payments could range primarily from one year to more than five years.

(2) Long-term debt obligations include our 5.375% Notes consisting of principal and interest payments. See Note 5 of Item 8, *Financial Statements and Supplementary Data* for further details.

(3) Lease obligations include lease financing obligations of $12.1 million related to our current Los Gatos, California headquarters for which we are the deemed owner for accounting purposes, commitments of $68.1 million for facilities under non-cancelable operating leases with various expiration dates through 2019, and commitments of $121.2 million for facilities lease agreements entered into in the third quarter of 2013 to expand our Los Gatos headquarters to a nearby site. At the time we entered into these lease agreements we simultaneously terminated the previous agreement signed in the fourth quarter of 2012. The 124 month lease terms for the new leases will commence after the construction of the buildings is complete.

(4) Other purchase obligations include all other non-cancelable contractual obligations. These contracts are primarily related to streaming content delivery, DVD content acquisition, and miscellaneous open purchase orders for which we have not received the related services or goods.

As of December 31, 2013, we had gross unrecognized tax benefits of $68.2 million and an additional $3.9 million for gross interest and penalties classified as "Other non-current liabilities" on the Consolidated Balance Sheets. At this time, we are not able to make a reasonably reliable estimate of the timing of payments in individual years due to uncertainties in the timing of tax audit outcomes; therefore, such amounts are not included in the above contractual obligation table.

Off-Balance Sheet Arrangements

As part of our ongoing business, we do not engage into any transactions with unconsolidated entities, such as entities often referred to as structured finance or special purpose entities, whereby we have financial guarantees, subordinated retained interests, derivative instruments, or other contingent arrangements that expose us to material continuing risks, contingent liabilities, or any other obligation under a variable interest in an unconsolidated entity that provides financing, liquidity, market risk, or credit risk support to us.

Indemnifications

The information set forth under Note 7 of Item 8, *Financial Statements and Supplementary Data* under the caption "Guarantees—Indemnification Obligations" is incorporated herein by reference.

Critical Accounting Policies and Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reported periods. The Securities and Exchange Commission ("SEC") has defined a company's critical accounting policies as the ones that are most important to the portrayal of a company's financial condition and results of operations, and which require a company to make its most difficult and subjective judgments. Based on this definition, we have identified the critical accounting policies and judgments addressed below. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from these estimates.

Streaming Content

We license rights to stream TV shows, movies, and original content to members for unlimited viewing. These licenses are for a fixed fee and specify license windows that generally range from six months to five years. Payment terms may extend over the license window, or may require more up-front payments as is typically the case for original content or content that is licensed in an earlier window through an output arrangement.

We capitalize the fee per title and record a corresponding liability at the gross amount of liabilities when the license period begins, the cost of the title is known and the title is accepted and available for streaming. The portion available for streaming within one year is recognized as "Current content library" and the remaining portion as "Non-current content library" on the Consolidated Balance sheets. The acquisition of streaming content licenses rights and the changes in related liabilities, are classified within cash used in operating activities on the Consolidated Statements of Cash Flows.

We amortize the content library in "Cost of revenues" on a straight line or on an accelerated basis, as appropriate:

- For content that does not premiere on the Netflix service (representing the vast majority of content), we amortize on a straight-line basis over the shorter of each title's contractual window of availability or estimated period of use, beginning with the month of first availability. The amortization period typically ranges from six months to five years.
- For content that premieres on the Netflix service, we expect more upfront viewing due to the additional merchandising and marketing efforts for this original content available only on Netflix. Hence, we amortize on an accelerated basis over the amortization period, which is the shorter of four years or the license period, beginning with the month of first availability. If a subsequent season is added, the amortization period is extended by a year.
- If the cost per title cannot be reasonably estimated, the license fee is not capitalized and costs are expensed on a straight line basis over the license period. This typically occurs when the license agreement does not specify the number of titles, the license fee per title or the windows of availability per title.

Amortization of the content library is determined based on our historical and estimated viewing patterns and requires considerable management judgment. When we started with original content, we did not have specific data about viewing patterns over time for content that premieres on Netflix. Based on our experience with other similar television series and our initial estimates of viewing patterns, we amortized content that exclusively premiered on our service on a straight-line basis over the shorter of four years or the license period. If a subsequent season is added, we extend the remaining amortization period by a year. Current estimates of viewing patterns indicate that viewing in the first few months is significantly higher, relative to the rest of the amortization period, than previously estimated. As a result, in the third quarter of 2013, we began amortizing this type of content on an accelerated basis over the amortization period. The effect of this change in estimate was a decrease in operating income and net income of $25.0 million and $15.4 million, respectively for the year ended December 31, 2013. Any other changes in management's estimates could have a significant impact on our future results of operations.

The content library is stated at the lower of unamortized cost or net realizable value. Streaming content licenses (whether capitalized or not) are reviewed in aggregate at the geographic region level for impairment when an event or change in circumstances indicates a change in the expected usefulness of the content. The level of geographic aggregation is determined based on the streaming content rights which are generally specific to a geographic region inclusive of several countries (such as Latin America). No material write down from unamortized cost to a lower net realizable value was recorded in any of the periods presented.

We have entered into certain licenses with performing rights organizations ("PROs"), and are currently involved in negotiations with other PROs, that hold certain rights to music and other entertainment works "publicly performed" in connection with streaming content into various territories. Accruals for estimated royalties are recorded and then adjusted based on any changes in estimates. These amounts are included in the streaming content obligations. The results of these negotiations are uncertain and may be materially different from management's estimates.

Income Taxes

We record a provision for income taxes for the anticipated tax consequences of our reported results of operations using the asset and liability method. Deferred income taxes are recognized by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases as well as net operating loss and tax credit carryforwards. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The measurement of deferred tax assets is reduced, if necessary, by a valuation allowance for any tax benefits for which future realization is uncertain.

Although we believe our assumptions, judgments and estimates are reasonable, changes in tax laws or our interpretation of tax laws and the resolution of any tax audits could significantly impact the amounts provided for income taxes in our consolidated financial statements.

In evaluating our ability to recover our deferred tax assets, in full or in part, we consider all available positive and negative evidence, including our past operating results, and our forecast of future earnings, future taxable income and prudent and feasible tax planning strategies. The assumptions utilized in determining future taxable income require significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses. Actual operating results in future years could differ from our current assumptions, judgments and estimates. However, we believe that it is more likely than not that substantially all deferred tax assets recorded on our Consolidated Balance Sheets will ultimately be realized. In the event we were to determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to earnings in the period in which we make such determination.

We did not recognize certain tax benefits from uncertain tax positions within the provision for income taxes. We may recognize a tax benefit only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. At December 31, 2013, our estimated gross unrecognized tax benefits were $68.2 million of which $57.0 million, if recognized, would favorably impact our future earnings. Due to uncertainties in any tax audit outcome, our estimates of the ultimate settlement of our unrecognized tax positions may change and the actual tax benefits may differ significantly from the estimates. See Note 10 of Item 8, *Financial Statements and Supplementary Data* for further information regarding income taxes.

Stock-Based Compensation

Stock-based compensation expense at the grant date is based on the total number of options granted and an estimate of the fair value of the awards expected to vest and is recognized as expense ratably over the requisite service period, which is the vesting period.

We calculate the fair value of new stock-based compensation awards under our stock option plans using a lattice-binomial model. This model requires the input of highly subjective assumptions, including price volatility of the underlying stock. Changes in the subjective input assumptions can materially affect the estimate of fair value of options granted and our results of operations could be impacted.

- *Expected Volatility:* Our computation of expected volatility is based on a blend of historical volatility of our common stock and implied volatility of tradable forward call options to purchase shares of our common stock. Our decision to incorporate implied volatility was based on our assessment that implied volatility of publicly traded options in our common stock is more reflective of market conditions and, therefore, can reasonably be expected to be a better indicator of expected volatility than historical volatility of our common stock. We include the historical volatility in our computation due to low trade volume of our tradable forward call options in certain periods thereby precluding sole reliance on implied volatility. An increase of 10% in our computation of expected volatility would increase the total stock-based compensation expense by approximately $4.5 million for the year ended December 31, 2013.
- *Suboptimal Exercise Factor:* Our computation of the suboptimal exercise factor is based on historical option exercise behavior and the terms and vesting periods of the options granted and is determined for both executives and non-executives. An increase in the suboptimal exercise factor of 10% would increase the total stock-based compensation expense by approximately $2.4 million for the year ended December 31, 2013.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks related to interest rate changes, the corresponding changes in the market values of our investments and foreign currency fluctuations.

Interest Rate Risk

The primary objective of our investment activities is to preserve principal, while at the same time maximizing income we receive from investments without significantly increased risk. To achieve this objective, we follow an established investment policy and set of guidelines to monitor and help mitigate our exposure to interest rate and credit risk. The policy sets forth credit quality standards and limits our exposure to any one issuer, as well as our maximum exposure to various asset classes. We maintain a portfolio of cash equivalents and short-term investments in a variety of securities. These securities are classified as available-for-sale and are recorded at fair value with unrealized gains and losses, net of tax, included in “Accumulated other comprehensive income” within stockholders equity in the Consolidated Balance Sheets.

For the year ended December 31, 2013, we had no material impairment charges associated with our short-term investment portfolio. Although we believe our current investment portfolio has very little risk of material impairment, we cannot predict future market conditions or market liquidity and can provide no assurance that our investment portfolio will remain materially unimpaired. Some of the securities we invest in may be subject to market risk due to changes in prevailing interest rates which may cause the principal amount of the investment to fluctuate. For example, if we hold a security that was issued with a fixed interest rate at the then-prevailing rate and the prevailing interest rate later rises, the value of our investment will decline. At December 31, 2013, our cash equivalents were generally invested in money market funds, which are not subject to market risk because the interest paid on such funds fluctuates with the prevailing interest rate. Our short-term investments were comprised of corporate debt securities, government and agency securities and asset and mortgage-backed securities.

Changes in interest rates could adversely affect the market value of the securities we hold that are classified as short-term investments. The table below separates these investments, based on stated maturities, to show the approximate exposure to interest rates.

	(in thousands)
Due within one year	$ 144,267
Due after one year and through 5 years	408,048
Due after 5 years and through 10 years	1,703
Due after 10 years	41,422
Total	$ 595,440

A sensitivity analysis was performed on our investment portfolio as of December 31, 2013. The analysis is based on an estimate of the hypothetical changes in market value of the portfolio that would result from an immediate parallel shift in the yield curve of various magnitudes. This methodology assumes a more immediate change in interest rates to reflect the current economic environment.

The following table presents the hypothetical fair values of our debt securities classified as short-term investments assuming immediate parallel shifts in the yield curve of 50 basis points ("BPS"), 100 BPS and 150 BPS. The analysis is shown as of December 31, 2013:

Fair Value December 31, 2013 (in thousands)					
-150 BPS	-100 BPS	-50 BPS	+50 BPS	+100 BPS	+150 BPS
$ 608,368	$ 604,059	$ 599,749	$ 591,131	$ 586,821	$ 582,512

Based on investment positions as of December 31, 2013, a hypothetical 100 basis point increase in interest rates across all maturities would result in an $8.6 million incremental decline in the fair market value of the portfolio. As of December 31, 2012, a similar 100 basis point increase in the yield curve would have resulted in a $1.5 million incremental decline in the fair market value of the portfolio. Such losses would only be realized if the Company sold the investments prior to maturity.

Foreign Currency Risk

We have foreign currency risk related to our revenues and operating expenses denominated in currencies other than the U.S. dollar, primarily the Euro, the British Pound, the Canadian Dollar, and the Brazilian Real. Accordingly, changes in exchange rates may negatively affect our revenue and net income as expressed in U.S. dollars. We also have foreign currency risk related to foreign currency transactions and monetary assets and liabilities, including intercompany balances denominated in currencies that are not the functional currency. We have experienced and will continue to experience fluctuations in our net income as a result of gains (losses) on these foreign currency transactions and the remeasurement of monetary assets and liabilities. To date, the impacts of foreign currency exchange rate changes on our revenues and net income have not been material. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy.

Item 8. Financial Statements and Supplementary Data

The consolidated financial statements and accompanying notes listed in Part IV, Item 15(a)(1) of this Annual Report on Form 10-K are included immediately following Part IV hereof and incorporated by reference herein.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K were effective in providing reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within Netflix have been detected.

(b) Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Securities Exchange Act of 1934 as amended (the Exchange Act)). Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2013. In making this assessment, our

management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control—Integrated Framework* (1992 framework). Based on our assessment under the framework in *Internal Control—Integrated Framework* (1992 framework), our management concluded that our internal control over financial reporting was effective as of December 31, 2013. The effectiveness of our internal control over financial reporting as of December 31, 2013 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report that is included herein.

(c) Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2013 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Netflix, Inc.

We have audited Netflix, Inc.'s internal control over financial reporting as of December 31, 2013, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (1992 framework) (the COSO criteria). Netflix, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Netflix, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Netflix, Inc. as of December 31, 2013 and 2012, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the two years in the period ended December 31, 2013 of Netflix, Inc. and our report dated January 31, 2014 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
San Jose, California
January 31, 2014

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information regarding our directors and executive officers is incorporated by reference from the information contained under the sections “Proposal One: Election of Directors,” “Section 16(a) Beneficial Ownership Compliance” and “Code of Ethics” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 11. Executive Compensation

Information required by this item is incorporated by reference from information contained under the section “Compensation of Executive Officers and Other Matters” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information required by this item is incorporated by reference from information contained under the sections “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information required by this item is incorporated by reference from information contained under the section “Certain Relationships and Related Transactions” and “Director Independence” in our Proxy Statement for the Annual Meeting of Stockholders.

Item 14. Principal Accounting Fees and Services

Information with respect to principal independent registered public accounting firm fees and services is incorporated by reference from the information under the caption “Proposal Two: Ratification of Appointment of Independent Registered Public Accounting Firm” in our Proxy Statement for the Annual Meeting of Stockholders.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements:

The financial statements are filed as part of this Annual Report on Form 10-K under "Item 8. Financial Statements and Supplementary Data."

(2) Financial Statement Schedules:

The financial statement schedules are omitted as they are either not applicable or the information required is presented in the financial statements and notes thereto under "Item 8. Financial Statements and Supplementary Data."

(3) Exhibits:

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Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation	10-Q	000-49802	3.1	August 2, 2004	
3.2	Amended and Restated Bylaws	8-K	000-49802	3.1	March 20, 2009	
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	10-Q	000-49802	3.3	August 2, 2004	
3.5	Certificate of Elimination of Rights, Preferences and Privileges of Series A Participating Preferred Stock	8-K	001-35727	3.1	December 30, 2013	
4.1	Form of Common Stock Certificate	S-1/A	333-83878	4.1	April 16, 2002	
4.2	Indenture, dated as of February 1, 2013, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	February 1, 2013	
10.1†	Form of Indemnification Agreement entered into by the registrant with each of its executive officers and directors	S-1/A	333-83878	10.1	March 20, 2002	
10.2†	2002 Employee Stock Purchase Plan	Def 14A	000-49802	A	April 8, 2010	
10.3†	Amended and Restated 2002 Stock Plan	Def 14A	000-49802	A	March 31, 2006	
10.4†	2011 Stock Plan	Def 14A	000-49802	A	April 20, 2011	
10.5†	Description of Director Equity Compensation Plan	8-K	000-49802	99.1	June 16, 2010	
10.6†	Description of Director Equity Compensation Plan	8-K	000-49802	10.1	December 28, 2009	
10.7†	Amended and Restated Executive Severance and Retention Incentive Plan	10-K	000-49802	10.7	February 1, 2013	
21.1	List of Significant Subsidiaries					X
23.1	Consent of Ernst & Young LLP					X
23.2	Consent of KPMG LLP					X
24	Power of Attorney (see signature page)					
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certifications of Chief Executive Officer and Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101	The following financial information from Netflix, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2013 filed with the SEC on January 31, 2014, formatted in XBRL includes: (i) Consolidated Statements of Operations for the Years Ended December 31, 2013, 2012 and 2011, (ii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2013, 2012 and 2011, (iii) Consolidated Statements of Cash Flows for the Years Ended December 31, 2013, 2012 and 2011, (iv) Consolidated Balance Sheets as of December 31, 2013 and 2012, (v) Consolidated Statements of Stockholders'					

Equity for the Years Ended December 31, 2013, 2012 and 2011 and (vi) the Notes to Consolidated Financial Statements.	X

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* These certifications are not deemed filed by the SEC and are not to be incorporated by reference in any filing we make under the Securities Act of 1933 or the Securities Exchange Act of 1934, irrespective of any general incorporation language in any filings.

† Indicates a management contract or compensatory plan

NETFLIX, INC.

INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Netflix, Inc.

We have audited the accompanying consolidated balance sheets of Netflix, Inc. as of December 31, 2013 and 2012, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the two years in the period ended December 31, 2013. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Netflix, Inc. at December 31, 2013 and 2012, and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2013, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Netflix, Inc.'s internal control over financial reporting as of December 31, 2013, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (1992 Framework) and our report dated January 31, 2014 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
San Jose, California
January 31, 2014

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
Netflix, Inc.:

We have audited the accompanying consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows of Netflix, Inc. and subsidiaries for the year ended December 31, 2011. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinions.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the results of operations and cash flows of Netflix, Inc. and subsidiaries for the year ended December 31, 2011, in conformity with U.S. generally accepted accounting principles.

/s/ KPMG LLP
Santa Clara, California
February 10, 2012

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year ended December 31,		
	2013	2012	2011
Revenues	$ 4,374,562	$ 3,609,282	$ 3,204,577
Cost of revenues	3,083,256	2,625,866	2,039,901
Marketing	503,889	465,400	381,269
Technology and development	378,769	329,008	259,033
General and administrative	180,301	139,016	148,306
Operating income	228,347	49,992	376,068
Other income (expense):			
Interest expense	(29,142)	(19,986)	(20,025)
Interest and other income (expense)	(3,002)	474	3,479
Loss on extinguishment of debt	(25,129)	—	—
Income before income taxes	171,074	30,480	359,522
Provision for income taxes	58,671	13,328	133,396
Net income	$ 112,403	$ 17,152	$ 226,126
Earnings per share:			
Basic	$ 1.93	$ 0.31	$ 4.28
Diluted	$ 1.85	$ 0.29	$ 4.16
Weighted-average common shares outstanding:			
Basic	58,198	55,521	52,847
Diluted	60,761	58,904	54,369

See accompanying notes to consolidated financial statements.

NETFLIX, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year ended December 31,		
	2013	2012	2011
Net income	$ 112,403	$ 17,152	$ 226,126
Other comprehensive income (loss):			
Foreign currency translation adjustments	1,772	1,357	24
Change in unrealized gains (losses) on available-for-sale securities, net of tax of $(697), $538, and $(43), respectively	(1,116)	856	(68)
Total other comprehensive income (loss)	656	2,213	(44)
Comprehensive income	$ 113,059	$ 19,365	$ 226,082

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2013	2012	2011
Cash flows from operating activities:			
Net income	$ 112,403	$ 17,152	$ 226,126
Adjustments to reconcile net income to net cash provided by operating activities:			
Additions to streaming content library	(3,049,758)	(2,515,506)	(2,320,732)
Change in streaming content liabilities	673,785	762,089	1,463,955
Amortization of streaming content library	2,121,981	1,591,218	699,128
Amortization of DVD content library	71,325	65,396	96,744
Depreciation and amortization of property, equipment and intangibles	48,374	45,469	43,747
Stock-based compensation expense	73,100	73,948	61,582
Excess tax benefits from stock-based compensation	(81,663)	(4,543)	(45,784)
Other non-cash items	5,332	(8,392)	(4,050)
Loss on extinguishment of debt	25,129	—	—
Deferred taxes	(22,044)	(30,071)	(18,597)
Changes in operating assets and liabilities:			
Other current assets	62,234	(5,432)	1,436
Accounts payable	18,374	(4,943)	23,968
Accrued expenses	1,941	9,806	65,560
Deferred revenue	46,295	20,676	21,613
Other non-current assets and liabilities	(8,977)	4,719	3,016
Net cash provided by operating activities	97,831	21,586	317,712
Cash flows from investing activities:			
Acquisition of DVD content library	(65,927)	(48,275)	(85,154)
Purchases of property and equipment	(54,143)	(40,278)	(49,682)
Other assets	5,939	8,816	3,674
Purchases of short-term investments	(550,264)	(477,321)	(223,750)
Proceeds from sale of short-term investments	347,502	282,953	50,993
Proceeds from maturities of short-term investments	60,925	29,365	38,105
Net cash used in investing activities	(255,968)	(244,740)	(265,814)
Cash flows from financing activities:			
Proceeds from issuance of common stock	124,557	4,124	19,614
Proceeds from public offering of common stock, net of issuance costs	—	(464)	199,947
Proceeds from issuance of debt, net of issuance costs	490,586	(295)	198,060
Repurchases of common stock	—	—	(199,666)
Redemption of debt	(219,362)	—	—
Excess tax benefits from stock-based compensation	81,663	4,543	45,784
Principal payments of lease financing obligations	(1,180)	(2,319)	(2,083)
Net cash provided by financing activities	476,264	5,589	261,656
Effect of exchange rate changes on cash and cash equivalents	(3,453)	(197)	—
Net increase (decrease) in cash and cash equivalents	314,674	(217,762)	313,554
Cash and cash equivalents, beginning of year	290,291	508,053	194,499
Cash and cash equivalents, end of year	$ 604,965	$ 290,291	$ 508,053

Supplemental disclosure:			
Income taxes paid	$ 7,465	$ 28,853	$ 79,069
Interest paid	19,114	19,009	19,395

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	As of December 31,	
	2013	2012
Assets		
Current assets:		
Cash and cash equivalents	$ 604,965	$ 290,291
Short-term investments	595,440	457,787
Current content library, net	1,706,421	1,368,162
Other current assets	151,937	124,551
Total current assets	3,058,763	2,240,791
Non-current content library, net	2,091,071	1,506,008
Property and equipment, net	133,605	131,681
Other non-current assets	129,124	89,410
Total assets	$ 5,412,563	$ 3,967,890
Liabilities and Stockholders' Equity		
Current liabilities:		
Current content liabilities	$ 1,775,983	$ 1,366,847
Accounts payable	108,435	86,468
Accrued expenses	54,018	53,139
Deferred revenue	215,767	169,472
Total current liabilities	2,154,203	1,675,926
Non-current content liabilities	1,345,590	1,076,622
Long-term debt	500,000	200,000
Long-term debt due to related party	—	200,000
Other non-current liabilities	79,209	70,669
Total liabilities	4,079,002	3,223,217
Commitments and contingencies (Note 6)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized at December 31, 2013 and 2012; no shares issued and outstanding at December 31, 2013 and 2012	—	—
Common stock, $0.001 par value; 160,000,000 shares authorized at December 31, 2013 and 2012; 59,607,001 and 55,587,167 issued and outstanding at December 31, 2013 and 2012, respectively	60	56
Additional paid-in capital	777,441	301,616
Accumulated other comprehensive income	3,575	2,919
Retained earnings	552,485	440,082
Total stockholders' equity	1,333,561	744,673
Total liabilities and stockholders' equity	$ 5,412,563	$ 3,967,890

See accompanying notes to consolidated financial statements.

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NETFLIX, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total Stockholders' Equity
	Shares	Amount				
Balances as of December 31, 2010	52,781,949	$ 53	$ 51,622	$ 750	$237,739	$ 290,164
Net income	—	—	—	—	226,126	226,126
Other comprehensive income	—	—	—	(44)	—	(44)
Issuance of common stock upon exercise of options	659,370	—	19,614	—	—	19,614
Issuance of common stock, net of costs	2,857,143	3	199,483	—	—	199,486
Repurchases of common stock	(899,847)	(1)	(158,730)	—	(40,935)	(199,666)
Stock-based compensation expense	—	—	61,582	—	—	61,582
Excess stock option income tax benefits	—	—	45,548	—	—	45,548
Balances as of December 31, 2011	55,398,615	$ 55	$219,119	$ 706	$422,930	$ 642,810
Net income	—	—	—	—	17,152	17,152
Other comprehensive income	—	—	—	2,213	—	2,213
Issuance of common stock upon exercise of options	188,552	1	4,123	—	—	4,124
Stock-based compensation expense	—	—	73,948	—	—	73,948
Excess stock option income tax benefits	—	—	4,426	—	—	4,426
Balances as of December 31, 2012	55,587,167	$ 56	$301,616	$ 2,919	$440,082	$ 744,673
Net income	—	—	—	—	112,403	112,403
Other comprehensive income	—	—	—	656	—	656
Issuance of common stock upon exercise of options	1,688,774	2	124,555	—	—	124,557
Note conversion	2,331,060	2	198,206	—	—	198,208
Stock-based compensation expense	—	—	73,100	—	—	73,100
Excess stock option income tax benefits	—	—	79,964	—	—	79,964
Balances as of December 31, 2013	59,607,001	$ 60	$777,441	$ 3,575	$552,485	$1,333,561

See accompanying notes to consolidated financial statements.

NETFLIX, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Summary of Significant Accounting Policies

Description of Business

Netflix, Inc. (the "Company") was incorporated on August 29, 1997 and began operations on April 14, 1998. The Company is the world's leading Internet television network with more than 44 million streaming members in over 40 countries enjoying more than one billion hours of TV shows and movies per month, including original series. Members can watch as much as they want, anytime, anywhere, on nearly any Internet-connected screen. Members can play, pause and resume watching, all without commercials or commitments. Additionally, in the United States ("U.S."), members can receive DVDs.

The Company is organized into three operating segments, Domestic streaming, International streaming and Domestic DVD. A substantial majority of the Company's revenues are generated in the United States, and substantially all of the Company's long-lived tangible assets are held in the United States. The Company's revenues are derived from monthly membership fees.

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. Significant items subject to such estimates and assumptions include the amortization policy for the streaming content library; the recognition and measurement of income tax assets and liabilities; and the valuation of stock-based compensation. The Company bases its estimates on historical experience and on various other assumptions that the Company believes to be reasonable under the circumstances. Actual results may differ from these estimates.

Cash Equivalents and Short-term Investments

The Company considers investments in instruments purchased with an original maturity of 90 days or less to be cash equivalents. The Company also classifies amounts in transit from payment processors for customer credit card and debit card transactions as cash equivalents.

The Company classifies short-term investments, which consist of marketable securities with original maturities in excess of 90 days as available-for-sale. Short-term investments are reported at fair value with unrealized gains and losses included in "Accumulated other comprehensive income" within stockholders' equity in the Consolidated Balance Sheets. The amortization of premiums and discounts on the investments, realized gains and losses, and declines in value judged to be other-than-temporary on available-for-sale securities are included in "Interest and other income (expense)" in the Consolidated Statements of Operations. The Company uses the specific identification method to determine cost in calculating realized gains and losses upon the sale of short-term investments.

Short-term investments are reviewed periodically to identify possible other-than-temporary impairment. When evaluating the investments, the Company reviews factors such as the length of time and extent to which fair value has been below cost basis, the financial condition of the issuer, the Company's intent to sell, or whether it would be more likely than not that the Company would be required to sell the investments before the recovery of their amortized cost basis.

Streaming Content

The Company licenses rights to stream TV shows, movies and original content to members for unlimited viewing. These licenses are for a fixed fee and specify license windows that generally range from six months to five years. Payment terms may extend over the license window, or may require more up-front payments as is typically the case for original content or content that is licensed in an earlier window through an output arrangement.

The Company capitalizes the fee per title and records a corresponding liability at the gross amount of liabilities when the license period begins, the cost of the title is known and the title is accepted and available for streaming. The portion available for streaming within one year is recognized as "Current content library" and the remaining portion as "Non-current content

library". The acquisition of streaming content license rights and the changes in related liabilities, are classified within cash used in operating activities on the Consolidated Statements of Cash Flows.

The Company amortizes the content library in "Cost of revenues" on a straight line or on an accelerated basis, as appropriate:

- For content that does not premiere on the Netflix service (representing the vast majority of content), the Company amortizes on a straight-line basis over the shorter of each title's contractual window of availability or estimated period of use, beginning with the month of first availability. The amortization period typically ranges from six months to five years.

- For content that premieres on the Netflix service, the Company expects more upfront viewing due to the additional merchandising and marketing efforts for this original content available only on Netflix. Hence, the Company amortizes on an accelerated basis over the amortization period, which is the shorter of four years or the license period, beginning with the month of first availability. If a subsequent season is added, the amortization period is extended by a year.

- If the cost per title cannot be reasonably estimated, the license fee is not capitalized and costs are expensed on a straight line basis over the license period. This typically occurs when the license agreement does not specify the number of titles, the license fee per title or the windows of availability per title.

The content library is stated at the lower of unamortized cost or net realizable value. Streaming content licenses (whether capitalized or not) are reviewed in aggregate at the geographic region level for impairment when an event or change in circumstances indicates a change in the expected usefulness of the content. The level of geographic aggregation is determined based on the streaming content rights which are generally specific to a geographic region inclusive of several countries (such as Latin America). No material write down from unamortized cost to a lower net realizable value was recorded in any of the periods presented.

DVD Content Library

The Company acquires DVD content for the purpose of renting such content to its members and earning membership rental revenues, and, as such, the Company considers its direct purchase DVD library to be a productive asset. Accordingly, the Company classifies its DVD library in "Non-current content library, net" on the Consolidated Balance Sheets. The acquisition of DVD content library, net of changes in related liabilities, is classified within cash used in investing activities on the Consolidated Statements of Cash Flows because the DVD content library is considered a productive asset. Other companies in the in-home entertainment video industry classify these cash flows as operating activities. The Company amortizes its direct purchase DVDs on an accelerated basis over their estimated useful lives, which range from one year to two years. The Company also obtains DVD content through revenue sharing agreements with studios and other content providers. Revenue sharing obligations are expensed as incurred based on shipments.

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation. Depreciation is calculated using the straight-line method over the shorter of the estimated useful lives of the respective assets, generally up to 30 years, or the lease term for leasehold improvements, if applicable. Leased buildings are capitalized and included in property and equipment when the Company was involved in the construction funding and did not meet the "sale-leaseback" criteria.

Impairment of Long-Lived Assets

Long-lived assets such as DVD content library, property and equipment and intangible assets subject to depreciation and amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable. Recoverability of asset groups to be held and used is measured by a comparison of the carrying amount of an asset group to estimated undiscounted future cash flows expected to be generated by the asset group. If the carrying amount of an asset group exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of an asset group exceeds fair value of the asset group. There were no events or changes in circumstances that would indicate that the carrying amount of an asset group may not be recoverable in any of the years presented.

Revenue Recognition

Revenues are recognized ratably over each monthly membership period. Revenues are presented net of the taxes that are collected from members and remitted to governmental authorities. Deferred revenue consists of membership fees billed to members that have not been recognized and gift memberships that have not been redeemed.

Marketing

Marketing expenses consist primarily of advertising expenses and also include payments made to the Company's affiliates and consumer electronics partners. Advertising expenses include promotional activities such as television and online advertising. Advertising costs are expensed as incurred. Advertising expenses were $437.9 million, $377.2 million and $299.1 million for the years ended December 31, 2013, 2012 and 2011, respectively.

Income Taxes

The Company records a tax provision for the anticipated tax consequences of the reported results of operations using the asset and liability method. Deferred income taxes are recognized by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The measurement of deferred tax assets is reduced, if necessary, by a valuation allowance for any tax benefits for which future realization is uncertain. There was no significant valuation allowance as of December 31, 2013 or 2012.

The Company did not recognize certain tax benefits from uncertain tax positions within the provision for income taxes. The Company recognizes a tax benefit from an uncertain tax position only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. See Note 10 to the consolidated financial statements for further information regarding income taxes.

Foreign Currency

The Company translates the assets and liabilities of its non-U.S. dollar functional currency subsidiaries into U.S. dollars using exchange rates in effect at the end of each period. Revenues and expenses for these subsidiaries are translated using rates that approximate those in effect during the period. Gains and losses from these translations are recognized in cumulative translation adjustment included in "Accumulated other comprehensive income" in stockholders' equity on the Consolidated Balance Sheets.

The Company remeasures monetary assets and liabilities that are not denominated in the functional currency at exchange rates in effect at the end of each period. Gains and losses from these remeasurements are recognized in interest and other income (expense). Foreign currency transactions resulted in losses of $8.4 million and $4.0 million for the years ended December 31, 2013 and 2012, respectively. The gains (losses) from foreign currency transactions were immaterial for the year ended December 31, 2011.

Earnings Per Share

Basic earnings per share is computed using the weighted-average number of outstanding shares of common stock during the period. Diluted earnings per share is computed using the weighted-average number of outstanding shares of common stock and, when dilutive, potential common shares outstanding during the period. Potential common shares consist of shares issuable upon the assumed conversion of the Company's Convertible Notes (prior to the conversion of such notes) and incremental shares issuable upon the assumed exercise of stock options. The computation of earnings per share is as follows:

	Year ended December 31,		
	2013	2012	2011
	(in thousands, except per share data)		
Basic earnings per share:			
Net income	$ 112,403	$ 17,152	$ 226,126
Shares used in computation:			
Weighted-average common shares outstanding	58,198	55,521	52,847
Basic earnings per share	$ 1.93	$ 0.31	$ 4.28
Diluted earnings per share:			
Net income	$ 112,403	$ 17,152	$ 226,126
Convertible Notes interest expense, net of tax	49	195	17
Numerator for diluted earnings per share	112,452	17,347	226,143
Shares used in computation:			
Weighted-average common shares outstanding	58,198	55,521	52,847
Convertible Notes shares	715	2,331	217
Employee stock options	1,848	1,052	1,305
Weighted-average number of shares	60,761	58,904	54,369
Diluted earnings per share	$ 1.85	$ 0.29	$ 4.16

Employee stock options with exercise prices greater than the average market price of the common stock were excluded from the diluted calculation as their inclusion would have been anti-dilutive. The following table summarizes the potential common shares excluded from the diluted calculation:

	Year ended December 31,		
	2013	2012	2011
	(in thousands)		
Employee stock options	198	1,207	225

Stock-Based Compensation

The Company grants stock options to its employees on a monthly basis. The Company has elected to grant all options as fully vested non-qualified stock options. As a result of immediate vesting, stock-based compensation expense is fully recognized on the grant date, and no estimate is required for post-vesting option forfeitures. See Note 8 to the consolidated financial statements for further information regarding stock-based compensation.

Stock Repurchases

To facilitate a stock repurchase program, shares are repurchased by the Company in the open market and are accounted for when the transaction is settled. Shares held for future issuance are classified as Treasury stock. Shares formally or constructively retired are deducted from common stock for par value and from additional paid-in capital for the excess over par value. If additional paid-in capital has been exhausted, the excess over par value is deducted from Retained earnings. Direct costs incurred to acquire the shares are included in the total cost of the shares.

2. Reclassifications and Changes in Estimates

Certain prior year amounts have been reclassified to conform to the current year presentation in the consolidated financial statements. Payroll and related expenses of $19.3 million and $21.4 million for the years ended December 31, 2012 and 2011, respectively, associated with corporate marketing personnel, previously classified in "Marketing" on the Consolidated Statements of Operations, have been reclassified as "General and administrative." Historically these costs were substantially recorded in the Domestic streaming segment and impacted segment contribution profit. Management and the Company's chief operating decision maker consider such employee costs to be global corporate costs rather than marketing costs directly attributable to the segment and as such are not indicative of any given segment's performance. Accordingly, such costs have been reclassified as "General and

administrative" expenses which are not a component of contribution profit. There was no impact to operating income in any year presented.

Prepaid content amounts are now included in Other current assets on both the Consolidated Balance Sheets and the Consolidated Statements of Cash Flows as they are not material.

Certain prior year amounts in the Consolidated Statements of Cash Flows have been revised to correctly present changes in accounts payable related to purchases of fixed assets. For the year ended December 31, 2012, a $1.2 million increase in accounts payable has been reclassified from purchases of property and equipment in "Net cash used in investing activities" to changes in accounts payable in "Net cash provided by operating activities." There was no impact to the Consolidated Statements of Operations or Consolidated Balance Sheets.

The Company had a change in estimate that is reflected in the consolidated financial statements for the year ended December 31, 2013. When the Company started with original content, the Company did not have specific data about viewing patterns over time for content that premieres on Netflix. Based on experience with other similar television series and initial estimates of viewing patterns, the Company amortized this type of content on a straight-line basis over the shorter of four years or the license period. If a subsequent season is added, the remaining amortization period is extended by a year. Current estimates of viewing patterns indicate that viewing in the first few months is significantly higher, relative to the remaining amortization period, than previously estimated. As a result, in the third quarter of 2013, the Company began amortizing this type of content on an accelerated basis over the amortization period. The effect of this change in estimate was an $18.9 million decrease in contribution profit for the Domestic streaming segment and a $6.1 million increase in contribution loss for the International streaming segment for the year ended December 31, 2013. The effect of this change in estimate was a decrease in operating income and net income of $25.0 million and $15.4 million, respectively for the year ended December 31, 2013. The effect to basic earnings per share and diluted earnings per share was a decrease of $0.27 and $0.25, respectively, for the year ended December 31, 2013. The effect of this change in estimate relates primarily to titles that first premiered on Netflix in the first and second quarters of 2013.

3. Short-term Investments

The Company's investment policy is consistent with the definition of available-for-sale securities. The Company does not buy and hold securities principally for the purpose of selling them in the near future. The Company's policy is focused on the preservation of capital, liquidity and return. From time to time, the Company may sell certain securities but the objectives are generally not to generate profits on short-term differences in price. The following tables summarize, by major security type, the Company's assets that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy.

	December 31, 2013			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(in thousands)			
Cash	$ 483,959	$ —	$ —	$ 483,959
Level 1 securities:				
Money market funds	126,208	—	—	126,208
Level 2 securities:				
Corporate debt securities	316,465	1,245	(654)	317,056
Government securities	143,812	287	(18)	144,081
Asset and mortgage-backed securities	93,118	229	(418)	92,929
Certificate of deposits	23,425	—	—	23,425
Agency securities	17,951	—	(2)	17,949
Total (1)	$ 1,204,938	$ 1,761	$ (1,092)	$ 1,205,607

	December 31, 2012			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(in thousands)			
Cash	$ 284,661	$ —	$ —	$ 284,661
Level 1 securities:				
Money market funds	10,500	—	—	10,500
Level 2 securities:				
Corporate debt securities	150,322	1,605	(32)	151,895
Government securities	166,643	285	—	166,928
Asset and mortgage-backed securities	138,340	750	(125)	138,965
Total (2)	$ 750,466	$ 2,640	$ (157)	$ 752,949

(1) Includes $605.0 million that is included in cash and cash equivalents, $595.4 million included in short-term investments and $5.2 million of restricted cash that is included in other non-current assets related to workers compensation deposits.

(2) Includes $290.3 million included in cash and cash equivalents, $457.8 million included in short-term investments and $4.8 million of restricted cash that is included in other non-current assets related to workers compensation deposits.

Fair value is a market-based measurement that should be determined based on the assumptions that market participants would use in pricing an asset or liability. The hierarchy level assigned to each security in the Company's available-for-sale portfolio and cash equivalents is based on its assessment of the transparency and reliability of the inputs used in the valuation of such instrument at the measurement date. The fair value of available-for-sale securities and cash equivalents included in the Level 1 category is based on quoted prices that are readily and regularly available in an active market. The fair value of available-for-sale securities included in the Level 2 category is based on observable inputs, such as quoted prices for similar assets at the measurement date; quoted prices in markets that are not active; or other inputs that are observable, either directly or indirectly. These values were obtained from an independent pricing service and were evaluated using pricing models that vary by asset class and may incorporate available trade, bid and other market information and price quotes from well-established independent pricing vendors and broker-dealers. The Company's procedures include controls to ensure that appropriate fair values are recorded, such as comparing prices obtained from multiple independent sources. See Note 5 to the consolidated financial statements for further information regarding the fair value of the Company's senior convertible notes and senior notes.

Because the Company does not intend to sell the investments that are in an unrealized loss position and it is not likely that the Company will be required to sell any investments before recovery of their amortized cost basis, the Company does not consider those investments with an unrealized loss to be other-than-temporarily impaired at December 31, 2013. There were no material other-than-temporary impairments or credit losses related to available-for-sale securities in the years ended December 31, 2013, 2012 or 2011.

There were no material gross realized gains or losses from the sale of available-for-sale investments in the years ended December 31, 2013, 2012 and 2011. Realized gains and losses and interest income are included in interest and other income.

The estimated fair value of short-term investments by contractual maturity as of December 31, 2013 is as follows:

	(in thousands)
Due within one year	$ 144,267
Due after one year and through 5 years	408,048
Due after 5 years and through 10 years	1,703
Due after 10 years	41,422
Total short-term investments	$ 595,440

4. Balance Sheet Components

Content Library

Content library consisted of the following:

	As of December 31,	
	2013	2012
	(in thousands)	
Total content library, gross	$ 6,474,688	$ 5,001,524
Accumulated amortization	(2,677,196)	(2,127,354)
Total content library, net	3,797,492	2,874,170
Current content library, net	1,706,421	1,368,162
Non-current content library, net	$ 2,091,071	$ 1,506,008

Property and Equipment, Net

Property and equipment and accumulated depreciation consisted of the following:

		As of December 31,	
		2013	2012
		(in thousands)	
Computer equipment	3 years	$ 102,867	$ 84,193
Operations and other equipment	5 years	96,361	100,207
Software	3 years	36,439	39,073
Furniture and fixtures	3 years	21,011	18,208
Building	30 years	40,681	40,681
Leasehold improvements	Over life of lease	51,194	45,393
Capital work-in-progress		8,643	8,282
Property and equipment, gross		357,196	336,037
Less: Accumulated depreciation		(223,591)	(204,356)
Property and equipment, net		$ 133,605	$ 131,681

5. Long-term Debt

Senior Convertible Notes

In November 2011, the Company issued $200.0 million aggregate principal amount of zero coupon senior convertible notes due on December 1, 2018 (the “Convertible Notes”) in a private placement offering to TCV VII, L.P., TCV VII(A), L.P., and TCV Member Fund, L.P. A general partner of these funds also serves on the Company’s Board of Directors, and as such, the issuance of the notes is considered a related party transaction. The net proceeds to the Company were approximately $197.8 million. Debt issuance costs of $2.2 million (of which $0.3 million was paid in the year ended December 31, 2012) were recorded in “Other non-current assets” on the Consolidated Balance Sheets and were amortized over the term of the notes as interest expense. At any time following May 28, 2012, the Company could have elected to cause the conversion of the Convertible Notes into shares of the Company’s common stock when specified conditions were satisfied, including that the daily volume weighted average price of the Company’s common stock was equal to or greater than $111.54 for at least 50 trading days during a 65 trading day period prior to the conversion date.

The Company determined that the embedded conversion option in the Convertible Notes did not require separate accounting treatment as a derivative instrument because it was both indexed to the Company's own stock and would be classified in

stockholders' equity if freestanding. Additionally, the Convertible Notes did not require or permit any portion of

the obligation to be settled in cash and accordingly the liability and equity (conversion option) components were not required to be accounted for separately.

In April 2013, after all specified conditions were satisfied, the Company elected to cause the conversion of all outstanding Convertible Notes with an aggregate principal amount of $200.0 million in accordance with the terms of the Indenture governing such notes. Pursuant to this conversion, the Company issued 2.3 million shares of common stock to the holders of the Convertible Notes at a conversion ratio of 11.6553. The fair market value of one share of common stock on the date of conversion was $216.99 per share.

Senior Notes

In November 2009, the Company issued $200.0 million aggregate principal amount of 8.50% senior notes due November 15, 2017 (the “8.50% Notes”). The net proceeds to the Company were approximately $193.9 million. Debt issuance costs of $6.1 million were recorded in “Other non-current assets” on the Consolidated Balance Sheets and were amortized over the term of the notes as interest expense. The notes were issued at par and were senior unsecured obligations of the Company. Interest was payable semi-annually at a rate of 8.50% per annum on May 15 and November 15 of each year, commencing on May 15, 2010. The 8.50% Notes were repayable in whole or in part upon the occurrence of a change of control, at the option of the holders, at a purchase price in cash equal to 101% of the principal plus accrued interest. The Company could redeem the 8.50% Notes prior to November 15, 2013 in whole or in part at a redemption price of 100% of the principal plus accrued interest, plus a “make-whole” premium.

In February 2013, the Company issued $500.0 million aggregate principal amount of 5.375% senior notes due 2021 (the “5.375% Notes”). The 5.375% Notes were issued at par and are senior unsecured obligations of the Company. Interest is payable semi-annually at a rate of 5.375% per annum on February 1 and August 1 of each year, commencing on August 1, 2013. The 5.375% Notes are repayable in whole or in part upon the occurrence of a change of control, at the option of the holders, at a purchase price in cash equal to 101% of the principal plus accrued interest. The Company may redeem the 5.375% Notes prior to maturity in whole or in part at an amount equal to the principal amount thereof plus accrued and unpaid interest plus a make-whole payment equivalent to the present value of the remaining interest payments through maturity.

The 5.375% Notes include, among other terms and conditions, limitations on the Company's ability to create, incur or allow certain liens; enter into sale and lease-back transactions; create, assume, incur or guarantee additional indebtedness of the Company's subsidiaries; and consolidate or merge with, or convey, transfer or lease all or substantially all of the Company's and its subsidiaries assets, to another person. At December 31, 2013 the Company was in compliance with these covenants.

In the first quarter of 2013, the Company used $224.5 million of the net proceeds of the 5.375% Notes to redeem the outstanding $200.0 million aggregate principal amount of 8.50% Notes and pursuant to the make-whole provision in the Indenture governing the 8.50% Notes, paid a $19.4 million premium and $5.1 million of accrued and unpaid interest. The Company recognized a loss on extinguishment of debt of $25.1 million related to redemption of the 8.50% Notes which included the write off of unamortized debt issuance costs of $4.2 million.

Based on quoted market prices in less active markets (a Level 2 input for this financial instrument), the fair value of the 5.375% Notes as of December 31, 2013 was approximately $506.3 million.

6. Commitments and Contingencies

Streaming Content

At December 31, 2013, the Company had $7.3 billion of obligations comprised of $1.8 billion included in "Current content liabilities" and $1.3 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $4.2 billion of obligations that are not reflected on the Consolidated Balance Sheet.

At December 31, 2012, the Company had $5.6 billion of obligations comprised of $1.3 billion included in "Current content liabilities" and $1.1 billion of "Non-current content liabilities" on the Consolidated Balance Sheets and $3.2 billion of obligations that are not reflected on the Consolidated Balance Sheet.

The expected timing of payments for these streaming content obligations is as follows:

	As of December 31,	
	2013	2012
	(in thousands)	
Less than one year	$ 2,972,325	$ 2,299,562
Due after one year and through 3 years	3,266,907	2,715,294
Due after 3 years and through 5 years	929,645	540,346
Due after 5 years	83,284	78,483
Total streaming content obligations	$ 7,252,161	$ 5,633,685

A streaming content obligation is incurred at the time the Company signs a license agreement to obtain future titles. Once a title becomes available, a content liability is generally recorded on the Consolidated Balance Sheet. Certain agreements include the obligation to license rights for unknown future titles, the ultimate quantity and / or fees for which are not yet determinable as of the reporting date. Because the amount is not reasonably estimable, the Company does not include any estimated obligation for these future titles beyond the known minimum amount. However, the unknown obligations are expected to be significant and the expected timing of payments could range from less than one year to more than five years.

The Company has entered into certain licenses with performing rights organizations ("PROs"), and is currently involved in negotiations with other PROs, that hold certain rights to music and other entertainment works "publicly performed" in connection with streaming content into various territories. Accruals for estimated royalties are recorded and then adjusted based on any changes in estimates. These amounts are included in the streaming content obligations. The results of these negotiations are uncertain and may be materially different from management's estimates.

Lease obligations

The Company leases facilities under non-cancelable operating leases with various expiration dates through 2019. Several lease agreements contain rent escalation clauses or rent holidays. For purposes of recognizing minimum rental expenses on a straight-line basis over the terms of the leases, the Company uses the date of initial possession to begin amortization, which is generally when the Company enters the space and begins to make improvements in preparation for intended use. For scheduled rent escalation clauses during the lease terms or for rental payments commencing at a date other than the date of initial occupancy, the Company records minimum rental expenses on a straight-line basis over the terms of the leases in the Consolidated Statements of Operations. The Company has the option to extend or renew most of its leases which may increase the future minimum lease commitments.

Because the terms of the Company's original facilities lease agreements for its current Los Gatos, California headquarters site required the Company's involvement in the construction funding of the buildings, the Company is the "deemed owner" (for accounting purposes only) of these buildings. Accordingly, the Company recorded an asset of $40.7 million, representing the total costs of the buildings and improvements, including the costs paid by the lessor (the legal owner of the buildings), with corresponding liabilities. Upon completion of construction of each building, the Company did not meet the sale-leaseback criteria for de-recognition of the building assets and liabilities. Therefore the leases are accounted for as financing obligations.

In the first quarter of 2010, the Company extended the facilities leases for the current Los Gatos buildings for an additional five year term after the remaining term of the original lease, thus increasing the future minimum payments under lease financing obligations by approximately $14 million. The leases continue to be accounted for as financing obligations and no gain or loss was recorded as a result of the lease financing modification. At December 31, 2013, the lease financing obligation balance was $30.6 million, of which $1.1 million and $29.5 million were recorded in "Accrued expenses" and "Other non-current liabilities," respectively, on the Consolidated Balance Sheets. The remaining future minimum payments under the lease financing obligation are $12.1 million. The lease financing obligation balance at the end of the extended lease term will be approximately $25.8 million which approximates the net book value of the buildings to be relinquished to the lessor.

In the third quarter of 2013, the Company entered into facilities lease agreements to expand its Los Gatos headquarters. At the time the Company entered into these lease agreements, the prior agreement signed in the fourth quarter of 2012 was simultaneously terminated. The 124 month lease term for each of the new leases will commence after the construction of the buildings is complete. Future minimum lease payments associated with these leases are $121.2 million as of December 31, 2013 and are included below.

Future minimum payments under lease financing obligations and non-cancelable operating leases as of December 31, 2013 are as follows:

Year Ending December 31,	Future Minimum Payments
	(in thousands)
2014	$ 25,101
2015	26,637
2016	26,073
2017	21,846
2018	15,586
Thereafter	86,179
Total minimum payments	$ 201,422

Rent expense associated with the operating leases was $27.9 million, $29.7 million and $16.9 million for the years ended December 31, 2013, 2012 and 2011, respectively.

Legal Proceedings

From time to time, in the normal course of its operations, the Company is a party to litigation matters and claims, including claims relating to employee relations, business practices and patent infringement. Litigation can be expensive and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict and the Company's view of these matters may change in the future as the litigation and events related thereto unfold. The Company expenses legal fees as incurred. The Company records a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. An unfavorable outcome to any legal matter, if material, could have an adverse effect on the Company's operations or its financial position, liquidity or results of operations.

On January 13, 2012, the first of three purported shareholder class action lawsuits was filed in the United States District Court for the Northern District of California against the Company and certain of its officers and directors. Two additional purported shareholder class action lawsuits were filed in the same court on January 27, 2012 and February 29, 2012 alleging substantially similar claims. These lawsuits were consolidated into *In re Netflix, Inc., Securities Litigation*, Case No. 3:12-cv-00225-SC, and the Court selected lead plaintiffs. On June 26, 2012, lead plaintiffs filed a consolidated complaint which alleged violations of the federal securities laws. The Court dismissed the consolidated complaint with leave to amend on February 13, 2013. Lead plaintiffs filed a first amended consolidated complaint on March 22, 2013. The Court dismissed the first amended consolidated complaint with prejudice on August 20, 2013, and judgment was entered on September 27, 2013. Lead plaintiffs filed a motion to alter or amend the judgment and requested leave to file a second amended complaint on October 25, 2013. On January 17, 2014, the Court denied that motion.

On November 23, 2011, the first of six purported shareholder derivative suits was filed in the Superior Court of California, Santa Clara County, against the Company and certain of its officers and directors. Five additional purported shareholder derivative suits were subsequently filed: two in the Superior Court of California, Santa Clara County on February 9, 2012 and May 2, 2012; and three in the United States District Court for the Northern District of California on February 13, 2012, February 24, 2012 and April 2, 2012. The purported shareholder derivative suits filed in the Northern District of California have been voluntarily dismissed. On July 5, 2012, the purported shareholder derivative suits filed in Santa Clara County were consolidated into *In re Netflix, Inc. Shareholder Derivative Litigation*, Case No. 1-12-cv-218399, and lead counsel was appointed. A consolidated complaint was filed on December 4, 2012, with plaintiffs seeking compensatory damages and other relief. The consolidated complaint alleges, among other things, that certain of the Company's current and former officers and directors breached their fiduciary duties, issued false and misleading statements primarily regarding the Company's streaming business, violated accounting rules concerning segment reporting, violated provisions of the California Corporations Code, and wasted corporate assets. The consolidated complaint further alleges that the defendants caused the Company to buy back stock at artificially inflated prices to the detriment of the Company and its shareholders while contemporaneously selling personally held Company stock. The Company filed a demurrer to the consolidated complaint and a motion to stay the derivative litigation in favor of the related federal securities class action on February 4, 2013. On June 21, 2013, the Court granted the motion to stay the derivative litigation pending resolution of the related federal securities class action. Management has determined a potential loss is reasonably possible however, based on its current knowledge, management does not believe that the amount of such possible loss or a range of potential loss is reasonably estimable.

The Company is involved in other litigation matters not listed above but does not consider the matters to be material either individually or in the aggregate at this time. The Company's view of the matters not listed may change in the future as the litigation and events related thereto unfold.

7. Guarantees—Indemnification Obligations

In the ordinary course of business, the Company has entered into contractual arrangements under which it has agreed to provide indemnification of varying scope and terms to business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of the Company's breach of such agreements and out of intellectual property infringement claims made by third parties. In these circumstances, payment may be conditional on the other party making a claim pursuant to the procedures specified in the particular contract.

The Company's obligations under these agreements may be limited in terms of time or amount, and in some instances, the Company may have recourse against third parties for certain payments. In addition, the Company has entered into indemnification agreements with its directors and certain of its officers that will require it, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The terms of such obligations vary.

It is not possible to make a reasonable estimate of the maximum potential amount of future payments under these or similar agreements due to the conditional nature of the Company's obligations and the unique facts and circumstances involved in each particular agreement. No amount has been accrued in the accompanying financial statements with respect to these indemnification guarantees.

8. Stockholders' Equity

On November 2, 2012, the Board of Directors (the "Board") of the Company authorized and declared a dividend distribution of one right (a "Right") for each outstanding share of common stock, par value $0.001 per share (the "Common Shares"), of the Company to stockholders of record at the close of business on November 12, 2012 (the "Record Date"). Each Right entitled the registered holder to purchase from the Company one one-thousandth of a share of Series A Participating Preferred Stock, par value $0.001 per share (the "Preferred Shares"), of the Company at an exercise price of $350 per one one-thousandth of a Preferred Share, subject to adjustment (the "Exercise Price"). The Rights were exercisable in the event any person or group acquires 10% (or 20% in the case of certain institutional investors who report their holdings on Schedule 13G) or more of the Common Shares without the approval of the Board, and until such time are inseparable from and trade with the Company's common stock. The Rights had a de minimus fair value. The Rights Agreement was amended on December 30, 2013 to accelerate the expiration of the Rights from the close of business on November 2, 2015 to the close of business on December 30, 2013, and had the effect of terminating the Rights Agreement on that date. At the time of the termination of the Rights Agreement, all of the Rights distributed to holders of the Company's common stock pursuant to the Rights Agreement expired.

On November 28, 2011, the Company issued 2.9 million shares of common stock upon the closing of a public offering for $200.0 million net of issuance costs of $0.5 million.

In April 2013, the Company issued 2.3 million shares of common stock in connection with the conversion of the Convertible Notes. See Note 5 to the consolidated financial statements for further details.

Preferred Stock

In 2012, the Company designated 1,000,000 shares of its preferred stock with par value of $0.001 per share as Series A Participating Preferred Stock. The remaining 9,000,000 shares of preferred stock with par value of $0.001 remained undesignated. In connection with the expiration of the Rights and the termination of the Rights Agreement on December 30, 2013, the shares that were designated to such series were returned to the status of authorized but unissued shares of preferred stock of the Company, and the Company therefore now has 10,000,000 shares of preferred stock with a par value of $0.001 that are undesignated.

None of the preferred shares were issued and outstanding at December 31, 2013 and 2012.

Voting Rights

The holders of each share of common stock shall be entitled to one vote per share on all matters to be voted upon by the Company's stockholders.

Stock Option Plans

In June 2011, the Company adopted the 2011 Stock Plan. The 2011 Stock Plan provides for the grant of incentive stock options to employees and for the grant of non-statutory stock options, stock appreciation rights, restricted stock and restricted

stock units to employees, directors and consultants. As of December 31, 2013, 3.4 million shares were reserved for future grants under the 2011 Stock Plan.

In February 2002, the Company adopted the 2002 Stock Plan, which was amended and restated in May 2006. The 2002 Stock Plan provided for the grant of incentive stock options to employees and for the grant of non-statutory stock options and stock purchase rights to employees, directors and consultants. In the first quarter of 2012, 1.2 million shares reserved for future grants under the 2002 Stock Plan expired.

A summary of the activities related to the Company's stock option plans is as follows:

		Options Outstanding			
	Shares Available for Grant	Number of Shares	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in Thousands)
Balances as of December 31, 2010	2,038,502	2,892,130	36.11		
Authorized	5,700,000	—	—		
Granted	(724,994)	724,994	154.09		
Exercised	—	(659,370)	29.11		
Balances as of December 31, 2011	7,013,508	2,957,754	66.59		
Granted	(1,803,798)	1,803,798	73.94		
Exercised	—	(188,552)	21.85		
Canceled	48	(48)	35.95		
Expired	(1,160,721)	—			
Balances as of December 31, 2012	4,049,037	4,572,952	71.33		
Granted	(642,720)	642,720	208.94		
Exercised	—	(1,688,774)	73.75		
Balances as of December 31, 2013	3,406,317	3,526,898			
Vested and exercisable at December 31, 2013		3,526,898	95.25	6.16	$ 962,570

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (the difference between the Company's closing stock price on the last trading day of 2013 and the exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on December 31, 2013. This amount changes based on the fair market value of the Company's common stock. Total intrinsic value of options exercised for the years ended December 31, 2013, 2012 and 2011 was $274.2 million, $14.7 million and $128.1 million, respectively.

Cash received from option exercises for the years ended December 31, 2013, 2012 and 2011 was $124.6 million, $4.1 million and $19.6 million, respectively.

Employee Stock Purchase Plan

In February 2002, the Company adopted the 2002 ESPP under which employees purchased common stock of the Company through accumulated payroll deductions. The purchase price of the common stock acquired by the employees participating in the ESPP is 85% of the closing price on either the first day of the offering period or the last day of the purchase period, whichever was lower. Under the ESPP, the offering and purchase periods took place concurrently in consecutive six month increments. Therefore, the look-back for determining the purchase price was six months. Employees could invest up to 15% of their gross compensation through payroll deductions. In no event was an employee permitted to purchase more than 8,334 shares of common stock during any six-month purchase period.

As of December 31, 2013, there were 2,785,721 shares available for future issuance under the 2002 Employee Stock Purchase Plan. The Company's ESPP was suspended in 2011 and there were no offerings subsequent to 2011.

Stock-Based Compensation

Vested stock options granted before June 30, 2004 can be exercised up to three months following termination of employment. Vested stock options granted after June 30, 2004 and before January 1, 2007 can be exercised up to one year following termination of employment. Vested stock options granted after January 2007 will remain exercisable for the full ten

year contractual term regardless of employment status. The following table summarizes the assumptions used to value option grants using the lattice-binomial model:

	Year Ended December 31,		
	2013	2012	2011
Dividend yield	—%	—%	—%
Expected volatility	51% - 54%	55% - 65%	51% – 65%
Risk-free interest rate	1.87% - 2.71%	1.61% - 2.01%	2.05% – 3.42%
Suboptimal exercise factor	2.33 - 3.92	2.26 - 3.65	2.17 – 3.64

The Company bifurcates its option grants into two employee groupings (executive and non-executive) based on exercise behavior and considers several factors in determining the estimate of expected term for each group, including the historical option exercise behavior, the terms and vesting periods of the options granted.

The Company estimates expected volatility based on a blend of historical volatility of the Company's common stock and implied volatility of tradable forward call options to purchase shares of its common stock. The Company believes that implied volatility of publicly traded options in its common stock is expected to be more reflective of market conditions and, therefore, can reasonably be expected to be a better indicator of expected volatility than historical volatility of its common stock. The Company includes historical volatility in its computation due to low trade volume of its tradable forward call options in certain periods, thereby precluding sole reliance on implied volatility.

In valuing shares issued under the Company's employee stock option plans, the Company bases the risk-free interest rate on U.S. Treasury zero-coupon issues with terms similar to the contractual term of the options. The Company does not anticipate paying any cash dividends in the foreseeable future and therefore uses an expected dividend yield of zero in the option valuation model. The Company does not use a post-vesting termination rate as options are fully vested upon grant date. The weighted-average fair value of employee stock options granted during 2013, 2012 and 2011 was $113.74, $41.00 and $84.94 per share, respectively.

Stock-based compensation expense related to stock option plans was $73.1 million, $73.9 million and $61.6 million for the years ended December 31, 2013, 2012 and 2011, respectively. The total income tax benefit recognized in the income statement related to stock option plans was $28.1 million, $28.5 million and $22.8 million for 2013, 2012 and 2011, respectively.

Stock Repurchase Program

The following table presents a summary of the Company's stock repurchases for the year ended December 31, 2011 (in thousands, except per share data):

Total number of shares repurchased		900
Dollar amount of shares repurchased	$	199,666
Average price paid per share	$	221.88
Range of price paid per share		$160.11 – $248.78

Under the stock repurchase plan announced on June 11, 2010, the Company was authorized to repurchase up to $300 million of its common stock through the end of 2012. As of December 31, 2012, the Company has repurchased $259.0 million of its common stock under this plan. As of December 31, 2012, the plan has expired and the remaining $41.0 million was unused.

9. Accumulated Other Comprehensive Income

The following table summarizes the changes in accumulated balances of other comprehensive income (loss), net of tax:

	Foreign currency	Change in unrealized gains on available for sale securities	Total
		(in thousands)	
Balance as of December 31, 2011	$ 24	$ 682	$ 706
Other comprehensive income before reclassifications	1,357	1,275	2,632
Amounts reclassified from accumulated other comprehensive income	—	(419)	(419)
Net increase in other comprehensive income	1,357	856	2,213
Balance as of December 31, 2012	$ 1,381	$ 1,538	$ 2,919
Other comprehensive income before reclassifications	1,772	(1,597)	175
Amounts reclassified from accumulated other comprehensive income	—	481	481
Net increase (decrease) in other comprehensive income	1,772	(1,116)	656
Balance as of December 31, 2013	$ 3,153	$ 422	$ 3,575

All amounts reclassified from accumulated other comprehensive income were related to gains (losses) on available-for-sale securities. These reclassifications impacted "Interest and other income (expense)" on the Consolidated Statements of Operations.

10. Income Taxes

Income before provision for income taxes was as follows:

	Year Ended December 31,		
	2013	2012	2011
		(in thousands)	
United States	$ 159,126	$ 27,885	$ 359,786
Foreign	11,948	2,595	(264)
Income before income taxes	$ 171,074	$ 30,480	$ 359,522

The components of provision for income taxes for all periods presented were as follows:

	Year Ended December 31,		
	2013	2012	2011
		(in thousands)	
Current tax provision:			
Federal	$ 58,558	$ 34,387	$ 123,406
State	15,154	7,850	28,657
Foreign	7,003	1,162	(70)
Total current	80,715	43,399	151,993
Deferred tax provision:			
Federal	(18,930)	(26,903)	(14,008)
State	(2,751)	(3,168)	(4,589)
Foreign	(363)	—	—
Total deferred	(22,044)	(30,071)	(18,597)
Provision for income taxes	$ 58,671	$ 13,328	$ 133,396

U.S. income taxes and foreign withholding taxes associated with the repatriation of earnings of foreign subsidiaries were not provided for on a cumulative total of $9.5 million of undistributed earnings for certain foreign subsidiaries as of December 31, 2013.

The Company intends to reinvest these earnings indefinitely in its foreign subsidiaries. If these earnings were distributed to the United States in the form of dividends or otherwise, the Company would be subject to additional U.S. income

taxes net of available foreign tax credits associated with these earnings. The amount of unrecognized deferred income tax liability related to these earnings is approximately $3.3 million.

Income tax benefits attributable to the exercise of employee stock options of $80.0 million, $4.4 million and $45.5 million for the years ended December 31, 2013, 2012 and 2011, respectively, were recorded directly to additional paid-in-capital.

A reconciliation of the provision for income taxes, with the amount computed by applying the statutory federal income tax rate to income before income taxes is as follows:

	Year Ended December 31,		
	2013	2012	2011
	(in thousands)		
Expected tax expense at U.S. federal statutory rate of 35%	$ 59,878	$ 10,667	$ 125,833
State income taxes, net of Federal income tax effect	8,053	2,914	15,042
R&D tax credit	(13,841)	(1,803)	(8,365)
Other	4,581	1,550	886
Provision for income taxes	$ 58,671	$ 13,328	$ 133,396

The components of deferred tax assets and liabilities were as follows:

	As of December 31,	
	2013	2012
	(in thousands)	
Deferred tax assets (liabilities):		
Stock-based compensation	$ 69,201	$ 66,827
Accruals and reserves	13,022	11,155
Depreciation and amortization	(11,159)	(18,356)
R&D credits	19,196	8,480
Other	824	(244)
Total deferred tax assets	91,084	67,862
Valuation allowance	(481)	—
Net deferred tax assets	$ 90,603	$ 67,862

Deferred tax assets include $21.5 million and $11.0 million classified as “Other current assets” and $69.1 million and $56.9 million classified as “Other non-current assets” in the Consolidated Balance Sheets as of December 31, 2013 and 2012, respectively. In evaluating its ability to realize the net deferred tax assets, the Company considered all available positive and negative evidence, including its past operating results and the forecast of future market growth, forecasted earnings, future taxable income, and prudent and feasible tax planning strategies. As of December 31, 2013 and 2012, it was considered more likely than not that substantially all deferred tax assets would be realized, and no significant valuation allowance was recorded.

As of December 31, 2013, our federal R&D tax credit and state tax credit carryforwards for tax return purposes were $16.3 million and $29.7 million, respectively. The federal R&D tax credit carryforwards expire in 2033. State tax credit carryforwards of $0.9 million expire in 2023 and the remaining tax credit carryforwards of $28.8 million can be carried forward indefinitely.

On January 2, 2013, the American Taxpayer Relief Act of 2012 (H.R. 8) was signed into law which retroactively extends the Federal research and development credit from January 1, 2012 through December 31, 2013. As a result, the Company recognized the retroactive benefit of the Federal research and development credit of approximately $3.1 million as a discrete item in the first quarter of 2013, the period in which the legislation was enacted.

The Company classifies unrecognized tax benefits that are not expected to result in payment or receipt of cash within one year as “Other non-current liabilities” in the Consolidated Balance Sheets. As of December 31, 2013, the total amount of gross unrecognized tax benefits was $68.2 million, of which $57.0 million, if recognized, would favorably impact the Company’s effective

tax rate. The aggregate changes in the Company's total gross amount of unrecognized tax benefits are summarized as follows (in thousands):

Balance as of December 31, 2011	$	28,133
Increases related to tax positions taken during prior periods		8,487
Decreases related to tax positions taken during prior periods		(320)
Increases related to tax positions taken during the current period		7,037
Balance as of December 31, 2012	$	43,337
Increases related to tax positions taken during prior periods		4
Decreases related to tax positions taken during prior periods		(25)
Increases related to tax positions taken during the current period		24,915
Balance as of December 31, 2013	$	68,231

The Company includes interest and penalties related to unrecognized tax benefits within the provision for income taxes. As of December 31, 2013 and December 31, 2012, the total amount of gross interest and penalties accrued was $3.9 million and $3.1 million, respectively, which is classified as "Other non-current liabilities" in the Consolidated Balance Sheets. Interest and penalties included in our provision for income taxes were not material in all the periods presented.

The Company files U.S. federal, state and foreign tax returns. The Company is currently under examination by the IRS for the years 2008 through 2011. The IRS has completed its Field Exam of the 2008 and 2009 federal tax returns and has issued a Revenue Agents Report with a proposed assessment primarily related to our R&D Credits claimed in those years. We have filed a protest against the proposed assessment and are currently awaiting the commencement of the IRS Appeals process. The IRS Field Exam of the 2010 and 2011 federal tax returns is still underway. The year 2012 remains subject to examination by the IRS.

The Company is also currently under examination by the state of California for the years 2006 and 2007. California has completed its Field Exam of the 2006 and 2007 California tax returns and has issued a Notice of Proposed Assessment primarily related to our R&D Credits claimed in those years. We have filed a protest against the proposed assessment and are currently awaiting the commencement of the Protest process with the Franchise Tax Board. The years 1997 through 2005, as well as 2008 through 2012, remain subject to examination by the state of California.

The Company is currently not under examination in any foreign jurisdiction. The years 2011 and 2012 remain subject to examination by foreign jurisdictions.

Given the potential outcome of the current examinations as well as the impact of the current examinations on the potential expiration of the statute of limitations, it is reasonably possible that the balance of unrecognized tax benefits could significantly change within the next twelve months. However, at this time, an estimate of the range of reasonably possible adjustments to the balance of unrecognized tax benefits cannot be made.

11. Employee Benefit Plan

The Company maintains a 401(k) savings plan covering substantially all of its employees. Eligible employees may contribute up to 60% of their annual salary through payroll deductions, but not more than the statutory limits set by the Internal Revenue Service. The Company matches employee contributions at the discretion of the Board. During 2013, 2012 and 2011, the Company's matching contributions totaled $6.5 million, $5.2 million and $4.0 million, respectively.

12. Segment Information

Beginning in the fourth quarter of 2011, the Company has three operating segments: Domestic streaming, International streaming and Domestic DVD. Segment information is presented along the same lines that the Company's chief operating decision maker reviews the operating results in assessing performance and allocating resources. The Company's chief operating decision maker reviews revenue and contribution profit for each of the reportable segments. Contribution profit (loss) is defined as revenues less cost of revenues and marketing expenses directly incurred by the segment.

The Domestic and International streaming segments derive revenues from monthly membership fees for services consisting solely of streaming content. The Domestic DVD segment derives revenues from monthly membership fees for services consisting solely of DVD-by-mail. Revenues and the related payment card fees are attributed to the operating segment based on the nature of the underlying membership (DVD or streaming) and the geographic region from which the membership originates. There are no internal revenue transactions between the Company's reporting segments.

Cost of revenues are primarily attributed to the operating segment based on the amounts directly incurred by the segment to obtain content and deliver it to the specific region. Marketing expenses are primarily comprised of advertising expenses which are generally included in the segment in which the expenditures are directly incurred.

The Company's long-lived tangible assets were located as follows:

	As of December 31,	
	2013	2012
	(in thousands)	
United States	$ 126,455	$ 127,712
International	7,150	3,969

Prior to the fourth quarter of 2011 the Company had two operating segments: Domestic and International. During this time, the Company's domestic streaming content and DVD-by-mail operations were combined. Members in the United States were able to receive both streaming content and DVDs under a single hybrid plan. Accordingly, revenues were generated and marketing expenses were incurred in connection with the membership offerings as a whole. Therefore, it is impracticable to allocate revenues or marketing expenses or present discrete segment information for the Domestic streaming and Domestic DVD segments for periods prior to the fourth quarter of 2011.

In the third quarter of 2011, the Company made certain changes to its domestic pricing and plan structure which require members who wish to receive both DVDs-by-mail and streaming content to have two separate membership plans. Following this change, beginning in the fourth quarter of 2011, the Company was able to generate discrete financial information for its Domestic DVD and Domestic streaming operations and began reporting this information to the chief operating decision maker for review.

The following tables represent segment information for the year ended December 31, 2013:

	As of/Year ended December 31, 2013			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total members at end of period (1)	33,420	10,930	6,930	—
Revenues	$ 2,751,375	$ 712,390	$ 910,797	$ 4,374,562
Cost of revenues	1,849,154	774,753	459,349	3,083,256
Marketing	279,454	211,969	12,466	503,889
Contribution profit (loss)	$ 622,767	$ (274,332)	$ 438,982	$ 787,417
Other operating expenses				559,070
Operating income				228,347
Other income (expense)				(57,273)
Provision for income taxes				58,671
Net income				$ 112,403

	As of/Year ended December 31, 2013			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total content library, net	$ 2,973,023	$ 804,690	$ 19,779	$ 3,797,492
Amortization of content library	1,420,076	701,905	71,325	2,193,306

The following tables represent segment information for the year ended December 31, 2012:

	As of/Year ended December 31, 2012			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total members at end of period (1)	27,146	6,121	8,224	—
Revenues	$ 2,184,868	$ 287,542	$ 1,136,872	$ 3,609,282
Cost of revenues	1,558,864	475,570	591,432	2,625,866
Marketing	256,995	201,115	7,290	465,400
Contribution profit (loss)	$ 369,009	$ (389,143)	$ 538,150	$ 518,016
Other operating expenses				468,024
Operating income				49,992
Other income (expense)				(19,512)
Provision for income taxes				13,328
Net income				$ 17,152

	As of/Year ended December 31, 2012			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total content library, net	$ 2,317,070	$ 527,235	$ 29,865	$ 2,874,170
Amortization of content library	1,152,446	438,772	65,396	1,656,614

The following table represents the Company's segment information for the fourth quarter of 2011:

	As of/Three Months ended December 31, 2011			
	Domestic Streaming	International Streaming	Domestic DVD	Consolidated
	(in thousands)			
Total members at end of period (1)	21,671	1,858	11,165	—
Revenues	$ 476,334	$ 28,988	$ 370,253	$ 875,575
Cost of revenues	345,026	55,909	174,220	575,155
Marketing	73,335	32,822	1,490	107,647
Contribution profit (loss)	$ 57,973	$ (59,743)	$ 194,543	$ 192,773
Other operating expenses				130,901
Operating income				61,872
Other income (expense)				(5,037)
Provision for income taxes				21,616
Net income				$ 35,219

The following table represents the Company’s segment information for the year ended December 31, 2011 based on the Company’s segment reporting prior to the fourth quarter of 2011:

	As of/Year ended December 31, 2011		
	Domestic	International	Consolidated
		(in thousands)	
Total unique members at end of period (1) (2)	24,395	1,858	26,253
Revenues	$ 3,121,727	$ 82,850	$ 3,204,577
Cost of revenues	1,932,419	107,482	2,039,901
Marketing	302,752	78,517	381,269
Contribution profit (loss)	$ 886,556	$ (103,149)	$ 783,407
Other operating expenses			407,339
Operating income			376,068
Other income (expense)			(16,546)
Provision for income taxes			133,396
Net income			$ 226,126

(1) A membership (also referred to as a subscription) is defined as the right to receive either the Netflix streaming service or Netflix DVD service. Memberships are assigned to territories based on the geographic location used at time of sign up as determined by our internal systems, which utilize industry standard geo-location technology. The Company offers free-trial memberships to new and certain rejoining members. For inclusion in the definition of a member in the above metrics, a method of payment is required to be provided even during the free-trial period. Total members therefore include those who are on a free-trial and have provided a method of payment. A membership would be canceled and cease to be reflected in the above metrics as of the effective cancellation date. Voluntary cancellations become effective at the end of the monthly membership period, while involuntary cancellation of the service, as a result of a failed method of payment, becomes effective immediately.

(2) For purposes of determining the number of unique members, domestic members who have elected both a DVD and a streaming membership plan are considered a single unique member.

13. Selected Quarterly Financial Data (Unaudited)

	December 31	September 30	June 30	March 31
		(in thousands, except for per share data)		
2013				
Total revenues	$ 1,175,230	$ 1,105,999	$ 1,069,372	$ 1,023,961
Gross profit	363,381	314,980	315,847	297,098
Net income	48,421	31,822	29,471	2,689
Earnings per share:				
Basic	$ 0.81	$ 0.54	$ 0.51	$ 0.05
Diluted	0.79	0.52	0.49	0.05
2012				
Total revenues	$ 945,239	$ 905,089	$ 889,163	$ 869,791
Gross profit	249,372	242,451	245,735	245,858
Net income (loss)	7,897	7,675	6,164	(4,584)
Earnings (loss) per share:				
Basic	$ 0.14	$ 0.14	$ 0.11	$ (0.08)
Diluted	0.13	0.13	0.11	(0.08)

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Netflix, Inc.

Dated: January 31, 2014	By:	/S/ REED HASTINGS Reed Hastings Chief Executive Officer *(principal executive officer)*
Dated: January 31, 2014	By:	/S/ DAVID WELLS David Wells Chief Financial Officer *(principal financial and accounting officer)*

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Reed Hastings and David Wells, and each of them, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments to this Report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his substitute or substituted, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities and Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/S/ REED HASTINGS Reed Hastings	President, Chief Executive Officer and Director (principal executive officer)	January 31, 2014
/S/ DAVID WELLS David Wells	Chief Financial Officer (principal financial and accounting officer)	January 31, 2014
/S/ RICHARD BARTON Richard Barton	Director	January 31, 2014
/S/ TIMOTHY M. HALEY Timothy M. Haley	Director	January 31, 2014
/S/ JAY C. HOAG Jay C. Hoag	Director	January 31, 2014
/S/ ANN MATHER Ann Mather	Director	January 31, 2014
/S/ A. GEORGE BATTLE A. George Battle	Director	January 31, 2014
/S/ LESLIE J. KILGORE Leslie J. Kilgore	Director	January 31, 2014

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EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation	10-Q	000-49802	3.1	August 2, 2004	
3.2	Amended and Restated Bylaws	8-K	000-49802	3.1	March 20, 2009	
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	10-Q	000-49802	3.3	August 2, 2004	
3.5	Certificate of Elimination of Rights, Preferences and Privileges of Series A Participating Preferred Stock	8-K	001-35727	3.1	December 30, 2013	
4.1	Form of Common Stock Certificate	S-1/A	333-83878	4.1	April 16, 2002	
4.2	Indenture, dated as of February 1, 2013, by and between the Company and Wells Fargo Bank, National Association, as Trustee.	8-K	001-35727	4.1	February 1, 2013	
10.1†	Form of Indemnification Agreement entered into by the registrant with each of its executive officers and directors	S-1/A	333-83878	10.1	March 20, 2002	
10.2†	2002 Employee Stock Purchase Plan	Def 14A	000-49802	A	April 8, 2010	
10.3†	Amended and Restated 2002 Stock Plan	Def 14A	000-49802	A	March 31, 2006	
10.4†	2011 Stock Plan	Def 14A	000-49802	A	April 20, 2011	
10.5†	Description of Director Equity Compensation Plan	8-K	000-49802	99.2	June 16, 2010	
10.6†	Description of Director Equity Compensation Plan	8-K	000-49802	10.1	December 28, 2009	
10.7†	Amended and Restated Executive Severance and Retention Incentive Plan	10-K	000-49802	10.7	February 1, 2013	
21.1	List of Significant Subsidiaries					X
23.1	Consent of Ernst & Young LLP					X
23.2	Consent of KPMG LLP					X
24	Power of Attorney (see signature page)					
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certifications of Chief Executive Officer and Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101	The following financial information from Netflix, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2013 filed with the SEC on January 31, 2014, formatted in XBRL includes: (i) Consolidated Statements of Operations for the Years Ended December 31, 2013, 2012 and 2011, (ii) Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2013, 2012 and 2011, (iii) Consolidated Statements of Cash Flows for the Years Ended December 31, 2013, 2012 and 2011, (iv) Consolidated Balance					

Sheets as of December 31, 2013 and 2012, (v) Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2013, 2012 and 2011 and (vi) the Notes to Consolidated Financial Statements.		X

* These certifications are not deemed filed by the SEC and are not to be incorporated by reference in any filing we make under the Securities Act of 1933 or the Securities Exchange Act of 1934, irrespective of any general incorporation language in any filings.

† Indicates a management contract or compensatory plan

MEDIA

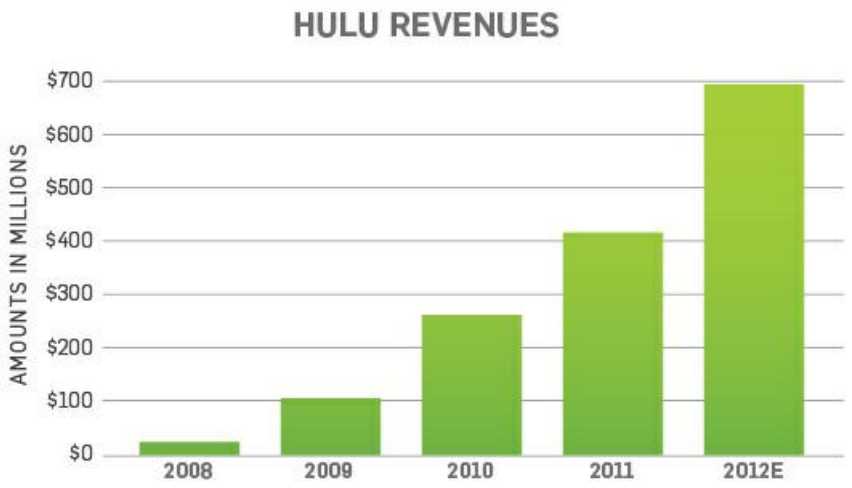
Embrace the mushy mush! Hulu's 2012 numbers are a mixed bag

JVG DECEMBER 17, 2012 12:40 PM

Hulu's "evil" plot to destroy the world and turn your brain to mushy mush is working — at least in part.

The streaming video company grew revenue by 65 percent year-over-year and will bring home about $695 million in revenue for 2012, CEO Jason Kilar wrote in a blog post Monday morning. Better still, Hulu's premium offering, Hulu Plus, doubled its subscriber base and will finish 2012 with more than 3 million paying customers. Competitor Netflix has 30 million streaming subscribers.

The uptick in revenue and customers is likely the result of the company's push to get Hulu Plus on more devices and its fulfilled commitment to add more content.



This year, Hulu launched Hulu Plus for Apple TV, Nintendo Wii and Wii U, and Windows 8 tablets. Hulu Plus, Kilar said, can now be accessed on 320 million Internet connected devices in the U.S., a figure that doesn't include PCs. Hulu, as promised, also spent more than $500 million on content deals in 2012 and increased its selection of titles by 40 percent.

"At Hulu, we are doubly fortunate in that we are at the crest of two massive waves that we believe will persist for the long term: the rise of online video advertising and the rise of online video subscription services," Kilar said.

So, just say yes to the mushy mush — the mushy-mush status report, that is. Hulu has done an okay job adding screens, bringing in fresh content for all ages, creating original series, signing additional advertisers, and attracting subscribers. But at what cost?

After subtracting content acquisition costs, Hulu made about $200 million this year. Then, there's the undisclosed sum that Hulu spends on customer acquisition. The company often runs elaborate, celebrity-endorsed ads, and even ran a 2012 Super Bowl spot (embedded below) featuring Will Arnett that cost around $3.5 million just to broadcast. That $700 million revenue figure is sounding less impressive by the minute.

Plus, 2013 could be a problematic year for the five-year-old brand. Kilar is rumored to be on his way out the door and the service seems ready to adopt a tweaked model that would make it a less attractive destination for online viewers.

Photo credit: lhuga/Flickr

The New Economics of the Music Industry

How artists really make money in the cloud – or don't

Adele onstage at the MTV Video Music Awards. Kevin Mazur/WireImage

By Steve Knopper
October 25, 2011

In the old days, it was much easier for pop stars to keep up with how much they were getting paid. Somebody would buy a CD at a Tower Records for $15 and a few dollars would appear months later on the star's royalty sheet. Then iTunes took over the record business, and it was even easier (if not more profitable) – every time somebody bought a 99-cent track, a few pennies went into the artist's bank account.

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Those were such simple times. Today, music fans play free music videos on YouTube, stream songs for free on Spotify, MOG or Rdio, customize Internet radio stations on Pandora or Slacker and consume music a zillion different ways. The fractions of pennies artists make for each of these services are nearly impossible to track – at least for now. "People like to simplify this and say, 'There's no money in it,'" says Jeff Price, founder of TuneCore, which charges artists to place songs directly into iTunes, Spotify and others. "But it's complex, it's complicated and it's still being worked out."

So you're Adele, the year's biggest pop star. Your songs stream on Spotify – or MOG, Rdio, Pandora or YouTube. You still sell downloads through iTunes and Amazon, and you still sell old-fashioned CDs in old-fashioned record stores. How much do you get paid?

Rolling Stone talked to several sources in the music business and got several different answers.

SUBSCRIPTION SERVICES

Spotify, MOG, Rdio and other subscription services are either free (with ads) or charge users monthly fees for unlimited streaming music. The quick calculation, according to one band manager: If a song gets streamed 60 times, the songwriter receives 9.1 cents in mechanical royalty payments. And the performing artist gets 38 cents (or splits that money, half and half, with a record label, per contract).

(**UPDATE:** A music-business source contacted us after this article appeared to clarify that these numbers were estimates based on one manager's royalty statements. They are not an actual formula Spotify and music publishers use to calculate their songwriting royalty payments. This manager's royalties could change as Spotify's subscriber numbers change, and they vary depending on the streaming popularity for each artist. This source explained to us, again, the actual formula used for determining artist royalties from streaming services – as Price says, it is too ridiculously complicated to reproduce here.)

Maybe you don't want to know the non-quick formula. "It is beyond complicated. It took me literally three months to understand this thing," says Jeff Price, founder of TuneCore, which charges artists $10 (for a single) and $50 (album) to place music in online stores such as iTunes and Amazon, as well as subscription services like Spotify and MOG.

Generally speaking, songwriters make about 10.5 percent of Spotify or MOG revenue. "However, each service has to run literally five formulas each month -- on calculation number one, they have Subsection Number One and Subsection Number Two," Price says.

"They throw out the higher of those and then compare that one against the other three. After that, they have to run this formula five different times."

Because the formulae are so byzantine, and the royalty payments that show up on audit sheets are still so tiny, very few artist lawyers and managers truly understand how much they could make – one day – from Spotify, MOG, Rdio or the other relatively new streaming services.

But Price makes the point that Spotify and the others encourage music fans to explore, listening to songs they might not have purchased. Even if it's not a rock-star payday, it's something. "Is it big money? I think it could be! I really do," says Jim Guerinot, manager of Nine Inch Nails and No Doubt.

NEXT: iTunes

ITUNES

Adele, who is signed to Sony Music, sells "Rolling in the Deep" for $1.29. Apple, as the retailer, keeps 30 percent, or roughly 40 cents. The rest, 90 cents, goes to Sony. From that, the major record label must deduct 9.1 cents as a "mechanical royalty," paid to Adele and her co-writer, Paul Epworth (although they might split it with their respective publishing companies). That leaves about 81 cents.

Typical record contracts give artists 12 to 20 percent of sales, depending on the hugeness of the star, so let's split the difference and say Adele's percent is 16. That comes out of the original $1.29 price – so the artist's cut for sale of the master recording is about 20 cents. (This is assuming Adele has made enough to "recoup" the expenses for her album – otherwise, it just contributes to paying off

her debt to her record company.) And the remainder, a grand total of 60 cents, goes to Sony to pay for marketing, publicity, videos, executive salaries and obviously, profit.

Of course, many artists don't want to share nearly half of their revenues with a major label like Sony, which is essentially a middleman. Before the Internet, and stuff like ProTools, an artist had to sign with a label even to be heard. That's obviously no longer true. Today, an artist can pay a service like TuneCore to be included in the iTunes Store. At that point, after Apple takes its cut, the entire 90 cents goes to the artist.

"When we released the first Puscifer record, we went to a major distributor," says Maynard James Keenan, frontman for Tool, A Perfect Circle and indie band Puscifer, which put out *Conditions of My Parole* on its own earlier this week. "There was still this groaning dinosaur, grasping at straws, trying to get out of the tar pits. They were still doing things the old-school way, throwing my money at things that really didn't matter. And there are always these little extra fees when you try to go through channels – distribution fees, hidden costs. All these things really add up. It doesn't seem like you can really make a living off that. I pulled out of that this time. It just makes more sense."

NEXT: YouTube and Vevo

YOUTUBE AND VEVO

Over the past couple of years, YouTube has grown into a lucrative machine for record labels. Popular videos – those that generate hits in the millions – can be festooned with ads, and YouTube shares

that revenue with the copyright holders. And it can be just as lucrative for goofy, homemade videos that use popular songs as it is for stars' original videos. For the homemade stuff, the system works like this: JK Wedding Entrance Dance, in which Chris Brown's "Forever" is the soundtrack, has racked up more than 70 million views since its debut in July 2009.

After the video was becoming a huge hit, YouTube's content identification people and employees of Brown's record label, Sony, had a conversation. The label had two options: Because YouTube isn't a piracy service, like Kazaa or LimeWire, it could take down the video immediately – or it could sell ads against it. According to music-business sources, a top artist might make $1 per 1,000 video plays -- so Sony has received, by our rough estimates, $70,000 for the JK Wedding Entrance Dance. (Vevo can draw five or 10 times that amount.) And artists get a fraction of that based on the percentages in their contracts. Which did Sony choose? Well, check out the multitude of ads, inside and outside the video box, throughout JK Wedding Dance.

Of course, truly independent artists – like video kings OK Go, who recently split with their longtime label EMI – are in a much better position in this scenario. "I know individual artists who make tens of thousands of dollars a month on YouTube," says Eric Garland, CEO of BigChampagne.com, which measures online metrics such as illegal file-sharing numbers and sells the data back to labels. "And I know of individual artists who make more money on an individual basis from YouTube than they do from iTunes."

NEXT: Internet Radio

INTERNET RADIO

After years of fighting over pennies, Internet radio services reached an agreement with artists, music publishers and record labels a few years ago on royalty payments. The rates go up every year, but the broad formula is that big "pure play" companies, such as Pandora and Slacker, pay either 25 percent of their total revenue per year, or a little more than $.001 per song -- whichever is greater. These payments go to a music-business collection agency known as SoundExchange, which then pays 50 percent of it to the copyright owner (usually a record label like Warner or Sony), 45 percent to the artist and 5 percent to non-featured performers. Smaller Internet radio companies pay slightly lower rates.

Anu Kirk, product lead for MOG, said at the recent Digital Music Forum in Los Angeles that Pandora winds up paying out much less than that – about a tenth of a penny per play. "It sucks that right now that artists are getting paid so little money by subscription services, but it sucks that artists are getting paid so little money by everyone," Kirk said.

David Hyman, CEO of MOG, won't divulge his subscriber numbers, but he offers broad royalty estimates that apply to both Pandora-style radio and MOG-style subscriptions. "Let's say MOG has 1 million subscribers and everyone's paying $10 per month. And let's say the labels got 60 percent of that. Now, each label gets their piece of 60 percent based on frequency of plays. So if Warner [Music, a major label] was 30 percent of all plays in a given month, then Warner gets 30 percent of that 60 percent," he says. "Then they get a wad of money. Once they get that wad of money, how do they distribute it internally? I have no idea."

NEXT: CDs

CDs

Speaking of wads of money, CDs were intensely profitable for artists and (especially) record labels for more than two decades, until the Internet, MP3s, piracy, Napster, iTunes, YouTube and Spotify kicked in over the past 10 years. The formula for artist payment is roughly the same as the iTunes model – only labels have traditionally removed hefty percentages for mysterious deductions.

Josh Grier, veteran music-business attorney for Wilco, Ryan Adams and others, walks us through the math. The retailer takes out about 30 percent of the suggested $17.98 price, or $5.40. From what's left, the songwriter and publishing company remove another 9.1 cents per song – or say, 91 cents for 10 songs. That leaves $11.67. (Often, producers take a cut as well.) From that, the artist receives 12 to 20 percent – let's use 16 to split the difference.

But Grier points out that labels have been cutting into artist royalties for years with deductions marked "free goods" (usually 10 percent of the artist's royalty) and "packaging" (usually 25 percent) -- dropping the royalty rate from roughly 16 to 11. (These old-school deductions for physical CDs and LPs don't apply to digital sales.)

In the end, in very broad terms, that leaves about $1.93 per sale in profit for the artist and $9.74 for the label. (We're assuming, once again, that the artist in question has recouped expenses, meaning he or she no longer has to pay back a record label for videos, tour support and so forth.) Of course, both need to remove their own expenses from that.

A decade ago, this disparity in payments was a huge point of contention between artists and the labels they worked for. That's still true today, but artists are far more likely to throw up their hands and say, "Who gives a crap? Let's just make a pile from touring." Says Grier: "The questions you're having are not all that relevant to the band. 'How many records are we going to sell? *Pfpfpfpft*. We just want to play the songs.'"

Comments

JSEL Journal of Sports & Entertainment Law
HARVARD LAW SCHOOL

Harvard Journal of Sports and Entertainment Law

Interviews December 19, 2016

Interview with Spotify General Counsel Horacio Gutierrez

The Journal on Sports and Entertainment Law recently sat down with attorney Horacio Gutierrez, General Counsel of Spotify, to discuss current issues in music streaming law. As Spotify's top lawyer, Mr. Gutierrez is responsible for overseeing Spotify's legal, compliance and regulatory affairs around the world, and serves as corporate secretary to its board of directors. Mr. Gutierrez received his LLM from Harvard Law School in 1991 as a Fulbright Scholar, a LL.B as from Universidad Católica Andres Bello in Caracas, Venezuela, and a JD from the University of Miami in 1998.

The interview was conducted by Loren Shokes (Class of 2017), the Executive Editor of Online Content and the Online Interview Editor for the Harvard Journal of Sports and Entertainment Law. The interview is part of JSEL's interview series with lawyers in the entertainment and sports field that will be featured on JSEL's website. It has been edited for clarity.

Please note that, throughout this interview, Mr. Gutierrez was speaking in his capacity as an individual and a scholar, and not as a representative of Spotify

Loren Shokes, Journal on Sports & Entertainment Law (JSEL): With over 100 million active users as of June 2016, Spotify is undoubtedly the titan of music streaming. Nonetheless, there is increasing competition from other streaming services such as Apple Music, Tidal, Pandora, and Amazon Music Unlimited. With that in mind, how has Spotify been working to ensure that it not only retains, but also expands, its customer base?

Horacio Gutierrez (HG): The only way a company like Spotify can get, and stay, ahead in the technology industry is through a combination of two key things: *innovation*—in technology, business model, as well as in other aspects the service that we provide our customers; and *customers delight* —we have to not only satisfy customers, but even surprise and delight them, by offering them experiences they don't get in other services. The combination of those two things is the only way that we can be sure to remain a leading force for years to come.

JSEL: There have been increasing demands from artists, music executives, and record labels for Congress to enact mandatory minimums for streaming services as many view streaming service's payment structures as unsustainable for musicians and labels alike. Spotify disclosed that it pays an average of $0.006 to $.0084 cents per song streamed and other streaming services pay both lower and higher rates for the same content. Do you think that mandatory minimums are necessary or should streaming companies be able to continue to set their own rates and payment structures?

HG: It is not accurate to say that streaming companies set their own rates and structures. Rates are the result of negotiations with rights holders; record labels, publishers and the other players in the music industry. One of the things that inspired the creation of Spotify and is part of the DNA of the company from the day it launched (and remember the service was launched for the first time around 8 years ago) was addressing one of the biggest questions that everyone in the music industry had at the time—how would one tackle and combat online piracy in music? Spotify was determined from the very beginning to provide a fully licensed, legal alternative for online music consumption that people would prefer over piracy. If you look at what has happened since the launch of the Spotify service, we have been incredibly successful on that score. Figures coming out the music industry show that after 15 years of revenue losses in music industry, the music industry is once again growing thanks to music streaming.

Most people do not realize that over 70% of all the revenue Spotify generates goes back to the creative community that owns the right to the music content that we distribute through our service; artists, songwriters, record labels, publishers. That's as it should be. Our success translates into the success of the music industry and vice-versa.

The key question going forward is if the growth is sustainable, and I believe it is. We have opportunities to continue to grow geographically, in terms of further penetration of the markets in which we already operate in, in terms of our ability to convert free users to our premium service, and in our ability to monetize other aspects of our service, including our free tier. If we can succeed doing that, we will all benefit. Everyone in the music industry benefits and the number of people who will be able to make a living, whether they are performers, songwriters, other artists, or people in the services associated with the music industry. The number of people who will be able to live off their craft and their creations will continue to increase. We see that as part of the mission. But in order to do that, we must have a profitable business. And therefore, while everyone should benefit, we also need to be able to fund the investments we are making on innovation from a technology perspective, and to fund our infrastructure and expansion into new markets. Striking a balance among those things is not a trivial thing; it is hard to do but we think, if anything, Spotify is an example that in fact that can be done in a fair and balanced way.

JSEL: There is more and more discussion that Spotify is planning to announce its IPO sometime in either late 2016 or early 2017. Although Spotify's revenues have grown each year since its launch in 2006 and the company has a current valuation of approximately $8 billion, Spotify has reported a loss every year since 2009. With that in mind, how can Spotify convince investors that its business model is not only sustainable but is also a worthwhile and profitable investment?

HG: I cannot comment on IPO plans or provide forward-looking financial information. We take the long view when it comes to these things. We're making the investments now that are necessary for us to continue to grow as a business and remain a leader in the industry, and we will continue to do so in the future.

JSEL: In response to criticisms that Spotify underpays artists, Spotify claims that it has helped reduce piracy by migrating listeners away from piracy websites and less monetized platforms, to its free, ad-supported tier, thereby generating far greater royalties for labels and artists alike. Furthermore, once customers begin using Spotify's free tier, the company tries to drive users to its premium subscription tier. Do you think that the criticisms against Spotify's payout structure are unwarranted and that the counterargument that it has helped curb the piracy plague is sufficient?

HG: I think one just has to look at data to recognize that the freemium model for online music consumption works. Our free tier is a key to attracting users away from online piracy, and Spotify's success is proof that the model works. We have data around the world that shows that it works, that in fact we are making inroads against piracy because we offer an ability for those users to have a better experience with higher quality content, variety richer catalogue, and a number of other user-minded features that make the experience much better for the user. As we continue to succeed in monetizing the free tier, and continue to do a good job of converting free users to paid subscribers in the way we have done so far, we have a proven formula and a formula that, once again, will benefit everyone in the industry.

JSEL: Prior to joining Spotify, you worked at Microsoft for 17 years and your last role at the technology conglomerate was General Counsel. Can you compare your duties and responsibilities as General Counsel for Microsoft to those in your role as General Counsel of the world's largest music streaming service?

HG: There are some aspects of the day-to-day role that are very similar. Fundamentally, setting aside the difference in size and breadth of the respective businesses, Microsoft and Spotify are both technology companies. There's a tremendous amount of software innovation that takes place in both places; both companies care deeply about understanding their users and using the insights generated from usage patters in order to have a closer understanding of its users and provide more value to them in the form of services. And that raises similar kinds of legal and regulatory questions that one has to deal with on a daily basis. There are issues about the protection of the privacy of the personal data of users; there are issues related to the regulatory environment from net neutrality to competition law to other telecommunication regulatory issues; clearly there are intellectual property and IP licensing related questions on both sides, even though in the case of Spotify it is more heavily focused on music and other content-related copyright. Spotify's business, like Microsoft's, is an intellectual property-based business in many significant ways. Being able to enter into licensing agreements with the key stakeholders is important for both companies. So in some respects it is very similar. In others, it is very different. Spotify is a company that has fewer than 3,000 employees. Microsoft has over 100,000 employees. The legal department at Microsoft is multiple times larger than the legal department at Spotify. That in and of itself is a reflection of stage of development of Spotify and the nature of its business as compared to a company that really is a conglomerate of several multi-billion dollar businesses like Microsoft is. So I am certainly enjoying the learning curve that I'm going through at Spotify, especially when it comes to the music copyright and music licensing space, but in other respects it's just a continuation of a learning curve that had started at Microsoft.

JSEL: I read that you graduated from Universidad Católica Andrés Bello law school in Caracas, Venezuela in 1986, where you also obtained a Specialization in Corporate and Commercial Law, then received an LLM from Harvard Law School in 1991 as a Fulbright Scholar. And yet, despite having two law degrees, you pursued a J.D. from the University of Miami in 1998. When recollecting on your experience at UM, you explained that, "it wasn't until I obtained my J.D. at UM that my career really took off." Many of our readers are graduates of foreign law schools and either have, or are in the process of obtaining, an LLM from Harvard Law School and hope to practice law in the U.S. Can you explain why you felt that having a J.D. from an American law school helped your career.

HG: There was one very concrete reason why I needed to have it and then sort of a general reason why I think became helpful later on. It is unusual for someone who has basically three law degrees to decide to go to law school at night to get a fourth one the way I did it after working full time. At the time I lived in Florida, and

Florida, like some other states in the US, required that in order to sit for the bar exam, one actually needs a JD from an ABA accredited university. I was already admitted in New York (I had taken the bar exam in New York after my LLM at Harvard and had passed and was a member of the New York bar) but was not, and could not, have become a member of the Florida bar had I not completed the Juris Doctorate program. So that was the more pressing, practical reason why I did it.

In hindsight, and even though it was a tremendous sacrifice from a personal and from a family perspective (I always tell people the story of how my second daughter was born the night of the property law exam and joke that I almost named her "Rule Against Perpetuities") that in the end having gone through the JD program in addition to the LLM did two things for me. First, it gave me a deeper understanding of the common law system, in a way that the LLM program really did not provide. An LLM will give you depth in a focused field of law or will give you breadth in a variety of fields of law, depending on which approach you choose to take. I had chosen to focus on corporate law, corporate finance, and international finance in my LLM, but there were a number of other important subjects of law, in some ways the "building blocks" of the US legal system, which I did not have an opportunity to focus on during my one year LLM. So the JD did that for me—it gave me the ability to more deeply understand the US legal system and, in the process, do a comparative law exercise based on my previous experience in the civil law system. The other thing that it did was help remove any doubts in people's minds, including potential employers, as to whether I was in fact fully qualified to practice law in the US. And regardless of the fact that I had been admitted to practice in New York and could have waived into the bars other jurisdictions in the United States, I think sometimes employers erroneously assume that a foreign law degree does not prepare you well enough to practice law in the United States.

JSEL: Through your various positions throughout your career as an attorney you have been exposed to both civil and common law jurisdictions. I read that when you began working for Microsoft you were as a commercial attorney for the Latin America region in Fort Lauderdale, you then transferred to Microsoft's corporate headquarters in Redmond, Washington, then you were stationed in Paris as Associate General Counsel for Europe Middle East and Africa, and ultimately back to the company's headquarters in Washington state where you worked as the Deputy General Counsel and finally as General Counsel. Moreover, while you were still enrolled at the University of Miami, you worked full time at the law firm Morgan Lewis LLP as an international consultant. Within the last 10 years, Spotify has expanded to over 50 countries on 5 continents, some of which are civil law countries and others are common law jurisdictions. How has your prior experience helped you in your position as General Counsel to manage the various types of legal issues that arise in the jurisdictions Spotify is based?

HG: Well just as the economy is now globalized, the practice of law has similar become global. And while no single person will be admitted to practice in every jurisdiction around the world, the reality is that in-house counsel must be prepared to navigate very disparate legal regimes in different parts of the world, including the very different cultural traditions and philosophical foundations of those different legal systems. So the experience I had, both prior to joining Microsoft as well as during my Microsoft tenure, was very international in nature. As we've discussed, I was trained and practiced as a lawyer in a civil law jurisdiction then I was trained and practiced as a lawyer in the United States. I led Microsoft's legal department in Europe, the Middle East, and Africa region, and when I returned to Microsoft's headquarters in Washington State my practice continued to have an international component. So I believe that the opportunity to have worked in those jurisdictions, to have visited there frequently, to have negotiated transactions and interacted with practitioners, regulators and policy makers around the world, has been key to my ability to take on the role that I am now performing at Spotify. As you said, Spotify is still in the process of expanding internationally, it is itself a very globally minded company, and if I had not had the kind of global breadth of the practice that I had before coming here, I might never had the opportunity to join Spotify as General Counsel.

JSEL: I read that you said that moving to Spotify "was just the right opportunity at the right time." What enticed you to work for Spotify?

HG: You don't leave a company like Microsoft, one that was so important to my professional and personal development, and you don't leave people that you respect and admire as much as I admired my colleagues at

Microsoft, unless you are passionate about the next opportunity you are pursuing. I had started at Microsoft basically an entry-level corporate attorney and over seventeen years I climbed all the way to the General Counsel position. It was a tough decision to make. The thing that really attracted me to Spotify is the fact that the nature of the business was such that it fit very well to the skillsets I had developed, in the areas of intellectual property and intellectual property licensing, which is such an important part of the business of Spotify from a content licensing perspective, but also all these other international legal issues including global regulatory issues. But it was also the excitement about the experience of joining a company that was still in its early stages of development. It is as if I had joined Microsoft in 1982, a couple years before it became a public company. The opportunity to be a contributor to the development and execution of the strategy as the company continues to grow and expand just proved irresistible to me—the opportunity to be part of a project like that and start not quite from the beginning but certainly at a time in which the company still had quite a bit of room to grow and to expand and to become more successful. However long I have left in my professional legal career, this was the way I wanted to spend that time.

JSEL: Can you tell me more about your career path?

HG: Life has a way of taking you to places and most of the time the path that you take is not a straight line between points A and B. You take a number of turns. I've always guided my career decisions in part by a sense of where my competence lies but also where my heart wants to take me. I need to feel excited about the opportunity ahead of me, I need to feel proud of a project that I am joining and that is the reason why I left private practice to join Microsoft in 1998, and the reason why over the 17+ years there I took a variety of roles that really stretched my skill set and challenged me to go through steep learning curves. And that is why when the opportunity to join Spotify presented itself I decided to take it. It was not a predictable outcome for a kid born in a province of Venezuela and who did not speak English. And I think if you try to lay plans as to where you are going to be 10, 15, 20 years down the road, it is very unlikely that you're going to end at the place where you originally thought you were going to end up; you have to adjust your plans as you grow, mature, and as your interests and curiosity take you different places.

JSEL: What advice would you give law students interested in pursuing careers in technology and entertainment law and going in-house?

HG: The obvious part of that is there are a number of courses in the curriculum in law school that one can take. I don't think I can overemphasize the importance of taking intellectual property classes as well as international law classes. If someone wants to go in house, particularly in a technology company, whether they are dealing with questions related to competition law or corporate issues, those intellectual property issues tend to be part and parcel of practice within the technology industry. Having a global focus is really critical for companies nowadays who have a global marketplace. Especially today, there's a tremendous amount of focus on issues related to privacy, and other legal and regulatory aspects of the big data and machine learning and analytics, and all of the data sciences as they explode. Those are going to be the issues that technology companies will be dealing with in the future.

Tags: entertainment, General Counsel, intellectual property, slider, Spotify

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Pandora Reveals Its Spotify Competitor, Pandora Premium

12/6/2016 by Andrew Flanagan

Getty Images

If Spotify is for music lovers, Pandora Premium is aimed squarely at music listeners.

It's likely the last time this year you'll see the words "launches new streaming service."

After a just under a year of re-engineering Rdio, the well-liked streaming service it purchased last December for $75 million, and the launch of a mid-tier subscription service in September, Pandora has pulled the curtain off of its all-you-can-eat streaming service, called Pandora Premium, expected to be released in the first quarter of next year.

As December rain chilled guests waiting outside to see The 1975, Bishop Briggs and Bastille , amongst "our friends, advertisers, investors, the music industry, and of course our team" to present Pandora Premium. So is this new product, as Westergren teased in September, something we've never seen before ?

READ MORE
Pandora Subjected to Conflicting Reports of Its Availability for Sale

"If you think about the solutions that have been offered to date, they've essentially been on-demand," CEO Tim Westergren told the small crowd. "We really don't believe that's the right answer -- you see all the symptoms of a product that's not meeting peoples' needs yet"

To correct the imbalance, Pandora Premium leans heavily on the data it crafted through the Music Genome and through the

data it has collected -- to the tune of one billion data points a day, one executive told the crowd -- on its listeners.

Many things remain the same between its mid-tier subscription, Plus, and Premium, including offline listening based on thumbs cross-referenced with machine-mined music data. However, as with any all-you-can-eat streaming service, the catalog is vast, so at every turn Pandora Premium looks to funnel users towards its recommendations. Searching for music returns specific albums and artists as well as suggestions; creating a playlist comes with the option to pad it with suggestions that will differ between users; the end of a record, if the "AutoPlay" feature is activated, will be met with suggested songs based on the last played.

If Spotify is for music lovers, Pandora Premium is aimed squarely at music listeners.

READ MORE
Pandora Redesigns Its Web Platform, Unveils New Features

In addition to the backroom reconstruction and revivification of Rdio's most streamlined pieces, the company -- really, CEO Tim Westergren, who ousted former head Brian McAndrews over fundamental differences in philosophy -- spent much of the year attempting to repair its industry relationships, threadbare after years of bitter legal battles and clever, but clearly aggressive, attempts to lower their royalty responsibilities . Itsigned deals with its bitterest former rivals, ASCAP and BMI, last December. It announced a partnership with song database repository Music Reports in order to provide greater transparency around the royalties it pays. It struck direct deals with the major labels and Merlin, the world's largest independent label organization. (Its deal with Warner Music was struck, in a word, strangely.)

The climb was reflected in a tumultuous year on Wall Street for the Oakland-based company, which hit a past-year high of $15.26 per share last Dec. 17, a year low of $7.88 in February and a bumpy climb back to $13.71 as of this writing. Throughout it has been plagued, or blessed, by rumors of a sale or acquisition, most recently last Friday when (conflicting) rumors of SiriusXM's tire-kicking hit the wires.

Pandora is now one of, if not the, most diversified music-only tech company, with a formidable advertising business, a foundational music profiling technology, a (very expensive) ticketing company bolstered by reams of data about its listeners, a full-service streaming product, a much-used (78.1 million listeners monthly) radio product, and a medium-tier offering between either. It has also, like Spotify and Apple Music and Amazon and Vevo (and the entire media industry), has dipped its toe into original content with Questlove of The Roots ' radio show *Questlove Supreme*(in addition to the live shows it throws via band partnerships and sponsorships and later makes available for listening).

The labels cheer each new music-tech product launch, bolstering as they do both bottom lines and their control over the digital ecosystem (no license, no music). Whether 2017 will bring even more entrants or a dwindling of streaming services' numbers, there is at least, and thankfully, no returning to the days of the disc.

☐ COMMENTS

CO EX. R-71

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

Mon, 23 Jan 2017 08:00:00 EST

Sprint Acquires 33 Percent of TIDAL and Creates Game-Changing Partnership

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212-827-3753
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TIDAL and its artists to deliver exclusive content to help Sprint acquire new customers, reward current customers

Sprint will make TIDAL available to its 45 million post and prepaid customers

Sprint CEO Marcelo Claure to join TIDAL Board of Directors

NEW YORK and OVERLAND PARK, Kan. – Jan. 23, 2017 – Global music and entertainment platform TIDAL and Sprint (NYSE: S) announced today an unprecedented partnership that will soon give Sprint's 45 million retail customers unlimited access to exclusive artist content not available anywhere else.

TIDAL and its artists will make exclusive content that will only be available to current and new Sprint customers.

As part of the partnership, Sprint will acquire 33 percent of TIDAL. JAY Z and the artist-owners will continue to run TIDAL's artist-centric service as it pioneers and grows the direct

relationship between artists and fans. The formidable pairing of Sprint and TIDAL will grow customers on both platforms by offering exclusive access for customers who subscribe to TIDAL. Sprint's chief executive officer, Marcelo Claure, will also join TIDAL's Board of Directors.

"Sprint shares our view of revolutionizing the creative industry to allow artists to connect directly with their fans and reach their fullest, shared potential," said JAY Z. "Marcelo understood our goal right away and together we are excited to bring Sprint's 45 million customers an unmatched entertainment experience."

TIDAL is a global, experiential, entertainment platform built for fans, directly from artists around the world. Members of TIDAL enjoy unmatched exclusively curated content that directly connect artists with their fans in multiple ways. TIDAL is available in more than 52 countries, with a more than 42.5 million song catalog and 140,000 high-quality videos.

The innovative TIDAL platform, combined with Sprint's award-winning reliable network and best value for unlimited data, talk and text, will deliver a first-of-its-kind experience for music fans.

"Jay saw not only a business need, but a cultural one, and put his heart and grit into building TIDAL into a world-class music streaming platform that is unrivaled in quality and content," said Claure. "The passion and dedication that these artist-owners bring to fans will enable Sprint to offer new and existing customers access to exclusive content and entertainment experiences in a way no other service can."

More news on exclusive offers and upcoming promotions from Sprint and TIDAL will be unveiled soon.

Sprint's dedication to its customers and to artists is at the heart of the partnership. Part of that effort will include the establishment of a dedicated marketing fund specifically for artists. The fund will allow artists the flexibility to create and share their work with and for their fans.

The Sprint-TIDAL partnership comes on the heels of TIDAL's recent announcement revealing the availability of "Master" quality recordings. A wide variety of content from labels and artists, including Warner Music Group's world-renowned music catalogue, is now available in Master audio across all of TIDAL's available markets worldwide.

About TIDAL

TIDAL is a global, experiential, entertainment platform built for fans, directly from artists around the world. TIDAL members enjoy exclusively curated content that directly connect artists with their fans in multiple ways. The service offers high-fidelity, CD sound quality music, high resolution video, an opportunity to discover new artists via TIDAL Rising and unique experiences via TIDAL X. TIDAL is available in more than 52 countries, with more than a 42.5 million song catalog and 140,000 high quality videos. For more information, please visit www.tidal.com. Follow TIDAL at http://facebook.com/tidal, http://twitter.com/tidalhifi and https://instagram.com/tidal/

About Sprint

Sprint (NYSE: S) is a communications services company that creates more and better ways to connect its customers to the things they care about most. Sprint served 60.2 million connections as of September 30, 2016, and is widely recognized for developing, engineering and deploying innovative technologies, including the first wireless 4G service from a national carrier in the United States; leading no-contract brands including Virgin Mobile USA, Boost Mobile, and Assurance Wireless; instant national and international push-to-talk capabilities; and a global Tier 1 Internet backbone. Sprint has been named to the Dow Jones Sustainability Index (DJSI) North America for the past five years. You can learn more and visit Sprint at www.sprint.com or www.facebook.com/sprint and www.twitter.com/sprint.

Cautionary Note Regarding Forward-Looking Statements

18 Jan 2017

HTC Bolt™ Blazes into Boost Mobile Device Lineup
17 Jan 2017

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Sprint Depicts Verizon Customer Who Fakes His Own Death to Get Out of His Contract in Super Bowl LI Commercial
01 Feb 2017

Sprint Acquires 33 Percent of TIDAL and Creates Game-Changing Partnership
23 Jan 2017

Sprint's 1Million Project Online Donation Site Now Available to Help Disadvantaged High School Students
18 Jan 2017

Sprint Becomes First U.S. Partner of Pokémon GO
07 Dec 2016

IMPORTANT LINKS

Commitment to Privacy

Consumer Resources

Public Policy

Public Resources

This news release includes “forward-looking statements” within the meaning of the securities laws. The statements in this news release regarding Sprint Corporation’s current expectations and beliefs as well as other statements about the partnership with TIDAL that are not historical facts are forward-looking statements, which include statements about future subscriber growth and the marketing fund. Forward-looking statements are estimates and projections reflecting management’s judgment based on currently available information and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. All information set forth in this release is as of January 17, 2017. Sprint Corporation does not intend, and undertakes no duty, to update this information to reflect future events or circumstances. Information about certain potential factors that could affect our business and financial results and cause actual results to differ materially from those expressed or implied in any forward-looking statements are included from time to time in our filings with the Securities and Exchange Commission, including Part 1, Item 1A “Risk Factors” in our Annual Report on Form 10-K for the year ended March 31, 2016.

Previous Story

ONLY Sprint and TIDAL Bring Customers Exclusive Access to The King of Bachata “Romeo Santos”

Next Story

Sprint’s 1Million Project Online Donation Site Now Available to Help Disadvantaged High School Students

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Sprint Purchases 33 Percent Stake in Tidal

Sprint has acquired a 33 percent stake in **Jay Z**'s streaming service Tidal, the two companies announced today (Jan. 23). A source familiar with the matter tells *Billboard* that the purchase was for $200 million and that Jay and each of the company's two dozen artist-owners will remain part owners.

As part of the deal, Tidal will become available to Sprint's 45 million retail customers, while the companies will partner for exclusives from its artists, according to a press release. Sprint CEO **Marcelo Claure** joins Tidal's board of directors.

"Jay saw not only a business need, but a cultural one, and put his heart and grit into building TIDAL into a world-class music streaming platform that is unrivaled in quality and content," Claure said in a statement. "The passion and dedication that these artist-owners bring to fans will enable Sprint to offer new and existing customers access to exclusive content and entertainment experiences in a way no other service can."

Another aspect of the partnership includes the creation of a "dedicated marketing fund," which a source says will have an annual budget of $75 million solely for the artist initiatives and exclusives. For those who already subscribe to Tidal, estimated to be around one million people, there will be no change in the existing service.

"Sprint shares our view of revolutionizing the creative industry to allow artists to connect directly with their fans and reach their fullest, shared potential," said Jay Z in a statement. "Marcelo understood our goal right away and together we are excited to bring Sprint's 45 million customers an unmatched entertainment experience."

Tidal's and Sprint's relationship dates back to the March 2015 U.S. launch of the company, when a report from the *New York Post* indicated that Sprint had acquired a stake in the company. At the time, Sprint walked back any formal deal, only alluding to negotiations "to determine how to best to make the service available to its customers... We are working together in partnership for the vision of the common cause of reestablishing the value of music, it is NOT a financial investment or exclusive partnership."

Those discussions seem to have resulted in today's announcement, which also comes days after Norwegian media outlet *Dagens Næringsliv* published a lengthy report claiming that Tidal had been inflating subscriber numbers, while rumors of an acquisition, possibly by Apple, have been growing for months. Jay Z bought Tidal from Swedish company Aspiro AB for $56 million in 2015.

JAN 23, 2017 @ 10:12 AM 42,483 VIEWS Pe

Sprint Invests In Jay Z's Tidal, Paying A For 33%

Zack O'Malley Greenburg, FORBES STAFF
I cover the business of music, media & entertainmen FULL BIO

Clapping Back: Jay Z appears to be proving Tidal's naysayers wrong with today's stunnin news. (Photo by Bryan Bedder/Getty Images for Sports Illustrated)

Jay Z is selling one-third of his Tidal streaming service to Sprint for $200 million, according to a report released earlier today by *Billboard*.

As part of the deal, Tidal will become available to Sprint's 45 million customers; the telecom giant's CEO Marcelo Claure wi join Tidal's board of directors. Jay Z and his squad of artist-investors will retain stakes in the company; the agreement als calls for a $75 million fund dedicated to musicians' exclusive releases.

"Jay saw not only a business need, but a cultural one, and put his heart and grit into building Tidal into a world-class music streaming platform that is unrivaled in quality and content," said Claure in a statement. Added Jay Z: "Marcelo understood our goal right away and together we are excited to bring Sprint 45 million customers an unmatched entertainment experience."

The news comes on the heels of a story released Friday by Norwegian business newspaper *Dagens Naeringsliv* reporting that Oslo-based Tidal had been inflating subscriber numbers. Tidal has placed the number at 3 million, while the report said the number was likely closer to 1 million.

In that story, I was quoted as saying that despite the bad optics of the news, Jay Z has a way of "extracting value from seemingly impossible situations." It looks like he's done exactl that already.

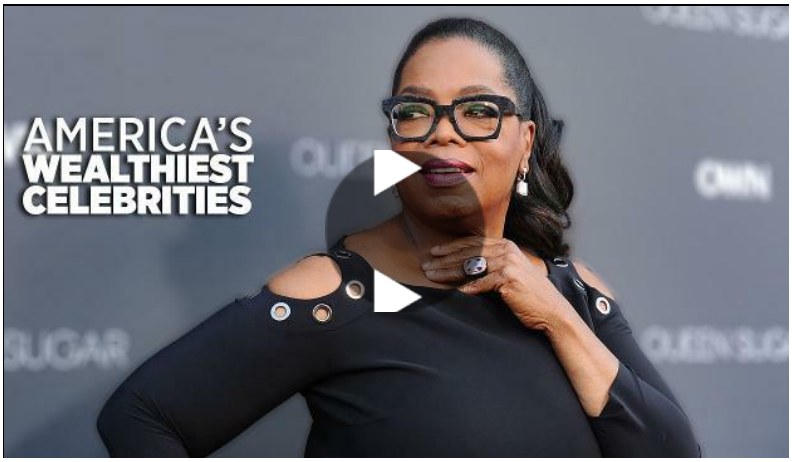
Given the timing of the deal, Sprint likely either already knew about the numbers issue or didn't care: its audience is so vast that a couple million subscribers here or there wouldn't make much of a difference.

Representatives for Sprint and Tidal did not immediately respond to requests for comment.

Needless to say, the news should have a positive impact on Jay Z's net worth--$610 million, 11th most among American celebrities, by FORBES' latest count. He initially paid $56 million for Tidal, though our recent estimate takes a higher valuation on the company into account. We will release new numbers this spring.

UPDATE: A Sprint spokesperson confirmed the company had purchased 33% of Tidal and that Jay Z and his fellow artist-owners would retain equity in the streaming service, but wouldn't comment on the price.

For more on the business of entertainment, check ou my Jay Z biography and sign up for my email updates.



CO EX. R-75

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-76

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

Top 10 Things You Need to Know about Programmatic but Were too Afraid to Ask

11.04.14

By Carl Kalapesi

On October 23rd, thinkLA and IAB were thrilled to host a Programmatic Summit in Los Angeles, in association with eMarketer. Our first ever collaboration focused on the rising tide of programmatic within digital media. Over 500 brand marketers, media buyers, online publishers, ad networks, ad exchanges, and other solution providers came together to discuss and debate the next evolution of programmatic. Here are the top 10 takeaways from the event about programmatic:

1. **Programmatic is more than RTB.** There is a lot of confusion over the term programmatic, which many people mistakenly believe is only real-time bidding (RTB) or used only for remnant inventory. Ultimately programmatic is the process of buying and selling media in an automated fashion. This includes four main types of transactions – open auctions, invitation-only/private auctions, unreserved fixed rate/preferred deals, and automated guaranteed/programmatic guaranteed deals. Every time someone says the word "programmatic" make sure you ask what

exactly they mean. Watch this Digital Simplified video that explains how one part of programmatic, RTB, works step by step.

2. **Lots of challenges still exist to enable programmatic to work.** Concerns that were addressed throughout the event included transparency, fraud, and trust; limited understanding and knowledge; confusion over terminology; moving from direct response to branding dollars, moving from mostly standard banners to native, video, rising stars, and audio ad formats; internal organizational challenges for brands and publishers; and delivering different creative through programmatic.

3. **Programmatic is big and getting bigger.** The programmatic market (including auction, and direct deals) is expected to top $10B in 2014 and grow to $20B by 2016. For now, RTB remains the dominant part of programmatic spending (92% in 2014), but is expected to fall to under 60% of total programmatic spend by 2016 as programmatic direct increases. Within RTB, open auctions account for 88% of total RTB spend, though this is changing with private marketplaces growing significantly faster. While display is still dominant for now, mobile and video programmatic are growing fast.

4. **Fraud and trust are big issues, but are being tackled by the industry.** Bots and fraud have become a big issue mainly due to the large sums of money involved. The IAB and the industry are building a trust stack to tackle fraud, malware, piracy, and transparency and include these in a joint cross-industry accountability program) building on the existing Quality Assurance Guidelines. Advertisers and buyers should make sure they know their supply sources, choose their vendors carefully, and always remember "If it's too good to be true, it probably is!" Publishers need to ensure they are coordinating between sales, marketing, operations, and analytics to identify any strange traffic patterns and remember if they are doing audience extension they need to apply the same controls as buyers should.

5. **Publishers can hit a home run with programmatic video.** The concern that programmatic has been perceived as a "race to the bottom" for rates and yield has not been the case in video due to restricted supply. Publishers can use programmatic to fund the creation of quality video content particularly by helping to monetize traffic spikes. Ultimately efficiency doesn't have to mean lower CPMs; it can also mean more effective engagement.

6. **Measurement matters even more in a programmatic world.** Brand marketers are looking for transparency, inventory quality, and technology simplicity. Buyers should ensure they are reaching the right audience, use a consistent, comparable metric to plan, buy, and sell audiences, use brand data to ensure advertising resonates, and ultimately ensure that the campaign drives the desired action.

7. **Attribution is essential to effective programmatic spend.** Last touch attribution is outdated and is like giving all the credit in a relay race to the last runner. Attribution models

should incorporate the "first site visit" separating the funnel into prospecting and retargeting, and set the right incentives to each part.

8. **Brands in automotive are leveraging programmatic.** Leading brands are looking beyond the simple retargeting of ads and embracing programmatic across the consumer path to purchase from unaware to loyal purchasers. The agency automation "stack" includes four layers – unified data platform, open access to media inventory, single metrics regime, and dynamic ad creation/production/serving platform. Brands are finally learning from programmatic media to employ new tactics in automated creativenot creating by machines, but optimizing ad variables based on real-time, impression level data.

9. **Publishers need to re-org to capture the value of programmatic.** Publishers are adopting programmatic as a core part of their monetization strategy. However, this can pose internal challenges. The top five ways to build a successful programmatic publisher organization were the following: align incentives and compensation; educate direct sellers and have them attend Programmatic 101 training; programmatic team to focus on supporting direct sales (agencies) and covering programmatic buying entities (DSPs, trading desks, retargeters); establish a programmatic rate card; and have internal and external quarterly budget reviews.

10. **Creativity and programmatic are not enemies.** Every ad should be dynamic and leverage the same audience signals used in programmatic media buying to make the creative relevant. This can be done by infusing first or third-party data on demographics, location, and previous website behavior to alter the headline call to action, image, or assets of the ad unit to ensure the message resonates with the user. Doing this can double yield on interaction rates and increase engagement by 50%.

About the author

Carl Kalapesi

VP, Industry Initiatives, IAB

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pandora FOR BRANDS

Pandora's Premium Programmatic Solution Offers Brands a Quality Environment

06.16.2015

Pandora Premium Programmatic

Remember when you were a kid, staring at that big gumball machine, and all you wanted was to get your hands on a bright blue, berry-flavored gumball? Knowing you didn't have much control over which one you got, you would insert a quarter and wait for luck to decide. Now, imagine we live in a world where you can finally ask for and receive the exact gumball flavor you want, and get it in real time. **In the advertising world, this is what programmatic accomplishes. Your display ads are delivered to the right audience at the optimal place and time.**

Everyday our team is tasked with building Pandora's suite of ad solutions to provide real, measurable value for our marketing partners. Over the last five months, we began offering Premium Programmatic through a Private Exchange to select partners in a beta. Our team has been busy testing and enhancing our programmatic solution on mobile display and refining it on web, so that today **we are thrilled to officially extend Pandora Premium Programmatic to all advertisers.**

Not only does Pandora Premium Programmatic unlock the streamlined efficiencies of programmatic media buying, but it does so in a way that **engages a viewable, quality audience at scale, all within a safe environment for your brand**. It's about ensuring that ads are truly reaching people, rather than fraudulent ad bots. Approaching programmatic in this way—through a Private Exchange with a trusted digital partner, like Pandora—is the ad industry's recipe for successfully reaching the right audience, with the right contextual messaging, at the right time.

There are various programmatic options available right now, so we've designed Pandora's solution to deliver an enhanced experience for listeners and advertisers alike. With Premium Programmatic, marketers gain access to real benefits that will drive brand success:

1. Viewable, Attention-Based Media Reaches Quality Audiences

Since Pandora first launched on the web, our advertising solutions have been architected with attention and engagement in mind. All of our display ads are only served when a listener takes an action, like thumbing-up a song or changing stations, which ensures that your message is being received by real people. With no "below the fold" placements on desktop or mobile, and with only one ad served at a time, your brand can capture the 100% share of attention it deserves, validated by your DSP's viewability tags.

2. Enhanced, Data-Rich Targeting Allows for Contextual Messaging

Pandora Premium Programmatic lets brands tailor their message to Pandora listeners by taking advantage of our 1st-party data. As one of the largest logged-in user bases in the country, our rich targeting capabilities are driven by the insightful data points we've been processing from our listeners for nearly a decade. This data includes declared information submitted at registration, music listening preferences, as well as other behaviors and inferred characteristics.

3. Premium, Brand-Safe Environment Fueled By the Passion Point of Music

According to a recent Nielsen study, 75% of people choose music as their top form of entertainment [1]. We firmly believe that music is a universal language that unites all of life's moments and transcends age, region and culture. Advertising on Pandora lets marketers tap into a passionate audience that is highly receptive to brand messaging. Our Premium Programmatic solution can ensure that your brand is part of the right moments, especially those that can only be captured in real-time.

Beginning today, we invite advertisers to buy Premium Programmatic on Pandora by accessing our Private Exchange, where marketers can bid on premium display inventory across mobile and web. Get in touch with our programmatic team to determine how your brand can amp up its marketing effectiveness with Pandora Premium Programmatic.

— Jack Krawczyk, Vice President, Advertising Product Management

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[1] Nielsen, Music 360 Study, January 2015

BACK TO ALL INSIGHTS

LET US INTRODUCE YOU TO PANDORA'S AUDIENCE

CONTACT US

10-K 1 p-12312015x10k.htm 10-K

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2015

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File Number: 001-35198

Pandora Media, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**94-3352630**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2101 Webster Street, Suite 1650 Oakland, CA	**94612**
(Address of principal executive offices)	(Zip Code)

(510) 451-4100

(Registrant's telephone number, including area code)

Securities registered pursuant to section 12(g) of the Act:

Title of each class	**Name of each exchange on which registered**
Common stock, $0.0001 par value	The New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section 232.405 of this chapter)

during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Section 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by a check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
(Do not check if a smaller reporting company)	

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting common stock held by non-affiliates of the registrant as of June 30, 2015 (the last business day of the registrant's most recently completed second quarter), based on the closing price of such stock on The New York Stock Exchange on such date was approximately $2,887 million. This calculation excludes the shares of common stock held by executive officers, directors and stockholders whose ownership exceeds 5% outstanding at June 30, 2015. This calculation does not reflect a determination that such persons are affiliates for any other purposes.

On February 16, 2016 the registrant had 227,695,644 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the registrant’s 2016 Annual Meeting of Stockholders (the “Proxy Statement”), to be filed within 120 days of the end of the fiscal year ended December 31, 2015, are incorporated by reference in Part III hereof. Except with respect to information specifically incorporated by reference in this Annual Report on Form 10-K, the Definitive Proxy Statement is not deemed to be filed as part of this Annual Report on Form 10-K.

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Pandora Media, Inc.
Form 10-K
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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This Annual Report on Form 10-K contains "forward-looking statements" that involve substantial risks and uncertainties. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including, but not limited to, statements regarding our expectations, beliefs, intentions, strategies, future operations, future financial position, future revenue, projected expenses and plans and objectives of management. In some cases, you can identify forward-looking statements by terms such as "anticipate," "believe," "estimate," "expect," "intend," "may," "might," "plan," "project," "will," "would," "should," "could," "can," "predict," "potential," "continue," "objective," or the negative of these terms, and similar expressions intended to identify forward-looking statements. However, not all forward-looking statements contain these identifying words. These forward-looking statements reflect our current views about future events and involve known risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievement to be materially different from those expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed in the section titled "Risk Factors" included in this Annual Report on Form 10-K. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements. We qualify all of our forward-looking statements by these cautionary statements. In addition, the industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors including those described in the section entitled "Risk Factors." These and other factors could cause our results to differ materially from those expressed in this Annual Report on Form 10-K.

Some of the industry and market data contained in this Annual Report on Form 10-K are based on independent industry publications, including those generated by Triton Digital Media or "Triton" and International Data Corporation or "IDC" or other publicly available information. This information involves a number of assumptions and limitations. Although we believe that each source is reliable as of its respective date, we have not independently verified the accuracy or completeness of this information.

As used herein, "Pandora," the "Company," "we," "our," and similar terms refer to Pandora Media, Inc. and, where appropriate, its wholly owned subsidiaries, unless the context indicates otherwise.

"Pandora" and other trademarks of ours appearing in this report are our property. This report contains additional trade names and trademarks of other companies. We do not intend our use or display of other companies' trade names or trademarks to imply an endorsement or sponsorship of us by such companies, or any relationship with any of these companies.

EXPLANATORY NOTE REGARDING THE ANNUAL REPORT

We changed our fiscal year from the twelve months ending January 31 to the calendar twelve months ending December 31, effective beginning with the year ended December 31, 2013. As a result, the period ended December 31, 2013 was shortened from twelve months to an eleven-month transition period.

When financial results for the 2014 annual period are compared to financial results for the 2013 period, the results compare the twelve-month period ended December 31, 2014 and the eleven-month period ended December 31, 2013.

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PART I

ITEM 1. BUSINESS

Overview

Pandora

Pandora is the world's most powerful music discovery platform, offering a personalized experience for each of our listeners wherever and whenever they want to listen to music - whether through earbuds, car speakers or live on stage. Our vision is to be the definitive source of music discovery and enjoyment for billions. The majority of our listener hours occur on mobile devices, with the majority of our revenue generated from advertising on these devices. We offer both local and national advertisers the opportunity to deliver targeted messages to our listeners using a combination of audio, display and video advertisements. Founded by musicians, Pandora also empowers artists with valuable data and tools to help grow their careers and connect with their fans.

For the twelve months ended December 31, 2015, we streamed 21.11 billion hours of internet radio, and as of December 31, 2015, we had 81.1 million active users during the prior 30-day period. Since we launched our non-subscription, ad-supported radio service in 2005 our listeners have created over 9 billion stations.

Ticketfly

Pandora completed the acquisition of Ticketfly on October 31, 2015. Ticketfly is a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America. Ticketfly's ticketing, digital marketing and analytics software helps promoters book talent, sell tickets and drive in-venue revenue, while Ticketfly's consumer tools help fans find and purchase tickets to events. For the twelve months ended December 31, 2015, Ticketfly sold approximately 12.5 million tickets, excluding box office sales, to 4.4 million unique ticket buyers to approximately 90,000 live events, with more than $490 million in gross transaction value, excluding box office sales.

Our Service

Pandora

Unlike traditional radio stations that broadcast the same content at the same time to all of their listeners, we enable each of our listeners to create personalized stations. The Music Genome Project and our content programming algorithms power our ability to predict listener music preferences, play music content suited to the tastes of each individual listener and introduce listeners to music we think they will love. When a listener enters a single song, artist, comedian or genre to start a station—a process we call seeding—the Pandora service instantly generates a station that plays music we think that listener will enjoy. Based on listener reactions to the songs we pick, we further tailor the station to match the listener's preferences. Listeners also have the ability to add variety to and rename stations, which further allows for the personalization of our service.

We currently provide the Pandora service through two models:

- *Free Service.* Our free service is advertising-supported and allows listeners access to our music and comedy catalogs and personalized playlist generating system for free across all of the Pandora delivery platforms.

- *Pandora One.* Pandora One is a paid subscription service without any advertising. Pandora One also enables listeners to have more daily skips, enjoy higher quality audio on supported devices and enjoy longer timeout-free listening. In addition to our traditional monthly subscriptions, service listeners can now purchase a single day Pandora One experience with our "Pandora One Day Pass" product.

Beyond song delivery, listeners can discover more about the music they hear by reading the history of their favorite artists, viewing artist photos and buying albums and songs from Amazon or iTunes. Our service also incorporates community social networking features. Our music feed feature enables a real-time, centralized stream for listeners to view the music that their social connections are experiencing and to provide and receive recommendations for songs, albums and artists. Listeners can also share their stations across other social media outlets and through email by using our share feature or by distributing our individualized station URLs.

Ticketfly

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The Ticketfly service is a fully-integrated cloud ticketing platform for live events. Ticketfly's platform provides ticketing and marketing services for venues and event promoters across North America and makes it easy for fans to find and purchase tickets to events, and also gives artists a means to more effectively promote their events. Tickets are primarily sold through the Ticketfly platform but are also sold through other channels, such as venue box offices.

Our Technologies

Pandora

At the core of our service is our set of proprietary personalization technologies, including the Music Genome Project and our playlist generating algorithms. When a listener enters a single song, artist or genre to start a station, the Pandora service instantly generates a station that plays music or comedy we think that listener will enjoy. Based on listener reactions to the songs or comedy tracks we stream, we further tailor the station to match the listener's preferences in real-time.

Music Genome Project

The Music Genome Project is a database of over 1,000,000 uniquely analyzed songs from over 350,000 artists, spanning over 600 genres and sub-genres, which we develop one song at a time by evaluating and cataloging each song's particular attributes. Once we select music to become part of our catalog, our music analysts genotype the music by examining up to 450 attributes including objectively observable metrics such as tone and tempo, as well as subjective characteristics, such as lyrics, vocal texture and emotional intensity. We employ rigorous hiring and training standards for selecting our music analysts, who typically have four-year degrees in music theory, composition or performance, and we provide them with intensive training in the Music Genome Project's precise methodology.

Comedy Genome Project

Our Comedy Genome Project leverages similar technology to that underlying the Music Genome Project, allowing a listener to choose a favorite comedian or a genre as a seed to start a station and then give feedback to personalize that station. Our comedy collection includes content from more than 2,500 comedians with more than 35,000 tracks.

Our Other Core Innovations

In addition to the Music Genome Project, we have developed other proprietary technologies to improve delivery of the Pandora service, enhance the listener experience and expand our reach. Our other core innovations include:

Playlist Generating Algorithms. We have developed complex algorithms that determine which songs play and in what order on each personalized station. Developed since 2004, these algorithms combine the Music Genome Project with the individual and collective feedback we receive from our listeners in order to deliver a personalized listening experience.

Pandora User Experience. We have invested in ways to enable us to reach our audience anytime, anywhere that they enjoy radio. To this end, we have developed a number of innovative approaches, including our autocomplete station creation feature, which predicts and generates a list of the most likely musical starting points as a listener begins to enter a favorite station, song or artist.

Pandora Mobile Streaming. We have designed a sophisticated system for streaming content to mobile devices. This system involves a combination of music coding programs that are optimized for mobile devices as well as algorithms designed to address the intricacies of reliable delivery over diverse mobile network technologies. For example, these algorithms are designed to maintain a continuous stream to a listener even in circumstances where the mobile data network may be unreliable.

Pandora Automotive Protocol. We have developed an automotive protocol to facilitate increased availability of the Pandora service in automobiles. Through the automotive protocol, certain automobile manufacturers, their suppliers and makers of aftermarket audio systems can easily connect dash-mounted interface elements to the Pandora app running on a smartphone. This allows us to deliver the Pandora service to listeners via their existing smartphone, while leveraging the automobile itself for application command, display and control functionalities.

Pandora API. As part of our effort to make the Pandora service available everywhere our listeners want it, we have developed an application programming interface, which we call the Pandora API. Through our partnerships with manufacturers of consumer electronics products, we have used this technology to bring the Pandora experience to connected devices

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throughout the home.

Tv.pandora.com. We have developed a standards-based HTML5 website called tv.pandora.com that allows users to stream music content on next generation TV, game consoles and set top box architectures that support open web standards. Tv.pandora.com features streamlined navigation with controls and displays designed specifically for larger screens.

Next Big Sound ("NBS")

NBS Platform. On July 1, 2015, we completed the acquisition of NBS. NBS is the leading provider of online music analytics and insights tracking hundreds of thousands of artists around the world. NBS was founded in 2009 and tracks social, streaming, and video data in one centralized platform. Sources range from Facebook and Twitter to Wikipedia, YouTube, Vevo, and many others. The NBS platform complements Pandora's Artist Marketing Platform ("Pandora AMP") and expands the suite of data-driven products that Pandora offers music makers.

Ticketfly

Fully-integrated Cloud Ticketing Platform. Ticketfly has developed a fully-integrated cloud ticketing platform for live events. The ticketing and marketing software powers the event lifecycle for venues and event promoters, including the booking of acts, the building and marketing of events and fan customer relationship management after the event.

Distribution and Partnerships

Pandora

A key element of our strategy is to make the Pandora service available everywhere that there is internet connectivity. To this end, we make the Pandora service available through a variety of distribution channels. In addition to streaming our service to computers, we have developed Pandora mobile device applications or “apps” for smartphones such as iPhone, phones running the Android operating system, the Windows Phone and for tablets, including the iPad and tablets running the Android operating system. We distribute those mobile apps free to listeners via app stores.

Pandora is now integrated with more than 1,700 connected devices, including automobiles, automotive aftermarket devices and consumer electronic devices. Currently, most automobile integrations rely on smartphones for internet connectivity, which has enabled Pandora to be available in the ten best-selling passenger vehicles in the United States. Some automobiles are now using embedded, built-in internet connectivity to power the Pandora experience. These native integrations, whether using embedded or phone-based connectivity, allow drivers to control the service via in-dash entertainment systems. As part of this ongoing effort to extend our reach in the car, we also built support for Android Auto and Apple CarPlay into our mobile applications in 2015. While these platforms are still nascent, we expect these platforms will develop and grow significantly and help broaden our reach and provide consumers with additional flexibility for accessing Pandora in the car. As of December 31, 2015, more than 15.5 million unique users have activated Pandora through a native integration in 26 major automobile brands and 8 automotive aftermarket manufacturers. We view the integration of the Pandora service into automobiles as key area of potential growth for the service, as a large portion of terrestrial radio listening occurs in automobiles.

Ticketfly

The Ticketfly services are available through multiple distribution channels, including the Ticketfly website, the websites of its venue and promoter clients, venue box offices and the Ticketfly website optimized for mobile devices. Tickets for events are delivered to fans through a variety of delivery methods, including mail, will call, print at home and mobile tickets, which are delivered electronically and presented by fans on their smartphones upon arrival to the venues.

Ticketfly contracts with clients to sell tickets for events to fans over a set period of time, which generally ranges from three to five years. Ticketfly does not set ticket prices or seating configurations for events, as this information is determined by the venue and/or promoter. Ticketfly generally is paid a fee per ticket sold, which usually increases as the face value of the ticket increases, or a percentage of the total ticket service charges. Ticketfly usually receives funds for the ticket sales and related service charges at the time the ticket is sold and periodically remits these receipts to the venue or promoter after deducting Ticketfly's portion of the fee. Venues also sell tickets through the box office at the venue using the Ticketfly technology. Ticketfly does not usually earn a fee on these box office ticket sales.

Pandora Advertising Revenue

We derive the substantial majority of our revenue from the sale of audio, display and video advertising for delivery across our computer, mobile and other connected device platforms. We generate the majority of our revenue from mobile and other connected devices, which presents an opportunity for us to reach our audience anytime, anywhere that they enjoy music and therefore offer additional distribution channels to current and potential advertisers for delivery of their advertising messages.

Our advertising strategy focuses on developing our core suite of audio, display and video advertising products and marketing these products to advertisers for delivery across computer and mobile and other connected device platforms. Our advertising products allow both local and national advertisers to target and connect with listeners based on attributes including age, gender, zip code and content preferences using multi-platform ad campaigns to target their advertising messages to listeners anytime and anywhere. As listenership on our mobile platforms has grown more rapidly than on our other platforms, we have sought to improve our mobile advertising products to better enable us to market multi-platform advertising solutions. In the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, advertising revenue accounted for approximately 82%, 80% and 80% of our total revenue, respectively, and we expect that advertising will comprise a substantial majority of revenue for the foreseeable future.

Pandora Audio Advertising. Our audio advertising products allow custom audio messages to be delivered between songs during short ad interludes. Audio ads are available across all of our delivery platforms. On supported platforms, the audio ads can be accompanied by display ads to further enhance advertisers' messages.

Pandora Display Advertising. Our display advertising products offer opportunities to maximize exposure to our listeners through our desktop and mobile service graphical interfaces, which are divided between our tuner containing our player and "now playing" information, and the information space surrounding our tuner. Our display ads include industry-standard banner ads of various sizes and placements depending on platform and listener interaction.

Pandora Video Advertising. Our video advertising products allow delivery of rich branded messages to further engage listeners through in-banner click-initiated videos, videos that automatically play when a listener changes stations or skips a song and opt-in videos that pause the music and cover the tuner, some of which allow users to listen to music without interruption for a period of time after watching the video.

Pandora Native Advertising. Our audio, display and video advertising products can be designed and modified by us and advertisers to tailor advertising campaigns to fit specific advertiser needs. Our advertisers can create custom "branded" stations from our music library that can be accessed by our listeners, as well as engage listeners by allowing them to personalize the branded stations through listener-controlled variables. In addition to branded stations, we offer advertisers our sponsored listening product, in which advertisers sponsor ad-free listening for consumers in exchange for the consumer’s active brand interaction, such as watching a video advertisement, interacting with rich media or visiting the advertiser's landing page.

Pandora Audience Targeting. Our audio, display, video and native advertising products have access to a set of over 500 targeting segments across all of our platforms, ranging from Pandora’s unique proprietary targeting segments to second and third party enabled segments. Examples include Pandora’s inferred Spanish Speakers and Political Preference proprietary segments, direct customer CRM upload and Datalogix and Neustar third-party segments.

Additionally, advertisers can also benefit from our proprietary ad targeting capabilities. Our proprietary targeting segments leverage listener-submitted profile information, enabling advertisers to precisely reach sought-after consumers across the web and connected devices without needing third-party cookies.

In 2013, we integrated Pandora's advertising inventory into the leading radio media buying platforms, Mediaocean and STRATA, and we are continuing to enhance the ability of radio advertisers to purchase media on these platforms, which incorporate Triton measurements of our radio audience reach side-by-side with terrestrial radio metrics.

In January 2014, we introduced in-car advertising solutions, offering advertisers the opportunity to reach in-car audiences through audio ads running on vehicle models and aftermarket automotive devices with native Pandora automotive integrations.

In addition, we have invested in building a local advertising sales force in major radio markets. As of December 31, 2015, Pandora has 154 local sellers in 39 markets in the United States and we intend to continue investing to extend our local market presence for the foreseeable future.

We have introduced a programmatic advertising buying solution into the market primarily for national digital display and remnant performance advertising inventory. We intend to continue invest in our programmatic advertising buying solution in the future.

Our integration into standard radio media-buying processes and measurement, our in-car advertising solutions and our local advertising sales force are key elements of our strategy to expand our penetration of the radio advertising market. Our success in executing this strategy is subject to numerous risks and uncertainties, including those described in “Risk Factors.”

Pandora Subscription and Other Revenue

Subscription and other revenue is generated primarily through the sale of Pandora One, a premium daily, monthly or annual paid version of the Pandora service, which currently includes advertisement-free access and higher audio quality on supported devices. Pandora One is primarily available for purchase through major app stores and through the Pandora website. For the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, subscription and other revenue accounted for 18%, 20% and 19% of our total revenue, respectively.

Ticketing Service Revenue

Ticketing service revenue is generated primarily from service and merchant processing fees generated on ticket sales through the Ticketfly platform. Ticketfly sells tickets to fans for events on behalf of clients and charges a fee per ticket, which generally increases as the face value of the ticket increases, or a percentage of the total convenience charge and order processing fee, for its services at the time the ticket for an event is sold. Ticketing service revenue is recorded net of the face value of the ticket at the time of the sale, as Ticketfly generally acts as the agent in these transactions. Ticketing service revenue is included in our consolidated operating results from October 31, 2015, when we acquired Ticketfly, and accounted for approximately 1% of our total revenue.

Pandora Content, Copyrights and Royalties

To secure the rights to stream music content over the internet, we must obtain licenses from, and pay royalties to, copyright owners, or their agents, for the sound recordings that we perform, as well as the musical works embodied in each of those sound recordings, subject to certain exclusions. These licensing and royalty arrangements strongly influence our business operations. We stream spoken word comedy content pursuant to a federal statutory license, as described under the section captioned "Sound Recordings" below, which in some instances we have opted to augment with direct agreements with the licensors of such sound recordings. For spoken word comedy, the underlying literary works are not currently entitled to eligibility for licensing by any performing rights organization ("PRO") for the United States. Rather, pursuant to industry-wide custom and practice, this content is performed absent a specific license from any such PRO or the copyright owner of such content.

Sound Recordings

The number of sound recordings we stream to users of the Pandora service, as generally reflected by our listener hours, drives the vast majority of our content acquisition costs. We obtain performance rights licenses and pay performance rights royalties for the benefit of the copyright owners of such sound recordings and the recording artists, both featured and non-featured, on such recordings, mainly pursuant to the Digital Performance Right in Sound Recordings Act of 1995 (the "DPRA") and the Digital Millennium Copyright Act of 1998 (the "DMCA"). Under federal statutory licenses created by the DPRA and the DMCA, we are permitted to stream any lawfully released sound recordings and to make reproductions of these recordings on our computer servers, without having to separately negotiate and obtain direct licenses with each individual sound recording copyright owner. These statutory licenses are granted to us on the condition that we operate in compliance with the rules of the statutory licenses and pay the applicable royalty rates to SoundExchange, the non-profit organization designated by the Copyright Royalty Board (the “CRB”), a tribunal established within the U.S. Library of Congress, to collect and distribute royalties under these statutory licenses.

The rates we pay pursuant to the federal statutory licenses can be established by either negotiation or through a rate proceeding conducted by the CRB. In 2009, certain webcasters reached a settlement agreement with SoundExchange establishing alternative rates and rate structures to those eventually established by the CRB for services not qualifying for the settlement rates. This settlement agreement is commonly known as the "Pureplay Settlement" and it established rates at the greater of the per-performance royalty rate or 25% of revenue applied through the end of 2015. We have elected since 2009 to avail ourselves of the Pureplay Settlement. On December 16, 2015, the CRB announced the new per performance rates that apply for commercial webcasters for calendar years 2016 through 2020 (the “Web IV Proceedings”). Effective January 1, 2016,

the royalties we pay are set by the Web IV Proceedings. The rates and terms for the 2016 period represent an approximate 15% increase over Pandora's 2015 effective per-performance royalty rate based on Pandora's projected blended rate for subscription and non-subscription performances in 2016. Unlike the royalty structure applicable prior to 2016, the Web IV rates do not include an alternate calculation based on percentage of revenue, but instead are solely based on per-performance rates. The rates for the calendar years 2017 through 2020 will be adjusted by the CRB to reflect the increases or decreases, if any, in the Consumer Price Index, applicable to that rate year.

The royalties we pay to SoundExchange for the streaming of sound recordings are calculated using a per-performance rate and are subject to audit. The table below sets forth the per-performance rates for the calendar year 2015 and 2016 as applicable to (i) our non-subscription, ad-supported service and (ii) our subscription service:

Per-performance Rate	Non-subscription	Subscription	Blended*
"Web IV Rate" Decision for 2016	$ 0.00170	$ 0.00220	$ 0.00176
"Pureplay Rate" for 2015**	$ 0.00140	$ 0.00250	$ 0.00153

**Pandora's projected blended rate for 2016.*
***In 2015, the "Web III" rate set by the CRB, which Pandora opted out of via the Pureplay Settlement, was $0.0023.*

As reflected in the table above, we pay per-performance rates for streaming of sound recordings via our Pandora One subscription service that are higher than the per-performance rates for our non-subscription, ad-supported service. As a result, we may incur higher royalty expenses to SoundExchange for a listener that subscribes to Pandora One as compared to a listener that uses our non-subscription, ad-supported service, even if both listeners listen to the same number of performances.

In addition to our federal statutory licenses for sound recording rights under the DPRA and DMCA, Pandora has direct licenses with certain labels and PROs for such rights. In August 2014, we announced an agreement to partner with Music and Entertainment Rights Licensing Independent Network ("Merlin"), the global rights agency for the independent label sector. This partnership is designed to help independent labels and artists increase the audiences they reach. Participating labels, and the artists they represent, can also take advantage of the marketing capabilities of our connected platform by obtaining direct access to our metadata to help make data-driven business decisions.

Musical Works

Our content costs also include the royalties we pay for the public performance of musical works embodied in the sound recordings that we stream. Copyright owners of musical works, typically, songwriters and music publishers, have traditionally relied on PROs to negotiate so-called "blanket" licenses with copyright users, collect royalties under such licenses, and distribute them to copyright owners. We have obtained public performance licenses from, and pay license fees to, the three major PROs in the United States: the American Society of Composers, Authors and Publishers ("ASCAP"), Broadcast Music, Inc. ("BMI") and SESAC, Inc. ("SESAC").

ASCAP and BMI each are governed by a consent decree with the United States Department of Justice. The rates that we paid ASCAP and BMI were historically established by either negotiation or through a rate court proceeding conducted by the United States District Court for the Southern District of New York. We elected to terminate our prior agreements with ASCAP as of December 31, 2010 and with BMI as of December 31, 2012 because, among other things, we believed that the royalty rates sought by ASCAP and BMI were in excess of rates paid by our largest radio competitors: broadcast radio stations and satellite radio. Notwithstanding our termination of these agreements, the musical works administered by each of ASCAP and BMI continued to be licensed to us pursuant to the provisions of their respective consent decrees. From 2012 to 2014, we were engaged in rate court proceedings with ASCAP to determine reasonable license fees and terms for the ASCAP consent decree license applicable to the period January 1, 2011 through December 31, 2015. A trial to determine the royalty rates we pay to ASCAP concluded in February 2014 and the court issued its opinion establishing final fees in March 2014. Similarly, from 2013 to 2015 we were engaged in rate court proceedings with BMI to determine reasonable license fees and terms for the BMI consent decree license applicable to the period January 1, 2013 through December 31, 2016. The BMI rate court proceeding concluded on March 13, 2015, and in May 2015, the court issued its opinion establishing final fees. In December, 2015, we entered into publishing agreements with ASCAP and BMI covering the period from January 1, 2016 through December 31, 2018. The new agreement with BMI supersedes the last year of the term of the prior BMI agreement, and in connection with the signing of the new BMI agreement, we agreed to withdraw our appeal of the May 2015 order in the BMI rate court proceeding.

We currently operate under an agreement with SESAC, which automatically renews yearly, but is subject to termination by either party in accordance with its terms at the end of each yearly term. The SESAC rate is subject to small annual increases.

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In addition to our license agreements with the PROs, in some cases, we enter into agreements directly with music publishers. Music publishers own or administer copyrights in musical works and license those copyrights to third parties that use music, such as record labels, filmmakers, television and radio stations. Publishers also collect license fees from these third parties and distribute the fees to the writers or composers of the musical works. Between 2012 and 2014, certain publishers purported to partially withdraw portions of their repertoires from each of ASCAP and BMI with the intent that each performing rights organization would be unable to license the withdrawn musical works to new media licensees such as Pandora. Despite our position that these attempted partial withdrawals violate the ASCAP and BMI consent decrees, we entered into agreements with three publishers directly licensing us the right to perform musical compositions under their control.

In November and December 2015, we entered into licenses with several music publishing companies, ASCAP and BMI that grant us the rights to publicly perform musical compositions under their control during the period from January 1, 2016 through December 31, 2018. The majority of the licenses are structured so that each publisher or PRO receives a pro rata share of 20% of the royalties paid by us for sound recordings, with the pro rata share paid to each publisher or PRO being determined based on our usage of its works. These license agreements are structured differently from previous publisher and PRO licenses, which have traditionally been based on a percentage of a service's revenue or a flat fee.

RMLC

In June 2013, we entered into an agreement to purchase the assets of KXMZ-FM and in June 2015 the Federal Communications Commission ("FCC") approved the transfer of the FCC licenses and the acquisition was completed. The agreement to purchase the assets of KXMZ allowed us to qualify for the RMLC royalty rate of 1.7% of revenue for a license to the ASCAP and BMI repertoires, before certain deductions, beginning in June 2013. As a result, we recorded cost of revenue - content acquisition costs at the RMLC royalty rate starting in June 2013, rather than the rate that was set in rate court proceedings.

In September 2015, despite confidence in our legal position that we were entitled to the RMLC royalty rate starting in June 2013 and as part of our strategy to strengthen our partnership with the music industry, we decided to forgo the application of the RMLC royalty rate from June 2013 through September 2015. As a result, cost of revenue - content acquisition costs increased by $28.2 million in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to spins played from June 2013 through September 30, 2015 in order to align the cumulative cost of revenue - content acquisition costs to the amounts previously paid at the rates that were set in the rate court proceedings in March 2014 for ASCAP and May 2015 for BMI. We recorded cost of revenue - content acquisition costs for the performing rights organizations at the rates established by the rate courts for the three months ended December 31, 2015, and we intend to record such costs at the rates established by direct licensing agreements, including BMI and ASCAP, among others, beginning in 2016.

Non-U.S. Licensing Regimes

In addition to the copyright and licensing arrangements described above for our use of sound recordings and musical compositions in the United States, other countries have various copyright and licensing regimes, including in some cases performing rights organizations and copyright collection societies from which licenses must be obtained. We have obtained licenses to operate in Australia and New Zealand for the communication of sound recordings and the musical compositions embodied in those sound recordings, which have not had a material effect on our results of operations to date.

Government Regulation

As a company conducting business on the internet, we are subject to a number of foreign and domestic laws and regulations relating to consumer protection, information security and data protection, among other things. Many of these laws and regulations are still evolving and could be interpreted in ways that could harm our business. In the area of information security and data protection, the laws in several states require companies to implement specific information security controls to protect certain types of information. Likewise, all but a few states have laws in place requiring companies to notify users if there is a security breach that compromises certain categories of their information. We are also subject to federal and state laws regarding privacy of listener data, among other things. Our privacy policy and terms of use describe our practices concerning the use, transmission and disclosure of listener information and are posted on our website.

Sales and Marketing

Pandora

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We organize our Pandora sales force into multiple geographically-based teams that are each focused on selling advertising across our computer, mobile and other connected device platforms. Teams are located in our Oakland, California headquarters, in regional sales offices in Atlanta, Chicago, Dallas, Detroit, New York and Santa Monica and local sales offices throughout the United States, in Sydney, Australia and in Auckland, New Zealand.

Our marketing team is charged with amplifying Pandora's brand message to grow awareness and drive listener hours. We organize the marketing team into three groups focused on communications, marketing analytics and brand marketing. While we have historically relied on the success of viral marketing to expand consumer awareness of our service, beginning in 2014 and continuing in 2015, we launched marketing campaigns to increase consumer awareness and expand our listener base. We anticipate that we will continue to utilize these types of marketing campaigns in the future.

Ticketfly

The Ticketfly sales force is organized into various teams based on vertical, such as client type, and is focused on obtaining contracts with clients to sell tickets on the Ticketfly platform. Teams are located in the Ticketfly headquarters in San Francisco, California and in local sales offices throughout the United States and in Canada.

Artist Relations

Pandora Artist Marketing Platform

In October 2014, we launched Pandora AMP, a free online service that gives artists and their managers a detailed view of their audience on our service. Pandora AMP provides data and insights to the more than 350,000 artists played on our service. Derived from tens of billions of hours of personalized listening, Pandora AMP is designed to help artists with many critical decisions such as tour routing, single selection, set lists, audience targeting and more.

NBS combines music consumption data into one centralized platform and will complement the Pandora AMP service. The NBS platform, which includes data from Facebook, Twitter and YouTube, combined with Pandora's data on music preferences, patterns and trends reflecting insights from its 81.1 million active users, will allow Pandora AMP to deliver detailed analytics to the music industry.

Pandora Music Makers Group.

In October 2014, to consolidate all of our music industry initiatives into a single product suite, and to help drive connections with fans across all channels at Pandora, we brought the teams across the business that work most directly with the music industry together into a single group known as the Music Makers Group. Our vision is to ensure artists can promote and market their music to fans, drive engagement with experiences from live events to original content and audio messages to fans and understand all of the benefits of these interactions via our analytics tools.

Competition

Pandora

Competition for Listeners

We compete for the time and attention of our listeners with other content providers on the basis of a number of factors, including quality of experience, relevance, acceptance and perception of content quality, ease of use, price, accessibility, perceptions of ad load, brand awareness and reputation. We also compete for listeners on the basis of our presence, branding and visibility as compared with other providers that deliver content through the internet, mobile devices and consumer products. We believe that we compete favorably on these factors. For additional details on risks related to competition for listeners, please refer to the section entitled "Risk Factors."

Many of our current and potential future competitors enjoy competitive advantages, such as greater name recognition, legacy operating histories and larger marketing budgets, as well as greater financial, technical and other resources. We compete with many forms of media for the time and attention of our listeners, such as Facebook, Twitter, Netflix, Pinterest and Instagram. Our direct competitors, however, include iHeartRadio, LastFM and other companies in the traditional broadcast and internet radio market. We also directly compete with the non-interactive, internet radio offerings from providers such as Spotify, Apple Music, Google Play Music and Slacker.

We compete for listeners with broadcast radio providers, including terrestrial radio providers. Many broadcast radio companies own large numbers of radio stations or other media properties. Many terrestrial radio stations have begun broadcasting digital signals, which provide high quality audio transmission. Broadcast and satellite radio companies generally enjoy larger established audiences and a significant cost advantage because they pay a much lower percentage of revenue for transmissions of sound recordings. Broadcast radio companies pay no royalties for the radio broadcast of sound recordings, and satellite radio companies paid only 10% of revenue in 2015 and will pay only 10.5% of revenue in 2016 for its satellite transmissions of sound recordings. By contrast, Pandora incurred content acquisition costs representing 46% of revenue for our internet transmissions of sound recordings during the twelve months ended December 31, 2015.

We also face competition for listeners and listener hours from interactive music streaming services such as Spotify, Apple Music, YouTube, Google Play Music, Amazon Prime, Rhapsody, and Deezer. These services offer consumers the ability to choose the songs and artists they want to hear, create customized playlists and download music for play offline - functionality that our service does not provide.

This interactive on-demand content is accessible in automobiles and homes, using portable players, mobile phones and other wireless and consumer electronic devices. The audio entertainment marketplace continues to rapidly evolve, providing our listeners with a growing number of alternatives and new media platforms.

At a macro level, we compete for the time and attention of our listeners with providers of other forms of in-home and mobile entertainment. To the extent existing or potential listeners choose to watch cable television, stream video from on-demand services or play interactive video games on their home-entertainment system, computer or mobile phone rather than listen to the Pandora service, these content services pose a competitive threat.

Competition for Advertisers

We compete with other content providers for a share of our advertising customers' overall marketing budgets. We compete on the basis of a number of factors, including perceived return on investment, effectiveness and relevance of our advertising products, pricing structure and ability to deliver large volumes or precise types of ads to targeted demographics. We believe that our ability to deliver targeted and relevant ads across a wide range of platforms allows us to compete favorably on the basis of these factors and justify a long-term profitable pricing structure. However, the market for online advertising solutions is intensely competitive and rapidly changing, and with the introduction of new technologies and market entrants, we expect competition to intensify in the future. Our competitors include Facebook, Google, MSN, Yahoo!, ABC, CBS, FOX, NBC, The New York Times and the Wall Street Journal. We directly compete against iHeartRadio, Entercom, Cumulus and other companies of the traditional broadcast radio market. For additional details on risks related to competition for advertisers, please refer to the section entitled "Risk Factors."

The market for online advertising has become increasingly competitive, yet advertisers are allocating increasing amounts of their overall marketing budgets to online advertising. We compete for online advertisers with other internet companies, including major internet portals, search engine companies and social media sites. Large internet companies with greater brand recognition have significant numbers of direct sales personnel, more advanced programmatic advertising capabilities and substantial proprietary advertising inventory and web traffic that provide a significant competitive advantage and have a significant impact on pricing for internet advertising and web traffic.

Terrestrial broadcast, and to a lesser extent satellite radio, are significant sources of competition for advertising dollars. These radio providers deliver ads across a more familiar platform than the internet may be to traditional advertisers.

We also compete for advertising dollars with other traditional media companies in television and print. These traditional outlets present us with a number of competitive challenges in attracting advertisers, including large established audiences, longer operating histories, greater brand recognition and a growing presence on the internet.

Ticketfly

Competition for Clients

We compete with other online live events technology and primary ticketing companies for contracts with promoters and venues. We compete on the basis of a number of factors, including our ability to sell tickets and provide enhanced fan experiences. Our ticketing platform also offers website, email, social marketing, booking, analytics, fan CRM and other tools for our clients. Cloud technology has made it easier for other technology-based companies to offer primary ticketing services

and standalone, automated ticketing systems that enable venues to perform their own ticketing services or utilize self-ticketing systems. We also experience competition from other national, regional and local primary ticketing service providers to secure contracts with new promoters and venues. Our main competitors for clients include primary ticketing companies such as Live Nation Entertainment's Ticketmaster division, Tickets.com, AXS and Paciolan and upstart providers such as Eventbrite and eTix.

Although we believe that our products and services currently compete favorably with respect to such factors, we cannot provide any assurance that we can maintain our competitive position against current and potential competitors, especially those with greater brand recognition, or financial, technical or other resources.

Competition for Fans

We compete with other live events technology and primary ticketing companies, as well as secondary ticketing companies for ticket sales to fans. We compete on the basis of a number of factors, including our ability to reach fans and provide enhanced fan experiences. The ticketing services industry includes the sale of tickets primarily through online channels, but also through telephone, mobile devices and ticket outlets. In the online environment, we compete with other websites, live events technology and ticketing companies to provide event information, sell tickets and provide other online services. We experience competition from other national, regional and local primary ticketing service providers to reach fans for events. Resale, or secondary, ticketing services have created more aggressive buying of primary tickets whereby brokers are using automated internet “bot” technology to attempt to bypass queues and buy tickets when they go on sale. Our main competitors for fans include primary ticketing companies such as Live Nation Entertainment's Ticketmaster division, Tickets.com, AXS and Paciolan, upstart providers such as Eventbrite and eTix and secondary ticketing companies such as StubHub.

Seasonality

Our results reflect the effects of seasonal trends in listener and advertising behavior. We expect to experience both higher advertising sales due to greater advertiser demand during the holiday season and increased usage due to the popularity of holiday music during the last three months of each calendar year. In addition, we expect to experience lower advertising sales in the first three months of each calendar year due to reduced advertiser demand and increased usage due to increased use of media-streaming devices received as gifts during the holiday season. See the section entitled "Business Trends" in Item 7 of this Annual Report on Form 10-K for a more complete description of the seasonality of our financial results.

We changed our fiscal year to the calendar twelve months ended December 31 to align with the advertising industry’s business cycle, effective beginning with the period ended on December 31, 2013. The results of our fiscal quarters prior to 2014 (three months ended April 30, July 31, October 31 and January 31 of each year) reflect the same effects of the seasonal trends on advertising revenue discussed above for calendar periods, except that the impact of these advertising sales-related trends on our fiscal results was not as pronounced due to the inclusion of January instead of October in our fourth fiscal quarter.

Intellectual Property

Our success depends in part upon our ability to protect our technologies and intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including trade secrets, patents, copyrights, trademarks, contractual restrictions, technological measures and other methods. We enter into confidentiality and proprietary rights agreements with our employees, consultants and business partners, and we control access to and distribution of our technology and proprietary information.

We have filed and acquired dozens of active patent applications and issued patents across the world, and we continue to pursue additional patent protection, both in the United States and abroad where appropriate and cost effective. In December 2014, we purchased certain patents covering technologies used in internet radio from Allied Security Trust. In June 2013, we purchased certain patents covering technologies used in internet radio from Yahoo! Inc. for $8.0 million in cash. We intend to hold these patents purchased from Allied Security Trust and Yahoo! Inc. as part of our strategy to protect and defend Pandora in patent-related litigation. We also acquire patents and patent applications from time to time as part of other transactions, including our recent acquisition of assets from Rdio, Inc. in December 2015.

Our registered trademarks in the United States include "Pandora," the "Music Genome Project," and "Ticketfly," in addition to a number of Pandora logos and other Pandora marks. "Pandora" is also registered in Australia, Canada, Chile, the European Union, India, Israel, Korea, Mexico, New Zealand, Switzerland, Taiwan and other countries. "Music Genome Project" is also registered in Australia, Canada, China and New Zealand. We have pending trademark applications in the United

States and other countries for Pandora names and marks.

We are the registrant of the internet domain names for our websites, pandora.com and ticketfly.com, as well as pandora.eu, pandora.fm, pandora.co.in, pandora.co.uk, pandora.uk, pandora.co.nz, pandora.de, pandora.tw, pandora.rocks, and others related to our current and potential businesses.

In addition to the forms of intellectual property listed above, we own rights to proprietary processes and trade secrets, including those underlying the Pandora service. We use contractual, policy and technological means to generally control access to, use and distribution of our proprietary software, trade secrets and other confidential information, both internally and externally, including contractual protections with employees, contractors, customers and partners.

Customer Concentration

For each of the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, we had no customers that accounted for 10% or more of total revenue.

Employees

As of December 31, 2015, we had 2,219 employees. None of our employees are covered by collective bargaining agreements, and we consider our relations with our employees to be good.

Corporate and Available Information

We were incorporated as a California corporation in January 2000 and reincorporated as a Delaware corporation in December 2010. Our principal executive offices are located at 2101 Webster Street, Suite 1650, Oakland, California 94612 and our telephone number is (510) 451-4100. Our website is located at www.pandora.com and our Investor Relations website is located at investor.pandora.com.

We changed our fiscal year to the calendar twelve months ending December 31, effective beginning with the period ended on December 31, 2013. As a result, the period ended December 31, 2013 was shortened from twelve months to an eleven-month transition period.

We file reports with the Securities and Exchange Commission ("SEC"), including Annual and Transition Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any other filings required by the SEC. We make available on our Investor Relations website, free of charge, our Annual and Transition Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information on our website is not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC.

The public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an internet site (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Investors and others should note that we announce material financial information to our investors using our Investor Relations website, SEC filings, press releases, public conference calls and webcasts. We use these channels as well as social media to communicate with the public about the Company, our services and other issues. It is possible that the information we post on social media could be deemed to be material information. Therefore, we encourage investors, the media, and others interested in the Company to review the information we post on the social media channels listed on our Investor Relations website.

ITEM 1A. RISK FACTORS

The risks and uncertainties set forth below, as well as other factors described elsewhere in this Annual Report on Form 10-K or in other filings by us with the SEC, could adversely affect our business, financial condition, results of operations and the trading price of our common stock. Additional risks and uncertainties that are not currently known to us or that are not currently believed by us to be material may also harm our business operations and financial results. Because of the following factors, as well as other factors affecting our financial condition and operating results, past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.

Risks Related to Our Business

We depend upon third-party licenses for the right to publicly perform musical works and a change to these licenses could materially increase our content acquisition costs.

Our content costs, in part, are comprised of the royalties we pay for the public performance of musical works embodied in the sound recordings that we stream. As described in "Business—Content, Copyrights and Royalties—Musical Works", to secure the rights to publicly perform musical works embodied in sound recordings over the internet, we obtain licenses from or for the benefit of copyright owners and pay royalties to copyright owners or their agents. There is no guarantee that the licenses available to us now will continue to be available in the future or that such licenses will be available at the royalty rates associated with the current licenses. If we are unable to secure and maintain rights to publicly perform musical works or if we cannot do so on terms that are acceptable to us, our ability to perform music content to our listeners, and consequently our ability to attract and retain both listeners and advertisers, will be adversely affected. For the twelve months ended December 31, 2015, we incurred content acquisition costs for the public performance of musical works representing 6.7% of our total revenue for that period.

As described in "Business—Content, Copyrights and Royalties—Musical Works", in December 2015, we entered into new, multi-year direct licenses with ASCAP, BMI and other music publishers which took effect on January 1, 2016 and expire on December 31, 2018. There is no guarantee that, upon the expiration or earlier termination of these licenses, renewals or equivalent licenses will be available at acceptable royalty rates in the future or that we will be able to obtain licenses to cover new products or new features we may wish to add to our products. If we are not able to agree to terms with ASCAP or BMI on new licenses when our current licenses expire or are terminated, either we or ASCAP or BMI, as the case may be, may petition the respective U.S. District Court having supervisory authority over ASCAP or BMI to set the terms of the new license. Any new rate court proceedings may be protracted, expensive and uncertain in outcome. In the event that any new rate court proceedings are resolved adversely to us, our content acquisition costs could increase significantly, which would materially and adversely affect our operating results.

We do not currently pay so-called "mechanical royalties" to music publishers for the reproduction and distribution of musical works embodied in server copies or transitory copies used to make streams audible to our listeners. Although not currently a matter of dispute, if music publishers were to retreat from the publicly stated position of their trade association that non-interactive streaming does not require the payment of mechanical royalties, and a court entered final judgment requiring that payment, our royalty obligations could increase significantly, which would increase our operating expenses and harm our business and financial conditions. While we would vigorously challenge such mechanical royalties as not required by law, our challenge may be unsuccessful and would in any case involve commitment of substantial time and resources.

In addition, we stream spoken word comedy content, for which the underlying literary works are not currently entitled to eligibility for licensing by any performing rights organization in the United States. Rather, pursuant to industry-wide custom and practice, this content is performed absent a specific license from any such performing rights organization or individual rights owners, although royalties are paid to SoundExchange for the public performance of the sound recordings in which such literary works are embodied. There can be no assurance that this industry custom will not change or that we will not otherwise become subject to additional licensing costs for spoken word comedy content imposed by performing rights organizations or individual copyright owners in the future or be subject to damages for copyright infringement.

Changes in third-party licenses for the right to publicly perform musical works may reduce the number of sound recordings available to stream on our service or materially increase our content acquisition costs.

The number of works administered by ASCAP, BMI and other performing rights organizations ("PROs") may fluctuate over time and may be subject to the withdrawal of certain rights by individual PRO-affiliated music publishers for certain types of transmissions by certain types of services, such as Pandora, or the loss of repertory entirely in the event of a publisher's

complete withdrawal from any PRO. The decrease in the works licensed by the PROs may require more direct licensing by us with individual music publishers who could withhold the rights to all of the musical works which they own or administer.

If music publishers withdraw all or a portion of their catalogs from PROs, we may no longer be able to obtain licenses for such publisher's withdrawn catalogs. Under these circumstances, we would either need to enter into direct licensing arrangements with such music publishers or remove those musical works from the service, including any sound recordings in which such musical works are embodied.

It is unclear what specific effect a publisher's prospective complete withdrawal of rights from a PRO would have on us. If we are unable to reach an agreement with respect to the repertoire of any music publisher that successfully withdraws all or a portion of its catalog from a PRO, or if we are forced to enter into direct licensing agreements with such publishers at rates higher than those currently set by the PROs, or higher than those set by the respective U.S. District Court having supervisory authority over ASCAP or BMI, for the performance of musical works, or if there is uncertainty as to what rights are administered by any particular PRO or publisher, the number of sound recordings that we perform on our service may be reduced, our content acquisition costs may increase and our ability to retain and expand our listener base could be adversely affected, any of which could materially and adversely affect our business, financial condition and results of operations.

In addition, PROs and musical work copyright owners with whom we have entered into direct licenses have or may have the right to audit our royalty payments, and any such audit could result in disputes over whether we have paid the proper royalties. If such a dispute were to occur, we could be required to pay additional royalties and audit fees, and the amounts involved could materially and adversely affect our business, financial condition and results of operations. SoundExchange informed us in December 2013 that it intends to audit our payments for the years 2010, 2011, and 2012, but has not yet commenced these audits. We believe the statute of limitations has run on SoundExchange's right to audit our payments for these years. In January 2016, SoundExchange informed us that it intends to audit our payments for the years 2013 and 2014. As of February 18, 2016, SoundExchange had not yet commenced these audits.

Our inability to obtain accurate and comprehensive information necessary to identify the ownership of musical works may impact our ability to obtain necessary licenses from the copyright holders, remove musical works or decrease the number of performances of a particular musical work, subjecting us to potential copyright infringement claims and difficulties in controlling content acquisition costs.

Comprehensive and accurate rightsholder information for the musical works underlying the sound recordings that we stream is not presently available to us. Without the ability to identify which composers, songwriters or publishers own or administer musical works, and an ability to determine which musical works correspond to specific sound recordings, it may be difficult to identify the appropriate rightsholders from which to obtain a license, which could lead to a reduction of sound recordings available to be streamed on our service, adversely impacting our ability to retain and expand our listener base. Such a lack of ownership data may also make it difficult to identify the sound recordings that we should remove from our service, which may subject us to significant liability for copyright infringement.

Our inability to enter into commercially viable direct licenses with record labels for the right to reproduce and publicly perform sound recordings on our service may delay or prevent our plans to expand our subscription offerings into multiple tiers, including an on-demand offering, and delay or prevent our international expansion.

Our largest expense is the royalties we pay for the reproduction and public performance of sound recordings that we stream on our service. As described in "Business-Content, Copyrights and Royalties-Sound Recordings" from the years 2009-2015 we operated under the Pureplay Settlement, which is an agreement with SoundExchange that provided the rates and terms of statutory licenses for the reproduction and public performance of sound recordings for commercial webcasters through the end of 2015. On December 16, 2015, the Copyright Royalty Board announced the new per performance rates that apply for commercial webcasters for calendar years 2016 through 2020 (the "Web IV Proceedings"). We intend to expand our subscription offerings into multiple tiers, including an on-demand offering, and make our offerings available in new geographic areas. The statutory license, and the rates provided under the Web IV Proceedings, do not extend to cover these new product offerings or geographies outside of the United States and its territories, and, therefore, we must obtain direct licenses with record labels for the right to reproduce and publicly perform sound recordings for these offerings and new geographies. There is no guarantee that such licenses will be available to us on terms that are commercially viable for our long-term success and sustainability. If we are unable to secure and maintain these rights from the record labels or if we cannot do so on terms that are acceptable to us, our ability to launch new product offerings and to continue our international expansion efforts will be delayed and our content acquisition costs could materially increase.

We plan to operate our expanded subscription offerings under a compulsory license for "mechanical royalties" which could change or cease to exist, therefore hindering our ability to launch new product offerings.

We intend to expand our subscription offerings into multiple tiers, including an on-demand offering, and we expect that such offerings may require that we pay mechanical royalties to music publishers for the reproduction and distribution of musical works under the compulsory license made available by Section 115 of the Copyright Act. There can be no assurance that this compulsory license will remain available to us for use at the current rates, or at all.

The Copyright Royalty Board commenced a proceeding to set the rates for a compulsory license for mechanical royalties for calendar years 2018 to 2022 (the "115 Proceedings") in 2016, and we have filed a petition to participate in the 115 Proceedings. There can be no assurances that the rates established by the CRB for periods following 2018 will not exceed the rates currently in place. If the CRB sets rates that exceed the rates that are currently in place, our content acquisition costs may significantly increase, which could materially harm our financial condition and hinder our ability to provide subscription offerings in multiple tiers, including an on-demand offering.

Assertions by third parties of violations under state law with respect to the public performance and reproduction of pre-1972 sound recordings could result in significant costs and substantially harm our business and operating results.

As described in "Business Content—Copyrights and Royalties—Sound Recordings", sound recordings made on or after February 15, 1972 fall within the scope of federal copyright protection. Subject to our ongoing compliance with numerous federal statutory conditions and regulatory requirements for a non-interactive service, we are permitted to operate our radio service under a statutory license that allows the streaming in the U.S. of any such sound recording lawfully released to the public and permits us to make reproductions of such sound recordings on computer servers pursuant to a separate statutory license designed to facilitate the making of such transmissions.

By contrast, protection of sound recordings created prior to February 15, 1972 ("pre-1972 sound recordings") remains governed by a patchwork of state statutory and common laws. Copyright owners of pre-1972 sound recordings have commenced litigation against us in New York, California, Illinois, and New Jersey alleging violations of state statutory and common laws arising from the reproduction and public performance of pre-1972 sound recordings. Despite settling one such suit with the major record labels in October 2015, we still face a number of class-action suits brought by various plaintiffs who seek, among other things, restitution, disgorgement of profits, and punitive damages as well as injunctive relief prohibiting further violation of those copyright owners' alleged exclusive rights.

Litigation has been brought previously against Sirius XM Radio Inc. ("Sirius") for similar claims by a number of different plaintiffs, and a federal district court and a state court in California recently ruled against Sirius for violating exclusive public performance rights in California. In addition, a federal district court in New York has found Sirius liable for similar claims in New York. Those same plaintiffs are amongst those that have initiated litigation against us, alleging similar violations of exclusive rights under California and New York law. If we are found liable for the violation of the exclusive rights of any pre-1972 sound recording copyright owners, then we could be subject to liability, the amount of which could be significant. Similarly, any settlements of the remaining litigation could require substantial payments. The settlement we did enter into only extends to the end of 2016. There is no assurance we will be able to enter into a new license with respect to the works covered under our settlement for periods after 2016 on reasonable terns, or at all. If we are required to obtain licenses from individual sound recording copyright owners for the reproduction and public performance of pre-1972 sound recordings, then the time, effort and cost of securing such licenses directly from all owners of sound recordings used on our service could be significant and could harm our business and operating results. If we are required to obtain licenses for pre-1972 sound recordings to avoid liability and are unable to secure such licenses, then we may have to remove pre-1972 sound recordings from our service, which could harm our ability to attract and retain users.

If we are unable to maintain revenue growth from our advertising products, particularly in mobile advertising, our results of operations will be materially adversely affected.

Our number of listener hours on mobile devices comprised approximately 85% of our total listener hours in 2015, and we expect that mobile listener hours will continue to grow more quickly than computer listener hours. The percentage of advertising spending allocated to digital advertising on mobile devices still lags behind that allocated to traditional online advertising. According to eMarketer, the percentage of U.S. advertising spending allocated to advertising on mobile devices was approximately 16% in 2015, compared to approximately 32% for all online advertising. We must therefore continue to convince advertisers of the capabilities of mobile digital advertising opportunities so that they migrate their advertising spend toward demographics and ad solutions that more effectively utilize mobile inventory.

We continue to build our sales capability to penetrate local advertising markets, which we view as a key challenge to monetizing our listener hours, including listener hours on mobile and other connected devices. Our audio advertising capability also places us in direct competition with terrestrial radio, as many advertisers that purchase audio ads focus their spending on terrestrial radio stations who traditionally have strong connections with local advertisers. We cannot foresee whether we will be able to continue to capture local and audio advertising revenue at the current rate of growth, which may have an adverse impact on future revenue and income.

We continue to work on initiatives that, if successfully implemented, would increase our number of listener hours on mobile and other connected devices, including efforts to expand the reach of our service by making it available on an increasing number of devices, such as smartphones and devices connected to or installed in automobiles. In order to effectively monetize such increased listener hours, we must, among other things, convince advertisers to migrate spending to nascent advertising markets, penetrate local advertising markets and develop compelling ad product solutions. We may not be able to effectively monetize inventory generated by listeners using mobile and connected devices, or do so in a timeframe that supports our business plans.

Advertising spending is increasingly being placed through new data-driven channels, such as the programmatic buying ecosystem, where mobile offerings are not as mature as their web-based equivalents. Because the substantial majority of our listener hours occur on mobile devices, our growth prospects and revenue may be adversely affected if the advertising ecosystem is slow to adopt data-driven mobile advertising offerings.

As new advertising buying technologies, such as programmatic buying, develop around data-driven technologies and advertising products, an increasing percentage of advertising spend is likely to shift to such channels and products. These data-driven advertising products and programmatic buying technologies allow publishers to use data to target advertising toward specific groups of consumers who are more likely to be interested in the advertising message delivered. These advertising products and programmatic technologies are currently more developed in terms of ad technology and industry adoption on the web than they are on mobile. Due to the fact that the substantial majority of our listener hours occur on mobile devices, our ability to attract advertising spend, and ultimately our ad revenue, may be adversely affected by this shift. We have no reliable way to predict how significantly or how quickly advertisers will shift buying to programmatic technologies and data-driven advertising products.

We have developed a data-driven, programmatic advertising capability for mobile in an effort to take advantage of this trend. However, we only released this capability to the market in the second quarter of 2015, and we have no reliable way to predict how significantly or how quickly advertisers will shift buying toward such data-driven ad products and programmatic channels on mobile. If advertising spend continues to be reallocated to web-based programmatic technologies and mobile programmatic adoption lags, our ability to grow revenue may be adversely affected.

Emerging industry trends in digital advertising measurement and pricing may pose challenges for our ability to forecast and optimize our advertising inventory which may adversely impact our advertising revenue.

The digital advertising marketplace is introducing new ways to measure and price advertising inventory. Specifically, the Media Ratings Council released the Viewable Ad Impression Measurement Guidelines in 2014 pursuant to which web display and web video advertising inventory will be transacted upon based on the number of “viewable” impressions delivered in connection with an applicable advertising campaign (instead of the number of ads served by the applicable ad server). The industry is in the early stages of this transition and we are still determining its potential impact on our inventory, operational resources, pricing, and revenue. In addition, the current measurement solutions are limited to web display and web video inventory and do not include mobile and audio inventory. Nonetheless, advertisers have been aggressively pushing to transact advertising purchases for audio advertising and mobile placement on a measured “viewable” basis. As these trends in the industry continue to evolve, our advertising revenue may be adversely affected by the availability, accuracy and utility of the available analytics and measurement technologies.

Our failure to convince advertisers of the benefits of our service in the future could harm our business.

For the twelve months ended December 31, 2015, we derived 80% of our revenue from the sale of advertising and expect to continue to derive a substantial majority of our revenue from the sale of advertising in the future. Our ability to attract and retain advertisers, and ultimately to sell our advertising inventory to generate advertising revenue, depends on a number of factors, including:

- increasing the number of listener hours, particularly within desired demographics;

- keeping pace with changes in technology and our competitors;
- competing effectively for advertising dollars from other online marketing and media companies;
- penetrating the market for local radio advertising;
- demonstrating the value of advertisements to reach targeted audiences across all of our delivery platforms, including the value of mobile digital advertising;
- continuing to develop and diversify our advertising platform, which currently includes delivery of display, audio and video advertising products through multiple delivery channels, including computers, mobile and other connected devices; and
- coping with ad blocking technologies that have been developed and are likely to continue to be developed that can block the display of our ads.

Our agreements with advertisers are generally short-term or may be terminated at any time by the advertiser. Advertisers that are spending only a small amount of their overall advertising budget on our service may view advertising with us as experimental and unproven and may leave us for competing alternatives at any time. We may never succeed in capturing a greater share of our advertisers' core advertising spending, particularly if we are unable to achieve the scale and industry penetration necessary to demonstrate the effectiveness of our advertising platforms, or if our advertising model proves ineffective or not competitive when compared to alternatives. Failure to demonstrate the value of our service would result in reduced spending by, or loss of, existing or potential future advertisers, which would materially harm our revenue and business.

Unavailability of, or fluctuations in, third-party measurements of our audience may adversely affect our ability to grow advertising revenue.

Selling ads, locally and nationally, requires that we demonstrate to advertisers that our service has substantial reach and usage. Third-party measurements may not reflect our true listening audience and their underlying methodologies are subject to change at any time. In addition, the methodologies we apply to measure the key metrics that we use to monitor and manage our business may differ from the methodologies used by third-party measurement service providers. For example, we calculate listener hours based on the total bytes served for each track that is requested and served from our servers, as measured by our internal analytics systems, whether or not a listener listens to the entire track. By contrast, certain third-party measurement service providers may calculate and report the number of listener hours using a client-based approach, which measures time elapsed during listening sessions. Measurement technologies for mobile and consumer electronic devices may be even less reliable in quantifying the reach, usage and location of our service, and it is not clear whether such technologies will integrate with our systems or uniformly and comprehensively reflect the reach, usage and location of our service. While we have been working with third-party measurement service providers and certain of their measurements have earned Media Ratings Council accreditation, some providers have not yet developed uniform measurement systems that comprehensively measure the reach, usage and location of our service. In order to demonstrate to potential advertisers the benefits of our service, we supplement third-party measurement data with our internal research, which may be perceived as less valuable than third-party numbers. If third-party measurement providers report lower metrics than we do, or if there is wide variance among reported metrics, our ability to attract advertisers to our service could be adversely affected.

The lack of accurate cross-platform measurements for internet radio and broadcast radio may adversely affect our ability to grow advertising revenue.

We have invested substantial resources to create accurate cross-platform measurements for internet radio and broadcast radio in the major automated media-buying platforms, attempting to create a one-stop shop that enables media buyers to compare internet radio audience reach with terrestrial radio audience reach using traditional broadcast radio metrics.

Media buying agencies receive measurement metrics from third parties, such as Triton for internet radio and Nielsen for more traditional media like terrestrial radio and television. Media buying agencies may choose not to show, or may be prohibited by contract from showing, internet radio metrics alongside traditional terrestrial metrics. Despite our efforts to achieve parity within the tools available to media buying agencies, a lack of comparable internet radio metrics in these buying tools could have a materially negative effect on our ability to sell advertising on our service and achieve our revenue goals.

If we fail to detect click fraud or other invalid clicks on ads, we could lose the confidence of our advertisers, which would cause our business to suffer.

Our business relies on delivering positive results to our advertising customers. We are exposed to the risk of fraudulent and other invalid clicks or conversions that advertisers may perceive as undesirable. A major source of invalid clicks could result from click fraud where a listener intentionally clicks on ads for reasons other than to access the underlying content of the ads. If fraudulent or other malicious activity is perpetrated by others and we are unable to detect and prevent it, or if we choose to manage traffic quality in a way that advertisers find unsatisfactory, the affected advertisers may experience or perceive a reduced return on their investment in our advertising products, which could lead to dissatisfaction with our advertising programs, refusals to pay, refund demands or withdrawal of future business. This could damage our brand and lead to a loss of advertisers and revenue.

If we are unable to continue to make our technology compatible with the technologies of third-party distribution partners who make our service available to our listeners through mobile devices, consumer electronic products and automobiles, we may not remain competitive and our business may fail to grow or decline.

In order to deliver music everywhere our listeners want to hear it, our service must be compatible with mobile, consumer electronic, automobile and website technologies. Our service is accessible in part through both Pandora-developed and third-party developed apps that hardware manufacturers embed in, and distribute through, their devices. Most of our agreements with makers of mobile operating systems and devices through which our service may be accessed, including Apple, Google and Microsoft, are short-term or can be canceled at any time with little or no prior notice or penalty. The loss of these agreements, or the renegotiation of these agreements on less favorable economic or other terms, could limit the reach of our service and its attractiveness to advertisers. Some of these mobile device makers and operating system providers, including Apple, Amazon, Samsung and Google, are now, or may in the future become, competitors of ours, and could stop allowing or supporting access to our service through their products for competitive reasons.

Connected devices and their underlying technologies are constantly evolving. As internet connectivity of automobiles, mobile devices and other consumer electronic products expands and as new internet-connected products are introduced, we must constantly adapt our technology. It is challenging to keep pace with the continual release of new devices and technological advances in digital media delivery. If manufacturers fail to make products that are interoperable with our technology or we fail to adapt our technology to their evolving requirements, our ability to grow or sustain the reach of our service, increase listener hours and sell advertising could be adversely affected.

Consumer tastes and preferences can change in rapid and unpredictable ways and consumer acceptance of these products depends on the marketing, technical and other efforts of third-party manufacturers, which is beyond our control. If consumers fail to accept the products of the companies with whom we partner or if we fail to establish relationships with makers of leading consumer products, our business could be adversely affected.

If our efforts to attract prospective listeners and to retain existing listeners are not successful, our growth prospects and revenue will be adversely affected.

Our ability to grow our business and generate advertising revenue depends on retaining and expanding our listener base and increasing listener hours. We must convince prospective listeners of the benefits of our service and existing listeners of the continuing value of our service. The more listener hours we stream, the more ad inventory we have to sell. Further, growth in our listener base increases the size of demographic pools targeted by advertisers, which improves our ability to deliver advertising in a manner that maximizes our advertising customers' return on investment and, ultimately, to demonstrate the effectiveness of our advertising solutions and justify a pricing structure that is profitable for us. If we fail to grow our listener base and listener hours, particularly in key demographics such as young adults, we will be unable to grow advertising revenue, and our business will be materially and adversely affected.

Our ability to increase the number of our listeners and listener hours will depend on effectively addressing a number of challenges. Some of these challenges include:

- providing listeners with a consistent high quality, user-friendly and personalized experience;
- successfully expanding our share of listening in cars;
- continuing to build and maintain availability of catalogs of music and comedy and other content that our listeners enjoy;

- continuing to innovate and keep pace with changes in technology and our competitors;
- maintaining and building our relationships with makers of consumer products such as mobile devices and other consumer electronic products to make our service available through their products;
- maintaining positive listener perception of our service while managing ad-load to optimize inventory utilization; and
- minimizing listener churn and attracting lapsed listeners back to the service.

In addition, we have historically relied heavily on the success of viral marketing to expand consumer awareness of our service. We recently began supplementing our viral marketing strategy with larger, more costly marketing campaigns, and this increase in marketing expenses could fail to achieve expected returns and therefore have an adverse effect on our results of operations. We cannot guarantee that we will be successful in maintaining or expanding our listener base and failure to do so would materially and adversely affect our business, operating results and financial condition.

Further, although we use our number of active users as a key indicator of our brand awareness and the growth of our business, the number of active users exceeds the number of unique individuals who register for, or actively use, our service. We define active users as the number of distinct users that have requested audio from our servers within the trailing 30 days from the end of each calendar month. To establish an account, a person does not need to provide personally unique information. For this reason, a person may have multiple accounts. If the number of actual listeners does not result in an increase in listener hours, then our business may not grow as quickly as we expect, which may harm our business, operating results and financial condition.

If we fail to accurately predict and play music, comedy or other content that our listeners enjoy, we may fail to retain existing and attract new listeners.

We believe that a key differentiating factor between the Pandora service and other music content providers is our ability to predict music that our listeners will enjoy. Our personalized playlist generating system, based on the Music Genome Project and our proprietary algorithms, is designed to enable us to predict listener music preferences and select music content tailored to our listeners' individual music tastes. We have invested, and will continue to invest, significant resources in refining these technologies; however, we cannot guarantee that such investments will produce the intended results. The effectiveness of our personalized playlist generating system depends in part on our ability to gather and effectively analyze large amounts of listener data and listener feedback and we have no assurance that we will continue to be successful in enticing listeners to give a thumbs-up or thumbs-down to enough songs for our database to effectively predict and select new and existing songs. In addition, our ability to offer listeners songs that they have not previously heard and impart a sense of discovery depends on our ability to acquire and appropriately categorize additional tracks that will appeal to our listeners' diverse and changing tastes. While we have over 1,000,000 analyzed songs in our library, we must continuously identify and analyze additional tracks that our listeners will enjoy and we may not effectively do so. Further, many of our competitors currently have larger catalogs than we offer and they may be more effective in providing their listeners with a more appealing listener experience.

We also provide comedy content on Pandora, and for that content we also try to predict what our listeners will enjoy, using technology similar to the technology that we use to generate personalized playlists for music. The risks that apply to predicting our listeners' musical tastes apply to comedy and other content to an even greater extent, particularly as we lack experience with content other than music, do not yet have as large a data set on listener preferences for comedy and other content, and have a much smaller catalog as compared to music. Our ability to predict and select music, comedy and other content that our listeners enjoy is critical to the perceived value of our service among listeners and failure to make accurate predictions would adversely affect our ability to attract and retain listeners, increase listener hours and sell advertising.

We face, and will continue to face, competition with other content providers for listener hours and advertising spending.

We compete for the time and attention of our listeners with other content providers on the basis of a number of factors, including quality of experience, relevance, acceptance and perception of content quality, ease of use, price, accessibility, perception of ad load, brand awareness and reputation. Such competition affects the amount of quality advertising inventory available which we can offer to advertisers.

Many of our competitors may leverage their existing infrastructure, brand recognition and content collections to augment their services by offering competing internet radio features within a more comprehensive digital music streaming service. We

face increasing competition for listeners from a growing variety of music services that deliver music content through mobile phones and other wireless devices. Our direct competitors in the internet radio segment include iHeart Radio, iTunes Radio, Beats 1 Radio, LastFM and other companies in the traditional broadcast and internet radio market. We also directly compete with the non-interactive, Internet radio offerings provided by digital music streaming services such as Spotify, Google Play Music and Slacker, and we compete more broadly with the interactive music services offered by these companies and others, such as Apple Music, YouTube and Amazon Prime Music.

Our competitors also include terrestrial radio and satellite radio services, many of which also broadcast on the internet. Terrestrial radio providers offer their content for free, are well established and accessible to listeners and offer content, such as news, sports, traffic, weather and talk that we currently do not offer. In addition, many terrestrial radio stations have begun broadcasting digital signals, which provide high-quality audio transmission. Satellite radio providers may offer extensive and oftentimes exclusive news, comedy, sports and talk content, national signal coverage and long-established automobile integration. In addition, terrestrial radio pays no royalties for its use of sound recordings and satellite radio pays a much lower percentage of revenue, 10% in 2015 and 10.5% in 2016, than internet radio providers for use of sound recordings, giving broadcast and satellite radio companies a significant cost advantage. We also compete directly with other emerging non-interactive internet radio providers, which may offer more extensive content libraries than we offer and some of which may be accessed internationally.

We compete for the time and attention of our listeners with providers of other forms of in-home and mobile entertainment. To the extent existing or potential listeners choose to watch cable television, stream video from on-demand services or play interactive video games on their home-entertainment system, computer or mobile phone rather than listen to the Pandora service, these content services pose a competitive threat. We also compete with many other forms of media and services for the time and attention of our listeners, including non-music competitors such as Facebook, Google, MSN, Yahoo!, ABC, CBS, FOX, NBC, The New York Times and the Wall Street Journal, among others.

We believe that companies with a combination of financial resources, technical expertise and digital media experience also pose a significant threat. For example, Apple, Amazon and Google have recently launched competing services. These and other competitors may devote greater resources than we have available, have a more accelerated time frame for deployment, be willing to absorb significant costs to acquire customers through free trials or other initiatives, operate their music services at a loss in order to drive their other profitable businesses, and leverage their existing user base and proprietary technologies to provide products and services that our listeners and advertisers may view as superior or more cost effective. Our current and future competitors may have more well established brand recognition, more established relationships with music content companies and consumer product manufacturers, greater financial, technical and other resources, more sophisticated technologies or more experience in the markets, both domestic and international, in which we compete.

We also compete for listeners on the basis of the presence and visibility of our app, which is distributed via the largest app stores operated by Apple, Google, Amazon and Microsoft. Such distribution is subject to an application developer license agreement in each case. We face significant competition for listeners from these companies, who are also promoting their own digital music and content online through their app stores. Search engines and app stores rank responses to search queries based on the popularity of a website or mobile application, as well as other factors that are outside of our control. Additionally, app stores often offer users the ability to browse applications by various criteria, such as the number of downloads in a given time period, the length of time since a mobile app was released or updated, or the category in which the application is placed. The websites and mobile applications of our competitors may rank higher than our website and our Pandora app, and our app may be difficult to locate in app stores, which could draw potential listeners away from our service and toward those of our competitors. In addition, our competitors' products may be pre-loaded or integrated into consumer electronics products or automobiles, creating an initial visibility advantage. If we are unable to compete successfully for listeners against other digital media providers by maintaining and increasing our presence and visibility online, in app stores and in consumer electronics products and automobiles, our listener hours may fail to increase as expected or decline and our business may suffer. Additionally, should any of these parties reject our app from their app store or amend the terms of their license in such a way that inhibits our ability to distribute our apps, or negatively affects our economics in such distribution, our ability to increase listener hours and sell advertising would be adversely affected, which would reduce our revenue and harm our operating results.

To compete effectively, we must continue to invest significant resources in the development of our service to enhance the user experience of our listeners.

Additionally, in order to compete successfully for advertisers against new and existing competitors, we must continue to invest resources in developing and diversifying our advertisement platform, harnessing listener data and ultimately proving the effectiveness and relevance of our advertising products. There can be no assurance that we will be able to compete successfully

for listeners and advertisers in the future against existing or new competitors, and failure to do so could result in loss of existing or potential listeners, loss of current or potential advertisers or a reduced share of our advertisers' overall marketing budget, which could adversely affect our pricing and margins, lower our revenue, increase our research and development and marketing expenses, diminish our brand strength and prevent us from achieving or maintaining profitability.

If our efforts to attract and retain subscribers are not successful, our business may be adversely affected.

Our ability to continue to attract and retain users of our paid subscription services will depend in part on our ability to consistently provide our subscribers with a quality experience through Pandora One. If Pandora One subscribers do not perceive that offering to be of value, or if we introduce new or adjust existing features or pricing in a manner that is not favorably received by them, we may not be able to attract and retain subscribers. Subscribers may cancel their subscription to our service for many reasons, including a perception that they do not use the service sufficiently, the need to cut household expenses, competitive services that provide a better value or experience or as a result in changes in pricing. If our efforts to attract and retain subscribers are not successful, our business, operating results and financial condition may be adversely affected.

If we are unsuccessful at launching expanded subscription offerings or converting listeners into subscribers of such subscription offerings, our business may be adversely affected.

Our recent acquisition of certain assets of Rdio was intended to facilitate our launch of new subscription offerings that provide additional functionality, including an on-demand offering. In addition to the cost of the Rdio assets, the development and launch of such additional service offerings will require significant engineering as well as marketing and other resources. There is no assurance that we will be able to successfully develop and launch such additional service offerings, obtain the content licensing rights to enable the offering of such services, or be able to convince listeners to become subscribers of such additional service offerings. If we fail to accomplish any of the foregoing and the additional service offerings are unsuccessful, we will not realize the benefits of the Rdio asset acquisition or the substantial investment made in the development of such additional product offerings.

If we are not successful in operating and growing our recently acquired Ticketfly business, we will not realize the benefits anticipated when we acquired the business.

We recently acquired Ticketfly, which was our first major acquisition and represents an entirely new line of business for us. Ticketfly's business is highly sensitive to rapidly changing public tastes and is dependent on the availability of popular artists and events. Ticketfly's revenue is derived from ticketing services under client contracts with venues and event promoters across North America, which consist primarily of per ticket convenience fees, credit card processing and shipping fees as well as per order "order processing" fees. If Ticketfly's clients fail to anticipate the tastes of consumers and to offer events that appeal to them, the business may not grow or succeed. We cannot provide assurances that Ticketfly will be able to maintain or expand arrangements with clients and other third parties on acceptable terms, if at all. Furthermore, a decline in attendance at or reduction in the number of live entertainment, sporting and leisure events for any reason may have an adverse effect on our Ticketfly business. If we fail to successfully operate and grow our Ticketfly business, we will not realize the benefits anticipated when we acquired the business, and any such failure could result in substantial impairment charges.

We face many risks associated with our long-term plan to further expand our operations outside of the United States, including difficulties obtaining rights to music and other content on favorable terms.

Expanding our operations into international markets is an element of our long-term strategy. For example, in June 2012 we began providing our service in New Zealand, Australia and their associated territories. However, offering our service outside of the United States involves numerous risks and challenges. Most importantly, while United States copyright law provides a statutory licensing regime for the public performance of sound recordings to listeners within the United States, there is no equivalent statutory licensing regime available outside of the United States, and direct licenses from rights organizations and other content owners may not be available on commercially viable terms. Addressing licensing structure and royalty rate issues in the United States required us to make very substantial investments of time, capital and other resources, and our business could have failed if such investments had not succeeded. Addressing these issues in foreign jurisdictions may require a commensurate investment by us, and there can be no assurance that we would succeed or achieve any return on this investment.

In addition, international expansion exposes us to other risks such as:

- the need to modify our technology and market our service in non-English speaking countries;

- the need to localize our service to foreign customers' preferences and customs;
- the need to conform our operations, and our marketing and advertising efforts, with the laws and regulations of foreign jurisdictions, including, but not limited to, the use of any personal information about our listeners;
- the need to amend existing agreements and to enter into new agreements with automakers, automotive suppliers, consumer electronics manufacturers with products that integrate our service, and others in order to provide that service in foreign countries;
- difficulties in managing operations due to language barriers, distance, staffing, cultural differences and business infrastructure constraints and domestic laws regulating corporations that operate internationally;
- our lack of experience in marketing, and encouraging viral marketing growth without incurring significant marketing expenses, in foreign countries;
- application of foreign laws and regulations to us;
- fluctuations in currency exchange rates;
- reduced or ineffective protection of our intellectual property rights in some countries; and
- potential adverse tax consequences associated with foreign operations and revenue.

Furthermore, in most international markets, we would not be the first entrant, and our competitors may be better positioned than we are to succeed. In addition, in jurisdictions where copyright protection has been insufficient to protect against widespread music piracy, achieving market acceptance of our service may prove difficult as we would need to convince listeners to stream our service when they could otherwise download the same music for free. As a result of these obstacles, we may find it impossible or prohibitively expensive to enter or sustain our presence in foreign markets, or entry into foreign markets could be delayed, which could hinder our ability to grow our business.

Expansion of our operations into content beyond pre-recorded music, including comedy, live events and podcasts, subjects us to additional business, legal, financial and competitive risks.

Expansion of our operations into delivery of content beyond pre-recorded music involves numerous risks and challenges, including increased capital requirements, new competitors and the need to develop new strategic relationships. Growth into these new areas may require changes to our existing business model and cost structure, modifications to our infrastructure and exposure to new regulatory and legal risks, including infringement liability, any of which may require additional expertise that we currently do not have. There is no guarantee that we will be able to generate sufficient revenue from advertising sales associated with comedy, live events, podcasts or other non-prerecorded-music content to offset the costs of maintaining these stations or the royalties paid for such stations. Further, we have established a reputation as a music format internet radio provider and our ability to gain acceptance and listenership for comedy, live events, podcasts or other non-music content stations, and thus our ability to attract advertisers on these stations, is not certain. Failure to obtain or retain rights to comedy, live events, podcasts or other non-music content on acceptable terms, or at all, to successfully monetize and generate revenues from such content, or to effectively manage the numerous risks and challenges associated with such expansion could adversely affect our business and financial condition.

We have acquired, and may continue to acquire, other companies or technologies, which could divert our management's attention, result in additional dilution to our stockholders and otherwise disrupt our operations and harm our operating results.

We have recently acquired and may in the future seek to acquire or invest in businesses, products or technologies that we believe could complement or expand our service, enhance our technical capabilities or otherwise offer growth opportunities. For example, in 2015, we acquired Next Big Sound, Ticketfly and certain assets of Rdio. These acquisitions, and our pursuit of future potential acquisitions, may divert the attention of management and cause us to incur various expenses in identifying, investigating and pursuing suitable acquisitions, whether or not they are consummated. In addition, we have limited experience acquiring and integrating other businesses. We may be unsuccessful in integrating our recently acquired businesses or any additional business we may acquire in the future. For instance, our recent acquisition of certain assets of Rdio in order to facilitate our intention to launch an on-demand service, will require time and resources. There is no assurance that we will be

able to successfully launch an on-demand service, if at all, and if we fail to launch an on-demand service or a new service is unsuccessful, we will not realize the benefits of this acquisition.

We also may not achieve the anticipated benefits from any acquired business due to a number of factors, including:

- unanticipated costs or liabilities associated with the acquisition;
- incurrence of acquisition-related costs;
- diversion of management's attention from other business concerns;
- regulatory uncertainties;
- harm to our existing business relationships with business partners and advertisers as a result of the acquisition;
- harm to our brand and reputation;
- the potential loss of key employees;
- use of resources that are needed in other parts of our business; and
- use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least annually. In the future, if our acquisitions do not yield expected returns, we may be required to take charges to our operating results based on this impairment assessment process. Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial condition may suffer.

Our ability to increase the number of our listeners will depend in part on our ability to establish and maintain relationships with automakers, automotive suppliers and consumer electronics manufacturers with products that integrate our service.

A key element of our strategy to expand the reach of our service and increase the number of our listeners and listener hours is to establish and maintain relationships with automakers, automotive suppliers and consumer electronics manufacturers that integrate our service into and with their products. Working with certain third-party distribution partners, we currently offer listeners the ability to access our service through a variety of consumer electronics products used in the home and devices connected to or installed in automobiles. We intend to broaden our ability to reach additional listeners, and increase current listener hours, through other platforms and partners over time, including through direct integration into connected cars. However, product design cycles in automotive manufacturing are lengthy and the useful lives of automobiles in service is long, and we may not be able to achieve our goals in our desired timeframe, which could adversely impact our ability to grow our business.

Our existing agreements with partners in the automobile and consumer electronics industries generally do not obligate those partners to offer our service in their products. In addition, some automobile manufacturers or their supplier partners may terminate their agreements with us for convenience. Our business could be adversely affected if our automobile partners and consumer electronics partners do not continue to provide access to our service or are unwilling to do so on terms acceptable to us. If we are forced to amend the business terms of our distribution agreements as a result of competitive pressure, our ability to maintain and expand the reach of our service and increase listener hours would be adversely affected, which would reduce our revenue and harm our operating results.

We rely upon an agreement with DoubleClick, which is owned by Google, for delivering and monitoring most of our ads. Failure to renew the agreement on favorable terms, or termination of the agreement, could adversely affect our business.

We use DoubleClick's ad-serving platform to deliver and monitor most of the ads for our service. There can be no assurance that our agreement with DoubleClick, which is owned by Google, will be extended or renewed upon expiration, that we will be able to extend or renew our agreement with DoubleClick on terms and conditions favorable to us or that we could identify another alternative vendor to take its place. Our agreement with DoubleClick also allows DoubleClick to terminate our

relationship before the expiration of the agreement on the occurrence of certain events, including material breach of the agreement by us, and to suspend provision of the services if DoubleClick determines that our use of its service violates certain security, technology or content standards.

We rely on third parties to provide software and related services necessary for the operation of our business.

We incorporate and include third-party software into and with our apps and service offerings and expect to continue to do so. The operation of our apps and service offerings could be impaired if errors occur in the third-party software that we use. It may be more difficult for us to correct any defects in third-party software because the development and maintenance of the software is not within our control. Accordingly, our business could be adversely affected in the event of any errors in this software. There can be no assurance that any third-party licensors will continue to make their software available to us on acceptable terms, to invest the appropriate levels of resources in their software to maintain and enhance its capabilities, or to remain in business. Any impairment in our relationship with these third-party licensors could harm our ability to maintain and expand the reach of our service, increase listener hours and sell advertising, each of which could harm our operating results, cash flow and financial condition.

Digital music streaming is an evolving industry, which makes it difficult to evaluate our near- and long-term business prospects.

Digital music streaming continues to develop as an industry and our near- and long-term business prospects are difficult to evaluate. The marketplace for digital music streaming is subject to significant challenges and new competitors. As a result, the future revenue, income and growth potential of our business is uncertain. Investors should consider our business and prospects in light of the risks and difficulties we encounter in this evolving business, which risks and difficulties include, among others, risks related to:

- our evolving business model and new licensing models for content as well as the potential need for additional types of content;
- our ability to develop additional products and services, or products and services in adjacent markets, in order to maintain revenue growth, and the resource requirements of doing so;
- our ability to retain current levels of active listeners, build our listener base and increase listener hours;
- our ability to effectively monetize listener hours by growing our sales of advertising inventory created from developing new and compelling ad product solutions that successfully deliver advertisers' messages across the range of our delivery platforms while maintaining our listener experience;
- our ability to attract new advertisers, retain existing advertisers and prove to advertisers that our advertising platform is effective enough to justify a pricing structure that is profitable for us;
- our ability to maintain relationships with platform providers, makers of mobile devices, consumer electronic products and automobiles;
- our ability to continue to secure the rights to music that attracts listeners to the service on fair and reasonable economic terms.

Failure to successfully address these risks and difficulties and other challenges associated with operating in an evolving marketplace could materially and adversely affect our business, financial condition and results of operations.

We have incurred significant operating losses in the past and may not be able to generate sufficient revenue to be profitable.

Since our inception in 2000, we have incurred significant net operating losses and, as of December 31, 2015, we had an accumulated deficit of $366.7 million. A key element of our strategy is to increase the number of listeners and listener hours to increase our industry penetration, including the number of listener hours on mobile and other connected devices. However, as our number of listener hours increases, the royalties we pay for content acquisition also increase. In addition, we have adopted a strategy to invest in our operations in advance of, and to drive, future revenue growth. This strategy includes recently completed acquisitions and other initiatives. As a result of these trends, we have not in the past generated, and may not in the future generate, sufficient revenue from the sale of advertising and subscriptions, or new revenue sources, to offset our

expenses. In addition, we plan to continue to invest heavily in our operations to support anticipated future growth. As a result of these factors, we expect to incur annual net losses in the near term.

Our revenue has increased rapidly in recent periods; however, we do not expect to sustain our high revenue growth rates in the future as a result of a variety of factors, including increased competition and the maturation of our business, and we cannot guarantee that our revenue will continue to grow or will not decline. Investors should not consider our historical revenue growth or operating expenses as indicative of our future performance. If revenue growth is lower than our expectations, or our operating expenses exceed our expectations, our financial performance will be adversely affected. Further, if our future growth and operating performance fail to meet investor or analyst expectations, it could have a material adverse effect on our stock price.

In addition, in our efforts to increase revenue as the number of listener hours has grown, we have expanded and expect to continue to expand our sales force. If our hiring of additional sales personnel does not result in a sufficient increase in revenue, the cost of this additional headcount will not be offset, which would harm our operating results and financial condition.

If we fail to effectively manage our growth, our business and operating results may suffer.

Our rapid growth has placed, and will continue to place, significant demands on our management and our operational and financial infrastructure. In order to attain and maintain profitability, we will need to recruit, integrate and retain skilled and experienced sales personnel who can demonstrate our value proposition to advertisers and increase the monetization of listener hours, particularly on mobile devices, by developing relationships with both national and local advertisers to convince them to migrate advertising spending to online and mobile digital advertising markets and utilize our advertising product solutions. Continued growth could also strain our ability to maintain reliable service levels for our listeners, effectively monetize our listener hours, develop and improve our operational, financial and management controls and enhance our reporting systems and procedures. If our systems do not evolve to meet the increased demands placed on us by an increasing number of advertisers, we may also be unable to meet our obligations under advertising agreements with respect to the timing of our delivery of advertising or other performance obligations. As our operations grow in size, scope and complexity, we will need to improve and upgrade our systems and infrastructure, which will require significant expenditures and allocation of valuable management resources. If we fail to maintain the necessary level of discipline and efficiency and allocate limited resources effectively in our organization as it grows, our business, operating results and financial condition may suffer.

Our business and prospects depend on the strength of our brands and failure to maintain and enhance our brands would harm our ability to expand our base of listeners, advertisers and other partners.

Maintaining and enhancing the “Pandora”, “Ticketfly” and “Next Big Sound” brands is critical to expanding our base of listeners, advertisers, venue partners, concertgoers, content owners and other partners. Maintaining and enhancing our brands will depend largely on our ability to continue to develop and provide an innovative and high quality experience for our listeners and concertgoers and attract advertisers, content owners, venue partners and automobile, mobile device and other consumer electronic product manufacturers to work with us, which we may not do successfully.

Our brands may be impaired by a number of other factors, including service outages, data privacy and security issues, listener perception of ad load and exploitation of our trademarks by others without permission. In addition, if our partners fail to maintain high standards for products that integrate our service, or if we partner with manufacturers of products that our listeners reject, the strength of our brand could be adversely affected.

We could be adversely affected by regulatory restrictions on the use of mobile and other electronic devices in motor vehicles and legal claims arising from use of such devices while driving.

Regulatory and consumer agencies have increasingly focused on distraction to drivers that may be associated with use of mobile and other devices in motor vehicles. In 2010, the U.S. Department of Transportation identified driver distraction as a top priority, and in April 2013, the National Highway Traffic Safety Administration (the “NHTSA”) released voluntary Phase 1 Driver Distraction Guidelines for visual-manual devices not related to the driving task that are integrated into motor vehicles. In March 2014, NHTSA held a public meeting soliciting comments related to its voluntary Phase 2 Driver Distraction Guidelines for portable and aftermarket devices that may be used in motor vehicles, but such guidelines have not yet been issued. If NHTSA or other agencies implemented regulatory restrictions and took enforcement action related to how drivers and passengers in motor vehicles may engage with devices on which our service is broadcast, such restrictions or enforcement actions could inhibit our ability to increase listener hours and generate ad revenue, which would harm our operating results. In addition, concerns over driver distraction due to use of mobile and other electronic devices used to access our service in motor vehicles could result in product liability or personal injury litigation and negative publicity.

Federal, state and industry regulations as well as self-regulation related to privacy and data security concerns pose the threat of lawsuits and other liability, require us to expend significant resources, and may hinder our ability and our advertisers' ability to deliver relevant advertising.

We collect and utilize demographic and other information from and about our listeners and artists as they interact with our service, including information which could fall under a definition of "personally identifiable information" under various state and federal laws. For example, to register for a Pandora account, our listeners must provide the following information: age, gender, zip code and e-mail address. Listeners must also provide their credit card or debit card numbers and other billing information in connection with additional service offerings, such as Pandora One or Ticketfly. We also may collect information from our listeners when they enter information on their profile page, post comments on other listeners' pages, use other community or social networking features that are part of our service, participate in polls or contests or sign up to receive e-mail newsletters. Further, we and third parties use tracking technologies, including "cookies" and related technologies, to help us manage and track our listeners' interactions with our service and deliver relevant advertising. We also collect information from and track artists' activity on our Pandora Artist Marketing Platform. Third parties may, either without our knowledge or consent, or in violation of contractual prohibitions, obtain, transmit or utilize our listeners' or artists' personally identifiable information, or data associated with particular users, devices or artists.

Various federal and state laws and regulations, as well as the laws of foreign jurisdictions in which we may choose to operate, govern the collection, use, retention, sharing and security of the data we receive from and about our listeners. Privacy groups and government authorities have increasingly scrutinized the ways in which companies link personal identities and data associated with particular users or devices with data collected through the internet, and we expect such scrutiny to continue to increase. Alleged violations of laws and regulations relating to privacy and data security, and any relevant claims, may expose us to potential liability and may require us to expend significant resources in responding to and defending such allegations and claims. Claims or allegations that we have violated laws and regulations relating to privacy and data security have resulted and could in the future result in negative publicity and a loss of confidence in us by our listeners and our advertisers.

Existing privacy-related laws and regulations are evolving and subject to potentially differing interpretations, and various federal and state legislative and regulatory bodies, as well as foreign legislative and regulatory bodies, may expand current or enact new laws regarding privacy and data security-related matters. We may find it necessary or desirable to join self-regulatory bodies or other privacy-related organizations that require compliance with their rules pertaining to privacy and data security. We also may be bound by contractual obligations that limit our ability to collect, use, disclose and leverage listener data and to derive economic value from it. New laws, amendments to or re-interpretations of existing laws, rules of self-regulatory bodies, industry standards and contractual obligations, as well as changes in our listeners' expectations and demands regarding privacy and data security, may limit our ability to collect, use and disclose, and to leverage and derive economic value from listener data. We may also be required to expend significant resources to adapt to these changes and to develop new ways to deliver relevant advertising or otherwise provide value to our advertisers. In particular, government regulators have proposed "do not track" mechanisms, and requirements that users affirmatively "opt-in" to certain types of data collection that, if enacted into law or adopted by self-regulatory bodies or as part of industry standards, could significantly hinder our ability to collect and use data relating to listeners. Restrictions on our ability to collect, access and harness listener data, or to use or disclose listener data or any profiles that we develop using such data, could in turn limit our ability to stream personalized music content to our listeners and offer targeted advertising opportunities to our advertising customers, each of which are critical to the success of our business.

We have incurred, and will continue to incur, expenses to comply with privacy and security standards and protocols imposed by law, regulation, self-regulatory bodies, industry standards and contractual obligations. Increased regulation of data utilization and distribution practices, including self-regulation and industry standards, could increase our cost of operation, limit our ability to grow our operations or otherwise adversely affect our business.

Government regulation of the internet is evolving, and unfavorable developments could have an adverse effect on our operating results.

We are subject to general business regulations and laws, as well as regulations and laws specific to the internet. Such laws and regulations cover sales and other taxes and withholding of taxes, user privacy, data collection and protection, copyrights, electronic contracts, sales procedures, automatic subscription renewals, credit card processing procedures, consumer protections, broadband internet access and content restrictions. We cannot guarantee that we have been or will be fully compliant in every jurisdiction, as it is not entirely clear how existing laws and regulations governing issues such as privacy, taxation and consumer protection apply to the internet. Moreover, as internet commerce continues to evolve, increasing regulation by federal, state and foreign agencies becomes more likely. The adoption of any laws or regulations that adversely

affect the popularity or growth in use of the internet, including laws limiting network neutrality, could decrease listener demand for our service offerings and increase our cost of doing business. Future regulations, or changes in laws and regulations or their existing interpretations or applications, could also hinder our operational flexibility, raise compliance costs and result in additional historical or future liabilities for us, resulting in adverse impacts on our business and our operating results.

Our operating results may fluctuate, which makes our results difficult to predict and could cause our results to fall short of expectations.

Our revenue and operating results could vary significantly from quarter to quarter and year to year due to a variety of factors, many of which are outside our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful. In addition to other risk factors discussed in this "Risk Factors" section, factors that may contribute to the variability of our quarterly and annual results include:

- costs associated with pursuing licenses or other commercial arrangements;
- costs associated with defending any litigation, including intellectual property infringement litigation, and any associated judgments or settlements;
- our ability to pursue, and the timing of, entry into new geographic or content markets or other strategic initiatives and, if pursued, our management of these initiatives;
- the impact of general economic and competitive conditions on our revenue and expenses; and
- changes in government regulation affecting our business.

Seasonal variations in listener and advertising behavior may also cause fluctuations in our financial results. We expect to experience some effects of seasonal trends in listener behavior due to higher advertising sales during the fourth quarter of each year due to greater advertiser demand during the holiday season and lower advertising sales in the first quarter of the following year. Expenditures by advertisers tend to be cyclical and discretionary in nature, reflecting overall economic conditions, the economic prospects of specific advertisers or industries, budgeting constraints and buying patterns and a variety of other factors, many of which are outside our control. In addition, we expect to experience increased usage during the fourth quarter of each year due to the holiday season, and in the first quarter of each year due to increased use of media-streaming devices received as gifts during the holiday season.

If we are unable to implement and maintain effective internal control over financial reporting in the future, the accuracy and timeliness of our financial reporting may be adversely affected.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we are required to furnish a report by our management on our internal control over financial reporting. The report contains, among other matters, an assessment of the effectiveness of our internal control over financial reporting as of year-end, including a statement as to whether or not our internal control over financial reporting is effective. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management.

While we have determined that our internal control over financial reporting was effective as of December 31, 2015, as indicated in "Controls and Procedures--Management's Report on Internal Control over Financial Reporting", we must continue to monitor and assess our internal control over financial reporting. Additionally, Ticketfly, our subsidiary, must implement internal control over financial reporting that complies with Section 404 of the Sarbanes-Oxley Act of 2002 by the end of 2016. Any material weaknesses in Ticketfly's internal control over financial reporting that remain uncorrected at year-end must be identified in our management's report on our internal controls over financial reporting. If our management identifies one or more material weaknesses in our internal control over financial reporting and such weakness remains uncorrected at year-end, we will be unable to assert that such internal control is effective at year-end. If we are unable to assert that our internal control over financial reporting is effective at year-end, or if our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal controls or concludes that we have a material weakness in our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which could have a material adverse effect on our business and the price of our common stock.

We may require additional capital to pursue our business objectives and respond to business opportunities, challenges or unforeseen circumstances. If capital is not available to us, our business, operating results and financial condition may be harmed.

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We may require additional capital to operate or expand our business. In addition, some of our current or future strategic initiatives, or international markets, may require substantial additional capital resources before they begin to generate revenue. Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. For example, our current credit facility contains restrictive covenants relating to our capital raising activities and other financial and operational matters, and any debt financing secured by us in the future could involve further restrictive covenants, which may make it more difficult for us to obtain additional capital and to pursue business opportunities. In addition, volatility in the credit markets may have an adverse effect on our ability to obtain debt financing. If we do not have funds available to enhance our solutions, maintain the competitiveness of our technology and pursue business opportunities, we may not be able to service our existing listeners, acquire new listeners or attract or retain advertising customers, each of which could inhibit the implementation of our business plan and materially harm our operating results.

Failure to protect our intellectual property could substantially harm our business and operating results.

The success of our business depends, in part, on our ability to protect and enforce our trade secrets, trademarks, copyrights and patents and all of our other intellectual property rights, including our intellectual property rights underlying the Pandora service. To establish and protect those proprietary rights, we rely on a combination of patents, patent applications, trademarks, copyrights, trade secrets (including know-how), license agreements, information security procedures, non-disclosure agreements with third parties, employee disclosure and invention assignment agreements, and other contractual obligations. These afford only limited protection. Despite our efforts to protect our intellectual property rights, unauthorized parties may copy or attempt to copy aspects of our technology. Moreover, policing our intellectual property rights is difficult, costly and may not always be effective.

We have filed, and may in the future file, patent applications and from time to time we have purchased patents and patent applications from third parties. It is possible, however, that these innovations may not be protectable. In addition, given the cost, effort, risks and downside of obtaining patent protection, including the requirement to ultimately disclose the invention to the public, we may choose not to seek patent protection for certain innovations. However, such patent protection could later prove to be important to our business. Furthermore, there is always the possibility that our patent applications may not issue as granted patents, that the scope of the protection gained will be insufficient or that an issued patent may be deemed invalid or unenforceable. Moreover, in certain circumstances there are additional risks, including:

- present or future patents or other intellectual property rights could lapse or be invalidated, circumvented, challenged or abandoned;
- our ability to assert our intellectual property rights against potential competitors or to settle current or future disputes may be limited by our relationships with third parties;
- our pending or future patent applications may not have coverage sufficient to provide the desired competitive advantage; and
- our intellectual property rights may not be enforced in jurisdictions where competition may be intense or where legal protection may be weak.

We have registered “Pandora,” “Music Genome Project”, “Next Big Sound”, “Ticketfly” and other marks as trademarks in the United States and other countries. Nevertheless, competitors may adopt service names similar to ours, or purchase confusingly similar terms as keywords in internet search engine advertising programs, thereby impeding our ability to build brand identity and possibly leading to confusion among our listeners or advertising customers. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of the term Pandora or our other trademarks. Any claims or customer confusion related to our trademarks could damage our reputation and brand and substantially harm our business and operating results.

We currently own the www.pandora.com and www.ticketfly.com internet domain names and various other domain names related to our business. The regulation of domain names in the United States and in foreign countries is subject to change. Regulatory bodies continue to establish additional top-level domains, appoint additional domain name registrars and modify the requirements for holding domain names. As a result, we may not be able to acquire or maintain the domain names that utilize our brand names in the United States or other countries in which we may conduct business in the future. If we lose or fail to acquire the right to use any domain name relevant to our current or future business in the United States or other countries, we may incur significant additional expense.

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In order to protect our trade secrets and other confidential information, we rely in part on confidentiality agreements with our employees, consultants and third parties with whom we have relationships. These agreements may not effectively prevent disclosure of trade secrets and other confidential information and may not provide an adequate remedy in the event of misappropriation of trade secrets or any unauthorized disclosure of trade secrets and other confidential information. In addition, others may independently discover the same subject matter as that covered by our trade secrets and confidential information, and in some such cases we might not be able to assert any trade secret rights against such parties. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our trade secret rights and related confidentiality and nondisclosure provisions, and failure to obtain or maintain trade secret protection, or our competitors' independent development of technology similar to ours for which we are unable to rely on other forms of intellectual property protection such as patents, could adversely affect our competitive business position.

Litigation or proceedings before the U.S. Patent and Trademark Office or other governmental authorities and administrative bodies in the United States and abroad may be necessary in the future to enforce our intellectual property rights, to protect our patent rights, trademarks, trade secrets and domain names and to determine the validity and scope of the proprietary rights of others. Our efforts to enforce or protect our proprietary rights may be ineffective and could result in substantial costs and diversion of resources and management time, each of which could substantially harm our operating results.

Assertions by third parties of infringement or other violation by us of their intellectual property rights could result in significant costs and substantially harm our business and operating results.

Internet, technology and media companies are frequently subject to litigation based on allegations of infringement, misappropriation or other violations of others' intellectual property rights. Some internet, technology and media companies, including some of our competitors, own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims against us. In addition, we encourage third parties to submit content for our catalogue and we cannot be assured that artist representations made in connection with such submissions accurately reflect the legal rights of the submitted content. Third parties have asserted, and may in the future assert, that we have infringed, misappropriated or otherwise violated their intellectual property rights. In addition, various federal and state laws and regulations govern the intellectual property and related rights associated with sound recordings and musical works. Existing laws and regulations are evolving and subject to different interpretations, and various federal and state legislative or regulatory bodies may expand current or enact new laws or regulations. We cannot guarantee that we are not infringing or violating any third-party intellectual property rights.

We cannot predict whether assertions of third-party intellectual property rights or any infringement or misappropriation claims arising from such assertions will substantially harm our business and operating results. When we are forced to defend against any infringement or misappropriation claims, we may be required to expend significant time and financial resources on the defense of such claims, even if without merit, settled out of court, or adjudicated in our favor. Furthermore, an adverse outcome of a dispute may require us to: pay damages(potentially including treble damages and attorneys' fees if we are found to have willfully infringed a party's intellectual property); cease making, licensing or using products or services that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to redesign our services to avoid infringement; enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies, content or materials; or to indemnify our partners and other third parties. We do not carry broadly applicable patent liability insurance and lawsuits regarding patent rights, regardless of their success, can be expensive to resolve and can divert the time and attention of our management and technical personnel.

Some of our services and technologies may use "open source" software, which may restrict how we use or distribute our service or require that we release the source code of certain services subject to those licenses.

Some of our services and technologies may incorporate software licensed under so-called "open source" licenses. Such open source licenses often require that source code subject to the license be made available to the public and that any modifications or derivative works to open source software continue to be licensed under open source licenses. Few courts have interpreted open source licenses, and the manner in which these licenses may be interpreted and enforced is therefore subject to some uncertainty. We rely on multiple employee and non-employee software programmers to design our proprietary technologies, and since we may not be able to exercise complete control over the development efforts of all such programmers we cannot be certain that they have not incorporated open source software into our products and services without our knowledge, or that they will not do so in the future. In the event that portions of our proprietary technology are determined to be subject to an open source license, we may be required to publicly release the affected portions of our source code, be forced to re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies, each of which could reduce the value of our services and technologies and materially and adversely affect our ability to sustain and grow our business.

Interruptions or delays in service arising from our own systems or from our third-party vendors could impair the delivery of our service and harm our business.

We rely on systems housed at our own premises and at those of third-party vendors, including network service providers and data center facilities, to enable listeners to stream our content in a dependable and efficient manner. We have experienced and expect to continue to experience periodic service interruptions and delays involving our own systems and those of our third-party vendors. In the event of a service outage at our main site, we maintain a backup site that can function in read-only capacity. We do not currently maintain live fail-over capability that would allow us to instantaneously switch our streaming operations from one facility to another in the event of a service outage. In the event of an extended service outage at our main site, we do maintain and test fail-over capabilities that should allow us to switch our live streaming operations from one facility to another. Both our own facilities and those of our third-party vendors are vulnerable to damage or interruption from earthquakes, floods, fires, power loss, telecommunications failures and similar events. They also are subject to break-ins, hacking, denial of service attacks, sabotage, intentional acts of vandalism, terrorist acts, natural disasters, human error, the financial insolvency of our third-party vendors and other unanticipated problems or events. The occurrence of any of these events could result in interruptions in our service and to unauthorized access to, or alteration of, the content and data contained on our systems and that these third-party vendors store and deliver on our behalf.

We do not exercise complete control over our third-party vendors, which makes us vulnerable to any errors, interruptions, or delays in their operations. Any disruption in the services provided by these vendors could have significant adverse impacts on our business reputation, customer relations and operating results. Upon expiration or termination of any of our agreements with third-party vendors, we may not be able to replace the services provided to us in a timely manner or on terms and conditions, including service levels and cost, that are favorable to us, and a transition from one vendor to another vendor could subject us to operational delays and inefficiencies until the transition is complete.

If our security systems are breached, we may face civil liability and public perception of our security measures could be diminished, either of which would negatively affect our ability to attract and retain listeners and advertisers.

Techniques used to gain unauthorized access to corporate data systems are constantly evolving, and we may be unable to anticipate or prevent unauthorized access to data pertaining to our listeners, including credit card and debit card information and other personally identifiable information. Like all internet services, our service, which is supported by our own systems and those of third-party vendors, is vulnerable to computer malware, Trojans, viruses, worms, break-ins, phishing attacks, denial-of-service attacks, attempts to access our servers to acquire playlists or stream music in an unauthorized manner, or other attacks on and disruptions of our and third-party vendor computer systems, any of which could lead to system interruptions, delays, or shutdowns, causing loss of critical data or the unauthorized access to personally identifiable information. If an actual or perceived breach of security occurs on our systems or a vendor's systems, we may face civil liability and reputational damage, either of which would negatively affect our ability to attract and retain listeners, which in turn would harm our efforts to attract and retain advertisers. We also would be required to expend significant resources to mitigate the breach of security and to address related matters. Unauthorized access to music or playlists would potentially create additional royalty obligations with no corresponding revenue.

We may not be able to effectively control the unauthorized actions of third parties who may have access to the listener data we collect. The integration of the Pandora service with apps provided by third parties represents a significant growth opportunity for us, but we may not be able to control such third parties' use of listeners' data, ensure their compliance with the terms of our privacy policies, or prevent unauthorized access to, or use or disclosure of, listener information, any of which could hinder or prevent our efforts with respect to growth opportunities.

Any failure, or perceived failure, by us to maintain the security of data relating to our listeners and employees, to comply with our posted privacy policy, laws and regulations, rules of self-regulatory organizations, industry standards and contractual provisions to which we may be bound, could result in the loss of confidence in us, or result in actions against us by governmental entities or others, all of which could result in litigation and financial losses, and could potentially cause us to lose listeners, artists, advertisers, revenue and employees.

We are subject to a number of risks related to credit card and debit card payments we accept.

We accept subscription payments through credit and debit card transactions. For credit and debit card payments, we pay interchange and other fees, which may increase over time. An increase in those fees would require us to either increase the prices we charge for our products, which could cause us to lose subscribers and subscription revenue, or absorb an increase in our operating expenses, either of which could harm our operating results.

If we or any of our processing vendors have problems with our billing software, or the billing software malfunctions, it could have an adverse effect on our subscriber satisfaction and could cause one or more of the major credit card companies to disallow our continued use of their payment products. In addition, if our billing software fails to work properly and, as a result, we do not automatically charge our subscribers' credit cards on a timely basis or at all, or there are issues with financial insolvency of our third-party vendors or other unanticipated problems or events, we could lose subscription revenue, which would harm our operating results.

We are also subject to payment card association operating rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted to make it more difficult for us to comply. We are currently accredited against, and in compliance with, the Payment Card Industry Data Security Standard, or PCI DSS, the payment card industry's security standard for companies that collect, store or transmit certain data regarding credit and debit cards, credit and debit card holders and credit and debit card transactions. Currently we comply with PCI DSS version 3.1 as a Level 2 merchant, and Ticketfly complies with PCI DSS version 3.0 as a Level 2 merchant. Although Pandora and Ticketfly are PCI DSS compliant, there is no guarantee that we will maintain PCI DSS compliance. Our failure to comply fully with PCI DSS in the future could violate payment card association operating rules, federal and state laws and regulations and the terms of our contracts with payment processors and merchant banks. Such failure to comply fully also could subject us to fines, penalties, damages and civil liability, and could result in the loss of our ability to accept credit and debit card payments. Further, there is no guarantee that PCI DSS compliance will prevent illegal or improper use of our payment systems or the theft, loss, or misuse of data pertaining to credit and debit cards, credit and debit card holders and credit and debit card transactions.

If we fail to adequately control fraudulent credit card transactions, we may face civil liability, diminished public perception of our security measures and significantly higher credit card-related costs, each of which could adversely affect our business, financial condition and results of operations. If we are unable to maintain our chargeback rate or refund rates at acceptable levels, credit card and debit card companies may increase our transaction fees or terminate their relationships with us. Any increases in our credit card and debit card fees could adversely affect our results of operations, particularly if we elect not to raise our rates for our service to offset the increase. The termination of our ability to process payments on any major credit or debit card would significantly impair our ability to operate our business.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

At December 31, 2015, we had federal net operating loss carryforwards of approximately $613.0 million and tax credit carryforwards of approximately $9.7 million. At December 31, 2015, we had state net operating loss carryforwards of approximately $480.0 million and tax credit carryforwards of approximately of $15.6 million. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, ("the Code"), if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes, such as research tax credits, to offset its post-change income may be limited. In general, an "ownership change" will occur if there is a cumulative change in our ownership by "5-percent shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. As a result of prior equity issuances and other transactions in our stock, we have previously experienced "ownership changes" under section 382 of the Code and comparable state tax laws. We may also experience ownership changes in the future as a result of this transaction or other future transactions in our stock. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards or other pre-change tax attributes to offset United States federal and state taxable income may be subject to limitations.

We could be subject to additional income tax liabilities.

We are subject to income taxes in the United States, Hong Kong, Australia and New Zealand. As we expand our operations outside of these locations, we become subject to taxation based on the applicable foreign statutory rates and our effective tax rate could fluctuate accordingly. Significant judgment is required in evaluating and estimating our worldwide provision for income taxes and accruals for these taxes. For example, our effective tax rates could be adversely affected by earnings being lower than anticipated in countries where we have lower statutory tax rates and higher than anticipated in countries where we have higher statutory tax rates, by losses incurred in jurisdictions for which we are not able to realize the related tax benefit, by changes in foreign currency exchange rates, by changes in the valuation of our deferred tax assets and liabilities, or by changes in the relevant tax, accounting and other laws, regulations, principles and interpretations. We are also subject to tax audits in various jurisdictions, and such jurisdictions may assess additional income tax liabilities against us.

Our Ticketfly business and venue partners may be subject to sales tax and other taxes.

The application of indirect taxes (such as sales, use, excise, admissions, amusement, entertainment or other transaction-based taxes) to internet-based live entertainment ticketing businesses such as Ticketfly is a complex and evolving area. Many of the fundamental statutes and regulations that impose these taxes were established before the adoption and growth of the internet and ecommerce. In many cases, it is not clear how existing statutes apply to the internet or ecommerce. In addition, governments are increasingly looking for ways to increase revenues, which has resulted in discussions about tax reform and other legislative action to increase tax revenues, including through indirect taxes. Changes in these tax laws could adversely affect our business.

Ticketfly is not the seller of tickets sold on the Ticketfly platform. Instead it facilitates the transaction between our venue partners and customers. If a taxing jurisdiction were to treat Ticketfly as the seller and liable for the tax of the venue partners or customers, it could result in a material liability.

Ticketfly does not currently calculate all applicable indirect taxes on the fees charged when a customer purchases tickets on the Ticketfly platform. Some jurisdictions may interpret their law in a manner that would require Ticketfly to calculate, collect and remit the applicable indirect taxes on the entire charges. Such an interpretation could negatively impact our customers and our business.

We depend on key personnel to operate our business, and if we are unable to retain, attract and integrate qualified personnel, our ability to develop and successfully grow our business could be harmed.

We believe that our success depends on the contributions of our executive officers as well as our ability to attract and retain qualified sales, technical and other personnel. All of our employees, including our executive officers, are free to terminate their employment relationship with us at any time, and their knowledge of our business and industry may be difficult to replace. Qualified individuals are in high demand, particularly in the digital media industry and in the San Francisco Bay Area, where our headquarters are located, and in New York, and we may incur significant costs to attract them. If we are unable to attract and retain our executive officers and key employees, we may not be able to achieve our strategic objectives, and our business could be harmed. We use share-based and other performance-based incentive awards such as restricted stock units and cash bonuses to help attract, retain, and motivate qualified individuals. If our share-based or other compensation programs cease to be viewed as competitive and valuable benefits, our ability to attract, retain, and motivate employees could be weakened, and our business could be harmed.

If we cannot maintain our corporate culture as we grow, we could lose the innovation, teamwork and focus that contribute crucially to our business.

We believe that a critical component of our success is our corporate culture, which we believe fosters innovation, encourages teamwork, cultivates creativity and promotes focus on execution. We have invested substantial time, energy and resources in building a highly collaborative team that works together effectively in a non-hierarchical environment designed to promote openness, honesty, mutual respect and pursuit of common goals. As we continue to develop the infrastructure of a public company and grow, we may find it difficult to maintain these valuable aspects of our corporate culture. Any failure to preserve our culture could negatively impact our future success, including our ability to attract and retain employees, encourage innovation and teamwork and effectively focus on and pursue our corporate objectives.

The impact of worldwide economic conditions, including the effect on advertising budgets and discretionary entertainment spending behavior, may adversely affect our business and operating results.

Our financial condition is affected by worldwide economic conditions and their impact on advertising spending. Expenditures by advertisers generally tend to reflect overall economic conditions, and reductions in spending by advertisers could have a serious adverse impact on our business. In addition, we provide an entertainment service, and payment for our Pandora One subscription service may be considered discretionary on the part of some of our current and prospective subscribers or listeners who may choose to use a competing free service or to listen to Pandora without subscribing. To the extent that overall economic conditions reduce spending on discretionary activities, our ability to retain current and obtain new subscribers could be hindered, which could reduce our subscription revenue and negatively impact our business.

Our business is subject to the risks of earthquakes, fires, floods and other natural catastrophic events and to interruption by man-made problems such as cyber-security incidents or terrorism.

Our systems and operations are vulnerable to damage or interruption from earthquakes, fires, floods, power losses, telecommunications failures, terrorist attacks, acts of war, human errors, break-ins or similar events. For example, a significant natural disaster, such as an earthquake, fire or flood, could have a material adverse effect on our business, operating results and

financial condition, and our insurance coverage may be insufficient to compensate us for losses that may occur. Our principal executive offices are located in the San Francisco Bay Area, a region known for seismic activity. In addition, acts of terrorism could cause disruptions in our business or the economy as a whole. Our servers may also be vulnerable to computer viruses, cyber security incidents and similar disruptions caused by unauthorized tampering with our computer systems, which could lead to interruptions, delays, loss of critical data or the unauthorized disclosure of confidential customer data. Our business interruption insurance may be insufficient to compensate us for all such losses. As we rely heavily on our servers and the internet to conduct our business and provide high quality service to our listeners, such disruptions could negatively impact our ability to run our business, resulting in a loss of existing or potential listeners and advertisers and increased maintenance costs, which would adversely affect our operating results and financial condition.

We may not have sufficient cash flow from our business to make payments on our indebtedness.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including our 1.75% convertible senior notes due 2020 (the "Notes"), depends on our performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

The conditional conversion feature of the Notes, if triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Notes is triggered, holders of Notes will be entitled to convert the Notes at any time during specified periods at their option. See "Note 7-Debt Instruments-Convertible Debt Offering." If one or more holders elect to convert their Notes, we may elect to satisfy our conversion obligation in whole or in part through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

The accounting method for convertible debt securities that may be settled in cash, such as the Notes, could have a material effect on our reported financial results.

Accounting Standards Codification Subtopic 470-20 (ASC 470-20), Debt with Conversion and Other Options, requires an entity to separately account for the liability and equity components of convertible debt instruments (such as the Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the Notes is that the equity component of the Notes is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet, and the value of the equity component is treated as original issue discount for purposes of accounting for the debt component of the Notes. As a result, we will be required to recognize a greater amount of non-cash interest expense current and future periods presented as a result of the amortization of the discounted carrying value of the Notes to their principal amount over the term of the Notes. We will report lower net income (or greater net losses) in our consolidated financial results because ASC 470-20 will require interest to include both the current period's amortization of the original issue discount and the instrument's coupon interest, which could adversely affect our reported or future consolidated financial results, the trading price of our common stock and the trading price of the Notes.

In addition, under certain circumstances, in calculating earnings per share, convertible debt instruments (such as the Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares of common stock issuable upon conversion of the Notes, if any, are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Notes exceeds their principal amount. Under the treasury stock method, diluted earnings per share is calculated as if the number of shares of common stock that would be necessary to settle such excess, if we were to elect to settle such excess in shares, were issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Notes (if any) then, to the extent we generate positive net income, our diluted consolidated earnings per share would be adversely affected.

Risks Related to Owning Our Common Stock

Our stock price has been and will likely continue to be volatile, and the value of an investment in our common stock may decline.

The trading price of our common stock has been and is likely to continue to be volatile. In addition to the risk factors described in this section, and elsewhere in this Annual Report on Form 10-K, additional factors that may cause the price of our common stock to fluctuate include, but are not limited to:

- our actual or anticipated operating performance and the operating performance of similar companies in the internet, radio or digital media spaces;
- our ability to grow active users and listener hours;
- competitive conditions and developments;
- our actual or anticipated achievement of financial and non-financial key operating metrics;
- general economic conditions and their impact on advertising spending;
- the overall performance of the equity markets;
- threatened or actual litigation or regulatory proceedings, including the recently concluded rate proceedings in the CRB;
- changes in laws or regulations relating to our service;
- any major change in our board of directors or management;
- publication of research reports about us or our industry or changes in recommendations or withdrawal of research coverage by securities analysts; and
- sales or expected sales of shares of our common stock by us, and our officers, directors and significant stockholders.

In addition, the stock market has experienced extreme price and volume fluctuations that often have been unrelated or disproportionate to the operating performance of affected companies. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in substantial costs, divert our management's attention and resources and harm our business, operating results and financial condition.

If securities or industry analysts cease publishing research about our business, publish inaccurate or unfavorable research about our business, or make projections that exceed our actual results, our stock price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If securities or industry analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline. Furthermore, such analysts publish their own projections regarding our actual results. These projections may vary widely from one another and may not accurately predict the results we actually achieve. Our stock price may decline if we fail to meet securities and industry analysts' projections.

Our charter documents, Delaware law and certain terms of our music licensing arrangements could discourage takeover attempts and lead to management entrenchment.

Our certificate of incorporation and bylaws contain provisions that could delay or prevent a change in control of the Company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by the current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the ability of our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;
- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of our board of directors, our president, our secretary, or a majority vote of our board of directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 2⁄3% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our certificate of incorporation relating to the issuance of preferred stock and management of our business or our bylaws, which may inhibit the ability of an acquiror to effect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our board of directors, by majority vote, to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquiror to amend the bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

Section 203 of the Delaware General Corporation Law governs us. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. In addition, if we are acquired, certain terms of our music licensing arrangements, including favorable royalty rates that currently apply to us, may not be available to an acquiror. These terms may discourage a potential acquiror from making an offer to buy us or may reduce the price such a party may be willing to offer.

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ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Pandora

Pandora's principal executive offices are located in Oakland, California in an office building with 233,094 square-feet, under a lease expiring on September 30, 2020. We also lease regional offices in Atlanta, Georgia; Chicago, Illinois; Dallas, Texas; Detroit, Michigan; New York, New York; San Francisco, California; and Santa Monica, California and local sales offices at various locations throughout the United States and in Australia, New Zealand, Canada and the United Kingdom.

Our data centers are located in colocation facilities operated by Equinix in San Jose, California and Ashburn, Virginia as well as by Digital Realty Trust in Chicago, Illinois and Oakland, California. These data centers are designed to be fault-tolerant and operate at maximum uptime. Backup systems in California and Virginia can be brought online in the event of a failure at the other data centers. These redundancies enable fault tolerance and will also support our continued growth.

The data centers host the Pandora.com website and intranet applications that are used to manage the website content. The websites are designed to be fault-tolerant, with a collection of identical web servers connecting to an enterprise database. The design also includes load balancers, firewalls and routers that connect the components and provide connections to the internet. The failure of any individual component is not expected to affect the overall availability of our website.

We believe that our current facilities are adequate to meet our needs for the near future and that suitable additional or alternative space will be available on commercially reasonable terms to accommodate our foreseeable future operations.

Ticketfly

Ticketfly's principal executive offices are located in San Francisco, California in an office building with 23,826 square-feet, under a lease expiring on January 31, 2022. We also lease regional offices in Austin, Texas; Chicago, Illinois; New York, New York; and Canada.

We believe that our current facilities are adequate to meet our needs for the near future and that suitable additional or alternative space will be available on commercially reasonable terms to accommodate our foreseeable future operations.

ITEM 3. LEGAL PROCEEDINGS

The material set forth in Note 8 of Notes to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is traded on The New York Stock Exchange ("NYSE") under the symbol "P." The following table sets forth the range of high and low intra-day sales prices per share of our common stock for the periods indicated, as reported by the NYSE.

PRICE RANGE OF OUR COMMON STOCK

Our common stock has traded on the NYSE since June 15, 2011. Our initial public offering was priced at $16.00 per share on June 14, 2011.

	High	Low
Twelve Months Ended December 31, 2015		
First quarter (January 1, 2015 - March 31, 2015)	$ 18.52	$ 14.63
Second quarter (April 1, 2015 - June 30, 2015)	$ 19.02	$ 15.54
Third quarter (July 1, 2015 - September 30, 2015)	$ 21.34	$ 13.81
Fourth quarter (October 1, 2015 - December 31, 2015)	$ 21.98	$ 11.51
Twelve Months Ended December 31, 2014		
First quarter (January 1, 2014 - March 31, 2014)	$ 39.43	$ 26.76
Second quarter (April 1, 2014 - June 30, 2014)	$ 31.74	$ 22.17
Third quarter (July 1, 2014 - September 30, 2014)	$ 29.82	$ 24.16
Fourth quarter (October 1, 2014 - December 31, 2014)	$ 24.70	$ 16.90

On December 31, 2015, the closing price per share of our common stock as reported on the NYSE was $13.41. As of December 31, 2015, there were approximately 126 holders of record of our common stock. The number of beneficial stockholders is substantially greater than the number of holders of record because a large portion of our common stock is held through brokerage firms.

Dividend Policy

We have not declared or paid any cash dividends on our common stock and currently do not anticipate paying any cash dividends in the foreseeable future. Instead, we intend to retain all available funds and any future earnings for use in the operation and expansion of our business. Any future determination relating to dividend policy will be made at the discretion of our board of directors and will depend on our future earnings, capital requirements, financial condition, future prospects, applicable Delaware law, which provides that dividends are only payable out of surplus or current net profits, and other factors that our board of directors deems relevant. In addition, our credit facility restricts our ability to pay dividends. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Our Indebtedness—Credit Facility" and Note 7 to our financial statements included elsewhere in this Annual Report on Form 10-K.

Equity Compensation Plan Information

For equity compensation plan information refer to Item 12 in Part III of this Annual Report on Form 10-K.

Stock Price Performance Graph

This performance graph shall not be deemed to be "soliciting material" or "filed" or incorporated by reference in future filings with the SEC, or subject to the liabilities of Section 18 of the Exchange Act except as shall be expressly set forth by specific reference in such filing.

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The following graph shows a comparison from June 15, 2011, the date our common stock commenced trading on the NYSE, through December 31, 2015 of the total cumulative return of our common stock with the total cumulative return of the New York Stock Exchange Composite Index (the "NYA Composite"), the Global X Social Media Index (the "SOCL") and the SPDR Morgan Stanley Technology MTK Index (the "MTK"). The figures represented below assume an investment of $100 in our common stock at the closing price of $17.42 on June 15, 2011 and in the NYA Composite and MTK on the same date. The SOCL was modeled from the inception of the index on November 15, 2011. Data for the NYA Composite, MTK and SOCL assume reinvestment of dividends. The comparisons in the graph are historical and are not intended to forecast or be indicative of possible future performance of our common stock.

Comparison of Cumulative Total Return Among Pandora Media, Inc., New York Stock Exchange Composite Index, Global X Social Media Index and SPDR Morgan Stanley Technology MTK Index

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ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial and other data should be read in conjunction with, and are qualified by reference to, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and our audited consolidated financial statements and the accompanying notes included elsewhere in this report. The consolidated statement of operations data for the twelve months ended January 31, 2012 and 2013 and the consolidated balance sheet data as of January 31, 2012 and 2013 and December 31, 2013 were derived from our audited consolidated financial statements not included in this report. The consolidated statements of operations data for the eleven months ended December 31, 2013 and for the twelve months ended December 31, 2014 and 2015, and the consolidated balance sheet data as of December 31, 2014 and 2015 were derived from our audited consolidated financial statements included in this report. The consolidated statements of operations for the twelve months ended December 31, 2015 include Ticketfly results for the two months ended December 31, 2015 and the consolidated balance sheets as of December 31, 2015 include Ticketfly's financial position as of December 31, 2015. The consolidated statement of operations data for the eleven months ended December 31, 2012 is unaudited. Our unaudited consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and include, in our opinion, all adjustments, consisting of normal recurring adjustments that we consider necessary for a fair presentation of the financial information set forth in those statements included elsewhere in this report.

The historical results presented below are not necessarily indicative of financial results to be achieved in future periods.

	Twelve Months Ended January 31,		Eleven Months Ended December 31,		Twelve Months Ended December 31,	
	2012	2013	2012	2013	2014	2015
	(in thousands, except per share data)					
Total revenue	$ 274,340	$ 427,145	$ 389,484	$ 600,233	$ 920,802	$ 1,164,043
Net loss attributable to common stockholders	(19,865)	(38,148)	(24,462)	(27,017)	(30,406)	(169,661)
Net loss per share, basic and diluted	(0.19)	(0.23)	(0.15)	(0.15)	(0.15)	(0.79)
Weighted-average common shares outstanding used in computing basic and diluted net loss per share	105,955	168,294	167,956	180,968	205,273	213,790

Key Metrics (unaudited):(1)

	Twelve Months Ended January 31,		Eleven Months Ended December 31,		Twelve Months Ended December 31,	
	2012	2013	2012	2013	2014	2015
	(in billions)					
Listener hours	8.23	14.01	12.56	15.31	20.03	21.11

	As of January 31,		As of December 31,		
	2012	2013	2013	2014	2015
	(in millions)				
Active users	47.6	65.6	76.2	81.5	81.1

(1) Listener hours and active users are defined in the section entitled "Key Metrics" in Item 7 of this Annual Report on Form 10-K.

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	As of January 31,		As of December 31,		
	2012	2013	2013	2014	2015
	(in thousands)				
Balance Sheet Data:					
Cash and cash equivalents	$ 44,126	$ 65,725	$ 245,755	$ 175,957	$ 334,667
Working capital	89,218	82,644	362,777	439,254	451,675
Total assets	178,015	218,832	673,335	749,290	1,240,657
Long-term debt, net	—	—	—	—	234,577
Total liabilities	73,475	119,843	165,104	165,933	497,270
Common stock and additional paid-in capital	205,971	238,569	675,123	781,030	1,110,562
Total stockholders' equity	104,540	98,989	508,231	583,357	743,387

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (MD&A)

You should read the following discussion of our financial condition and results of operations in conjunction with the financial statements and the notes thereto included elsewhere in this Annual Report on Form 10-K. The following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ substantially from those referred to herein due to a number of factors, including but not limited to those discussed below and elsewhere in this report, particularly in the sections entitled "Special Note Regarding Forward-Looking Statements and Industry Data" and "Risk Factors."

We changed our fiscal year from the twelve months ending January 31 to the calendar twelve months ending December 31, effective beginning with the year ended December 31, 2013. As a result, the period ended December 31, 2013 was shortened from twelve months to an eleven-month transition period.

When financial results for the 2014 annual period are compared to financial results for the 2013 period, the results compare the twelve-month period ended December 31, 2014 and the eleven-month period ended December 31, 2013.

Overview

Pandora

Pandora is the world's most powerful music discovery platform, offering a personalized experience for each of our listeners wherever and whenever they want to listen to music - whether through earbuds, car speakers or live on stage. Our vision is to be the definitive source of music discovery and enjoyment for billions. The majority of our listener hours occur on mobile devices, with the majority of our revenue generated from advertising on these devices. We offer both local and national advertisers the opportunity to deliver targeted messages to our listeners using a combination of audio, display and video advertisements. Founded by musicians, Pandora also empowers artists with valuable data and tools to help grow their careers and connect with their fans.

For the twelve months ended December 31, 2015, we streamed 21.11 billion hours of internet radio, and as of December 31, 2015, we had 81.1 million active users during the prior 30-day period. Since we launched our non-subscription, ad-supported radio service in 2005 our listeners have created over 9 billion stations.

At the core of our service is our set of proprietary personalization technologies, including the Music Genome Project and our playlist generating algorithms. The Music Genome Project is a database of over 1,000,000 uniquely analyzed songs from over 350,000 artists, spanning over 600 genres and sub-genres, which we develop one song at a time by evaluating and cataloging each song's particular attributes. When a listener enters a single song, artist, comedian or genre to start a station, the Pandora service instantly generates a station that plays music or comedy we think that listener will enjoy. Based on listener reactions to the recordings we pick, we further tailor the station to match the listener's preferences. Listeners also have the ability to add variety to and rename stations, which further allows for the personalization of our service.

We currently provide the Pandora service through two models:

- *Free Service.* Our free service is advertising-supported and allows listeners access to our music and comedy catalogs and personalized playlist generating system for free across all of our delivery platforms.

- *Pandora One.* Pandora One is a premium daily, monthly or annual paid version of the Pandora service, which currently includes advertisement-free access. Pandora One also enables listeners to have more daily skips, enjoy higher quality audio on supported devices and enjoy longer timeout-free listening.

A key element of our strategy is to make the Pandora service available everywhere that there is internet connectivity. To this end, we make the Pandora service available through a variety of distribution channels. In addition to streaming our service to computers, we have developed Pandora mobile device applications ("apps") for smartphones and mobile operating systems, such as the iPhone, Android and the Windows Phone and for tablets including the iPad and Android tablets. We distribute those mobile apps free to listeners via app stores. In addition to smartphones and tablets, Pandora is now integrated with more than 1,700 connected devices, including automobiles, automotive aftermarket devices and consumer electronic devices.

Ticketfly

Pandora completed the acquisition of Ticketfly on October 31, 2015. Ticketfly is a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America. Ticketfly's ticketing, digital marketing and analytics software helps promoters book talent, sell tickets and drive in-venue revenue, while Ticketfly's consumer tools help fans find and purchase tickets to events. Tickets are primarily sold through the Ticketfly platform but are also sold through other channels such as box offices. For the twelve months ended December 31, 2015, Ticketfly sold approximately 12.5 million tickets, excluding box office sales, to 4.4 million unique ticket buyers to approximately 90,000 live events, with more than $490 million in gross transaction value, excluding box office sales. Ticketfly's operating results are included in Pandora's operating results only for the final two months of 2015.

Recent Events

Acquisitions

Acquisition of Assets from Rdio, Inc. ("Rdio")

On December 23, 2015, we completed the acquisition of technology and intellectual property from Rdio for $77.5 million, which includes $2.5 million in additional purchase consideration transferred prior to the closing of the acquisition. The asset sale was administered and approved by the U.S. Bankruptcy Court. Goodwill generated from the assets acquired is primarily attributable to expected synergies that will allow us to broaden our subscription business and roll out a multi-tier product offering. We have accounted for this acquisition as a business combination, and the financial results of Rdio are included in our consolidated financial statements from the date of acquisition. As a result of the sale of assets, Rdio discontinued its service as of December 22, 2015.

Acquisition of Ticketfly

On October 31, 2015, we completed the acquisition of Ticketfly for an aggregate purchase price of $335.3 million of common stock and cash, including 11,193,847 shares of the Company's common stock and approximately $191.5 million in cash paid by the Company. Goodwill generated from the Ticketfly acquisition is primarily attributable to expected synergies from future growth and strategic advantages in the ticketing industry. Upon acquisition, Ticketfly became a wholly owned subsidiary of Pandora. We have accounted for this acquisition as a business combination, and the financial results of Ticketfly are included in our consolidated financial statements from the date of acquisition.

Acquisition of Next Big Sound, Inc. ("NBS")

On July 1, 2015, we completed the acquisition of NBS. NBS provides analytics for online music, including analyzing the popularity of musicians in social networks, streaming services and radio. Goodwill generated from the business acquisition is primarily attributable to expected synergies from future growth and from the potential to expand our Artist Marketing Platform ("AMP"). We have accounted for this acquisition as a business combination, and the results of NBS are included in our consolidated financial statements from the date of acquisition.

Acquisition of KXMZ-FM

In June 2013, we entered into an agreement to purchase the assets of KXMZ-FM. The Federal Communications Commission ("FCC") approved the transfer of the FCC licenses and the acquisition was completed in June 2015. We have accounted for this acquisition as a business combination in the twelve months ended December 31, 2015. The results of KXMZ-FM are included in our consolidated financial statements from the date of acquisition, but were not material to our operating results or consolidated balance sheets.

Music Royalty Matters

Copyright Royalty Board ("CRB") Ruling

On December 16, 2015, the CRB announced the new per performance rates that apply for commercial webcasters for calendar years 2016 through 2020 (the "Web IV Proceedings"). The rates and terms take effect January 1, 2016 and represent an approximate 15% increase over Pandora's 2015 effective per-performance royalty rate based on Pandora's projected blended rate for subscription and non-subscription performances in 2016. Unlike the royalty structure applicable prior to 2016, the Web IV rates do not include an alternative calculation based on percentage of revenue, but instead are solely based on per-performance rates. The rates for the calendar years 2017 through 2020 will be adjusted by the CRB to reflect the increases or

decreases, if any, in the Consumer Price Index, applicable to that rate year. For additional information on the CRB ruling, please see "Item 1. Business—Pandora Content, Copyrights and Royalties."

Direct Licensing Deals

With respect to the public performance of musical works, Pandora has direct licenses with certain publishers for such rights. In addition, during the twelve months ended December 31, 2015, we entered into several direct deals with performing rights organizations ("PROs"), including BMI and ASCAP, among others. The majority of the licenses are structured so that each publisher or PRO receives a pro rata share of 20% of the royalties paid by us for sound recordings, with the pro rata share paid to each publisher or PRO being determined based on our usage of its works. These license agreements are structured differently from previous PRO and publisher licenses, which have traditionally been based on a percentage of a service's revenue or a flat fee. In connection with the signing of the BMI agreement, we agreed to withdraw our appeal of the May 2015 order in the BMI rate case. Refer to Note 8 "Commitments and Contingencies" in the Notes to Consolidated Financial Statements for further details.

Pre-1972 Copyright Litigation

On April 17, 2014, UMG Recordings, Inc., Sony Music Entertainment, Capitol Records, LLC, Warner Music Group Corp. and ABKCO Music and Records, Inc. filed suit against Pandora Media Inc. in the Supreme Court of the State of New York. The complaint claimed common law copyright infringement and unfair competition arising from allegations that Pandora owed royalties for the public performance of sound recordings recorded prior to February 15, 1972.

In October 2015 the parties reached an agreement whereby we agreed to pay the plaintiffs a total of $90 million. The settlement resolves all past claims as to our use of pre-1972 recordings owned or controlled by the plaintiffs and enables us to reproduce, perform and broadcast such recordings in the United States through December 31, 2016. This agreement was approved by our board of directors and executed on October 21, 2015. Pursuant to this settlement, which covers approximately 90% of total pre-1972 spins on our service, we paid the plaintiffs $60 million in October 2015 and the plaintiffs dismissed the case with prejudice. As a result, cost of revenue - content acquisition costs increased by $65.4 million in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to pre-1972 spins played through September 30, 2015. The remaining charge of $24.6 million will be recorded in cost of revenue - content acquisition costs over the future service period of January 1, 2016 through December 31, 2016 based on expected streaming of pre-1972 recordings over the period. The pre-72 settlement further requires that we make four additional installment payments of $7.5 million each. The first was paid in 2015, and the remaining three installments will be paid on or before April 1, 2016, July 1, 2016 and October 1, 2016.

RMLC

In June 2013, we entered into an agreement to purchase the assets of KXMZ-FM and in June 2015 the Federal Communications Commission ("FCC") approved the transfer of the FCC licenses and the acquisition was completed. The agreement to purchase the assets of KXMZ allowed us to qualify for the RMLC royalty rate of 1.7% of revenue for a license to the ASCAP and BMI repertoires, before certain deductions, beginning in June 2013. As a result, we recorded cost of revenue - content acquisition costs at the RMLC royalty rate starting in June 2013, rather than the rate that was set in rate court proceedings in March 2014 for ASCAP and in May 2015 for BMI.

In September 2015, despite confidence in our legal position that we were entitled to the RMLC royalty rate starting in June 2013, and as part of our strategy to strengthen our partnership with the music industry, management decided to forgo the application of the RMLC royalty rate from June 2013 through September 2015. As a result, cost of revenue - content acquisition costs increased by $28.2 million in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to spins played from June 2013 through September 30, 2015 in order to align the cumulative cost of revenue - content acquisition costs to the amounts previously paid at the rates that were set in the rate court proceedings in March 2014 for ASCAP and May 2015 for BMI. We recorded cost of revenue - content acquisition costs for the performing rights organizations at the rates established by the rate courts for the three months ended December 31, 2015, and we intend to record such costs at the rates established by direct licensing agreements beginning in 2016.

Other

Convertible Debt Offering

On December 9, 2015, we completed an unregistered Rule 144A offering of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020 (the “Notes”). The Notes were offered only to qualified institutional buyers pursuant to Rule 144A under the Securities Act. In connection with the offering of the Notes, we entered into capped call transactions with the initial purchaser of the Notes and an additional financial institution (“capped call transactions”), which are designed to reduce the potential dilutive effect of issuing shares in connection with the future conversion of the Notes, if any. The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchaser’s fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions, and we intend to use the remainder of the net proceeds for general corporate purposes, including funding expansion of our business and to pursue additional growth opportunities. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details.

Factors Affecting our Business Model

A majority of our listener hours occur on mobile devices and as such, we face challenges in optimizing our advertising products for delivery on mobile and other connected device platforms and monetizing inventory, or opportunities to sell advertisements, generated by listeners using these platforms. As a greater share of our listener hours is consumed on mobile devices, our ability to monetize increased mobile streaming may not achieve the levels of monetization of streaming we have achieved on computers.

In addition, our monetization strategy includes increasing the number of ad campaigns for computer, mobile and other connected device platforms sold to local advertisers, placing us in more direct competition with broadcast radio for advertiser spending, especially for audio advertisements. Key to the success of our strategy to increase local advertising is our ability to convince a substantial base of local advertisers of the benefits of advertising on the Pandora service, including demonstrating the effectiveness and relevance of our advertising products, in particular audio advertising products, across the range of our delivery platforms.

Growth in our active users and distribution platforms has fueled a corresponding growth in listener hours. Our total number of listener hours is a key driver for both revenue generation opportunities and content acquisition costs, which are the largest component of our expenses.

- *Revenue.* Listener hours define the number of opportunities we have to sell advertisements, which we refer to as inventory. Our ability to attract advertisers depends in large part on our ability to offer sufficient inventory within desired demographics. In turn, our ability to generate revenue depends on the extent to which we are able to sell the inventory we have.

- *Cost of Revenue—Content Acquisition Costs.* The number of sound recordings we transmit to users of the Pandora service, as generally reflected by listener hours, drives a substantial majority of our content acquisition costs, although historically certain of our licensing agreements required us to pay fees for public performances of musical works based on a percentage of revenue.

We pay content acquisition costs, or royalties, to the copyright owners and performers, or their agents, of each sound recording that we stream, as well as to the publishers and songwriters, or their agents, for the musical works embodied in each of those sound recordings, subject to certain exclusions. Royalties for sound recordings are negotiated with and paid to record labels, rights organizations or to SoundExchange, Inc. ("SoundExchange") and Merlin Networks B.V ("Merlin"). Royalties for musical works are most often negotiated with and paid to performing rights organizations (“PROs") such as ASCAP, BMI and SESAC, Inc. (“SESAC”) or directly to publishing companies. Royalties are calculated based on the number of sound recordings streamed, revenue earned or other usage measures.

We stream spoken word comedy content pursuant to a federal statutory license, for which the underlying literary works are not currently entitled to eligibility for licensing by any PRO for the United States. Rather, pursuant to industry-wide custom and practice, this content is performed absent a specific license from any such PRO or the copyright owner of such content. However, we pay royalties to SoundExchange at rates negotiated between representatives of online music services and SoundExchange for the right to stream this spoken word comedy content.

Given the current royalty structures in effect through the end of 2020 with respect to the public performance of sound recordings in the United States, our content acquisition costs increase with each additional listener hour, regardless of whether we are able to generate more revenue. As such, our ability to achieve and sustain profitability and operating leverage depends on our ability to increase our revenue per hour of streaming through increased advertising revenue across all of our delivery platforms.

In 2016, we expect to substantially increase our investments in our operations to drive anticipated future growth. One of our key objectives is to be the most powerful music discovery platform, which we believe will strengthen our brand and help us to convince advertisers to allocate spending towards our ad products. As such, a central focus is adding, retaining and engaging listeners to build market share and grow our listener hours. As our business has begun to mature, our revenue growth has begun to exceed the growth in our listener hours. However, we expect to incur increasing annual net losses in the near term because our current strategy is to leverage improvements in gross profit by investing in broadening distribution channels and developing innovative and scalable products. These investments are intended to drive further growth in our business through both increased listener hours and monetization of those hours, and as a result we are targeting gradual improvements in gross profit over time. Our planned reinvestment of the resulting incremental gross profit will continue to depress the growth of our profitability.

We completed four acquisitions in 2015, and we may continue to pursue acquisitions as a means of expanding our product offerings and technology assets. Our completed and potential acquisitions require extensive management time and capital resources to complete and integrate, and there is no assurance that we will ultimately realize the expected benefits of our acquisitions.

Key Metrics

The below key metrics do not include Ticketfly amounts unless otherwise specifically stated.

Listener Hours

We track listener hours because it is a key indicator of the growth of our business. Beginning with the listener hours disclosed in this annual report, we are also including listener hours related to our non-radio content offerings in the definition of listener hours. These offerings include non-music content such as podcasts, as well as custom music content such as Pandora Premiers and artist mixtapes. Historically, listener hours related to non-radio content represented a negligible number of listener hours. Including non-radio content in the listener hours we have previously reported for 2013, 2014 and 2015 would not have changed the reported listener hours for any such period. We calculate listener hours based on the total bytes served for each track that is requested and served from our servers, as measured by our internal analytics systems, whether or not a listener listens to the entire track. For non-music content such as podcasts, episodes are divided into approximately track-length parts, which are treated as tracks under this definition. To the extent that third-party measurements of listener hours are not calculated using a similar server-based approach, the third-party measurements may differ from our measurements.

The table below sets forth our total listener hours for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015.

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
	(in billions)		
Listener hours	15.31	20.03	21.11

Active Users

We track the number of active users as an additional indicator of the breadth of audience we are reaching at a given time. We define active users as the number of distinct registered users, including subscribers that have requested audio from our servers within the trailing 30 days to the end of the final calendar month of the period. The number of active users may overstate the number of unique individuals who actively use our service within a month as one individual may register for, and use, multiple accounts. Beginning with the active users disclosed in this annual report, we are also including active users who only request non-radio content offerings in the definition of active users. Including users who only request non-radio content in the calculation of active users would not have materially changed the reported active users for 2013, 2014 or 2015.

The table below sets forth our total active users as of December 31, 2014 and 2015.

	As of December 31,	
	2014	2015
	(in millions)	
Active users	81.5	81.1

We define advertising-based active users ("ad-based active users") as the number of users, excluding subscribers, that have requested audio from our servers within the trailing 30 days to the end of the final calendar month of the period. We define subscribers as the number of distinct users at the end of the period that have subscribed to our service. Inactive subscribers are included as they contribute towards revenue per thousand listener hours ("RPMs"), which are described in further detail below.

The table below sets forth our users on an advertising and subscription basis as of December 31, 2014 and 2015.

	As of December 31,	
	2014	2015
User Type	Users (in millions)	
Ad-based active users	78.5	77.6
Subscribers*	3.6	3.9
Total	82.1	81.5

* Includes subscribers that have not used our service within the trailing 30 days to the end of the final calendar month of the period.

The table below sets forth our listener hours on an advertising and subscription basis for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015.

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
User Type	Listener hours (in billions)		
Ad-based active users	13.34	17.58	18.47
Subscribers	1.97	2.45	2.64
Total	15.31	20.03	21.11

Advertising Revenue per Thousand Listener Hours ("ad RPMs")

We track ad RPMs for our non-subscription, ad-supported service because it is a key indicator of our ability to monetize advertising inventory created by our listener hours. We focus on ad RPMs across all of our delivery platforms. We believe ad RPMs to be the central top-line indicator for evaluating the results of our monetization efforts. Ad RPMs are calculated by dividing advertising revenue by the number of thousands of listener hours of our advertising-based service.

Subscription and Other Revenue per Thousand Listener Hours ("subscription RPMs")

We track subscription RPMs because it is a key indicator of the performance of our subscription service. We focus on subscription RPMs across all of our delivery platforms. Subscription RPMs are calculated by dividing subscription and other revenue by the number of thousands of listener hours of our subscription service.

Total Revenue per Thousand Listener Hours ("total RPMs")

We track total RPMs for our service, which includes ad and subscription RPMs, because it is a key indicator of our ability to monetize our listener hours. Total RPMs compare advertising and subscription and other revenue in a given period to total listener hours in the period. We calculate total RPMs by dividing the total revenue by the number of thousands of listener hours.

Licensing Costs per Thousand Listener Hours ("LPMs")

We track LPMs and analyze them in combination with our analysis of RPMs as they provide a key indicator of our profitability. LPMs are relatively fixed licensing costs with scheduled annual rate increases that drive period-over-period changes in LPMs. As such, the margin on our business varies principally with variances in ad RPMs and subscription RPMs.

Estimated RPMs and LPMs by Platform

We also provide estimates of disaggregated ad RPMs, subscription RPMs, total RPMs and related LPMs for our computer platform as well as our mobile and other connected devices platforms, which we calculate by dividing the estimated revenue and costs generated through the respective platforms by the number of thousands of listener hours of our services delivered through such platforms. While we believe that such disaggregated data provides directional insight for evaluating our efforts to monetize our service, we do not validate such disaggregated data to the level of financial statement reporting. Such data should be seen as indicative only and as management's best estimate.

Period-to-period results should not be regarded as precise nor can they be relied upon as indicative of results for future periods. In addition, as our business matures and in response to technological evolutions, we anticipate that the relevant indicators we monitor for evaluating our business may change.

The table below sets forth our RPMs and LPMs, including total, computer and mobile and other connected devices, on an ad, subscription and total basis for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015.

	Eleven Months Ended December 31,		Twelve Months Ended December 31,			
	2013		2014		2015	
	RPM	LPM*	RPM	LPM*	RPM**	LPM*
Advertising						
Computer	$ 56.79	$ 18.94	$ 62.00	$ 20.76	$ 67.99	$ 28.79
Mobile and other connected devices	31.97	18.63	37.84	20.23	47.56	25.68
Total advertising	$ 36.70	$ 18.69	$ 41.66	$ 20.31	$ 50.52	$ 26.13
Subscription						
Computer	$ 52.38	$ 31.83	$ 60.56	$ 33.37	$ 71.75	$ 45.70
Mobile and other connected devices	57.77	33.87	82.25	37.41	86.80	49.18
Total subscription	$ 56.27	$ 33.30	$ 76.89	$ 36.41	$ 83.66	$ 48.45
Total						
Total computer	$ 56.01	$ 21.23	$ 61.74	$ 23.02	$ 68.63	$ 31.68
Total mobile and other connected devices	34.98	20.41	42.77	22.14	52.13	28.42
Total	$ 39.22	$ 20.57	$ 45.97	$ 22.28	$ 54.65	$ 28.92

* Under the Pureplay Settlement, we pay per-performance rates for the streaming of sound recordings for our Pandora One subscription service that are higher than the per-performance rates for our non-subscription, ad-supported service.
**The calculation of RPMs does not include revenue generated by Ticketfly or Next Big Sound.

Total Ad RPMs

For the twelve months ended December 31, 2015 compared to 2014, total ad RPMs increased primarily due to an increase in ad RPMs on the mobile and other connected devices platform. Ad RPMs on the mobile and other connected devices platform increased as advertising revenue growth outpaced the growth in advertising listener hours as a result of an increase in the average price per ad sold on that platform, due in part to our increase in relative volume of local ad sales.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, total ad RPMs increased primarily due to an increase in ad RPMs on the mobile and other connected devices platform. Ad RPMs on the mobile and other connected devices platform increased as advertising revenue growth outpaced the growth in advertising listener hours as a result of an increase in the average price per ad sold on that platform, due in part to our increase in relative volume of local ad sales.

Total Subscription RPMs

For the twelve months ended December 31, 2015 compared to 2014, total subscription RPMs increased primarily due to an increase in subscription RPMs on the mobile and other connected devices platform. Subscription RPMs on the mobile and other connected devices platform increased as the growth in subscription and other revenue outpaced the growth in subscription listener hours, primarily due to an increase in the average price per subscriber as a result of the increase in the Pandora One pricing structure and an increase in subscribers.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, total subscription RPMs increased as the growth in subscription and other revenue outpaced the growth in subscription listener hours on both the computer and the mobile and other connected devices platforms, primarily due to an increase in the average price per subscriber as a result of the increase in the Pandora One pricing structure. In addition, the changes in subscription RPMs for the twelve months ended December 31, 2014 reflect a $14.2 million increase in subscription revenue in connection with the one-time recognition of the accumulation of deferred revenue related to certain subscriptions purchased through mobile app stores. Refer to “Deferred Revenue” below for further details regarding these mobile subscriptions.

Total Ad LPMs

Total ad LPMs in the twelve months ended December 31, 2015 compared to 2014 increased as the growth in cost of revenue - content acquisition costs outpaced the growth in advertising listener hours. Cost of revenue - content acquisition costs increased by $65.4 million in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs for the pre-1972 sound recordings settlement. In addition, cost of revenue - content acquisition costs increased by $28.2 million in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition as a result of our decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015. Total ad LPMs also increased as a result of scheduled rate increases for sound recordings paid to SoundExchange.

Total ad LPMs in the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013 increased primarily due to scheduled rate increases for sound recording royalties paid to SoundExchange.

Total Subscription LPMs

Total subscription LPMs in the twelve months ended December 31, 2015 compared to 2014 increased as the growth in cost of revenue - content acquisition costs outpaced the growth in subscription listener hours. Cost of revenue - content acquisition costs increased by $65.4 million in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs for the pre-1972 sound recordings settlement. In addition, cost of revenue - content acquisition costs increased by $28.2 million in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition as a result of our decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015. Total subscription LPMs also increased as a result of scheduled rate increases for sound recordings paid to SoundExchange.

Total subscription LPMs in the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013 increased primarily due to scheduled rate increases for sound recording royalties paid to SoundExchange.

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Basis of Presentation and Results of Operations

The following table presents our results of operations for the periods indicated as a percentage of total revenue. Our results of operations for the twelve months ended December 31, 2015 include operating results of Ticketfly for the two months ended December 31, 2015. The period-to-period comparisons of results are not necessarily indicative of results for future periods.

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Revenue			
Advertising	82 %	80 %	80 %
Subscription and other	18	20	19
Ticketing service	—	—	1
Total revenue	100	100	100
Cost of revenue			
Cost of revenue—Content acquisition costs	52	48	52
Cost of revenue—Other(1)	7	7	7
Cost of revenue—Ticketing service(1)	—	—	1
Total cost of revenue	59	55	60
Gross profit	41	45	40
Operating expenses			
Product development(1)	5	6	7
Sales and marketing(1)	28	30	34
General and administrative(1)	12	12	13
Total operating expenses	45	48	55
Loss from operations	(4)	(3)	(15)
Other income (expense), net	—	—	—
Loss before provision for income taxes	(4)	(3)	(15)
Provision for income taxes	—	—	—
Net loss	(5)%	(3)%	(15)%
(1) Includes stock-based compensation as follows:			
Cost of revenue—Other	0.3%	0.5%	0.5%
Cost of revenue—Ticketing service	—	—	—
Product development	1.5	1.9	2.0
Sales and marketing	3.4	4.6	4.5
General and administrative	1.5	2.5	2.5
Note: Amounts may not recalculate due to rounding			

Revenue

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
		(in thousands)			(in thousands)	
Revenue						
Advertising	$ 489,340	$ 732,338	$ 242,998	$ 732,338	$ 933,305	$ 200,967
Subscription and other	110,893	188,464	77,571	188,464	220,571	32,107
Ticketing service	—	—	—	—	10,167	10,167
Total revenue	$ 600,233	$ 920,802	$ 320,569	$ 920,802	$ 1,164,043	$ 243,241

Advertising Revenue

We generate advertising revenue primarily from audio, display and video advertising, which is typically sold on a cost-per-thousand impressions, or CPM, basis. Advertising campaigns typically range from one to twelve months, and advertisers generally pay us based on the number of delivered impressions or the satisfaction of other criteria, such as click-throughs. We also have arrangements with advertising agencies under which these agencies sell advertising inventory on our service directly to advertisers. We report revenue under these arrangements net of amounts due to agencies. For the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, advertising revenue accounted for 82%, 80% and 80%, of our total revenue, respectively. We expect that advertising will comprise a substantial majority of revenue for the foreseeable future.

For the twelve months ended December 31, 2015 compared to 2014, advertising revenue increased $201.0 million or 27%, primarily due to an approximate 25% increase in the average price per ad sold, due in part to our increase in relative volume of local ad sales and our focus on monetizing mobile inventory, and an approximate 5% increase in the number of ads sold, primarily due to an increase in advertising listener hours.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, advertising revenue increased by $243.0 million or 50%, primarily due to an approximate 25% increase in the average price per ad sold, due in part to our increase in relative volume of local ad sales and our focus on monetizing mobile inventory, and an approximate 15% increase in the number of ads sold, primarily due to an increase in advertising listener hours. In addition, the remaining increase in advertising revenue was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

Subscription and other revenue

Subscription and other revenue is generated primarily through the sale of Pandora One, a daily, monthly or annual subscription to a premium version of the Pandora service, which currently includes advertisement-free access and higher audio quality on supported devices. Subscription revenue is recognized on a straight-line basis over the duration of the subscription period. For the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, subscription and other revenue accounted for 18%, 20% and 19% of our total revenue, respectively.

Effective in March 2014, we implemented a change in the pricing structure for Pandora One under which the $36 annual subscription option was eliminated. In addition, effective in May 2014, the monthly pricing option for Pandora One was increased to $4.99 per-month for new subscribers. Existing monthly subscribers who did not lapse maintained the $3.99 per-month pricing structure, and existing annual subscribers who did not lapse were migrated to the $3.99 per-month monthly pricing structure. Effective in December 2014, we reinstated the annual subscription option at $54.89 per year.

For the twelve months ended December 31, 2015 compared to 2014, subscription revenue increased $32.1 million or 17%, primarily due to an approximate 15% increase in the average price per subscription as a result of the change in the Pandora One pricing structure and due to an approximate 10% increase in the number of subscribers.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, subscription and other revenue increased by $77.6 million, or 70%, primarily due to an approximate 25% increase in the average price per subscription as a result of the change in the Pandora One pricing structure and due to an approximate 10%

increase in the number of subscribers. The increase in subscription revenue for the twelve months ended December 31, 2014 was also due to a $14.2 million increase in subscription revenue in connection with the one-time recognition of the accumulation of deferred revenue related to certain subscriptions purchased through mobile app stores. Refer to "Deferred Revenue" below for further details regarding these mobile subscriptions. In addition, the remaining increase in subscription revenue was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

Ticketing service

Ticketing service revenue is generated primarily from service and merchant processing fees generated on ticket sales through the Ticketfly platform. Ticketfly sells tickets to fans for events on behalf of clients and charges a fee per ticket, which generally increases as the face value of the ticket increases, or a percentage of the total convenience charge and order processing fee, for its services at the time the ticket for an event is sold. Ticketing service revenue is recorded net of the face value of the ticket at the time of the sale, as Ticketfly generally acts as the agent in these transactions. As Ticketfly was acquired on October 31, 2015, the consolidated statements of operations include ticketing service revenue for the two months ended December 31, 2015. For the two months ended December 31, 2015, ticketing service revenue accounted for approximately 1% of our total revenue. We had no ticketing service revenue in the eleven months ended December 31, 2013 or the twelve months ended December 31, 2014.

Deferred revenue

Our deferred revenue consists principally of both prepaid but unrecognized subscription revenue and advertising fees received or billed in advance of the delivery or completion of the delivery of services. Deferred revenue is recognized as revenue when the services are provided and all other revenue recognition criteria have been met.

In addition, subscription revenue derived from sales through certain mobile devices may be subject to refund or cancellation terms which may affect the timing or amount of the subscription revenue recognition. When refund rights exist, we recognize revenue when services have been provided and the rights lapse or when we have developed sufficient transaction history to estimate a return reserve.

We were required to defer revenue for certain subscriptions purchased through mobile app stores that contained refund rights until the refund rights lapsed or until we developed sufficient operating history to estimate a return reserve. As of December 31, 2013, we had deferred all revenue related to these mobile subscriptions subject to refund rights totaling approximately $14.2 million, as we did not have sufficient transaction history to estimate a return reserve. Beginning in January 2014, we had sufficient transaction history that enabled us to estimate future returns. Accordingly, in January 2014, we began recording revenue related to these mobile subscriptions net of estimated returns. This resulted in a one-time increase in subscription revenue in the three months ended March 31, 2014 of approximately $14.2 million, as the previously deferred revenue was recognized. As of December 31, 2015, the deferred revenue related to the return reserve was not significant.

Costs and Expenses

Cost of revenue consists of cost of revenue—content acquisition costs, cost of revenue—other and cost of revenue - ticketing. Our operating expenses consist of product development, sales and marketing and general and administrative costs. Cost of revenue—content acquisition costs are the most significant component of our costs and expenses, followed by employee-related costs, which include stock-based compensation expenses. We expect to continue to hire additional employees in order to support our anticipated growth and our product development initiatives. In any particular period, the timing of additional hires could materially affect our cost of revenue and operating expenses, both in absolute dollars and as a percentage of revenue. We anticipate that our costs and expenses will increase in the future.

Cost of revenue—Content Acquisition Costs

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	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Cost of revenue—Content acquisition costs	$ 314,866	$ 446,377	$ 131,511	$ 446,377	$ 610,362	$ 163,985

Content Acquisition Costs as a Percentage of Advertising Revenue by Platform

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Computer	34%	34%	41%
Mobile and other connected devices	58%	53%	55%

Cost of revenue—content acquisition costs principally consist of royalties paid for streaming music or other content to our listeners. Royalties are currently calculated using negotiated rates documented in agreements. The majority of our royalties are payable based on a fee per public performance of a sound recording, while in other cases our royalties are payable based on a percentage of our revenue or a formula that involves a combination of per performance and revenue metrics. For certain royalty arrangements, we accrue for estimated royalties based on the available facts and circumstances and adjust these estimates as more information becomes available. The results of any finalized negotiation may be materially different from our estimates.

We estimate our advertising-based content acquisition costs attributable to specific platforms by allocating costs from royalties payable based on a fee per track to the platform for which the track is served and by allocating costs from royalties based on a percentage of our revenue in accordance with the overall percentage of our revenue estimated to be attributable to such platforms. While we believe that comparing disaggregated content acquisition costs and revenues across our delivery platforms may provide directional insight for evaluating our efforts to monetize our service by platform, we do not validate such disaggregated metrics to the level of financial statement reporting. We continue to refine our systems and methodologies used to categorize such metrics across our delivery platforms and the period-to-period comparisons of results are not necessarily indicative of results for future periods.

For the twelve months ended December 31, 2015 compared to 2014, content acquisition costs increased $164.0 million or 37%, primarily due to an increase of $65.4 million related to pre-1972 sound recordings in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs for the pre-1972 sound recordings settlement. In addition, cost of revenue - content acquisition costs increased by $28.2 million related to publisher royalty rate increases in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition as a result of our decision to forgo the application of the RMLC publisher royalty rate from June 2013 to September 2015. Cost of revenue - content acquisition costs also increased due to scheduled sound-recording royalty rate increases of 8%. Content acquisition costs as a percentage of total revenue increased from 48% to 52%, primarily due to the increased royalties related to pre-1972 sound recordings, RMLC publisher royalties and scheduled sound-recording royalty rate increases of 8%, offset by an increase in advertising sales. Estimated content acquisition costs as a percentage of the advertising revenue attributable to our computer platform increased from 34% to 41%, and estimated content acquisition costs as a percentage of the advertising revenue attributable to our mobile and other connected devices platform increased from 53% to 55%, in each case primarily due to the increased royalties related to the pre-1972 sound recordings settlement, RMLC publisher royalties and scheduled sound-recording royalty rate increases of 8%, offset by an increase in advertising sales on both the computer and mobile and other connected devices platforms.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, content acquisition costs increased by $131.5 million or 42%, primarily due to an approximate 20% increase in listener hours and scheduled sound-recording royalty rate increases of 8%. In addition, the remaining increase in content acquisition costs was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013. Content acquisition costs as a percentage of total revenue decreased from 52% to 48%, primarily due to an increase in advertising revenue and a $14.2 million increase in subscription revenue in connection with the one-time recognition of the accumulation of deferred revenue related to certain subscriptions purchased through mobile app stores. Refer to “Deferred Revenue” above for further details regarding these mobile subscriptions. Estimated content acquisition costs as a

percentage of the advertising revenue attributable to our computer platform were 34% in both the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014, primarily due to an increase in advertising revenue on the computer platform as a result of an increase in the average price per ad sold, offset by scheduled rate increases. Estimated content acquisition costs as a percentage of the advertising revenue attributable to our mobile and other connected devices platform decreased from 58% to 53%, primarily due to an increase in advertising revenue on the mobile and other connected devices platform as a result of an increase in the average price per ad sold and an increase in the number of ads sold. The decrease in estimated content acquisition costs as a percentage of the advertising revenue attributable to our mobile and other connected devices platform was also due to the effect of measures we have adopted to manage the growth of mobile content acquisition costs while minimizing adverse effects on the listener experience, such as adjusting the number of times users can skip songs during a given listening session, as well as optimizing time-based thresholds whereby music will stop playing after a certain length of user inactivity with the service, partially offset by scheduled rate increases.

Cost of Revenue—Other

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Cost of revenue—Other	$ 42,217	$ 61,627	$ 19,410	$ 61,627	$ 79,858	$ 18,231

Cost of revenue—other consists primarily of ad and music serving costs, employee-related and facilities and equipment costs and other costs of ad sales. Ad and music serving costs consist of content streaming, maintaining our internet radio service and creating and serving advertisements through third-party ad servers. We make payments to third-party ad servers for the period the advertising impressions are delivered or click-through actions occur, and accordingly, we record this as a cost of revenue in the related period. Employee-related costs include salaries and benefits associated with supporting music and ad serving functions. Other costs of ad sales include costs related to music events that are sold as part of advertising arrangements.

For the twelve months ended December 31, 2015 compared to 2014, cost of revenue—other increased $18.2 million or 30%, primarily due to an $11.3 million increase in ad and music serving costs driven by an increase in impressions served and a $6.7 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 75% increase in headcount.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, cost of revenue—other increased by $19.4 million or 46%, primarily due to a $7.3 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 20% increase in headcount, a $4.2 million increase in ad and music serving costs driven by an increase in impressions served and a $2.3 million increase in other costs of ad sales related to events sold as part of advertising arrangements. In addition, the remaining increase in cost of revenue—other was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

Cost of Revenue - Ticketing Service

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Cost of revenue—Ticketing service	$ —	$ —	$ —	$ —	$ 7,121	$ 7,121

Cost of revenue—ticketing service consists primarily of ticketing revenue share costs, credit card fees and other cost of revenue and intangible amortization expense. The majority of these costs are related to revenue share costs, which consist of royalties paid to clients for their share of convenience and order processing fees. Intangible amortization expense is related to amortization of developed technology acquired in connection with the Ticketfly acquisition.

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For the two months ended December 31, 2015, cost of revenue—ticketing service was $7.1 million and consisted of $4.4 million in revenue share costs, $1.7 million in credit card fees and other cost of revenue and $1.0 million in intangible amortization of developed technology.

Gross Profit

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Gross profit						
Total revenue	$ 600,233	$ 920,802	$ 320,569	$ 920,802	$ 1,164,043	$ 243,241
Total cost of revenue	357,083	508,004	150,921	508,004	697,341	189,337
Gross profit	$ 243,150	$ 412,798	$ 169,648	$ 412,798	$ 466,702	$ 53,904
Gross margin	41%	45%		45%	40%	

For the twelve months ended December 31, 2015 compared to 2014, gross profit increased by $53.9 million or 13%, primarily due to an increase in advertising revenue as a result of an increase in the average price per ad sold and an increase in the number of ads sold. Gross margin decreased from 45% to 40% as the growth in content acquisition costs outpaced the growth in revenue primarily due to the increase of $65.4 million related to pre-1972 sound recordings settlement, the increase of $28.2 million related to publisher royalty rate increases and scheduled sound-recording royalty rate increases of 8%.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, gross profit increased by $169.6 million or 70%, primarily due to an increase in advertising revenue as a result of an increase in the average price per ad sold and an increase in the number of ads sold. In addition, the remaining increase in gross profit was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013. Gross margin increased from 41% to 45% as the growth in revenue outpaced the growth in content acquisition costs primarily due to an increase in advertising revenue and the effect of measures we have adopted to manage the growth of mobile content acquisition costs while minimizing adverse effects on the listener experience, such as adjusting the number of times users can skip songs during a given listening session, as well as optimizing time-based thresholds whereby music will stop playing after a certain length of user inactivity with the service. The increase in gross margin was also due to an increase in subscription and other revenue driven by a $14.2 million increase in connection with the one-time recognition of the accumulation of deferred revenue related to certain subscriptions purchased through mobile app stores. Refer to “Deferred Revenue” above for further details regarding these mobile subscriptions.

Product Development

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Product development	$ 31,294	$ 53,153	$ 21,859	$ 53,153	$ 84,581	$ 31,428

Product development consists primarily of employee-related and facilities and equipment costs, including salaries and benefits related to employees in software engineering, music analysis and product management departments, information technology and costs associated with supporting consumer connected-device manufacturers in implementing our service in their products. We incur product development expenses primarily for improvements to our website and the Pandora app, development of new advertising products and development and enhancement of our personalized station generating system. We have generally expensed product development as incurred. Certain website development and internal use software development costs are capitalized when specific criteria are met. In such cases, the capitalized amounts are amortized over the useful life of the related application once the application is placed in service. We intend to substantially increase investments in developing new products and enhancing the functionality of our existing products.

For the twelve months ended December 31, 2015 compared to 2014, product development expenses increased $31.4 million or 59%, primarily due to a $29.2 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 115% increase in headcount and a $1.3 million increase in professional fees.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, product development expenses increased by $21.9 million or 70%, primarily due to a $18.1 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 35% increase in headcount. In addition, the remaining increase in product development expenses was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

Sales and Marketing

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
Sales and marketing	$ 169,005	$ 277,330	$ 108,325	$ 277,330	$ 398,169	$ 120,839

Sales and marketing consists primarily of employee-related and facilities and equipment costs, including salaries, commissions and benefits related to employees in sales, sales support, marketing, advertising and music maker group departments. In addition, sales and marketing expenses include transaction processing commissions on subscription purchases through mobile app stores, external sales and marketing expenses such as brand marketing, advertising, direct response and search engine marketing costs, public relations expenses, costs related to music events, agency platform and media measurement expenses, infrastructure costs and amortization expense related to acquired intangible assets.

We expect sales and marketing expenses to increase as we hire additional personnel to build out our sales and sales support teams, particularly as we continue to build out our local market sales team. While we have historically relied on the success of viral marketing to expand consumer awareness of our service, in 2014 we began to launch marketing campaigns to increase consumer awareness and expand our listener base and in 2015, we began to launch advertising campaigns. We anticipate that we will continue to utilize these types of marketing and advertising campaigns in the future. As such, we anticipate higher overall levels of sales and marketing expense going forward.

For the twelve months ended December 31, 2015 compared to 2014, sales and marketing expenses increased $120.8 million or 44%, primarily due to a $54.0 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 40% increase in headcount, a $45.3 million increase in brand marketing, advertising, direct response and search costs, which were driven by advertising campaigns that were launched in the twelve months ended December 31, 2015, an $11.2 million increase in transaction processing commissions on subscription purchases through mobile app stores, a $5.3 million increase in costs related to music events, a $2.2 million increase in professional fees, a $1.4 million increase in agency platform and media measurement expenses and a $1.1 million increase in amortization expense related to acquired intangible assets.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, sales and marketing expenses increased by $108.3 million or 64%, primarily due to a $64.5 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 30% increase in headcount, a $10.3 million increase in brand marketing, advertising, direct response and search costs, a $9.0 million increase in transaction processing commissions on subscription purchases through mobile app stores, a $2.3 million increase in agency platform and media measurement expenses, a $1.9 million increase in costs related to music events and a $1.2 million increase in public relations expenses. In addition, the remaining increase in sales and marketing expenses was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

General and Administrative

	Eleven Months Ended December 31,	Twelve Months Ended December 31,		Twelve Months Ended December 31,		
	2013	2014	$ Change	2014	2015	$ Change
	(in thousands)			(in thousands)		
General and administrative	$ 69,300	$ 112,443	$ 43,143	$ 112,443	$ 153,943	$ 41,500

General and administrative consists primarily of employee-related and facilities and equipment costs, including salaries and benefits for finance, accounting, legal, internal information technology and other administrative personnel. In addition, general and administrative expenses include professional services costs for outside legal and accounting services, infrastructure costs and credit card fees. We expect general and administrative expenses to increase in future periods as we continue to invest in corporate infrastructure, including adding personnel and systems to our administrative functions.

For the twelve months ended December 31, 2015 compared to 2014, general and administrative expenses increased $41.5 million or 37%, primarily due to a $22.4 million increase in employee-related, facilities and equipment costs, which were driven by an approximate 45% increase in headcount, a $13.8 million increase in professional services costs primarily due to royalty and other legal matters and a $3.0 million increase in credit card fees.

For the twelve months ended December 31, 2014 compared to the eleven months ended December 31, 2013, general and administrative expenses increased by $43.1 million or 62%, primarily due to a $26.4 million increase in employee-related and facilities and equipment costs, which were driven by an approximate 40% increase in headcount, a $5.5 million increase in professional services costs primarily due to royalty-related legal matters, a $1.2 million increase in credit card fees and a $1.0 million increase in infrastructure costs. In addition, the remaining increase in general and administrative expenses was due to the twelve months ended December 31, 2014 having one additional month as compared to the eleven months ended December 31, 2013.

Other income (expense), net

Other income (expense), net in the twelve months ended December 31, 2015 consists primarily of interest expense on our 1.75% Convertible Senior Notes due 2020, offset by interest income from available-for-sale securities. We expect interest expense to grow significantly as a result of the issuance of our Notes in December 2015. Refer to Note 7 “Debt Instruments” in the Notes to Consolidated Financial Statements for further details on our Notes.

Provision for (Benefit from) Income Taxes

We have historically been subject to income taxes in the United States, Australia and New Zealand. As we expand our operations outside of these locations, we become subject to taxation based on the applicable foreign statutory rates and our effective tax rate could fluctuate accordingly.

Our provision for (benefit from) income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted statutory income tax rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce net deferred tax assets to the amount expected to be realized.

During the year ended December 31, 2015, we released $1.8 million of our valuation allowance as a result of acquisitions. Deferred tax liabilities were established for the book-tax basis difference related to acquired intangible assets. The net deferred tax liabilities provided an additional source of income to support the realizability of pre-existing deferred tax assets.

Liquidity and Capital Resources

As of December 31, 2015, we had cash, cash equivalents and investments totaling $416.9 million, which consisted of cash and money market funds held at major financial institutions, commercial paper, investment-grade corporate debt securities and U.S. government and government agency debt securities.

On December 9, 2015, we completed an unregistered Rule 144A offering of $345.0 million aggregate principal amount

of our 1.75% Convertible Senior Notes due 2020. The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchaser's fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details on our Notes.

In September 2013, we completed a follow-on public equity offering in which we sold an aggregate of 15,730,000 shares of our common stock at a public offering price of $25.00 per share. We received aggregate net proceeds of $378.7 million, after deducting underwriting discounts and commissions and offering expenses from sales of our shares in the offering.

Our principal uses of cash during the twelve months ended December 31, 2015 were funding our operations, as described below, the acquisitions of Ticketfly, Rdio and NBS, royalty settlements and capital expenditures.

Sources of Funds

We believe, based on our current operating plan, that our existing cash and cash equivalents and available borrowings under our credit facility will be sufficient to meet our anticipated cash needs for at least the next twelve months.

From time to time, we may explore additional financing sources and means to lower our cost of capital, which could include equity, equity-linked and debt financing. In addition, in connection with any future acquisitions, we may require additional funding which may be provided in the form of additional debt, equity or equity-linked financing or a combination thereof. There can be no assurance that any additional financing will be available to us on acceptable terms.

Our Indebtedness

Credit Facility

In May 2011, we entered into a $30.0 million credit facility with a syndicate of financial institutions. In September 2013, we amended this credit facility. The amendment increased the aggregate commitment amount from $30.0 million to $60.0 million, extended the maturity date from May 12, 2015 to September 12, 2018 and decreased the interest rate on borrowings. In December 2015, we further amended this credit facility. The amendment increased the aggregate commitment amount to a maximum aggregate commitment amount of $120.0 million. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details regarding our credit facility.

1.75% Convertible Senior Notes Due 2020

On December 9, 2015, we completed an unregistered Rule 144A offering of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020. The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchaser's fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions. Refer to Note 7 "Debt Instruments" in the Notes to Consolidated Financial Statements for further details on our Notes.

The Notes are unsecured, senior obligations of Pandora, and interest is payable semi-annually at a rate of 1.75% per annum. The Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms prior to such date. Prior to July 1, 2020, the Notes are convertible at the option of holders only upon the occurrence of specified events or during certain periods; thereafter, until the second scheduled trading day prior to maturity, the Notes will be convertible at the option of holders at any time.

The conversion rate for the Notes is initially 60.9050 shares of common stock per $1,000 principal amount of the Notes, which is equivalent to an initial conversion price of approximately $16.42 per share of our common stock, and is subject to adjustment in certain circumstances.

The Notes were separated into debt and equity components and assigned a fair value. The value assigned to the debt component is the estimated fair value as of the issuance date of similar debt without the conversion feature. The difference between the cash proceeds and this estimated fair value represents the value which has been assigned to the equity component and recorded as a debt discount. The debt discount is being amortized using the effective interest method.

The capped call transactions are expected generally to reduce the potential dilution to our common stock and/or offset the cash payments we would be required to make in excess of the principal amount of the converted Notes in the event that the market price of our common stock, as measured under the terms of the capped call transaction, is greater than the strike price of

the capped call transaction, with such reduction and/or offset subject to a cap based on the cap price of the capped call transactions. The strike price of the capped call transactions corresponds to the initial conversion price of the Notes and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have an initial cap price of $25.26 per share and are subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have been included as a net reduction to additional paid-in capital within stockholders' equity.

Capital Expenditures

Consistent with previous periods, future capital expenditures will primarily focus on acquiring additional hosting and general corporate infrastructure. Our access to capital is adequate to meet our anticipated capital expenditures for our current plans.

Historical Trends

The following table summarizes our cash flow data for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015. Our cash flow data for the twelve months ended December 31, 2015 include cash flow data of Ticketfly for the two months ended December 31, 2015.

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
	(in thousands)		
Net cash provided by (used in) operating activities	$ (2,986)	$ 21,029	$ (42,082)
Net cash used in investing activities	(211,919)	(112,200)	(102,266)
Net cash provided by financing activities	394,997	21,661	303,135

Operating activities

In the twelve months ended December 31, 2015, net cash used by operating activities was $42.1 million and primarily consisted of our net loss of $169.7 million and increases in accounts receivable and prepaid and other assets of $55.9 million and $18.9 million, offset by decreases in accounts payable, accrued and other current liabilities and accrued royalties of $18.1 million and $23.7 million, and non-cash charges of $141.2 million, primarily related to $111.6 million in stock-based compensation charges and $24.5 million in depreciation and amortization charges. Cash provided by operating activities decreased $63.1 million from the twelve months ended December 31, 2014, primarily due to a $139.3 million increase in our net loss, offset by a $24.6 million increase in stock-based compensation expense as a result of an increase in headcount.

In the twelve months ended December 31, 2014, net cash provided by operating activities was $21.0 million and primarily consisted of non-cash charges of $106.3 million, primarily related to $87.1 million in stock-based compensation charges, offset by an increase in accounts receivable of $55.5 million driven by an increase in revenue and our net loss of $30.4 million. Net cash provided by operating activities also included a $28.2 million decrease in deferred revenue from December 31, 2013, primarily due to the one-time recognition of the accumulation of deferred revenue related to certain subscriptions purchased through mobile app stores of $14.2 million and due to a decrease in deferred revenue as a result of the elimination of the annual subscription option from March through December 2014, as we collected less cash upfront under the one-month subscription period as opposed to the twelve-month subscription period under the annual subscription option. Cash provided by operating activities increased $24.0 million from the eleven months ended December 31, 2013, primarily due to a $47.0 million increase in stock-based compensation expense as a result of an increase in headcount, offset by a $3.4 million increase in our net loss.

In the eleven months ended December 31, 2013, net cash used in operating activities was $3.0 million, including our net loss of $27.0 million, which was offset by non-cash charges of $50.6 million primarily related to $40.0 million in stock-based compensation expense. Net cash used in operating activities benefited from a $13.4 million increase in deferred revenue from the prior period primarily due to an increase in subscriptions, partially driven by the temporary implementation of the mobile listening limit and an increase in accrued royalties of $13.0 million due to schedule rate increases, offset by a $60.6 million increase in accounts receivable driven by an increase in revenue.

Investing activities

In the twelve months ended December 31, 2015, net cash used in investing activities was $102.3 million, primarily due to $269.6 million in payments related to acquisitions, net of cash acquired due to the acquisitions of Rdio, Ticketfly, NBS and KXMZ, $141.0 million of purchases of investments and $32.1 million of capital expenditures for leasehold improvements and server equipment, offset by $229.0 million in maturities of investments and $111.4 million in proceeds from sale of investments.

In the twelve months ended December 31, 2014, net cash used in investing activities was $112.2 million, primarily due to $340.7 million of purchases of investments and $30.0 million of capital expenditures for leasehold improvements and server equipment, partially offset by $258.5 million in maturities of investments.

In the eleven months ended December 31, 2013, net cash used in investing activities was $211.9 million, primarily due to $224.5 million for purchases of investments, $21.2 million for capital expenditures for server equipment and leasehold improvements and $8.0 million for the purchase of patents, offset by $42.2 million in maturities of short-term investments.

Financing activities

In the twelve months ended December 31, 2015, net cash provided by financing activities was $303.1 million, primarily consisting of $345.0 million in proceeds from issuance of the Notes, offset by $43.2 million in payments pursuant to the capped call transaction and $8.9 million in payment of debt issuance costs related to the issuance of the Notes and the amendment to our line of credit facility.

In the twelve months ended December 31, 2014, net cash provided by financing activities was $21.7 million, primarily consisting of $16.9 million in proceeds from the exercise of stock options and $6.4 million in proceeds from our employee stock purchase plan.

In the eleven months ended December 31, 2013, net cash provided by financing activities was $395.0 million, primarily consisting of net proceeds from the follow-on public equity offering of $378.7 million and cash proceeds from the issuance of common stock of $17.3 million.

Contractual Obligations and Commitments

The following summarizes our contractual obligations as of December 31, 2015:

	Payments Due by Period				
	Total	Less Than 1 Year	1 - 3 Years	4 - 5 Years	More Than 5 Years
	(in thousands)				
Purchase obligations	$ 153,252	$ 60,252	$ 93,000	$ —	$ —
Operating lease obligations	162,634	19,044	45,941	41,747	55,902
Total	$ 315,886	$ 79,296	$ 138,941	$ 41,747	$ 55,902

Purchase Obligation

As of December 31, 2015, we had various non-cancelable minimum payments, primarily in connection with the publishing agreements signed in 2015, of which $124.0 million is recoupable against future royalty payments and $29.3 million of which is not recoupable against future royalty payments, through 2018.

Off-Balance Sheet Arrangements

As of December 31, 2014 and 2015, we did not have any off-balance sheet arrangements.

Business Trends

Our operating results fluctuate from quarter to quarter as a result of a variety of factors. We expect our operating results

to continue to fluctuate in future quarters.

Our results reflect the effects of seasonal trends in listener and advertising behavior. We expect to experience both higher advertising sales due to greater advertiser demand during the holiday season and increased usage due to the popularity of holiday music during the last three months of each calendar year. In addition, we expect to experience lower advertising sales in the first three months of each calendar year due to reduced advertiser demand and increased usage due to increased use of media-streaming devices received as gifts during the holiday season. We believe these seasonal trends have affected, and will continue to affect our operating results, particularly as increases in content acquisition costs from increased usage are not offset by increases in advertising sales in the first calendar quarter.

In addition, expenditures by advertisers tend to be cyclical and discretionary in nature, reflecting overall economic conditions, the economic prospects of specific advertisers or industries, budgeting constraints and buying patterns and a variety of other factors, many of which are outside our control. As a result of these and other factors, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

We have invested in building a local advertising sales force in major radio markets and as of December 31, 2015, we had 154 local sellers in 39 markets in the United States. As a result, we experienced an increase in local advertising revenue as a percentage of total advertising revenue in the twelve months ended December 31, 2015 compared to the twelve months ended December 31, 2014, and we intend to continue investing to extend our local market presence for the foreseeable future.

Critical Accounting Policies and Estimates

Our discussion and analysis of our consolidated financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses and the related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Our estimates form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

An accounting policy is considered to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, and if different estimates that reasonably could have been used, or changes in the accounting estimate that are reasonably likely to occur, could materially impact the consolidated financial statements. We believe that our critical accounting policies reflect the most significant estimates and assumptions used in the preparation of the consolidated financial statements.

We believe that the assumptions and estimates associated with our royalties for performance rights of musical works, advertising revenue, subscription and other revenue, business combinations, goodwill and intangible assets and stock based compensation and the valuation of stock option grants and market stock units have the greatest potential impact on our financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Royalties for Performance Rights of Musical Works

We incur royalty expenses from our public performance of musical works. This includes royalties that we pay for public performance rights to the owners of those musical works or their agents, such as ASCAP, BMI, SESAC and individual publishers. We record a liability for public performance royalties based on our best estimate of the amount owed to each licensor, PRO or individual copyright owner, based on historical rates, third-party evidence and legal developments consistent with our past practices. For each quarterly period, we evaluate our estimates to assess the adequacy of recorded liabilities. If actual royalty rates differ from estimates, revisions to the estimated royalty liabilities may be required, which could materially affect our results of operations.

Revenue Recognition

We recognize revenue when four basic criteria are met: (1) persuasive evidence exists of an arrangement with the customer reflecting the terms and conditions under which the products or services will be provided; (2) delivery has occurred or services have been provided; (3) the fee is fixed or determinable; and (4) collection is reasonably assured. We consider a signed agreement, a binding insertion order or other similar documentation to be persuasive evidence of an arrangement. Collectability is assessed based on a number of factors, including transaction history and the creditworthiness of a customer. If it is

determined that collection is not reasonably assured, revenue is not recognized until collection becomes reasonably assured, which is generally upon receipt of cash. We record cash received in advance of revenue recognition as deferred revenue.

Advertising revenue

We generate advertising revenue primarily from audio, display and video advertising. We generate the majority of our advertising revenue through the delivery of advertising impressions sold on a cost per thousand, or CPM, basis. In determining whether an arrangement exists, we ensure that a binding arrangement, such as an insertion order or a fully executed customer-specific agreement, is in place. We generally recognize revenue based on delivery information from our campaign trafficking systems.

We also generate advertising revenue pursuant to arrangements with advertising agencies and brokers. Under these arrangements, we provide the agencies and brokers the ability to sell advertising inventory on our service directly to advertisers. We report this revenue net of amounts due to agencies and brokers because we are not the primary obligor under these arrangements, we do not set the pricing and do not establish or maintain the relationship with the advertisers.

Subscription and other revenue

Subscription and other revenue is generated primarily through the sale of a premium version of the Pandora service which currently includes advertisement-free access and higher audio quality on supported devices. Subscription revenue derived from direct sales to listeners is recognized on a straight-line basis over the duration of the subscription period. Subscription revenue derived from sales through some mobile operating systems may be subject to refund or cancellation terms which may affect the timing or amount of the subscription revenue recognition. When refund rights exist, we recognize revenue when services have been provided and the rights lapse or when we have developed sufficient transaction history to estimate a reserve.

We were required to defer revenue for certain subscriptions purchased through mobile app stores that contained refund rights until the refund rights lapsed or until we developed sufficient operating history to estimate a return reserve. As of December 31, 2013, we had deferred all revenue related to these mobile subscriptions subject to refund rights totaling approximately $14.2 million, as we did not have sufficient history to estimate a return reserve. Beginning in January 2014, we had sufficient historic transactional information which enabled us to estimate future returns. Accordingly, in January 2014, we began recording revenue related to these mobile subscriptions net of estimated returns. This change resulted in a one-time increase in subscription revenue in the three months ended March 31, 2014 of approximately $14.2 million, as the previously deferred revenue was recognized. As of December 31, 2015, the deferred revenue related to the return reserve was not significant.

Ticketing service revenue

Ticketing service revenue is generated from service and merchant processing fees generated on ticket sales through the Ticketfly platform. Ticketfly sells tickets to fans for events on behalf of clients and charges a fixed fee or a percentage of the total convenience charge and order processing fee for its services at the time the ticket for an event is sold. Ticketing service revenue is recorded net of the face value of the ticket at the time of the sale, as Ticketfly generally acts as the agent in these transactions.

Business Combinations, Goodwill and Intangible Assets, net

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired users, acquired technology, and trade names from a market participant perspective, useful lives and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. During the measurement period, which is one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

We review goodwill for impairment at least annually or more frequently if events or changes in circumstances would more likely than not reduce the fair value of our single reporting unit below its carrying value. We evaluate indefinite-lived intangible assets for impairment annually or more frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. As of December 31, 2015, no impairment of goodwill or indefinite-lived intangible assets has been identified.

Acquired finite-lived intangible assets are amortized over the estimated useful lives of the assets, which range from two to four years. Acquired finite-lived intangible assets consist primarily of patents, customer relationships, developed technology and trade names resulting from business combinations. We evaluate the recoverability of our intangible assets for potential impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the assets are expected to generate. If such review indicates that the carrying amount of intangible assets is not recoverable, the carrying amount of such assets is reduced to the fair value.

In addition to the recoverability assessment, we routinely review the remaining estimated useful lives of finite-lived intangible assets. If we reduce the estimated useful life assumption for any asset, the remaining unamortized balance would be amortized over the revised estimated useful life. We record the amortization of intangible assets to the financial statement line item in our consolidated statement of operations that the asset directly relates to. To the extent that purchased intangibles are used in revenue generating activities, we record the amortization of these intangible assets to cost of revenue.

Stock-Based Compensation

Stock-based compensation expenses are classified in the statement of operations based on the department to which the related employee reports. We measure stock-based compensation expense for employees at the grant date fair value of the award, and recognize expense on a straight-line basis over the requisite service period, which is generally the vesting period, net of estimated forfeitures.

We generally estimate the grant date fair value of stock options using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model is affected by our stock price on the date of grant, the expected stock price volatility over the expected term of the award, which is based on projected employee stock option exercise behaviors, the risk-free interest rate for the expected term of the award and expected dividends.

Stock-based compensation expense is recorded net of estimated forfeitures in the statement of operations for only those stock-based awards that we expect to vest. We estimate the forfeiture rate based on historical forfeitures of equity awards and adjust the rate to reflect changes in facts and circumstances, if any. We will revise our estimated forfeiture rate if actual forfeitures differ from our initial estimates.

Stock-Based Compensation — Market Stock Units ("MSUs")

We implemented a market stock unit program in March 2015 for certain key executives. Specifically, MSUs measure Pandora's total stockholder return ("TSR") performance against that of the Russell 2000 Index across three performance periods.

We have determined the grant-date fair value of the MSUs using a Monte Carlo simulation performed by a third-party valuation firm. The Monte Carlo simulation model utilizes multiple input variables to estimate the probability that market conditions will be achieved. These variables include our expected stock price volatility over the expected term of the award, actual and projected employee stock option exercise behaviors and the risk-free interest rate for the expected term of the award. The variables used in these models are reviewed on an annual basis and adjusted, as needed. We recognize stock-based compensation for the MSUs over the requisite service period using the accelerated attribution method.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risks in the ordinary course of our business, including interest rate and inflation risks.

Interest Rate Fluctuation Risk

Our exposure to interest rates relates to the increase or decrease in the amount of interest we must pay on our outstanding debt instruments. In May 2011, we entered into a credit facility and in December 2015, we amended this credit facility to increase the aggregate commitment amount to $120.0 million, with a maturity date of September 12, 2018. The amendment further increased the minimum liquidity financial covenant requirement from $5.0 million to $10.0 million at any time. Any outstanding borrowings under the credit facility bear a variable interest rate and therefore the interest we pay as well as the fair value of our outstanding borrowings will fluctuate as changes occur in certain benchmark interest rates. As of December 31, 2015, we had no amounts drawn under the credit facility and had $1.1 million in outstanding letters of credit.

On December 9, 2015, we completed an unregistered Rule 144A offering for the issuance of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020 (the “Notes”). The Notes were offered only to qualified institutional buyers pursuant to Rule 144A under the Securities Act. In connection with the issuance of the Notes, we entered into capped call transactions with the initial purchaser of the Notes and an additional financial institution (“capped call transactions”). The Notes are unsecured, senior obligations of Pandora, and interest is payable semi-annually at a rate of 1.75% per annum, with no interest rate fluctuation risk.

Refer to Note 7 “Debt Instruments” in the Notes to Consolidated Financial Statements for further details regarding our credit facility and convertible notes.

The primary objective of our investment activities is to preserve principal while maximizing income without significantly increasing risk. Approximately 74% of our portfolio consists of cash and cash equivalents that have a relatively short maturity, and a fair value relatively insensitive to interest rate changes. Our available-for-sale investments consist of corporate debt securities, commercial paper and U.S. government and government agency debt securities which may be subject to market risk due to changes in prevailing interest rates that may cause the fair values of our investments to fluctuate. Based on a sensitivity analysis, we have determined that a hypothetical 100 basis points increase in interest rates would have resulted in a decrease in the fair values of our investments of approximately $0.9 million as of December 31, 2015. Such losses would only be realized if we sold the investments prior to maturity. In future periods, we will continue to evaluate our investment policy in order to ensure that we continue to meet our overall objectives.

Inflation Risk

Effective January 1, 2016, the royalties we pay are set by the Web IV rate-setting proceeding. The rates for the calendar years 2017 through 2020 will be adjusted by the CRB to reflect the increases or decreases, if any, in the Consumer Price Index ("CPI"), applicable to that rate year. A material increase in the CPI could potentially result in a material impact to our cost of revenue - content acquisition costs.

Other than inflation risk related to the CPI, we do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

PANDORA MEDIA, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Pandora Media, Inc.

We have audited the accompanying consolidated balance sheets of Pandora Media, Inc. as of December 31, 2014 and 2015, and the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for the eleven month period ended December 31, 2013 and the twelve month periods ended December 31, 2014 and 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Pandora Media, Inc. at December 31, 2014 and 2015, and the consolidated results of its operations and its cash flows for the eleven month period ended December 31, 2013 and the twelve month periods ended December 31, 2014 and 2015, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Pandora Media, Inc.'s internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 18, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Francisco, California
February 18, 2016

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Pandora Media, Inc.

We have audited Pandora Media, Inc.'s internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Pandora Media, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As indicated in the accompanying Management’s Report on Internal Control Over Financial Reporting, management’s assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Ticketfly, which is included in the 2015 consolidated financial statements of Pandora Media, Inc. and constituted 3% and 2% of total and net assets, respectively, as of December 31, 2015 and 1% and 4% of revenues and net loss, respectively, for the year then ended. Our audit of internal control over financial reporting of Pandora Media, Inc. also did not include an evaluation of the internal control over financial reporting of Ticketfly.

In our opinion, Pandora Media, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the 2015 consolidated financial statements of Pandora Media, Inc. and our report dated February 18, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

San Francisco, California
February 18, 2016

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Pandora Media, Inc.
Consolidated Balance Sheets
(in thousands, except share and per share amounts)

	As of December 31,	
	2014	2015
Assets		
Current assets		
Cash and cash equivalents	$ 175,957	$ 334,667
Short-term investments	178,631	35,844
Accounts receivable, net of allowance of $1,218 at December 31, 2014 and $2,165 at December 31, 2015	218,437	277,075
Prepaid expenses and other current assets	15,389	35,920
Total current assets	588,414	683,506
Long-term investments	104,243	46,369
Property and equipment, net	42,921	66,370
Goodwill	—	303,875
Intangible assets, net	6,939	110,745
Other long-term assets	6,773	29,792
Total assets	$ 749,290	$ 1,240,657
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	$ 10,825	$ 17,897
Accrued liabilities	15,754	37,185
Accrued royalties	73,693	97,390
Deferred revenue	14,412	19,939
Accrued compensation	34,476	43,788
Other current liabilities	—	15,632
Total current liabilities	149,160	231,831
Long-term debt, net	—	234,577
Other long-term liabilities	16,773	30,862
Total liabilities	165,933	497,270
Stockholders' equity		
Common stock, $0.0001 par value, 1,000,000,000 shares authorized: 209,071,488 shares issued and outstanding at December 31, 2014 and 224,970,412 at December 31, 2015	21	23
Additional paid-in capital	781,009	1,110,539
Accumulated deficit	(196,997)	(366,658)
Accumulated other comprehensive loss	(676)	(517)
Total stockholders' equity	583,357	743,387
Total liabilities and stockholders' equity	$ 749,290	$ 1,240,657

The accompanying notes are an integral part of the consolidated financial statements.

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Pandora Media, Inc.
Consolidated Statements of Operations
(in thousands, except per share amounts)

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Revenue			
Advertising	$ 489,340	$ 732,338	$ 933,305
Subscription and other	110,893	188,464	220,571
Ticketing service	—	—	10,167
Total revenue	600,233	920,802	1,164,043
Cost of revenue			
Cost of revenue—Content acquisition costs	314,866	446,377	610,362
Cost of revenue—Other	42,217	61,627	79,858
Cost of revenue—Ticketing service	—	—	7,121
Total cost of revenue	357,083	508,004	697,341
Gross profit	243,150	412,798	466,702
Operating expenses			
Product development	31,294	53,153	84,581
Sales and marketing	169,005	277,330	398,169
General and administrative	69,300	112,443	153,943
Total operating expenses	269,599	442,926	636,693
Loss from operations	(26,449)	(30,128)	(169,991)
Other income (expense), net	(474)	306	(1,220)
Loss before benefit from (provision for) income taxes	(26,923)	(29,822)	(171,211)
Benefit from (provision for) income taxes	(94)	(584)	1,550
Net loss	$ (27,017)	$ (30,406)	$ (169,661)
Weighted-average common shares outstanding used in computing basic and diluted net loss per share	180,968	205,273	213,790
Net loss per share, basic and diluted	$ (0.15)	$ (0.15)	$ (0.79)

The accompanying notes are an integral part of the consolidated financial statements.

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Pandora Media, Inc.
Consolidated Statements of Comprehensive Loss
(in thousands)

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Net loss	$ (27,017)	$ (30,406)	$ (169,661)
Change in foreign currency translation adjustment	(42)	(184)	53
Change in net unrealized losses on marketable securities	(253)	(191)	106
Other comprehensive income (loss)	(295)	(375)	159
Total comprehensive loss	$ (27,312)	$ (30,781)	$ (169,502)

The accompanying notes are an integral part of the consolidated financial statements.

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Pandora Media, Inc.
Consolidated Statements of Stockholders' Equity
(in thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Par Amount				
Balances as of January 31, 2013	172,506,051	$ 17	$ 238,552	$ (6)	$ (139,574)	$ 98,989
Issuance of common stock upon exercise of stock options	5,659,377	1	18,355	—	—	18,356
Issuance of common stock in connection with secondary offering, net issuance costs	15,730,000	2	378,635	—	—	378,637
Stock-based compensation	—	—	40,041	—	—	40,041
Vesting of restricted stock units	1,520,516	—	—	—	—	—
Share cancellations to satisfy tax withholding on vesting of restricted stock units	(20,004)	—	(480)	—	—	(480)
Components of comprehensive loss:						—
Net loss	—	—	—	—	(27,017)	(27,017)
Other comprehensive loss	—	—	—	(295)	—	(295)
Balances as of December 31, 2013	195,395,940	$ 20	$ 675,103	$ (301)	$ (166,591)	$ 508,231
Issuance of common stock upon exercise of stock options	10,437,509	1	17,115	—	—	17,116
Stock-based compensation	—	—	87,055	—	—	87,055
Vesting of restricted stock units	3,169,456	—	—	—	—	—
Share cancellations to satisfy tax withholding on vesting of restricted stock units	(73,682)	—	(2,019)	—	—	(2,019)
Stock issued under employee stock purchase plan	142,265	—	3,407	—	—	3,407
Excess tax benefit from stock-based awards	—	—	348	—	—	348
Components of comprehensive loss:						
Net loss	—	—	—	—	(30,406)	(30,406)
Other comprehensive loss	—	—	—	(375)	—	(375)
Balances as of December 31, 2014	209,071,488	$ 21	$ 781,009	$ (676)	$ (196,997)	$ 583,357
Issuance of common stock upon exercise of stock options	1,077,797	—	5,156	—	—	5,156
Issuance of common stock related to acquisitions	10,246,616	2	148,488			148,490
Stock-based compensation	—	—	111,645	—	—	111,645
Vesting of restricted stock units	4,184,415	—	—	—	—	—
Share cancellations to satisfy tax withholding on vesting of restricted stock units	(148,302)	—	(2,540)	—	—	(2,540)
Stock issued under employee stock purchase plan	538,398	—	6,973	—	—	6,973
Equity component of convertible note issuance, net of issuance costs	—	—	102,968	—	—	102,968
Purchase of capped call	—	—	(43,160)	—	—	(43,160)
Components of comprehensive loss:						
Net loss	—	—	—	—	(169,661)	(169,661)
Other comprehensive income	—	—	—	159	—	159
Balances as of December 31, 2015	224,970,412	$ 23	$ 1,110,539	$ (517)	$ (366,658)	$ 743,387

The accompanying notes are an integral part of the consolidated financial statements.

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Pandora Media, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Operating activities			
Net loss	$ (27,017)	$ (30,406)	$ (169,661)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities			
Depreciation and amortization	10,112	15,431	24,458
Stock-based compensation	40,041	87,055	111,645
Amortization of premium on investments	237	2,833	1,911
Excess tax benefit from stock-based awards	—	(348)	—
Amortization of debt discount	—	—	1,084
Other operating activities	220	1,366	2,134
Changes in assets and liabilities			
Accounts receivable	(60,613)	(55,478)	(55,904)
Prepaid expenses and other assets	(7,891)	(9,219)	(18,918)
Accounts payable, accrued and other current liabilities	11,745	4,830	18,080
Accrued royalties	13,027	7,608	23,736
Accrued compensation	(3,393)	13,736	7,378
Other long-term liabilities	5,607	7,690	6,005
Deferred revenue	13,384	(28,238)	4,946
Reimbursement of cost of leasehold improvements	1,555	4,169	1,024
Net cash provided by (used in) operating activities	(2,986)	21,029	(42,082)
Investing activities			
Purchases of property and equipment	(21,180)	(30,039)	(32,074)
Purchases of patents	(8,000)	—	—
Purchases of investments	(224,549)	(340,679)	(140,980)
Proceeds from maturities of investments	42,210	258,518	228,998
Proceeds from sale of investments	—	—	111,356
Payments related to acquisitions, net of cash acquired	(400)	—	(269,566)
Net cash used in investing activities	(211,919)	(112,200)	(102,266)
Financing activities			
Proceeds from issuance of convertible notes	—	—	345,000
Payments for purchase of capped call	—	—	(43,160)
Payment of debt issuance costs	(450)	—	(8,909)
Borrowings under debt arrangements	10,000	—	—
Repayments of debt	(10,000)	—	—
Proceeds from follow-on offering, net of issuance costs	378,654	—	—
Proceeds from exercise of stock options	17,273	16,894	5,192
Tax payments from net share settlements of restricted stock units	(480)	(2,019)	(2,540)
Excess tax benefit from stock-based awards	—	348	—
Proceeds from employee stock purchase plan	—	6,438	7,552
Net cash provided by financing activities	394,997	21,661	303,135
Effect of exchange rate changes on cash and cash equivalents	(62)	(288)	(77)
Net increase (decrease) in cash and cash equivalents	180,030	(69,798)	158,710

Cash and cash equivalents at beginning of period	65,725	245,755	175,957
Cash and cash equivalents at end of period	$ 245,755	$ 175,957	$ 334,667
Supplemental disclosures of cash flow information			
Cash paid during the period for income taxes	$ 26	$ 164	$ 389
Cash paid during the period for interest	$ 18	$ 314	$ 351
Purchases of property and equipment recorded in accounts payable and accrued liabilities	$ 7,910	$ 751	$ 5,890
Fair value of shares issued related to the acquisition of a business	$ —	$ —	$ 146,855

The accompanying notes are an integral part of the consolidated financial statements.

Pandora Media, Inc.
Notes to Consolidated Financial Statements

1. Description of Business and Basis of Presentation

Pandora

Pandora is the world's most powerful music discovery platform, offering a personalized experience for each of our listeners wherever and whenever they want to listen to music - whether through earbuds, car speakers or live on stage. Our vision is to be the definitive source of music discovery and enjoyment for billions. The majority of our listener hours occur on mobile devices, with the majority of our revenue generated from advertising on these devices. We offer both local and national advertisers the opportunity to deliver targeted messages to our listeners using a combination of audio, display and video advertisements. We also generate revenue by offering an advertising-free subscription service which we call Pandora One. We were incorporated as a California corporation in January 2000 and reincorporated as a Delaware corporation in December 2010. Our principal operations are located in the United States, and we also operate in Australia, New Zealand and Canada.

Ticketfly

We completed the acquisition of Ticketfly on October 31, 2015. Ticketfly is a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America. Ticketfly's ticketing, digital marketing and analytics software helps promoters book talent, sell tickets and drive in-venue revenue, while Ticketfly's consumer tools help fans find and purchase tickets to events. Ticketfly's revenue primarily consists of service and merchant processing fees from ticketing operations.

As used herein, "Pandora," "we," "our," the "Company" and similar terms include Pandora Media, Inc. and its subsidiaries, unless the context indicates otherwise.

Basis of Presentation

The consolidated financial statements and accompanying notes have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP") and include the accounts of Pandora and our wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Certain changes in presentation have been made to conform the prior period presentation to current period reporting. We have reclassified goodwill and intangible assets from the other long-term assets line item to the goodwill and intangible assets, net line items in our consolidated balance sheets. We have also reclassified certain non-cash amounts from the amortization of debt issuance costs and the change in accounts receivable line items to the other operating activities line item in our consolidated statements of cash flows. Additionally, we have reclassified certain non-cash amounts from the purchases of property and equipment line item to the prepaid expenses and other assets line item of our consolidated statements of cash flows. Lastly, we have reclassified certain amounts from the accounts payable, accrued and other current liabilities line item to the long-term liabilities line item of our consolidated statements of cash flows.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the related disclosures at the date of the financial statements, as well as the reported amounts of revenue and expenses during the periods presented. Estimates are used in several areas including, but not limited to determining accrued royalties, selling prices for elements sold in multiple-element arrangements, the allowance for doubtful accounts, the fair value of stock options, market stock units ("MSUs") and the Employee Stock Purchase Plan ("ESPP"), the impact of forfeitures on stock-based compensation, the provision for (benefit from) income taxes, the subscription return reserve, the fair value of convertible debt, the fair value of acquired property and equipment, intangible assets and goodwill and the useful lives of acquired intangible assets. To the extent there are material differences between these estimates, judgments or assumptions and actual results, our financial statements could be affected. In many cases, the accounting treatment of a particular transaction is specifically dictated by U.S. GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result.

Segments

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

Our chief operating decision maker (the "CODM"), our Chief Executive Officer, manages our operations on a consolidated basis for purposes of allocating resources. When evaluating our financial performance, the CODM reviews separate revenue information for our advertising, subscription, ticketing and other offerings, while all other financial information is reviewed on a consolidated basis. There are no segment managers who are held accountable by the CODM, or anyone else, for operations, operating results, and planning for levels or components below the consolidated unit level. Accordingly, we have determined that we have a single reportable segment and operating unit structure.

Fiscal year

We changed our fiscal year from the twelve months ending January 31 to the calendar twelve months ending December 31, effective beginning with the year ended December 31, 2013. As a result, the period ended December 31, 2013 was shortened from twelve months to an eleven-month transition period. In these consolidated financial statements, including the notes thereto, the most recent financial results for the years ended December 31, 2014 and 2015 are for twelve-month periods.

2. Summary of Significant Accounting Policies

Revenue Recognition

We recognize revenue when four basic criteria are met: (1) persuasive evidence exists of an arrangement with the customer reflecting the terms and conditions under which the products or services will be provided; (2) delivery has occurred or services have been provided; (3) the fee is fixed or determinable; and (4) collection is reasonably assured. We consider a signed agreement, a binding insertion order or other similar documentation to be persuasive evidence of an arrangement. Collectability is assessed based on a number of factors, including transaction history and the creditworthiness of a customer. If it is determined that collection is not reasonably assured, revenue is not recognized until collection becomes reasonably assured, which is generally upon receipt of cash. We record cash received in advance of revenue recognition as deferred revenue.

Gross versus net revenue recognition. We report revenue on a gross or net basis based on management's assessment of whether we act as a principal or agent in the transaction. To the extent we act as the principal, revenue is reported on a gross basis. The determination of whether we act as a principal or an agent in a transaction is based on an evaluation of whether we have the substantial risks and rewards of ownership under the terms of an arrangement.

Advertising revenue. We generate advertising revenue primarily from audio, display and video advertising. We generate the majority of our advertising revenue through the delivery of advertising impressions sold on a cost per thousand, or CPM, basis. In determining whether an arrangement exists, we ensure that a binding arrangement, such as an insertion order or a fully executed customer-specific agreement, is in place. We generally recognize revenue based on delivery information from our campaign trafficking systems.

We also generate advertising revenue pursuant to arrangements with advertising agencies and brokers. Under these arrangements, we provide the agencies and brokers the ability to sell advertising inventory on our service directly to advertisers. We report this revenue net of amounts due to agencies and brokers because we are not the primary obligor under these arrangements, we do not set the pricing nor do we establish or maintain the relationships with the advertisers.

Subscription and other revenue. Subscription and other revenue is generated primarily through the sale of a premium version of the Pandora service which currently includes advertisement-free access and higher audio quality on supported devices. We offer both an annual and a monthly subscription option. Subscription revenue derived from direct sales to listeners is recognized on a straight-line basis over the duration of the subscription period. Subscription revenue derived from sales through some mobile operating systems may be subject to refund or cancellation terms which may affect the timing or amount of the subscription revenue recognition. When refund rights exist, we recognize revenue when services have been provided and the rights lapse or when we have developed sufficient transaction history to estimate a reserve.

We were required to defer revenue for certain subscriptions purchased through mobile app stores that contained refund rights until the refund rights lapsed or until we developed sufficient operating history to estimate a return reserve. As of December 31, 2013,

we had deferred all revenue related to these mobile subscriptions subject to refund rights totaling approximately $14.2 million, as we did not have sufficient history to estimate a return reserve. Beginning in January 2014, we

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

had sufficient historic transactional information which enabled us to estimate future returns. Accordingly, in January 2014, we began recording revenue related to these mobile subscriptions net of estimated returns. This change resulted in a one-time increase in subscription revenue in the three months ended March 31, 2014 of approximately $14.2 million, as the previously deferred revenue was recognized. As of December 31, 2014 and 2015, the deferred revenue related to the return reserve was not significant.

Multiple-element arrangements. We enter into arrangements with customers to sell advertising packages that include different media placements or ad services that are delivered at the same time, or within close proximity of one another. We recognize the relative fair value of the media placements or ad services as they are delivered assuming all other revenue recognition criteria are met.

We allocate arrangement consideration in multiple-deliverable revenue arrangements at the inception of an arrangement to all deliverables or those packages in which all components of the package are delivered at the same time, based on the relative selling price method in accordance with the selling price hierarchy, which includes: (1) vendor-specific objective evidence ("VSOE") if available; (2) third-party evidence ("TPE") if VSOE is not available; and (3) best estimate of selling price ("BESP") if neither VSOE nor TPE is available.

We determine VSOE based on our historical pricing and discounting practices for the specific product or service when sold separately. In determining VSOE, we require that a substantial majority of the selling prices for these services fall within a reasonably narrow pricing range. We have not historically priced our advertising products within a narrow range. As a result, we have not been able to establish VSOE for any of our advertising products.

When VSOE cannot be established for deliverables in multiple element arrangements, we apply judgment with respect to whether it can establish a selling price based on TPE. TPE is determined based on competitor prices for similar deliverables when sold separately. Generally, our go-to-market strategy differs from that of our peers and our offerings contain a significant level of differentiation such that the comparable pricing of services cannot be obtained. Furthermore, we are unable to reliably determine what similar competitor services' selling prices are on a stand-alone basis. As a result, we have not been able to establish selling price based on TPE.

When we are unable to establish selling price using VSOE or TPE, we use BESP in our allocation of arrangement consideration. The objective of BESP is to determine the price at which we would transact a sale if the service were sold on a stand-alone basis. BESP is generally used to allocate the selling price to deliverables in our multiple element arrangements. We determine BESP for deliverables by considering multiple factors including, but not limited to, prices we charge for similar offerings, market conditions, competitive landscape and pricing practices. We limit the amount of allocable arrangement consideration to amounts that are fixed or determinable and that are not contingent on future performance or future deliverables. We regularly review BESP. Changes in assumptions or judgments or changes to the elements in the arrangement may cause an increase or decrease in the amount of revenue that we report in a particular period.

Ticketing service revenue. Ticketing service revenue is generated primarily from service and merchant processing fees generated on ticket sales through the Ticketfly platform. Ticketfly sells tickets to fans for events on behalf of clients and charges a fee per ticket, which generally increases as the face value of the ticket increases, or a percentage of the total convenience charge and order processing fee, for its services at the time the ticket for an event is sold. Ticketing service revenue is recorded net of the face value of the ticket at the time of the sale, as Ticketfly generally acts as the agent in these transactions.

Concentration of Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk consist principally of cash and cash equivalents, investments and trade accounts receivable. We maintain cash and cash equivalents with domestic financial institutions of high credit quality. We perform periodic evaluations of the relative credit standing of such institutions.

We perform ongoing credit evaluations of customers to assess the probability of accounts receivable collection based on a number of factors, including past transaction experience with the customer, evaluation of their credit history, and review of the invoicing terms of the contract. We generally do not require collateral. We maintain reserves for potential credit losses on customer accounts when deemed necessary. Actual credit losses during the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015 were $0.4 million, $1.1 million and $1.1 million, respectively.

For the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and 2015, we had no customers that accounted for 10% or more of total revenue. As of December 31, 2014 and 2015, there were no customers that

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

accounted for 10% or more of our total accounts receivable.

Cash, Cash Equivalents and Investments

We classify our highly liquid investments with maturities of three months or less at the date of purchase as cash equivalents. Our investments consist of commercial paper, corporate debt securities and U.S. government and government agency debt securities. These investments are classified as available-for-sale securities and are carried at fair value with the unrealized gains and losses reported as a component of stockholders' equity. Management determines the appropriate classification of our investments at the time of purchase and reevaluates the available-for-sale designations as of each balance sheet date. We classify our investments as either short-term or long-term based on each instrument's underlying contractual maturity date. Investments with maturities of twelve months or less are classified as short-term and those with maturities greater than twelve months are classified as long-term. The cost basis for investments sold is based upon the specific identification method.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded net of an allowance for doubtful accounts. Our allowance for doubtful accounts is based upon historical loss patterns, the number of days that billings are past due and an evaluation of the potential risk of loss associated with delinquent accounts. We also consider any changes to the financial condition of our customers and any other external market factors that could impact the collectability of our receivables in the determination of our allowance for doubtful accounts. Accounts receivable amounts that are deemed uncollectable are charged against the allowance for doubtful accounts when identified.

Property and Equipment, net

Property and equipment is recorded at cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method based on the estimated useful lives of the assets, which typically range from three to five years. Leasehold improvements are amortized over the shorter of the lease term or expected useful lives of the improvements.

Property and equipment is reviewed for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the assets are expected to generate. If property and equipment are considered to be impaired, the impairment to be recognized equals the amount by which the carrying value of the asset exceeds its fair market value. If we reduce the estimated useful life assumption for any asset, the remaining unamortized balance would be amortized or depreciated over the revised estimated useful life.

Costs incurred to develop software for internal use are required to be capitalized and amortized over the estimated useful life of the asset if certain criteria are met. Costs related to preliminary project activities and post implementation activities are expensed as incurred. We evaluate the costs incurred during the application development stage of website development to determine whether the costs meet the criteria for capitalization. As of December 31, 2014 and 2015, we had approximately $2.8 million and $6.3 million of capitalized internal use software and website development costs, net of accumulated amortization. These costs are being amortized over their three-year estimated useful lives. Internal use software and website development costs are included in property and equipment.

Ticketing Contract Advances

Ticketing contract advances, which are either recoupable or non-recoupable, represent amounts paid in advance to clients pursuant to ticketing agreements. These amounts are reflected in prepaid expenses and other current assets if the amount is expected to be recouped or recognized over a period of twelve months or less or in other long-term assets if the amount is expected to be recouped or recognized over a period of more than twelve months. Recoupable ticketing contract advances are generally recoupable against future royalties earned by clients, based on the contract terms, over the lives of their contracts which typically range between three and five years. Non-recoupable ticketing contract advances are fixed incentives paid by Ticketfly to secure exclusive rights with certain clients and are amortized to sales and marketing expense over the life of the contract on a straight-line basis. Amortization expense for the two months ended December 31, 2015 was $0.7 million.

We maintain an allowance for doubtful accounts to reserve for recoupable ticketing contract advances that we potentially do not expect to recoup. Our allowance is based on historical loss patterns, the aging of balances and known factors about customers'

current financial conditions.

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

Business Combinations, Goodwill and Intangible Assets, net

We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired users, acquired technology, and trade names from a market participant perspective, useful lives and discount rates. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates. During the measurement period, which is one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

We review goodwill for impairment at least annually or more frequently if events or changes in circumstances would more likely than not reduce the fair value of our single reporting unit below its carrying value. We evaluate indefinite-lived intangible assets for impairment annually or more frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. As of December 31, 2015, no impairment of goodwill or indefinite-lived intangible assets has been identified.

Acquired finite-lived intangible assets are amortized over the estimated useful lives of the assets, which range from two to eleven years. Acquired finite-lived intangible assets consist primarily of patents, customer relationships, developed technology and trade names resulting from business combinations. We evaluate the recoverability of our intangible assets for potential impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the assets are expected to generate. If such review indicates that the carrying amount of intangible assets is not recoverable, the carrying amount of such assets is reduced to the fair value.

In addition to the recoverability assessment, we routinely review the remaining estimated useful lives of finite-lived intangible assets. If we reduce the estimated useful life assumption for any asset, the remaining unamortized balance would be amortized over the revised estimated useful life. We record the amortization of intangible assets to the financial statement line item in our consolidated statement of operations that the asset directly relates to. To the extent that purchased intangibles are used in revenue generating activities, we record the amortization of these intangible assets to cost of revenue.

Stock-Based Compensation—Restricted Stock Units and Stock Options

Stock-based awards granted to employees, including grants of restricted stock units ("RSUs") and stock options, are recognized as expense in our statements of operations based on their grant date fair value. We recognize stock-based compensation expense on a straight-line basis over the service period of the award, which is generally four years. We estimate the fair value of RSUs at our stock price on the grant date. We generally estimate the grant date fair value of stock options using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model is affected by our stock price on the date of grant, the expected stock price volatility over the expected term of the award, which is based on projected employee stock option exercise behaviors, the risk-free interest rate for the expected term of the award and expected dividends.

Stock-based compensation expense is recorded net of estimated forfeitures in the statement of operations for only those stock-based awards that we expect to vest. We estimate the forfeiture rate based on historical forfeitures of equity awards and adjust the rate to reflect changes in facts and circumstances, if any. We revise our estimated forfeiture rate if actual forfeitures differ from our initial estimates.

We have elected to use the "with and without" approach as described in Accounting Standards Codification 740 - *Income Taxes* in determining the order in which tax attributes are utilized. As a result, we will only recognize a tax benefit from stock-based awards in additional paid-in capital if an incremental tax benefit is realized after all other tax attributes currently available to us have been utilized. In addition, we have elected to account for the indirect effects of stock-based awards on other tax attributes, such as the research tax credit, through the statement of operations.

Stock-Based Compensation—Employee Stock Purchase Plan

In December 2013, our board of directors approved the Employee Stock Purchase Plan ("ESPP"), which was approved by our stockholders at the annual meeting in June 2014. We estimate the fair value of shares to be issued under the ESPP on the first day of the offering period using the Black-Scholes valuation model. The determination of the fair value is affected by our

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

stock price on the first date of the offering period, as well as other assumptions including the risk-free interest rate, the estimated volatility of our stock price over the term of the offering period, the expected term of the offering period and the expected dividend rate. Stock-based compensation expense related to the ESPP is recognized on a straight-line basis over the offering period, net of estimated forfeitures.

Stock-Based Compensation — MSUs

We implemented a market stock unit program in March 2015 for certain key executives. Specifically, MSUs measure Pandora's total stockholder return ("TSR") performance against that of the Russell 2000 Index across three performance periods.

We have determined the grant-date fair value of the MSUs using a Monte Carlo simulation performed by a third-party valuation specialist. The Monte Carlo simulation model utilizes multiple input variables to estimate the probability that market conditions will be achieved. These variables include our expected stock price volatility over the expected term of the award, actual and projected employee stock option exercise behaviors and the risk-free interest rate for the expected term of the award. The variables used in these models are reviewed on an annual basis and adjusted, as needed. We recognize stock-based compensation for the MSUs over the requisite service period using the accelerated attribution method.

Cost of Revenue—Content Acquisition Costs

Cost of revenue—content acquisition costs principally consist of royalties paid for streaming music or other content to our listeners. Royalties are currently calculated using negotiated rates documented in agreements. The majority of our royalties are payable based on a fee per public performance of a sound recording, while in other cases our royalties are payable based on a percentage of our revenue or a formula that involves a combination of per performance and revenue metrics. For certain royalty arrangements, we accrue for estimated royalties based on the available facts and circumstances and adjust these estimates as more information becomes available.

Cost of Revenue—Ticketing Service

Cost of revenue—ticketing service consists primarily of ticketing revenue share costs, credit card fees and intangible amortization expense. The majority of the cost is related to revenue share costs which consist of royalties paid to clients for their share of convenience and order processing fees. Payments to clients are recorded as an expense to the extent that the fair value of the identifiable benefit received in the exchange exceeds the amount of the payment to the client. Intangible amortization expense is related to amortization of developed technology.

Cost of Revenue—Other

Cost of revenue—other consists primarily of ad and music serving costs, employee-related and facilities and equipment costs and other costs of ad sales. Ad and music serving costs consist of content streaming, maintaining our internet radio service and creating and serving advertisements through third-party ad servers. We make payments to third-party ad servers for the period the advertising impressions are delivered or click-through actions occur, and accordingly, we record this as a cost of revenue in the related period. Employee-related costs include salaries and benefits associated with supporting music and ad serving functions. Other costs of ad sales include costs related to music events that are sold as part of advertising arrangements.

Product Development

Product development consists primarily of employee-related, facilities and equipment costs, including salaries and benefits related to employees in software engineering, music analysis and product management departments, information technology and costs associated with supporting consumer connected-device manufacturers in implementing our service in their products. We incur product development expenses primarily for improvements to our website and the Pandora app, development of new advertising products and development and enhancement of our personalized station generating system. We have generally expensed product development as incurred.

Certain website development and internal use software development costs are capitalized when specific criteria are met. In such cases, the capitalized amounts are amortized over the useful life of the related application once the application is placed in service.

Sales and Marketing

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

Sales and marketing consists primarily of employee-related and facilities and equipment costs, including salaries, commissions and benefits related to employees in sales, sales support, marketing, advertising and music maker group departments. In addition, sales and marketing expenses include transaction processing commissions on subscription purchases through mobile app stores, external sales and marketing expenses such as brand marketing, advertising, direct response and search engine marketing costs, public relations expenses, costs related to music events, agency platform and media measurement expenses, infrastructure costs and amortization expense related to acquired intangible assets.

We expense the costs of producing advertisements as they are incurred and expense the cost of communicating advertisements at the time the advertisement airs or the event occurs, in each case as sales and marketing expense within the accompanying consolidated statements of operations. During the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, we recorded advertising expenses of $4.2 million, $10.4 million and $35.1 million, respectively.

General and Administrative

General and administrative consists primarily of employee-related and facilities and equipment costs, including salaries and benefits for finance, accounting, legal, internal information technology and other administrative personnel. In addition, general and administrative expenses include professional services costs for outside legal and accounting services, infrastructure costs and credit card fees.

Provision for (Benefit from) Income Taxes

Our provision for (benefit from) income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted statutory income tax rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce net deferred tax assets to the amount expected to be realized.

We recognize a tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. We will recognize interest and penalties related to unrecognized tax benefits in the provision for (benefit from) income taxes in the accompanying statement of operations.

We calculate the current and deferred income tax provision based on estimates and assumptions that could differ from the actual results reflected in income tax returns filed in subsequent years. Adjustments based on filed income tax returns are recorded when identified. The amount of income taxes paid is subject to examination by U.S. federal, state and international tax authorities. The estimate of the potential outcome of any uncertain tax issue is subject to management's assessment of relevant risks, facts and circumstances existing at that time. To the extent that the assessment of such tax positions change, the change in estimate is recorded in the period in which the determination is made.

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by giving effect to all potential shares of common stock, including stock options, restricted stock units and market stock units, to the extent dilutive. Basic and diluted net loss per share were the same for each period presented as the inclusion of all potential common shares outstanding would have been anti-dilutive.

Recently Issued Accounting Standards

In November 20, 2015, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update No. 2015-17, *Income Taxes (Subtopic 740): Balance Sheet Classification of Deferred Taxes* ("ASU 2015-17"). ASU 2015-17 requires all deferred tax assets and liabilities, and any related valuation allowance, to be classified as non-current on the balance sheet. The classification change for all deferred taxes as non-current simplifies entities’ processes as it eliminates the need to separately identify the net current and net non-current deferred tax asset or liability in each jurisdiction and allocate valuation allowances. The guidance is effective for fiscal years beginning after December 15, 2016, although early adoption is permitted. We have elected to early adopt this standard prospectively in the year ended December 31, 2015. The adoption of this guidance

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

did not have a material effect on our consolidated financial statements. Prior periods in our Consolidated Financial Statements were not retrospectively adjusted.

In September 2015, the FASB issued Accounting Standards Update No. 2015-16, *Business Combinations* ("ASU 2015-16"). ASU 2015-16 eliminates the requirement for an acquirer in a business combination to account for measurement-period adjustments retrospectively. Rather, the acquirer must recognize adjustments during the period in which the amounts are determined, including the effect on earnings of any amounts that would have been recorded in previous periods. The guidance is effective for fiscal years beginning after December 15, 2015, although early adoption is permitted. We early adopted this standard in the year ended December 31, 2015. The adoption of this guidance did not have a material effect on our consolidated financial statements, as there were no measurement period adjustments.

In April 2015, The FASB issued Accounting Standards Update No. 2015-03, *Interest - Imputation of Interest (Subtopic 835-30)* ("ASU 2015-03"). ASU 2015-03 requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the corresponding debt liability, consistent with the presentation of a debt discount. The guidance is effective for fiscal years beginning after December 15, 2015, although early adoption is permitted. We early adopted this standard in the year ended December 31, 2015. This resulted in a $5.9 million and $2.6 million reduction to our convertible senior notes and equity at December 31, 2015 related to issuance costs paid, which will be accreted to interest expense over the term of the notes.

In May 2014, the FASB issued Accounting Standards Update No. 2014-9, *Revenue from Contracts with Customers (Topic 606)* (“ASU 2014-9”). ASU 2014-9 outlines a single comprehensive model for entities to use in accounting for revenue. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delays the effective date of ASU 2014-09 by one year. The FASB also agreed to allow entities to choose to adopt the standard as of the original effective date. As such, the updated standard will be effective for us in the first quarter of 2018, with the option to adopt it in the first quarter of 2017. Entities have the option of using either a full retrospective or a modified retrospective approach to adopt the guidance. We are currently evaluating implementation methods and the effect that implementation of this standard will have on our consolidated financial statements upon adoption.

3. Composition of Certain Financial Statement Captions

Cash, Cash Equivalents and Investments

Cash, cash equivalents and investments consisted of the following:

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31,	
	2014	2015
	(in thousands)	
Cash and cash equivalents		
Cash	$ 72,487	$ 104,361
Money market funds	89,113	180,021
Commercial paper	9,349	31,089
Corporate debt securities	5,008	2,000
U.S. government and government agency debt securities	—	17,196
Total cash and cash equivalents	$ 175,957	$ 334,667
Short-term investments		
Commercial paper	$ 45,443	$ 4,792
Corporate debt securities	128,691	31,052
U.S. government and government agency debt securities	4,497	—
Total short-term investments	$ 178,631	$ 35,844
Long-term investments		
Corporate debt securities	$ 100,998	$ 46,369
U.S. government and government agency debt securities	3,245	—
Total long-term investments	$ 104,243	$ 46,369
Total cash, cash equivalents and investments	$ 458,831	$ 416,880

Our short-term investments have maturities of twelve months or less and are classified as available-for-sale. Our long-term investments have maturities of greater than twelve months and are classified as available-for-sale.

The following tables summarizes our available-for-sale securities' adjusted cost, gross unrealized gains, gross unrealized losses and fair value by significant investment category as of December 31, 2014 and 2015.

	As of December 31, 2014			
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Cash equivalents and marketable securities				
Money market funds	$ 89,113	$ —	$ —	$ 89,113
Commercial paper	54,792	—	—	54,792
Corporate debt securities	235,135	6	(444)	234,697
U.S. government and government agency debt securities	7,751	—	(9)	7,742
Total cash equivalents and marketable securities	$ 386,791	$ 6	$ (453)	$ 386,344

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31, 2015			
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Cash equivalents and marketable securities				
Money market funds	$ 180,021	$ —	$ —	$ 180,021
Commercial paper	35,881	—	—	35,881
Corporate debt securities	79,760	8	(347)	79,421
U.S. government and government agency debt securities	17,198	—	(2)	17,196
Total cash equivalents and marketable securities	$ 312,860	$ 8	$ (349)	$ 312,519

The following tables present available-for-sale investments by contractual maturity date as of December 31, 2014 and 2015:

	As of December 31, 2014	
	Adjusted Cost	Fair Value
	(in thousands)	
Due in one year or less	$ 282,206	$ 282,101
Due after one year through three years	104,585	104,243
Total	$ 386,791	$ 386,344

	As of December 31, 2015	
	Adjusted Cost	Fair Value
	(in thousands)	
Due in one year or less	$ 266,205	$ 266,150
Due after one year through three years	46,655	46,369
Total	$ 312,860	$ 312,519

The following tables summarize our available-for-sale securities' fair value and gross unrealized losses aggregated by investment category and length of time that the individual securities have been in a continuous unrealized loss position as of December 31, 2014 and 2015:

	As of December 31, 2014					
	Twelve Months or Less		More than Twelve Months		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	(in thousands)					
Money market funds	$ —	$ —	$ —	$ —	$ —	$ —
Commercial paper	—	—	—	—	—	—
Corporate debt securities	192,699	(422)	12,148	(22)	204,847	(444)
U.S. government and government agency debt securities	5,240	(9)	—	—	5,240	(9)
Total	$ 197,939	$ (431)	$ 12,148	$ (22)	$ 210,087	$ (453)

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31, 2015					
	Twelve Months or Less		More than Twelve Months		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	(in thousands)					
Money market funds	$ —	$ —	$ —	$ —	$ —	$ —
Commercial paper	—	—	—	—	—	—
Corporate debt securities	64,804	(293)	8,531	(54)	73,335	(347)
U.S. government and government agency debt securities	16,241	(2)	—	—	16,241	(2)
Total	$ 81,045	$ (295)	$ 8,531	$ (54)	$ 89,576	$ (349)

Our investment policy requires investments to be investment grade, primarily rated “A1” by Standard & Poor’s or “P1” by Moody’s or better for short-term investments and rated “A” by Standard & Poor’s or “A2” by Moody’s or better for long-term investments, with the objective of minimizing the potential risk of principal loss. In addition, the investment policy limits the amount of credit exposure to any one issuer.

The unrealized losses on our available-for-sale securities as of December 31, 2015 were primarily a result of unfavorable changes in interest rates subsequent to the initial purchase of these securities. As of December 31, 2015, we owned 71 securities that were in an unrealized loss position. Based on our cash flow needs, we may be required to sell a portion of these securities prior to maturity. However, we expect to recover the full carrying value of these securities. As a result, no portion of the unrealized losses at December 31, 2015 is deemed to be other-than-temporary and the unrealized losses are not deemed to be credit losses. When evaluating the investments for other-than-temporary impairment, we review factors such as the length of time and extent to which fair value has been below cost basis, the financial condition of the issuer and any changes thereto, and our intent to sell, or whether it is more likely than not we will be required to sell, the investment before recovery of the investment’s amortized cost basis. During the twelve months ended months ended December 31, 2015, we did not recognize any impairment charges. During the twelve months ended December 31, 2015, proceeds from the sale of available-for-sale securities were $111.4 million. We did not recognize a realized gain or loss in connection with these sales.

Accounts Receivable, net

Accounts receivable, net consisted of the following as of December 31, 2014 and 2015:

	As of December 31,	
	2014	2015
	(in thousands)	
Accounts receivable, net		
Accounts receivable	$ 219,655	$ 279,240
Allowance for doubtful accounts	(1,218)	(2,165)
Total accounts receivable, net	$ 218,437	$ 277,075

The following table summarizes our beginning allowance for doubtful accounts balance for each period, additions, write-offs net of recoveries and the balance at the end of each period for the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015:

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

Allowance for Doubtful Accounts	Balance at Beginning of Period	Additions	Write-offs, Net of Recoveries	Balance at End of Period
		(in thousands)		
For the eleven months ended December 31, 2013	$ 761	948	(437)	$ 1,272
For the twelve months ended December 31, 2014	$ 1,272	1,064	(1,118)	$ 1,218
For the twelve months ended December 31, 2015	$ 1,218	2,085	(1,138)	$ 2,165

Prepaid and Other Current Assets

Prepaid and other current assets consisted of the following as of December 31, 2014 and 2015:

	As of December 31,	
	2014	2015
	(in thousands)	
Prepaid and other current assets		
Other current assets	$ 8,520	$ 15,821
Prepaid expenses	6,169	13,908
Ticketing contract advance - short term, net	—	4,092
Prepaid royalties	700	2,099
Total prepaid and other current assets	$ 15,389	$ 35,920

Other current assets consists primarily of $12.9 million in receivables for the reimbursement of costs of leasehold improvements in connection with our operating leases.

Other Long-Term Assets

Other long-term assets consisted of the following as of December 31, 2014 and 2015:

	As of December 31,	
	2014	2015
	(in thousands)	
Other long-term assets		
Other	$ 1,826	$ 10,929
Ticketing contract advance - long-term	—	9,824
Long-term security deposits	4,947	9,039
Total other long-term assets	$ 6,773	$ 29,792

Property and Equipment, net

Property and equipment, net consisted of the following as of December 31, 2014 and 2015:

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31,	
	2014	2015
	(in thousands)	
Property and equipment, net		
Servers, computers and other related equipment	$ 39,890	$ 57,309
Leasehold improvements	25,893	35,947
Office furniture and equipment	2,721	5,470
Construction in progress	5,075	12,550
Software developed for internal use	4,519	10,239
Total property and equipment	$ 78,098	$ 121,515
Less accumulated depreciation and amortization	(35,177)	(55,145)
Total property and equipment, net	$ 42,921	$ 66,370

Depreciation expenses totaled $9.7 million, $14.7 million and $20.4 million for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, respectively. There were no material write-offs during the eleven months ended December 31, 2013 or the twelve months ended December 31, 2014 or 2015.

Software developed for internal use generally has an expected useful life of three years from the date placed in service. As of December 31, 2014 and 2015 the net carrying amount was $2.8 million and $6.3 million, including accumulated amortization of $1.7 million and $4.0 million. Amortization expense for the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 was $0.6 million, $1.1 million and $2.2 million, respectively.

Other Current Liabilities

Other current liabilities consisted of the following as of December 31, 2014 and 2015:

	As of December 31,	
	2014	2015
	(in thousands)	
Other current liabilities		
Ticketing amounts due to clients	$ —	$ 13,104
Other	—	2,528
Total other current liabilities	$ —	$ 15,632

Ticketing amounts due to clients consists of the face value of tickets sold and the revenue share costs related to tickets sold on the Ticketfly ticketing platform that are owed to clients. The face value of tickets sold on the Ticketfly ticketing platform is collected by Ticketfly and remitted to clients. Revenue share costs owed to clients related to tickets sold on the Ticketfly ticketing platform consist of fees paid to clients for their share of convenience and order processing fees.

Other Long-Term Liabilities

Other long-term liabilities consisted of the following as of December 31, 2014 and 2015:

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31,	
	2014	2015
	(in thousands)	
Other long-term liabilities		
Long-term deferred rent	$ 15,068	$ 23,662
Other	1,705	7,200
Total other long-term liabilities	$ 16,773	$ 30,862

For operating leases that include escalation clauses over the term of the lease, tenant improvement reimbursements and rent abatement periods, we recognize rent expense on a straight-line basis over the lease term including expected renewal periods. The difference between rent expense and rent payments is recorded as deferred rent.

4. Fair Value

We record cash equivalents and investments at fair value. Fair value is an exit price, representing the amount that would be received from the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. Fair value measurements are required to be disclosed by level within the following fair value hierarchy:

Level 1 — Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2 — Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3 — Inputs lack observable market data to corroborate management's estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

When determining fair value, whenever possible we use observable market data and rely on unobservable inputs only when observable market data is not available.

The fair value of these financial assets and liabilities was determined using the following inputs at December 31, 2014 and 2015:

	As of December 31, 2014		
	Fair Value Measurement Using		
	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Total
	(in thousands)		
Assets			
Money market funds	$ 89,113	$ —	$ 89,113
Commercial paper	—	54,792	54,792
Corporate debt securities	—	234,697	234,697
U.S. government and government agency debt securities	—	7,742	7,742
Total assets measured at fair value	$ 89,113	$ 297,231	$ 386,344

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

	As of December 31, 2015		
	Fair Value Measurement Using		
	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Total
	(in thousands)		
Assets			
Money market funds	$ 180,021	$ —	$ 180,021
Commercial paper	—	35,881	35,881
Corporate debt securities	—	79,421	79,421
U.S. government and government agency debt securities	—	17,196	17,196
Total assets measured at fair value	$ 180,021	$ 132,498	$ 312,519

Our money market funds are classified as Level 1 within the fair value hierarchy because they are valued primarily using quoted market prices. Our other cash equivalents and investments are classified as Level 2 within the fair value hierarchy because they are valued using professional pricing sources for identical or comparable instruments, rather than direct observations of quoted prices in active markets. As of December 31, 2014 and 2015, we held no Level 3 assets or liabilities.

5. Business Combinations

Ticketfly

On October 31, 2015, we completed the acquisition of Ticketfly, a leading live events technology company that provides ticketing and marketing software and services for venues and event promoters across North America, for an aggregate purchase price of $335.3 million of common stock and cash, including 11,193,847 shares of the Company's common stock and approximately $191.5 million in cash paid by the Company. In addition to the purchase price, unvested options and unvested RSUs of Ticketfly held by Ticketfly employees were converted into unvested options to acquire our common stock and our unvested RSUs.

Upon acquisition, Ticketfly became a wholly owned subsidiary of Pandora. The acquisition was accounted for as a business combination, and the financial results of Ticketfly are included in our consolidated financial statements from the date of acquisition.

The following table summarizes the components of the purchase consideration transferred based on the closing price of $12.18 per share of our common stock as of the acquisition date:

	(in thousands)
Cash paid by Pandora	$ 191,479
Cash paid by Ticketfly to option holders	7,238
Common stock (11,193,847 shares at $12.18 per share) issued by Pandora to selling shareholders	136,342
Fair value of stock options and restricted stock units assumed	10,514
Less: purchase price adjustments	(6,995)
Less: post-combination compensation expense	(3,235)
Purchase consideration	$ 335,343

The $3.2 million of post-combination compensation expense (approximately 0.2 million shares of common stock and $1.9 million in cash) is subject to continuous employment and will be recognized over the required service period of up to three years.

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

The following table summarizes the estimated fair values of assets acquired and liabilities assumed as of the date of acquisition:

	(in thousands)
Current assets	$ 39,809
Long-term assets	15,982
Current liabilities	(21,853)
Long-term liabilities	(6,298)
Deferred tax liability	(1,738)
Intangible assets	76,800
Goodwill	232,641
Total	$ 335,343

The fair value of assets acquired and liabilities assumed from our acquisition of Ticketfly was based on a preliminary valuation and our estimates and assumptions are subject to change. We will recognize any subsequent adjustments to the purchase price prospectively in the period in which the adjustments are determined. A portion of the purchase price is held in escrow and may be recovered from this escrow amount. The primary areas of the purchase accounting that are not yet finalized are estimated liabilities for taxes and other liabilities totaling $7.0 million. We have recorded a receivable in the amount of $7.0 million related to these liabilities, as we expect to recover any amounts required to be paid by us from the escrow amount.

The following unaudited pro forma information presents the combined results of operations as if the acquisition had been completed on January 1, 2014, the beginning of the comparable prior annual reporting period. The unaudited pro forma results include: (i) amortization associated with preliminary estimates for the acquired intangible assets; (ii) recognition of the post-combination compensation expense; and (iii) share-based compensation expense related to the RSUs and options granted to Ticketfly employees.

The unaudited pro forma results do not reflect any cost saving synergies from operating efficiencies or the effect of the incremental costs incurred in integrating the two companies. Accordingly, these unaudited pro forma results are presented for informational purpose only and are not necessarily indicative of what the actual results of operations of the combined company would have been if the acquisition had occurred at the beginning of the period presented, nor are they indicative of future results of operations:

	Twelve Months Ended December 31,	
	2014	2015
	(in thousands)	
Revenue	$ 975,712	$ 1,222,452
Net loss	$ (58,195)	$ (210,111)

Rdio, Inc. ("Rdio")

On December 23, 2015, we completed the acquisition of technology and intellectual property from Rdio for $77.5 million, which includes $2.5 million in additional purchase consideration transferred prior to the closing of the acquisition. In November 2015, Rdio sought protection in the United States Bankruptcy Court for the Northern District of California and began to wind down its business. Our acquisition of technology and employees from Rdio was subject to the approval of the Court, which was obtained on December 22, 2015. Goodwill generated from the assets acquired is primarily attributable to expected synergies that will allow us to broaden our subscription business and roll out a multi-tier product offering. We have accounted for this acquisition as a business combination, and the financial results of Rdio are included in our consolidated financial statements from the date of acquisition. As a result of the sale of assets, Rdio discontinued its service as of December 22, 2015.

Other acquisitions

During the year ended December 31, 2015, we completed the acquisitions of Next Big Sound ("NBS") and KXMZ-FM ("KXMZ"). These acquisitions were not material to our consolidated financial statements, either individually or in the aggregate.

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

We have included the financial results of Ticketfly, Rdio, NBS and KXMZ in our consolidated financial statements from their respective dates of acquisition. Pro forma results of operations related to our acquisitions, other than Ticketfly, during the year ended December 31, 2015 have not been presented because they are not material to our consolidated statements of operations, either individually or in the aggregate.

The fair value of assets acquired and liabilities assumed from our acquisitions were based on a preliminary valuation and our estimates and assumptions are subject to change within the measurement period. Measurement period adjustments that we determine to be material will be applied to the period in which the amounts are determined in our consolidated financial statements.

The following table summarizes the allocation of estimated fair values of the net assets acquired during the year ended December 31, 2015, including the related estimated useful lives, where applicable:

	Ticketfly		Rdio		Other	
	Estimated fair value	Estimated useful life in years	Estimated fair value	Estimated useful life in years	Estimated fair value	Estimated useful life in years
	(in thousands, except for estimated useful life)					
Intangible assets:						
Customer relationships - clients	$ 37,300	8	$ —		$ —	
Developed technology	28,100	5	26,400	2-5	1,550	4
Tradename	10,400	8	1,000	3	320	2
Customer relationships - users	1,000	2	—		940	2
FCC license - broadcast radio	—		—		193	
Tangible assets acquired, net	27,640		1,969		(490)	
Deferred tax liabilities	(1,738)		—		(49)	
Net assets acquired	$ 102,702		$ 29,369		$ 2,464	
Goodwill	232,641		48,131		23,103	
Total fair value consideration	$ 335,343		$ 77,500		$ 25,567	

Goodwill generated from the Ticketfly acquisition is primarily attributable to expected synergies from future growth and strategic advantages in the ticketing industry. Goodwill generated from Rdio is primarily attributable to expected synergies from future growth and strategic advantages in the online streaming music industry. Goodwill generated from all other business acquisitions during the year ended December 31, 2015 is primarily attributed to expected synergies from future growth and, also for NBS, the potential to expand our Artist Marketing Platform ("AMP"). Goodwill generated during the period related to Ticketfly and NBS is not deductible for tax purposes and goodwill generated during the period related to Rdio and KXMZ is deductible for tax purposes.

6. Goodwill and Other Intangible Assets

The changes in the carrying amount of goodwill for the twelve months ended December 31, 2015 are as follows:

	Goodwill
	(in thousands)
Balance as of December 31, 2014	$ —
Goodwill resulting from business combinations	303,875
Balance as of December 31, 2015	$ 303,875

The following summarizes information regarding the gross carrying amounts and accumulated amortization of intangibles:

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		As of December 31, 2014			As of December 31, 2015		
	Weighted average remaining useful lives (in years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
		(in thousands)					
Finite-lived intangible assets							
Patents	8.5	$ 8,030	$ (1,091)	$ 6,939	$ 8,030	$ (1,824)	$ 6,206
Developed technology	4.7	—	—	—	56,050	(1,265)	54,785
Customer relationships - clients	7.8	—	—	—	37,300	(777)	36,523
Customer relationships - users	1.7	—	—	—	1,940	(318)	1,622
Trade names	7.3	—	—	—	11,720	(304)	11,416
Total finite-lived intangible assets	6.2	$ 8,030	$ (1,091)	$ 6,939	$ 115,040	$ (4,488)	$ 110,552
Indefinite-lived intangible assets							
FCC license - broadcast radio		$ —	$ —	$ —	$ 193	$ —	$ 193
Total intangible assets		$ 8,030	$ (1,091)	$ 6,939	$ 115,233	$ (4,488)	$ 110,745

Amortization expense of intangible assets was $0.4 million, $0.7 million and $3.4 million for the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, respectively.

The following is a schedule of future amortization expense related to finite-lived intangible assets as of December 31, 2015.

	As of December 31, 2015
	(in thousands)
2016	$ 20,437
2017	20,002
2018	17,649
2019	17,129
2020	15,896
Thereafter	19,439
Total future amortization expense	$ 110,552

7. Debt Instruments

Long-term debt, net consisted of the following:

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	As of December 31,	
	2014	2015
	(in thousands)	
1.75% convertible senior notes due 2020	$ —	$ 345,000
Unamortized discount on convertible senior notes	—	(110,423)
Long-term debt, net	$ —	$ 234,577

Convertible Debt Offering

On December 9, 2015, we completed an unregistered Rule 144A offering for the issuance of $345.0 million aggregate principal amount of our 1.75% Convertible Senior Notes due 2020 (the "Notes"). In connection with the issuance of the Notes, we entered into capped call transactions with the initial purchaser of the Notes and an additional financial institution ("capped call transactions").

The net proceeds from the sale of the Notes were approximately $336.5 million, after deducting the initial purchasers' fees and other estimated expenses. We used approximately $43.2 million of the net proceeds to pay the cost of the capped call transactions.

The Notes are unsecured, senior obligations of Pandora, and interest is payable semi-annually at a rate of 1.75% per annum. The Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms prior to such date. Prior to July 1, 2020, the Notes are convertible at the option of holders only upon the occurrence of specified events or during certain periods; thereafter, until the second scheduled trading day prior to maturity, the Notes will be convertible at the option of holders at any time.

The conversion rate for the Notes is initially 60.9050 shares of common stock per $1,000 principal amount of the Notes, which is equivalent to an initial conversion price of approximately $16.42 per share of our common stock, and is subject to adjustment in certain circumstances.

We will not have the right to redeem the Notes prior to December 5, 2018. We may redeem all or any portion of the Notes for cash at our option on or after December 5, 2018 if the last reported sale price of our common stock is at least 130% of the conversion price then in effect for at least 20 trading days, whether or not consecutive, during any 30 consecutive trading day period, including the last trading day of such period, ending on, and including, any of the five trading days immediately preceding the date on which we provide notice of redemption. Any optional redemption of the Notes will be at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. The maximum number of shares of common stock the Notes are convertible into is approximately 27.3 million, and is subject to adjustment under certain circumstances.

The Notes will be convertible at the option of holders only under the following circumstances:

- Prior to the close of business on the business day immediately preceding July 1, 2020, during any calendar quarter commencing after the calendar quarter ending on March 31, 2016 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive), during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

- Prior to the close of business on the business day immediately preceding July 1, 2020, during the five business day period after any ten consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day;

- Prior to the business day immediately preceding July 1, 2020, upon the occurrence of specified corporate events; or

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

- At any time on or after July 1, 2020 until the close of business on the second scheduled trading day immediately preceding the December 1, 2020 maturity date.

Upon the occurrence of a make-whole fundamental change or if we call all or any portion of the Notes for redemption prior to July 1, 2020, we will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert its Notes in connection with such make-whole fundamental change or during the related redemption period.

The Notes were separated into debt and equity components and assigned a fair value. The value assigned to the debt component is the estimated fair value as of the issuance date of similar debt without the conversion feature. The difference between the cash proceeds and this estimated fair value represents the value which has been assigned to the equity component and recorded as a debt discount. The debt discount is being amortized using the effective interest method over the period from the date of issuance through the December 1, 2020 maturity date.

The initial debt component of the Notes was valued at $233.5 million, based on the contractual cash flows discounted at an appropriate market rate for non-convertible debt at the date of issuance. The carrying value of the permanent equity component reported in additional paid-in-capital was initially valued at $103.0 million, which is net of $2.6 million of fees and expenses allocated to the equity component.

The following table outlines the effective interest rate, contractually stated interest expense and costs related to the amortization of the discount for the Notes:

	Twelve Months Ended December 31,	
	2015	
	(in thousands except for effective interest rate)	
Effective interest rate		10.18%
Contractually stated interest expense	$	369
Amortization of discount	$	1,084

The capped call transactions are expected generally to reduce the potential dilution to our common stock and/or offset the cash payments we would be required to make in excess of the principal amount of the converted Notes in the event that the market price of our common stock, as measured under the terms of the capped call transaction, is greater than the strike price of the capped call transaction, with such reduction and/or offset subject to a cap based on the cap price of the capped call transactions. The strike price of the capped call transactions corresponds to the initial conversion price of the Notes and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have an initial cap price of $25.26 per share and are subject to certain adjustments under the terms of the capped call transactions. The capped call transactions have been included as a net reduction to additional paid-in capital within stockholders' equity.

Credit Facility

In May 2011, we entered into a credit facility and in December 2015, we amended this credit facility to increase the aggregate commitment amount to $120.0 million, with a maturity date of September 12, 2018. The amendment further increased the minimum liquidity financial covenant requirement from $5.0 million to $10.0 million at any time.

The credit facility interest rate on US borrowings is based on an alternate base rate plus 1.00% - 1.25% and Eurocurrency borrowings are based on the LIBO rate plus 2.00% - 2.25%, both of which are per annum rates based on outstanding borrowings. The non-usage fee is 0.375% per annum. The available letters of credit under the amended credit facility is $15.0 million, and the annual charge for outstanding letters of credit is 2.00% - 2.25% per annum based on outstanding borrowings.

The amount of borrowings available under the credit facility at any time is based on our monthly accounts receivable balance at such time and the amounts borrowed are collateralized by our personal property, including such accounts receivable but excluding intellectual property. The credit facility contains customary events of default, conditions to borrowing and

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

covenants, including restrictions on our ability to dispose of assets, make acquisitions, incur debt, incur liens and make distributions to stockholders. During the continuance of an event of a default, the lenders may accelerate amounts outstanding, terminate the credit facility and foreclose on all collateral.

As of December 31, 2014 and 2015, we had no outstanding borrowings, $1.1 million in letters of credit outstanding and $58.9 million and $118.9 million of available borrowing capacity under the credit facility.

Total debt issuance costs associated with the 2015 credit facility amendment were $0.4 million, which will be amortized as interest expense over the four-year remaining term of credit facility agreement. For eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015, $0.2 million, $0.2 million and $0.2 million of debt issuance costs, respectively, were amortized and included in interest expense.

8. Commitments and Contingencies

Leases

The following is a schedule of future minimum lease payments and future minimum sublease income under noncancelable operating leases as of December 31, 2015:

	As of December 31, 2015	
	Future Minimum Lease Payments	Future Minimum Sublease Income
	(in thousands)	
2016	$ 19,044	$ 1,246
2017	23,219	1,277
2018	22,722	541
2019	22,148	—
2020	19,599	—
Thereafter	55,902	—
Total	$ 162,634	$ 3,064

We conduct our operations using leased office facilities in various locations. We lease office space under arrangements expiring through 2025. Rent expenses for eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 were $5.7 million, $8.6 million and $12.2 million, respectively.

For operating leases that include escalation clauses over the term of the lease, tenant improvement reimbursements and rent abatement periods, we recognize rent expense on a straight-line basis over the lease term including expected renewal periods. The difference between rent expense and rent payments is recorded as deferred rent in current and long-term liabilities. As of December 31, 2014 and 2015 deferred rent was $15.3 million and $23.9 million.

Purchase Obligations

As of December 31, 2015, we had various non-cancelable minimum payments of $153.3 million, primarily in connection with the publishing agreements signed in 2015, of which $124.0 million is recoupable against future royalty payments and $29.3 million of which is not recoupable against future royalty payments, through 2018.

Legal Proceedings

We have been in the past, and continue to be, a party to various legal proceedings, which have consumed, and may continue to consume, financial and managerial resources. We record a liability when we believe that it is both probable that a loss has been incurred and the amount can be reasonably estimated. Our management periodically evaluates developments that could affect the

amount, if any, of liability that we have previously accrued and make adjustments as appropriate. Determining both the likelihood and the estimated amount of a loss requires significant judgment, and management's judgment may be

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incorrect. We do not believe the ultimate resolution of any pending legal matters is likely to have a material adverse effect on our business, financial position, results of operations or cash flows.

RMLC ("Radio Music Licensing Committee")

In June 2013, we entered into an agreement to purchase the assets of KXMZ-FM and in June 2015 the Federal Communications Commission ("FCC") approved the transfer of the FCC licenses and the acquisition was completed. The agreement to purchase the assets of KXMZ allowed us to qualify for the RMLC royalty rate of 1.7% of revenue for a license to the ASCAP and BMI repertoires, before certain deductions, beginning in June 2013. As a result, we recorded cost of revenue - content acquisition costs at the RMLC royalty rate starting in June 2013, rather than the rate that was set in rate court proceedings in March 2014 for ASCAP and in May 2015 for BMI.

In September 2015, despite confidence in our legal position that we were entitled to the RMLC royalty rate starting in June 2013, and as part of our strategy to strengthen our partnership with the music industry, management decided to forgo the application of the RMLC royalty rate from June 2013 through September 2015. As a result, cost of revenue - content acquisition costs increased by $28.2 million in the twelve months ended December 31, 2015, of which $23.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to spins played from June 2013 through September 30, 2015 in order to align the cumulative cost of revenue - content acquisition costs to the amounts previously paid at the rates that were set in the rate court proceedings in March 2014 for ASCAP and May 2015 for BMI. We recorded cost of revenue - content acquisition costs for the performing rights organizations at the rates established by the rate courts for the three months ended December 31, 2015, and we intend to record such costs at the rates established by our direct licensing agreements beginning in 2016.

Pre-1972 copyright litigation

On April 17, 2014, UMG Recordings, Inc., Sony Music Entertainment, Capitol Records, LLC, Warner Music Group Corp. and ABKCO Music and Records, Inc. filed suit against Pandora Media Inc. in the Supreme Court of the State of New York. The complaint claimed common law copyright infringement and unfair competition arising from allegations that Pandora owed royalties for the public performance of sound recordings recorded prior to February 15, 1972.

In October 2015, the parties reached an agreement ("pre-1972 settlement") whereby we agreed to pay the plaintiffs a total of $90 million. The settlement resolves all past claims as to our use of pre-1972 recordings owned or controlled by the plaintiffs and enables us, without any additional payment, to reproduce, perform and broadcast such recordings in the United States through December 31, 2016. This agreement was approved by our board of directors and executed on October 21, 2015. Pursuant to this settlement, we paid the plaintiffs $60 million in October 2015 and the plaintiffs dismissed the case with prejudice. As a result, cost of revenue - content acquisition costs increased by $65.4 million in the twelve months ended December 31, 2015, of which $57.9 million was related to a one-time cumulative charge to cost of revenue - content acquisition costs related to pre-1972 spins played through September 30, 2015. The remaining charge of $24.6 million will be recorded in cost of revenue - content acquisition costs over the future service period of January 1, 2016 through December 31, 2016 based on expected streaming of pre-1972 recordings over the period. The pre-72 settlement further requires that we make four additional installment payments of $7.5 million each. The first was paid in 2015, and the remaining three installments will be paid on or before April 1, 2016, July 1, 2016 and October 1, 2016.

On October 2, 2014, Flo & Eddie Inc. filed a class action suit against Pandora Media Inc. in the federal district court for the Central District of California. The complaint alleges misappropriation and conversion in connection with the public performance of sound recordings recorded prior to February 15, 1972. On December 19, 2014, Pandora filed a motion to strike the complaint pursuant to California's Anti-Strategic Lawsuit Against Public Participation ("Anti-SLAPP") statute. This motion was denied, and we have appealed the ruling to the Ninth Circuit Court of Appeals. As a result, the district court litigation has been stayed pending the Ninth Circuit's review.

On September 14, 2015, Arthur and Barbara Sheridan, et al filed a class action suit against Pandora Media, Inc. in the federal district court for the Northern District of California. The complaint alleges common law misappropriation, unfair competition, conversion, unjust enrichment and violation of California rights of publicity arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On October 28, 2015, the Court granted the parties' stipulation to stay the district court action pending the Ninth Circuit's review of Pandora's appeal in Flo & Eddie et al. v. Pandora Media, Inc., which involves similar allegations.

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Notes to Consolidated Financial Statements - Continued

On September 16, 2015, Arthur and Barbara Sheridan, et al filed a second class action suit against Pandora Media, Inc. in the federal district court for the Southern District of New York. The complaint alleges common law copyright infringement, violation of New York right of publicity, unfair competition and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On October 28, 2015 the Court granted the parties' stipulation to stay the district court action pending the Second Circuit's review of Sirius XM's appeal in the Flo & Eddie et al. v. Sirius XM matter, which involves similar allegations.

On October 17, 2015, Arthur and Barbara Sheridan, et al filed a third class action suit against us in the federal district court for the Northern District of Illinois ("Third Class Action Suit"). The complaint alleges common law copyright infringement, violation of the Illinois Uniform Deceptive Trade Practices Act, conversion, and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. On December 29, 2015, Pandora filed a motion to dismiss and motion to stay the case pending the Second Circuit's decision. The motion to stay was denied, and the motion to dismiss remains pending.

On October 19, 2015, Arthur and Barbara Sheridan, et al filed a fourth class action suit against us in the federal district court for the District of New Jersey ("Fourth Class Action Suit"). The complaint alleges common law copyright infringement, unfair competition and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. Pandora's response to the complaint was due on December 29, 2015. On December 29, 2015, Pandora filed a motion to dismiss and motion to stay the case pending the Second Circuit's decision. Both motions remain pending.

On February 8, 2016, Ponderosa Twins Plus One et al filed a class action suit against Pandora Media, Inc. in the federal district court for the Southern District of New York. The complaint alleges common law copyright infringement, misappropriation, unfair competition and unjust enrichment arising from allegations that we owe royalties for the public performance of sound recordings recorded prior to February 15, 1972. We are currently preparing our response to these allegations.

The outcome of any litigation is inherently uncertain. Except as noted above, including with respect to the $90 million settlement for UMG Recordings, Inc. et al v. Pandora Media Inc. in the Supreme Court of the State of New York, we do not believe it is probable that the final outcome of the matters discussed above will, individually or in the aggregate, have a material adverse effect on our business, financial position, results of operations or cash flows; however, in light of the uncertainties involved in such matters, there can be no assurance that the outcome of each case or the costs of litigation, regardless of outcome, will not have a material adverse effect on our business. In particular, rate court proceedings could take years to complete, could be very costly and may result in current and past royalty rates that are materially less favorable than rates we currently pay or have paid in the past.

Indemnification Agreements, Guarantees and Contingencies

In the ordinary course of business, we are party to certain contractual agreements under which we may provide indemnifications of varying scope, terms and duration to customers, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, services to be provided by us or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with directors and certain officers and employees that will require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. Such indemnification provisions are accounted for in accordance with guarantor's accounting and disclosure requirements for guarantees, including indirect guarantees of indebtedness of others. To date, we have not incurred, do not anticipate incurring and therefore have not accrued for, any costs related to such indemnification provisions.

While the outcome of these matters cannot be predicted with certainty, we do not believe that the outcome of any claims under indemnification arrangements will have a material adverse effect on our consolidated financial position, results of operations or cash flows.

9. Provision for Income Taxes

Loss before provision for income taxes by jurisdiction consists of the following:

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	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
		(in thousands)	
Jurisdiction			
Domestic	$ (24,005)	$ (24,230)	$ (163,460)
Foreign	(2,918)	(5,592)	(7,751)
Loss before provision for income taxes	$ (26,923)	$ (29,822)	$ (171,211)

The provision for income taxes consists of the following:

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
		(in thousands)	
Current			
Federal	$ —	$ —	$ —
State and local	7	353	9
International	87	231	214
Total current income tax expense	$ 94	$ 584	$ 223
Deferred			
Federal	(10,166)	(9,996)	(17,943)
State and local	(2,027)	(6,238)	(2,174)
Valuation allowance	12,193	16,234	18,344
Total deferred income tax expense (benefit)	$ —	$ —	$ (1,773)
Total provision for (benefit from) income taxes	$ 94	$ 584	$ (1,550)

The provision for income taxes decreased by $2.1 million during the twelve months ended December 31, 2015 as a result of benefits recognized from the valuation allowance release through acquisition accounting and state income taxes computed without the benefit of stock options.

The following table presents a reconciliation of the statutory federal rate and our effective tax rate:

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
U.S. federal taxes at statutory rate	34 %	34 %	34 %
State taxes, net of federal benefit	—	(1)	—
Permanent differences	5	4	3
Foreign rate differential	(4)	(7)	(1)
Federal and state credits, net of reserve	8	11	2
Impact of acquired DTAs and DTLs	—	—	1
Change in valuation allowance	(46)	(55)	(33)
Change in rate	—	6	(1)

Deferred adjustments	3	6	(4)
Effective tax rate	— %	(2)%	1 %

The major components of deferred tax assets and liabilities consist of the following:

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	As of December 31,	
	2014	2015
	(in thousands)	
Deferred tax assets		
Net operating loss carryforwards	$ 27,487	$ 91,658
Tax credit carryforwards	10,839	14,204
Allowances and other	13,832	21,802
Stock options	24,215	29,927
Depreciation and amortization	255	—
Total deferred tax assets	$ 76,628	$ 157,591
Valuation allowance	(73,983)	(92,772)
Total deferred tax assets, net of valuation allowance	$ 2,645	$ 64,819
Deferred tax liabilities		
Convertible debt	—	(37,580)
Depreciation and amortization	(2,645)	(27,252)
Total deferred tax liabilities	$ (2,645)	$ (64,832)
Net deferred tax assets (liabilities)	$ —	$ (13)

During the year ended December 31, 2015, we released $1.8 million of our valuation allowance as a result of acquisitions. Deferred tax liabilities were established for the book-tax basis difference related to acquired intangible assets. The net deferred tax liabilities provided an additional source of income to support the realizability of pre-existing deferred tax assets.

At December 31, 2015, we had federal net operating loss carryforwards of approximately $613.0 million and tax credit carryforwards of approximately $9.7 million. If realized, approximately $377.0 million of the net operating loss carryforwards will be recognized as a benefit through additional paid in capital. The federal net operating losses and tax credits expire in years beginning in 2021. At December 31, 2015, we had state net operating loss carryforwards of approximately $480.0 million which expire in years beginning in 2016. In addition, we had state tax credit carryforwards of approximately $10.7 million that do not expire and approximately $4.9 million of credits that will expire beginning in 2024.

At December 31, 2015, we had foreign net operating loss carryforwards of approximately $4.3 million which expire in years beginning in 2033.

Included in the net operating loss carryforward amounts above are approximately $67.6 million of federal, $42.9 million of state and $4.3 million of foreign net operating loss carryforwards related to acquisitions.

Under Section 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change attributes, such as research tax credits, to offset its post-change income may be limited. In general, an "ownership change" will occur if there is a cumulative change in our ownership by "5-percent shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. Utilization of our net operating loss and tax credit carryforwards may be subject to annual limitations due to ownership changes. Such annual limitations could result in the expiration of our net operating loss and tax credit carryforwards before utilized.

During the twelve months ended December 31, 2015, our valuation allowance increased by $18.8 million. At December 31, 2014 and 2015, we maintained a full valuation allowance on our net deferred tax assets. The valuation allowance was determined in accordance with the provisions of Accounting Standards Codification 740 - *Income Taxes*, which requires an assessment of both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. Such assessment is required on a jurisdiction by jurisdiction basis. Our history of cumulative losses, along with expected future U.S. losses required that a full valuation allowance be recorded against all net deferred tax assets. We intend to maintain a full valuation allowance on net deferred tax assets until sufficient positive evidence exists to support reversal of the valuation allowance.

At December 31, 2014 and 2015 we have unrecognized tax benefits of approximately $5.8 million and $6.9 million. The

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increase in our unrecognized tax benefits was primarily attributable to current year activities. A reconciliation of the beginning and ending amounts of unrecognized tax benefits (excluding interest and penalties) is as follows:

	Twelve Months Ended December 31,	
	2014	2015
	(in thousands)	
Beginning balance	$ 5,220	$ 5,793
Increases related to tax positions taken during a prior year	1,161	—
Decreases related to tax positions taken during a prior year	(1,924)	(74)
Increases related to tax positions taken during the current year	1,336	1,145
Ending balance	$ 5,793	$ 6,864

The total unrecognized tax benefits, if recognized, would not affect the Company's effective tax rate as the tax benefit would increase a deferred tax asset, which is currently offset with a full valuation allowance. We do not anticipate that the amount of existing unrecognized tax benefits will significantly increase or decrease within the next twelve months. Accrued interest and penalties related to unrecognized tax benefits are recorded in the provision for income taxes. We did not have such interest, penalties or tax benefits during the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014 and 2015.

We file income tax returns in the United States, California, other states and international jurisdictions. Tax years 2000 to 2015 remain subject to examination for U.S. federal, state and international purposes. All net operating loss and tax credits generated to date are subject to adjustment for U.S. federal and state purposes. We are not currently under examination in federal, state or international jurisdictions.

10. Stock-based Compensation Plans and Awards

Stock Compensation Plans

In 2000, our board of directors adopted the 2000 Stock Incentive Plan, as amended (the "2000 Plan"). In 2004, our board of directors adopted the 2004 Stock Option Plan (the "2004 Plan"), which replaced the 2000 Plan and provided for the issuance of incentive and non-statutory stock options to employees and other service providers of Pandora. In 2011, our board of directors adopted the Pandora Media, Inc. 2011 Equity Incentive Plan (the "2011 Plan" and, together with the 2000 Plan and the 2004 Plan, the "Plans"), which replaced the 2004 Plan. The Plans are administered by the compensation committee of our board of directors (the "Plan Administrator").

The 2011 Plan provides for the issuance of stock options, restricted stock units and other stock-based awards. Shares of common stock reserved for issuance under the 2011 Plan include 12,000,000 shares of common stock reserved for issuance under the 2011 Plan and 1,506,424 shares of common stock previously reserved but unissued under the 2004 Plan as of June 14, 2011. To the extent awards outstanding as of June 14, 2011 under the 2004 Plan expire or terminate for any reason prior to exercise or would otherwise return to the share reserve under the 2004 Plan, the shares of common stock subject to such awards will instead be available for future issuance under the 2011 Plan. Each year, the number of shares in the reserve under the Plan may be increased by the lesser of 10,000,000 shares, 4.0% of the outstanding shares of common stock on the last day of the prior fiscal year or another amount determined by our board of directors. The 2011 Plan is scheduled to terminate in 2021, unless our board of directors determines otherwise.

Under the 2011 Plan, the Plan Administrator determines various terms and conditions of awards including option expiration dates (no more than ten years from the date of grant), vesting terms (generally over a four-year period) and payment terms. For stock option grants the exercise price is determined by the Plan Administrator, but generally may not be less than the fair market value of the common stock on the date of grant.

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In December 2013, our board of directors approved the ESPP, which was approved by our stockholders at the annual meeting in June 2014. The ESPP allows eligible employees to purchase shares of our common stock through payroll deductions of up to 15% of their eligible compensation, subject to a maximum of their eligible compensation, subject to a maximum of $25,000 per calendar year. Shares reserved for issuance under the ESPP include 4,000,000 shares of common stock. The ESPP provides for six-month offering periods, commencing in February and August of each year. At the end of each offering period employees are able to purchase shares at 85% of the lower of the fair market value of our common stock on the first trading day of the offering period or on the last day of the offering period.

Shares available for grant as of December 31, 2015 and the activity during the twelve months ended December 31, 2015 are as follows:

	Shares Available for Grant		
	Equity Awards	ESPP	Total
Balance as of December 31, 2014	14,326,460	3,857,735	18,184,195
Additional shares authorized	8,323,469	—	8,323,469
Ticketfly shares authorized	3,215,223	—	3,215,223
Options granted	(2,940,736)	—	(2,940,736)
Restricted stock granted	(11,678,792)	—	(11,678,792)
Market stock units granted	(776,000)	—	(776,000)
ESPP shares issued	—	(538,398)	(538,398)
Options forfeited	7,709	—	7,709
Restricted stock forfeited	1,245,994	—	1,245,994
Balance as of December 31, 2015	11,723,327	3,319,337	15,042,664

Employee Stock Purchase Plan ("ESPP")

We estimate the fair value of shares to be issued under the ESPP on the first day of the offering period using the Black-Scholes valuation model. The determination of the fair value is affected by our stock price on the first date of the offering period, as well as other assumptions including the risk-free interest rate, the estimated volatility of our stock price over the term of the offering period, the expected term of the offering period and the expected dividend rate. Stock-based compensation expense related to the ESPP is recognized on a straight-line basis over the offering period, net of estimated forfeitures.

The per-share fair value of shares to be granted under the ESPP is determined on the first day of the offering period using the Black-Scholes option pricing model using the following assumptions:

	Twelve Months Ended December 31,	
	2014	2015
Expected life (in years)	0.5	0.5
Risk-free interest rate	0.06%	0.12%
Expected volatility	42%	52%
Expected dividend yield	0%	0%

During the twelve months ended December 31, 2014 and 2015, we withheld $6.4 million and $7.6 million in contributions from employees and recognized $2.1 million and $3.3 million of stock-based compensation expense related to the ESPP. In the twelve months ended December 31, 2014 and 2015, 149,378 and 538,398 shares of common stock were issued under the ESPP at a weighted average purchase price of $23.95 and $17.80. There was no stock-based compensation expense related to the ESPP or shares of common stock issued under the ESPP in the eleven months ended December 31, 2013.

Stock Options

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Stock option activity during the twelve months ended December 31, 2015 was as follows:

	Options Outstanding			
	Outstanding Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (1)
	(in thousands, except share and per share data)			
Balance as of December 31, 2014	10,980,256	$ 7.91	1.08	$ 120,033
Granted	2,940,736	3.44		
Exercised	(1,077,797)	4.78		
Forfeited	(27,304)	6.09		
Balance as of December 31, 2015	12,815,891	7.15	1.09	101,151
Vested and exercisable as of December 31, 2015	9,292,855	5.74	0.57	81,541
Expected to vest as of December 31, 2015 (2)	3,259,020	$ 10.81	2.47	$ 18,156

(1)Amounts represent the difference between the exercise price and the fair value of common stock at each period end for all in the money options outstanding based on the fair value per share of common stock of $17.83 and $13.41 as of December 31, 2014 and 2015.

(2)Options expected to vest reflect an estimated forfeiture rate.

The per-share fair value of stock options granted during the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 was determined on the grant date using the Black-Scholes option pricing model with the following assumptions:

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
Expected life (in years)	5.99 - 6.32	6.08	6.08
Risk-free interest rate	1.00% - 2.04%	1.71% - 1.93%	1.75% - 1.92%
Expected volatility	58% - 59%	58% - 59%	49% - 50%
Expected dividend yield	0%	0%	0%

The expected term of stock options granted represents the weighted average period that the stock options are expected to remain outstanding. We determined the expected term assumption based on our historical exercise behavior combined with estimates of the post-vesting holding period. Expected volatility is based on historical volatility of peer companies in our industry that have similar vesting and contractual terms. The risk free interest rate is based on the implied yield currently available on U.S. Treasury issues with terms approximately equal to the expected life of the option. We currently have no history or expectation of paying cash dividends on our common stock.

During the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015, we recorded stock-based compensation expense related to stock options of approximately $10.6 million, $14.7 million and $10.7 million, respectively.

As of December 31, 2015, there was $32.2 million of unrecognized compensation cost related to outstanding employee stock options. This amount is expected to be recognized over a weighted-average period of 2.47 years. To the extent the actual forfeiture rate differs from our estimates, stock-based compensation related to these awards could differ from our expectations.

The weighted-average fair value of stock option grants made during the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 was $9.34, $19.74 and $9.08 per share, respectively.

The total grant date fair value of stock options vested during the eleven months ended December 31, 2013, the twelve

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

months ended December 31, 2014 and the twelve months ended December 31, 2015 was $9.1 million, $16.0 million and $17.6 million, respectively.

The aggregate intrinsic value of stock options exercised during the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 was $93.8 million, $169.2 million and $9.5 million, respectively. The total fair value of options vested during the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015 was $9.4 million, $16.5 million and $17.6 million, respectively.

Restricted Stock Units

The fair value of the restricted stock units is expensed ratably over the vesting period. RSUs vest annually on a cliff basis over the service period, which is generally four years. During the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015, we recorded stock-based compensation expense related to restricted stock units of approximately $28.9 million, $69.9 million and $96.1 million, respectively. As of December 31, 2015, total compensation cost not yet recognized of approximately $256.1 million related to non-vested restricted stock units, is expected to be recognized over a weighted average period of 2.75 years.

The following table summarizes the activities for our RSUs for the twelve months ended December 31, 2015:

	Number of RSUs	Weighted-Average Grant Date Fair Value
Unvested as of December 31, 2014	11,024,068	$ 21.99
Granted	11,678,792	15.40
Vested	(4,184,415)	21.06
Forfeited	(1,246,360)	19.89
Unvested as of December 31, 2015	17,272,085	17.91
Expected to vest as of December 31, 2015 (1)	15,595,029	$ 17.90

(1) RSUs expected to vest reflect an estimated forfeiture rate.

MSUs

We implemented a market stock unit program in March 2015 for certain key executives. MSUs are earned as a function of Pandora's TSR performance measured against that of the Russell 2000 Index across three performance periods:

- One-third of the target MSUs are eligible to be earned for a performance period that is the first calendar year of the MSU grant (the "One-Year Performance Period");
- One-third of the target MSUs are eligible to be earned for a performance period that is the first two calendar years of the MSU grant (the "Two-Year Performance Period"); and
- Any remaining portion of the target MSUs are eligible to be earned for a performance period that is the entire three calendar years of the MSU grant (the "Three-Year Performance Period").

For each performance period, a "performance multiplier" is calculated by comparing Pandora's TSR for the period to the Russell 2000 Index TSR for the same period, using the average adjusted closing stock price of Pandora stock, and the Russell 2000 Index, for ninety calendar days prior to the beginning of the performance period and the last ninety calendar days of the performance period. In each period, the target number of shares will vest if the Pandora TSR is equal to the Russell 2000 Index TSR. For each percentage point that the Pandora TSR falls below the Russell 2000 Index TSR for the period, the performance multiplier is decreased by three percentage points. The performance multiplier is capped at 100% for the One-Year and Two-Year Performance Periods. However, the full award is eligible for a payout up to 200% of target, less any shares earned in prior periods, in the Three-Year Performance Period. Specifically, for each percentage point that the Pandora TSR exceeds the Russell 2000 Index TSR for the Three-Year Performance Period, the performance multiplier is increased by 2%. As such, the ability to exceed the target number of shares is determined exclusively with respect to Pandora's three-year TSR during the term of the award.

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

We have determined the grant-date fair value of the MSUs using a Monte Carlo simulation performed by a third-party valuation firm. We recognize stock-based compensation for the MSUs over the requisite service period, which is approximately three years, using the accelerated attribution method. During the twelve months ended December 31, 2015, we granted 776,000 MSUs at a total grant-date fair value of $4.3 million. During the twelve months ended December 31, 2015, we recorded stock-based compensation expense from MSUs of approximately $1.5 million. As of December 31, 2015, total compensation cost not yet recognized of approximately $2.8 million related to non-vested MSUs, is expected to be recognized over a weighted average period of 2.13 years. There was no stock-based compensation expense related to MSUs or shares of common stock issued under the MSU plan in the eleven months ended December 31, 2013 and the twelve months ended December 31, 2014.

The following table summarizes the activities for our MSUs for the twelve months ended December 31, 2015:

	Number of MSUs	Weighted-Average Grant Date Fair Value
Unvested as of December 31, 2014	—	$ —
Granted	776,000	5.60
Vested	—	—
Forfeited	—	—
Unvested as of December 31, 2015	776,000	5.60
Expected to vest as of December 31, 2015 (1)	710,882	$ 5.60

(1) MSUs expected to vest reflect an estimated forfeiture rate.

Stock-based Compensation Expense

Stock-based compensation expense includes expense related to Ticketfly employees for the two months ended December 31, 2015. Stock-based compensation expense related to all employee and non-employee stock-based awards was as follows:

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
	(in thousands)		
Stock-based compensation expense			
Cost of revenue—Other	$ 1,946	$ 4,414	$ 5,531
Cost of revenue—Ticketing service	—	—	40
Product development	8,802	17,546	23,671
Sales and marketing	20,222	42,165	52,747
General and administrative	9,071	22,930	29,656
Total stock-based compensation expense	$ 40,041	$ 87,055	$ 111,645

During the eleven months ended December 31, 2013 and twelve months ended December 31, 2014 and 2015, we capitalized $0.7 million, $1.3 million and $2.7 million of stock-based compensation as internal use software and website development costs, respectively.

11. Common Stock and Net Loss per Share

Each share of common stock has the right to one vote per share. The holders of common stock are also entitled to receive dividends as and when declared by our board of directors, whenever funds are legally available.

Follow-on Public Offering

In September 2013, we completed a follow-on public equity offering in which we sold an aggregate of 15,730,000 shares of our common stock, inclusive of 2,730,000 shares sold pursuant to the exercise by the underwriters of an option to purchase

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

additional shares, at a public offering price of $25.00 per share. In addition, another 5,200,000 shares were sold by certain selling stockholders. We received aggregate net proceeds of $378.7 million, after deducting underwriting discounts and commissions and offering expenses from sales of our shares in the offering. We did not receive any of the proceeds from the sales of shares by the selling stockholders.

Net Loss per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of shares of common stock outstanding during the period.

Diluted net loss per share is computed by giving effect to all potential shares of common stock, including stock options and restricted stock units, to the extent dilutive. Basic and diluted net loss per share were the same for the eleven months ended December 31, 2013, the twelve months ended December 31, 2014 and the twelve months ended December 31, 2015, as the inclusion of all potential common shares outstanding would have been anti-dilutive.

The following table sets forth the computation of historical basic and diluted net loss per share:

	Eleven Months Ended December 31,	Twelve Months Ended December 31,	
	2013	2014	2015
	(in thousands except per share amounts)		
Numerator			
Net loss	$ (27,017)	$ (30,406)	$ (169,661)
Denominator			
Weighted-average common shares outstanding used in computing basic and diluted net loss per share	180,968	205,273	213,790
Net loss per share, basic and diluted	$ (0.15)	$ (0.15)	$ (0.79)

The following potential common shares outstanding were excluded from the computation of diluted net loss per share because including them would have been anti-dilutive:

	As of December 31, 2013	As of December 31, 2014	As of December 31, 2015
	(in thousands)		
Options to purchase common stock	22,708	10,980	12,816
Restricted stock units	10,366	11,024	17,272
Market stock units	—	—	776
Total common stock equivalents	33,074	22,004	30,864

On December 9, 2015, we completed an offering of our 1.75% convertible senior notes due 2020. Under the treasury stock method, the Notes will generally have a dilutive impact on earnings per share if our average stock price for the period exceeds approximately $16.42 per share of our common stock, the conversion price of the Notes. For the period from the issuance of the offering of the Notes through December 31, 2015, the conversion feature of the Notes was anti-dilutive.

In connection with the pricing of the Notes, we entered into capped call transactions which increase the effective conversion price of the Notes, and are designed to reduce potential dilution upon conversion of the Notes. Since the beneficial impact of the capped call is anti-dilutive, it is excluded from the calculation of earnings per share. Refer to Note 7 "Debt Instruments" for further details regarding our Notes.

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

12. Selected Quarterly Financial Data (unaudited)

	Three months ended							
	March 31, 2014	June 30, 2014	September 30, 2014	December 31, 2014	March 31, 2015	June 30, 2015	September 30, 2015	December 31, 2015
	(in thousands, except per share data)							
Total revenue (1)	$ 194,315	$ 218,894	$ 239,593	$ 268,000	$ 230,764	$ 285,560	$ 311,562	$ 336,157
Cost of revenue								
Cost of Revenue—Content acquisition costs	108,275	111,461	111,315	115,326	126,023	130,134	211,272	142,933
Cost of revenue—Other	14,979	13,989	15,453	17,206	16,233	20,043	21,414	22,168
Cost of revenue—Ticketing service (1)	—	—	—	—	—	—	—	7,121
Total cost of revenue	123,254	125,450	126,768	132,532	142,256	150,177	232,686	172,222
Gross profit	71,061	93,444	112,825	135,468	88,508	135,383	78,876	163,935
Operating expenses								
Product development (1)	11,831	13,076	13,381	14,865	15,875	18,742	21,849	28,115
Sales and marketing (1)	61,864	66,232	72,320	76,914	84,274	94,035	107,286	112,574
General and administrative (1)	26,361	25,865	29,143	31,074	36,754	38,812	35,603	42,774
Total operating expenses	100,056	105,173	114,844	122,853	136,903	151,589	164,738	183,463
Income (loss) from operations	(28,995)	(11,729)	(2,019)	12,615	(48,395)	(16,206)	(85,862)	(19,528)
Net income (loss)	(28,931)	(11,728)	(2,025)	12,278	(48,257)	(16,065)	(85,930)	(19,409)
Net income (loss) per share, basic	(0.14)	(0.06)	(0.01)	0.06	(0.23)	(0.08)	(0.40)	(0.09)
Net income (loss) per share, diluted	$ (0.14)	$ (0.06)	$ (0.01)	$ 0.06	$ (0.23)	$ (0.08)	$ (0.40)	$ (0.09)

(1) Includes two months of revenue and expense for Ticketfly from the acquisition date of October 31, 2015 to December 31, 2015.

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) under the Exchange Act, that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognizes that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. Based on their evaluation at the end of the period covered by this Annual Report on Form 10-K, our chief executive officer and chief financial officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2015.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of internal control effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management has assessed the effectiveness of the internal control over financial reporting as of December 31, 2015. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control-Integrated Framework (2013 framework).

In accordance with guidance issued by the Securities and Exchange Commission, companies are permitted to exclude acquisitions from their final assessment of internal control over financial reporting for the first fiscal year in which the acquisition occurred. Our management’s evaluation of internal control over financial reporting excluded the internal control activities of Ticketfly, which we acquired on October 31, 2015, as discussed in Note 5, “Business Combinations,” of the Notes to the Consolidated Financial Statements. We have included the financial results of Ticketfly in the consolidated financial statements from the date of acquisition. Total revenues subject to Ticketfly's internal control over financial reporting represented approximately one percent of our consolidated total revenues for the twelve months ended December 31, 2015. Total assets and net assets subject to Ticketfly's internal control over financial reporting represented approximately three percent and approximately two percent of our consolidated total assets and consolidated net assets, excluding acquisition method fair value adjustments, as of December 31, 2015.

Based on the results of this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2015.

The effectiveness of our internal control over financial reporting as of December 31, 2015 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

We are in the process of implementing a new enterprise resource planning ("ERP") system, which will occur over a period of more than one year. During the year ended December 31, 2015, we completed the implementation of several significant ERP modules including core financial and purchasing modules. In connection with the implementation of the ERP

Pandora Media, Inc.
Notes to Consolidated Financial Statements - Continued

system, we updated the processes that constitute our internal control over financial reporting, as necessary, to accommodate related changes to our business processes and accounting procedures. We will continue to implement additional ERP modules in a phased approach.

Although the processes that constitute our internal control over financial reporting have been materially affected by the implementation of several significant ERP modules and will require testing for effectiveness as the implementation progresses, we do not believe that the implementation of the ERP system has had or will have a material adverse effect on our internal control over financial reporting.

Except as otherwise described above, there have been no other changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the three months ended December 31, 2015, that has materially affected, or is reasonably likely to materially affect our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information required by this Item regarding our directors and executive officers is incorporated by reference to the sections of our proxy statement to be filed with the SEC in connection with our 2016 annual meeting of stockholders (the "Proxy Statement") entitled "Election of Class III Directors" and "Management."

Information required by this Item regarding our corporate governance, including our audit committee and code of business conduct and ethics, is incorporated by reference to the sections of the Proxy Statement entitled "Corporate Governance" and "Board of Directors."

Information required by this Item regarding compliance with Section 16(a) of the Exchange Act required by this Item is incorporated by reference to the section of the Proxy Statement entitled "Section 16(a) Beneficial Ownership Reporting Compliance."

ITEM 11. EXECUTIVE COMPENSATION

Information required by this Item is incorporated by reference to the sections of the Proxy Statement entitled "Executive Compensation," "Board of Directors—Compensation of Directors," "Corporate Governance—Compensation Committee Interlocks and Insider Participation."

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding security ownership of certain beneficial owners and management is incorporated by reference to the section of the Proxy Statement entitled "Security Ownership of Certain Beneficial Owners and Management."

Information regarding our stockholder approved and non-approved equity compensation plans is incorporated by reference to the section of the Proxy Statement entitled "Equity Compensation Plan Information."

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this Item is incorporated by reference to the sections of the Proxy Statement entitled "Certain Relationships and Related Party Transactions" and "Corporate Governance-Director Independence."

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by this Item is incorporated by reference to the section of the Proxy Statement entitled "Ratification of Appointment of Independent Registered Public Accounting Firm."

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are included as part of this Annual Report on Form 10-K.

1. Index to Financial Statements

Reports of Independent Registered Public Accounting Firm
Consolidated Balance Sheets
Consolidated Statements of Operations
Consolidated Statements of Comprehensive Loss
Consolidated Statements of Stockholders' Equity
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements

2. Financial Statement Schedules

All other schedules are omitted as the information required is inapplicable or the information is presented in the consolidated financial statements or the related notes.

3. Exhibits

See the Exhibit Index immediately following the signature page of this Annual Report on Form 10-K.

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SIGNATURES

Pursuant to the requirements Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on February 18, 2016.

PANDORA MEDIA, INC.

By: /s/ BRIAN MCANDREWS

Name: Brian McAndrews

Title: *Chief Executive Officer, President and Chairman of the Board*

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Brian McAndrews, Michael S. Herring and Stephen Bené and each of them, his or her true and lawful attorneys-in-fact and agents, with full power to act separately and full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or his or her or their substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1934, as amended, this report has been signed by the following persons in the capacities and on the dates indicated.

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Signature	Title	Date
/s/ BRIAN MCANDREWS Brian McAndrews	Chief Executive Officer, President and Chairman of the Board (Principal Executive Officer)	February 18, 2016
/s/ MICHAEL S. HERRING Michael S. Herring	Chief Financial Officer (Principal Financial and Accounting Officer)	February 18, 2016
/s/ PETER CHERNIN Peter Chernin	Director	February 18, 2016
/s/ ROGER FAXON Roger Faxon	Director	February 18, 2016
/s/ JAMES M. P. FEUILLE James M. P. Feuille	Director	February 18, 2016
/s/ PETER GOTCHER Peter Gotcher	Director	February 18, 2016
/s/ TIMOTHY LEIWEKE Timothy Leiweke	Director	February 18, 2016
Elizabeth A. Nelson	Director	
/s/ MICKIE ROSEN Mickie Rosen	Director	February 18, 2016
/s/ TIM WESTERGREN Tim Westergren	Director	February 18, 2016

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EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference					Filed Herewith
		Form	File No.	Exhibit	Filing Date	Filed By	
2.01	Agreement and Plan of Merger, dated as of October 7, 2015, among the Company, Ticketfly, Inc., Tennessee Acquisition Sub I, Inc., Tennessee Acquisition Sub II, LLC and Shareholder Representative Services LLC	8-K/A	001-35198	2.1	10/8/2015		
2.02	Asset Purchase Agreement, dated as of November 16, 2015, by and between Pandora Media, Inc. and Rdio, Inc.						X
3.01	Amended and Restated Certificate of Incorporation	S-1/A	333-172215	3.1	5/4/2011		
3.02	Amended and Restated Bylaws	S-1/A	333-172215	3.2	5/4/2011		
4.01	Fifth Amended and Restated Investor Rights Agreement, by and among Pandora Media, Inc. and the investors listed on Exhibit A thereto, dated May 20, 2010, as amended	S-1/A	333-172215	4.2	2/22/2011		
4.02	Indenture, dated as of December 9, 2015, between Pandora Media, Inc. and Citibank, N.A., as Trustee	8-K	001-35198	4.1	12/9/2015		
4.03	Form of 1.75% Convertible Senior Note due 2020 (included in Exhibit 4.02)						
10.01†	2011 Long Term Incentive Plan and Form of Stock Option Agreement under 2011 Long Term Incentive Plan	S-1/A	333-172215	10.1	5/26/2011		
10.02†	Ticketfly, Inc. 2008 Stock Plan	S-8	333-208005	99.1	11/13/2015		
10.03†	2004 Stock Plan, as amended, and Forms of Stock Option Agreement and Restricted Stock Purchase Agreement under 2004 Stock Plan	S-1/A	333-172215	10.3	2/22/2011		
10.04†	2000 Stock Incentive Plan, as amended, and Forms of NSO Stock Option Agreement and ISO Stock Option Agreement under 2000 Stock Plan	S-1/A	333-172215	10.4	2/22/2011		
10.05†	Form of Indemnification Agreement by and between Pandora Media, Inc. and each of its executive officers and its directors not affiliated with an investment fund	S-1/A	333-172215	10.5	2/22/2011		
10.06†	Form of Indemnification Agreement by and between Pandora Media, Inc. and each of its directors affiliated with an investment fund	S-1/A	333-172215	10.5A	2/22/2011		
10.7†	Employment Agreement with Tim Westergren, dated April 28, 2004	S-1/A	333-172215	10.7	2/22/2011		
10.9†	Offer Letter with John Trimble, dated February 18, 2009	S-1/A	333-172215	10.1	2/22/2011		
10.10	Office Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated July 23, 2009	S-1/A	333-172215	10.12	2/22/2011		
10.10A	First Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated April 13, 2010	S-1/A	333-172215	10.12A	2/22/2011		
10.10B	Second Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated June 16, 2010	S-1/A	333-172215	10.12B	2/22/2011		
10.10C	Third Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated December 15, 2010	10-Q	001-35198	10.12C	9/4/2012		
10.10D	Fourth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated March 10, 2011	10-Q	001-35198	10.12D	9/4/2012		
10.10E	Fifth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated July 1, 2011	10-Q	001-35198	10.12E	9/4/2012		

10.10F	Sixth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated September 27, 2011	10-Q	001-35198	10.12F	9/4/2012	
10.10G	Seventh Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated July 12, 2012	10-Q	001-35198	10.12G	9/4/2012	
10.10H	Eighth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated February 1, 2013	10-Q	001-35198	10.12H	5/29/2013	
10.10I	Ninth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated August 15, 2013	10-Q	001-35198	10.12I	10/28/2014	
10.10J	Tenth Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated October 1, 2014	10-Q	001-35198	10.12J	10/28/2014	
10.10K	Sublease between Cerexa, Inc. and Pandora Media, Inc. dated January 1, 2015	10-K	001-35198	10.10K	2/11/2015	
10.10L	First Lease Modification and Term Extension and Additional Space Agreement between 125 Park Owner LLC and Pandora Media, Inc., dated July 22, 2015	10-Q	001-35198	10.10L	7/24/2015	
10.10M	Eleventh Amendment to Lease between CIM/Oakland Center 21, LP and Pandora Media, Inc., dated July 28, 2015*					X
10.12	License Agreement by and between SESAC and Pandora Media, Inc., dated July 1, 2007	S-1/A	333-172215	10.14	2/22/2011	
10.13	Credit Agreement among Pandora Media, Inc., the Lenders party thereto and JPMorgan Chase Bank, N.A. as Administrative Agent, dated as of May 13, 2011	S-1/A	333-172215	10.17	6/10/2011	
10.13A	Amendment and Restatement Agreement to Credit Agreement among Pandora Media, Inc., the Lenders party thereto and JPMorgan Chase Bank, N.A. as Administrative Agent, dated as of September 12, 2013	10-Q	001-35198	10.15	11/26/2013	
10.13B	Amendment No. 1 to Credit Agreement, as amended and restated as of September 12, 2013, among Pandora Media, Inc., the Lenders party thereto and JPMorgan Chase Bank, N.A. as Administrative Agent, dated as of December 2, 2015					X
10.13C	Amendment and Restatement Agreement to Credit Agreement, as previously amended and restated as of September 12, 2013, among Pandora Media, Inc., the Lenders party thereto and JPMorgan Chase Bank, N.A. as Administrative Agent, dated as of December 21, 2015					X
10.14†	Form of Restricted Stock Unit Agreement under the 2011 Equity Incentive Plan	10-Q	001-35198	10.01	9/2/2011	
10.15†	Amended Executive Severance and Change in Control Policy	10-K	001-35198	10.18	3/19/2012	
10.16†	Offer Letter with Simon Fleming-Wood, dated August 5, 2012	10-Q	001-35198	10.19	6/4/2012	
10.17†	Calendar 2014 Corporate Incentive Plan	10-Q	001-35198	10.19C	4/29/2014	
10.18†	2015 Corporate Incentive Plan	10-Q	001-35198	10.17D	4/27/2015	
10.20†	Australian Form of Restricted Stock Unit Agreement under the 2011 Equity Incentive Plan	10-K	001-35198	10.22	3/18/2013	
10.21†	Offer Letter with Michael Herring, dated December 21, 2012	10-K	001-35198	10.23	3/18/2013	
10.22†	New Zealand Form of Restricted Stock Unit Agreement under the 2011 Equity Incentive Plan	10-Q	001-35198	10.24	5/29/2013	

10.23†	Offer Letter with Brian McAndrews, dated September 11, 2013	10-Q	001-35198	10.25	11/26/2013
10.24†	2014 Employee Stock Purchase Plan	S-8	333-193612	99.2	1/28/2014

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10.25†	Offer Letter with Sara Clemens, dated January 22, 2014	10-Q	001-35198	10.25	4/27/2015	
10.26†	Offer Letter with Stephen Bené, dated October 14, 2014	10-Q	001-35198	10.26	4/27/2015	
10.27†	Offer Letter with Christopher Phillips, dated October 20, 2014	10-Q	001-35198	10.27	4/27/2015	
10.28†	Form of MSU Grant Notice and Award Agreement	10-Q	001-35198	10.28	4/27/2015	
10.29	Settlement Agreement by and among Pandora Media, Inc. and Capitol Records, LLC et al.**	10-Q	001-35198	10.29	10/26/2015	
10.30	Capped call transaction confirmation, dated as of December 3, 2015, by and between Morgan Stanley & Co. LLC and Pandora Media, Inc.	8-K	001-35198	10.1	12/9/2015	
10.31	Additional capped call transaction confirmation, dated as of December 4, 2015, by and between Morgan Stanley & Co. LLC and Pandora Media, Inc.	8-K	001-35198	10.2	12/9/2015	
10.32	Capped call transaction confirmation, dated as of December 3, 2015, by and between JPMorgan Chase Bank, National Association, London Branch and Pandora Media, Inc.	8-K	001-35198	10.3	12/9/2015	
10.33	Additional capped call transaction confirmation, dated as of December 4, 2015, by and between JPMorgan Chase Bank, National Association, London Branch and Pandora Media, Inc.	8-K	001-35198	10.4	12/9/2015	
23.01	Consent of Independent Registered Public Accounting Firm					X
24.01	Power of Attorney (included on signature page of this Annual Report on Form 10-K)					X
31.01	Certification of the Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act					X
31.02	Certification of the Principal Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act					X
32.01	Certification of the Principal Executive Officer and Principal Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act					X
101	Interactive Data Files Pursuant to Rule 405 of Regulation S-T: (i) Balance Sheets as of December 31, 2015 and December 31, 2014, (ii) Statements of Operations for the Twelve months ended December 31, 2015 and 2014 and the Eleven months ended December 31, 2013, (iii) Statements of Comprehensive Loss for the Twelve months ended December 31, 2015 and 2014 and the Eleven months Ended December 31, 2013, (iv) Statements of Cash Flows for the Twelve months ended December 31, 2015 and 2014 and the Eleven months ended December 31, 2013 and (v) Notes to Financial Statements					X

† Indicates management contract or compensatory plan.

* Schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule or exhibit will be furnished on a supplemental basis to the Securities and Exchange Commission upon request; provided, however that we may request confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, for any schedules or exhibits so furnished.

** Confidential treatment requested as to certain portions of this exhibit, which portions have been omitted and submitted separately to the Securities and Exchange Commission.

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Spotify Launches Programmatic Audio Globally

Posted on July 20, 2016 by The Spotify for Brands Team (https://brandsnews.spotify.com/us/author/the-spotify-for-brands-team/)

Today we have officially enabled programmatic buying across our audio ads globally. We're partnering with three of the largest and most established platforms in the programmatic space – AppNexus, Rubicon Project and The Trade Desk – to give buyers access to over 70 million music fans on Spotify Free.

Here's the deal: we've launched Private Marketplaces for our best in-class audio advertising platform on mobile, allowing access for :15 and :30 second audio spots. This makes Spotify the first publisher to enable Deal ID/PMP access across audio inventory in a true, real-time bidding environment. Buyers will also have the opportunity to access Spotify's authenticated first party demographic data and unique playlist data (https://www.spotify.com/us/brands/targeting/).

This is available globally across Spotify's 59 markets. Buyers can target audiences by age, gender, genres and playlists – all in real time.

Today's release rounds out one of the most diverse programmatic offerings in market, now expanding across display, video and audio, with industry-leading viewability topping 95%. We're now one step closer to our goal of making all of our innovative ad experiences available programmatically. To learn more about Audio PMPs, email programmaticsales@spotify.com (mailto:programmaticsales@spotify.com).

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Announcing continued unlimited free listening!

Posted on 2012/03/29 by spotifysehr (https://news.spotify.com/us/author/spotifysehr/)

Well, it's now been 9 months since we launched in the US. Time sure flies when you're having fun! To celebrate, here's some great news...

We've been so overwhelmed by the US response to Spotify that we've extended the honeymoon for unlimited free listening.

More time to discover more free music

Right now, if you're a free user, you can continue to enjoy millions and millions of tracks without time limits, gimmicks or catches. It's our way of saying thanks to the US!

Like to try Premium for free?

If you'd like to experience the joy of Spotify Premium – and get Spotify on your phone and other favourite devices – just take our 30-day free trial. You've got nothing to lose but the ads!

Click here (http://www.spotify.com/freetrial) for our 30-day free trial.

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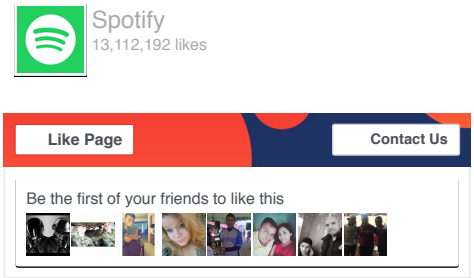

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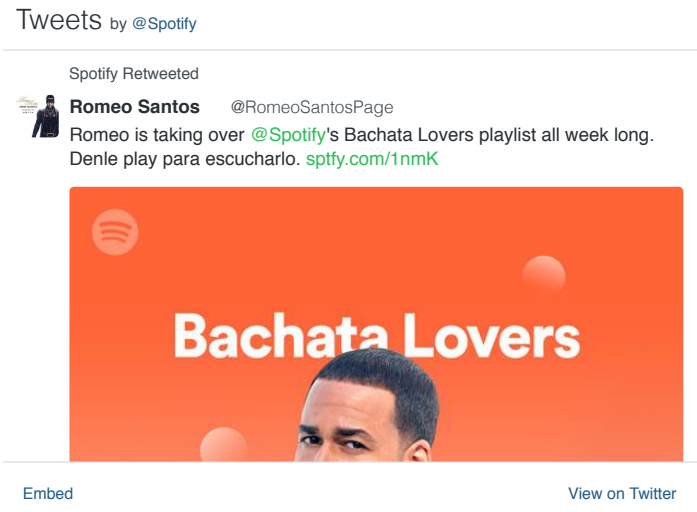

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ASCAP

ASCAP AND THE RADIO MUSIC LICENSE COMMITTEE ANNOUNCE NEW AGREEMENT
12/15/2016

New York, NY, December 15, 2016: The **Radio Music License Committee (RMLC)** and the **American Society of Composers, Authors and Publishers (ASCAP)** today announced a new five-year agreement through 2021 that sets the rates payable by over 10,000 of America's commercial terrestrial radio stations to publicly perform more than 10.5 million musical works in the ASCAP repertory. The RMLC represents the vast majority of the nation's radio stations and ASCAP represents 600,000 songwriters, composers and music publisher members whose songs and compositions comprise the largest catalog of music played on commercial AM/FM radio of any performing rights organization in the United States.

The agreement covers the five-year period 2017 to 2021. It provides for increases in the rates paid by radio stations to perform music by ASCAP members via terrestrial, over-the-air broadcasts as well as certain digital transmissions and, for the first time, expressly affirms the percentage share of radio performances represented by ASCAP -- at a level that reflects that ASCAP licenses more performances on broadcast radio than any other performing rights organization.

ASCAP CEO Elizabeth Matthews commented: "We are confident that our new agreement will provide enhanced financial benefits to ASCAP songwriters, composers and music publishers at a time of tremendous disruption in the music industry. Reaching a voluntary agreement with the terrestrial radio industry enables ASCAP to stabilize and grow revenues for our members while continuing to aggressively advocate for regulatory reform to modernize the music licensing system."

RMLC Chairman Ed Christian commented: "This agreement demonstrates how the creative and music user communities can work together in good faith to produce an outcome that is positive for both sides. The increase in ASCAP fees is consistent with ASCAP's established spin share on radio. We are pleased to close this deal ensuring that there will be no interruption in ASCAP music being performed on American radio at a time when the music licensing landscape has become increasingly complex."

About ASCAP
The American Society of Composers, Authors and Publishers (ASCAP) is a professional membership organization of songwriters, composers and music publishers of every kind of music. ASCAP's mission is to license and promote the music of its members and foreign affiliates, obtain fair compensation for the public performance of their works and to distribute the royalties that it collects based upon those performances. ASCAP members write the world's best-loved music and ASCAP has pioneered the efficient licensing of that music to hundreds of thousands of enterprises who use it to add value to their business - from bars, restaurants and retail, to radio, TV and cable, to Internet, mobile services and more. The ASCAP license offers an efficient solution for businesses to legally perform ASCAP music while respecting the right of songwriters and composers to be paid fairly. With 600,000 members representing more than 10 million copyrighted works, ASCAP is the worldwide leader in performance royalties, service and advocacy for songwriters and composers, and the only American performing rights organization (PRO) owned and governed by its writer and publisher members. Learn more and stay in touch at www.ascap.com, on Twitter @ASCAP and on Facebook.

About the RMLC
The Radio Music License Committee is a non-profit entity that has roots dating back to the 1950's. It represents the interests of the vast majority of commercial radio stations in the U.S. with regard to music licensing matters involving performance right organizations such as ASCAP, BMI and SESAC. The RMLC's Board of Directors consists of a diverse group of radio station owners and/or management who serve on a voluntary basis and without compensation.

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Radio Music License Committee
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ASCAP and Radio Group's 5-Year Pact Doesn't Address the Elephant in the Room

1/3/2017 by Ed Christman

Getty Images

ASCAP and the Radio Music License Committee (RMLC) announced in mid-December that they had reached a deal whereby the performance rights organization will issue a blanket license from 2017 through 2021, setting rates payable by over 10,000 U.S. terrestrial radio stations.

The deal provides for rate increases during the five-year term, but further details were not disclosed. Sources suggest to *Billboard*, however, that ASCAP had been getting 1.7 percent of revenue in the prior deal; and the new arrangement starts at 1.73 percent of revenue and escalates to 1.75 percent of revenue over the life of the deal. This is good news because it means that ASCAP not only got a rate increase but did so without getting involved in a costly and protracted rate trial.

But the really interesting part of the announcement is a reference stating the license "expressly affirms the percentage share of radio performance represented by ASCAP's" catalog. It further claims this is the first time ever that a blanket license deal has included that ingredient.

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Why that's interesting will become clear in a minute.

Another really interesting aspect of the deal's announcement is what it doesn't say. Nowhere in the press release is the biggest issue of the day facing both ASCAP and BMI: the DOJ's interpretation that the consent decrees imposes full works licensing on them. While BMI's rate court judge ruled against the DOJ that BMI can do fractional licensing if it so chooses (the DOJ has appealed), the DOJ's interpretation still stands for ASCAP.

What is the difference between full-works versus fractional licensing? If there is a song with four songwriters -- each a member of a different PRO, be it ASCAP, BMI, SESAC or GMR (Global Music Rights) -- full-work licensing means you only need a license from one of those PROs. In fractional licensing, a music user would need a license from all four PRO's as each one would only license their share of the song.

After the DOJ handed down its interpretation, the PROs and publishers said the full-works decision opened up a Pandora's box of issues that haven't been thought through, including how one PRO would pay a songwriter from another PRO, as required by regulation.

Since it's a direct negotiated deal, the two parties likely don't have to abide by the DOJ interpretation. ASCAP declined to comment on whether full-works or fractional licensing is used in the deal, or any other aspect of the deal; while the RMLC has not yet responded to a request for comment made on Dec. 23.

If the deal encompasses full-works licensing, how does the agreement treat songs written by songwriters that are not in ASCAP? One possible hint to that answer is back to the earlier-mentioned part of the press release noting that this deal is the first time a blanket licensing deal also included mathematically determined—but publicly undisclosed—market share for radio performance represented by ASCAP's catalog.

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Irving Azoff's Global Music Rights Files Suit Against Radio Industry Body Over Monopolistic Practices

That market share assignment may serve multiple purposes. For one, it could allow the RMLC to claim that the blanket license it received from ASCAP is a full-works license, but the market share assignment gives BMI a way to pay on a fractional license basis, the way the industry has traditionally worked. That means the RMLC could assign market share to each of the other PROs for their share of overall plays, too.

This mechanism would insure that all songwriters get paid, even if it doesn't take away the legal risk assigned by the regulation, which says that the licensor in full works licensing is responsible for paying the other songwriters.

What else does the market share assignment do?

In the past, it has traditionally been assumed that ASCAP has 45 percent market share, BMI has 45 percent market share and everyone else has 10 percent market share. This would be the first time that an actual mathematically measured market share, based on percentage of plays that a PRO's songwriters collectively tally in a certain period, is actually tied to an actual rate.

That could allow for bonuses to ASCAP or discounts for the RMLC, if the five year deal is cut up into one-year periods. If ASCAP songwriters have a hot year and the PRO gets a bigger market share, then the PRO could get more money by some agreed-upon formula. Conversely, if ASCAP writers go cold during one year, then the RMLC could receive a discount.

Moreover, the RMLC could potentially derive another huge benefit out of the assignment of market shares: it could provide another mechanism in setting rates for all the other PROs.

This benefit would not come into play in deals where the two sides successfully negotiate a deal that sets rates. But that happens if the RMLC can't reach a deal with another PRO.

If the other PRO is Global Music Rights, this mechanism would not come into play because GMR is not under any mandate to abide by arbitration or go to rate court. Let's leave GMR aside until the antitrust suits that GMR and RMLC have filed against

each other are resolved.

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Dept. of Justice Appeals BMI Consent Decree Decision

But what happens if BMI and SESAC fail to reach a negotiated rate with the RMLC. If it's BMI, then it's off to BMI rate court, per the consent decree. If SESAC, it's off to arbitration because that PRO agreed to that process as part of a settlement in the RMLC's antitrust suit at the end of 2015.

In arbitration and in rate court, a mathematically researched market share assignment to either SESAC or BMI could likely play a role in determining what rate is paid to them -- if it can get the judge or arbitrator to go along. All that would need to be done is the mathematical assignment of market share based on plays for ASCAP, BMI, SESAC and GMR.

How will those market shares be applied in a rate setting determination?

Remember, a few years back, Pandora was seeking licenses from both ASCAP and BMI and wound up in rate court for both. At the time, both PROs were assumed to each have 45 percent share, and everyone else had 10 percent. But even though ASCAP and BMI were thought to be the same size, the ASCAP rate court Judge Denise Cote ruled that Pandora should pay ASCAP 1.85 percent of revenue while the BMI rate court Judge Louis Stanton ruled that Pandora should pay 2.5 percent or revenue to BMI.

The BMI rate court judge found a way to justify BMI's higher rate, when they were both considered the same size. But could the Judge give a higher market share, if it was mathematically proven that one PRO was larger than the other, at least in terms of market share plays?

Since ASCAP was the first one in to agree to having market share assigned to it, it probably likes what the mathematically researched market share showed. If that's the case, and if the RMLC can get the mathematically proven market share concept introduced in rate court and arbitration, it could box in the rate determination for BMI and SESAC, some music publishing executives speculate, and thus keep the RMLC's overall rate down.

In fact, as this story was being published, BMI issued a press release denouncing the radio airplay market share assigned to it by the RMLC; and saying it was headed to rate court because it can't negotiate a deal, based on the RMLC proposal.

"The RMLC has proposed an interim rate well below BMI's previous deal, the effect of which would have a significant impact on the royalties BMI pays to its songwriters, composers and music publishers," according to the BMI statement. "The RMLC has justified its proposed rate based upon incomplete and incorrect information regarding BMI's radio performances. BMI disagrees fundamentally with the RMLC's proposal and, consistent with past practices, is asking the Court to maintain its most recent rate while new terms are negotiated." (Check back later today for a follow-up story on this.)

"RMLC has a rate in mind for the entire industry and this market share mechanism may help them establish that," speculates one music publishing exec. "They don't care how their payments to songwriters are divided up among the PROs, as long as they can establish a mechanism that helps them contain overall payments."

***UPDATE 1:46 PM** This article was updated to include a statement regarding BMI's legal action against the RMLC.*

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Google merges YouTube, Play Music teams as it looks to create a streamlined experience

The new unit is designed to bring some unity to the two services and "deliver the best possible product."

By Michael Simon

| Follow
Staff Writer, Greenbot | Feb 9, 2017 9:21 AM PT

9 google play music tips tinker with music queue 7
Credit: Ben Patterson

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Google's YouTube Music and Play Music apps have always been two ships in need of a single rudder, offering an overlapping set of features with separate logins and interfaces. Now, Google has taken the first step toward streamlining its music streaming experience.

According to a report by The Verge, Google has merged its YouTube Music and Google Play Music teams into a single unit, marking the first step toward a possible creation of a unified experience across a single app. While a subscription to Google Play Music or YouTube Red already includes access to the other service (and both have a decent chunk of content that can be accessed for free), Google told the Verge that improvements to the way the two services interact could be coming:

> "Music is very important to Google and we're evaluating how to bring together our music offerings to deliver the best possible product for our users, music partners and artists. Nothing will change for users today and we'll provide plenty of notice before any changes are made."

When asked about the rate of YouTube Red signups during Alphabet's fourth-quarter conference call last month, Google CEO Sundar Pichai also alluded to some changes to Google's music streaming strategy. "We have YouTube Red, YouTube Music and we do offer it across Google Play Music as well," he said. "You will see us invest more, more countries, more original content. And we'll bring together the experiences we have over the course of this year, so it's even more compelling for users."

How it may play out: Streaming is rapidly becoming one of the music industry's biggest business, but it's unclear how much of the pie Google actually owns. Spotify is still far and away the biggest music streaming service with some 40 million subscribers, but Apple Music is gaining fast, having crossed the 20 million threshold after just a year and a half. However, while Google has yet to release any subscriber numbers for either Play Music or YouTube Red, which are bundled, it has a built-in advantage by pre-installing the app on most Android phones, much like Apple does with Apple Music. And a simple, single experience across YouTube and Play Music could prove to be a serious threat to Spotify's dominance.

This story, "Google merges YouTube, Play Music teams as it looks to create a streamlined experience" was originally published by Greenbot.

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Michael Simon covers all things mobile for Greenbot and Macworld. You can usually find him with his nose buried in a screen.

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MEDIA MUSIC GOOGLE

Here's why the music labels are furious at YouTube. Again.

RIAA boss Cary Sherman says Katy Perry and the rest of the music business are getting a bad deal.

BY PETER KAFKA | APR 11, 2016, 4:00AM EDT

Jefta Images / Barcroft Media via Getty Images

You've heard this song before: The music industry is mad at YouTube.

In the old days, the music business used to complain that YouTube took their music and didn't pay them. Now the complaint has changed: Now the music guys say YouTube doesn't pay them enough.

The music labels have been grousing about YouTube for a while now, but they have recently turned up the volume.

Last month, the RIAA, the labels' American trade group, lobbed a volley at Google's video service, arguing that YouTube doesn't pay a fair price for all the music it gives

its users for free. The IFPI, the label's global trade group, should have a report out shortly which repeats the same charge. (UPDATE: Here's the IFPI report.)

The complaints come as the big three music labels — Universal Music Group, Sony and Warner Music Group — are set to renegotiate contracts with YouTube.

It would seem like the best way to get more money from YouTube would be to get a better deal this time around. But the labels say their bargaining power is reduced by the 1998 Digital Millennium Copyright Act, which gives broad protection to YouTube and other services that rely on content that users upload.

I asked RIAA head Cary Sherman to explain his industry's beef with both the DMCA and with YouTube. Here's an edited excerpt of our conversation. There's also a response of sorts from YouTube at the end.

Peter Kafka: I don't understand why the industry is complaining about YouTube and its use of the DMCA again. Viacom spent years on this in court, and got soundly defeated. Hasn't everyone learned to accept this by now?

Cary Sherman: We accept the inevitability of death. It doesn't mean we have to like it. There is now under way a study of whether the DMCA is actually effective and fulfilling its intended purpose, being conducted by the Copyright Office, and it has given us an opportunity for the community to collect our thoughts about just how dysfunctional the DMCA actually is. And to actually tell the government about it.

A lot of people would argue that the DMCA allowed Silicon Valley to build really big, really amazing and wonderful things. And that on the whole it's a net plus for the U.S. and the world.

That assumes that only with the DMCA, as it was written in 1998, would that have been possible. We feel like the 1998 Internet is not the Internet of 2016. It's a dramatically different Internet, and it's time to take a fresh look at whether the balance that was struck in 1998 is effective in 2016.

And the answer is clearly "no."

Just look at Silicon Valley. They've done an extraordinary job, and their market cap is worth gazillions of dollars. Look at the creative industries — not just the music industry, but all of them. All of them have suffered. We're half the size we were. And we're flat, and we haven't been growing. And that's true of all of the creative industries.

For the music industry, 70 percent of revenues now come from digital. We've licensed every different kind of model, but the revenues just aren't coming in.

One of the problems is piracy, which continues to be a problem. The other is under-monetization, and that's because of things like the DMCA, where some companies get the benefit of being able to distribute our content, without taking fair market value kind of licenses.

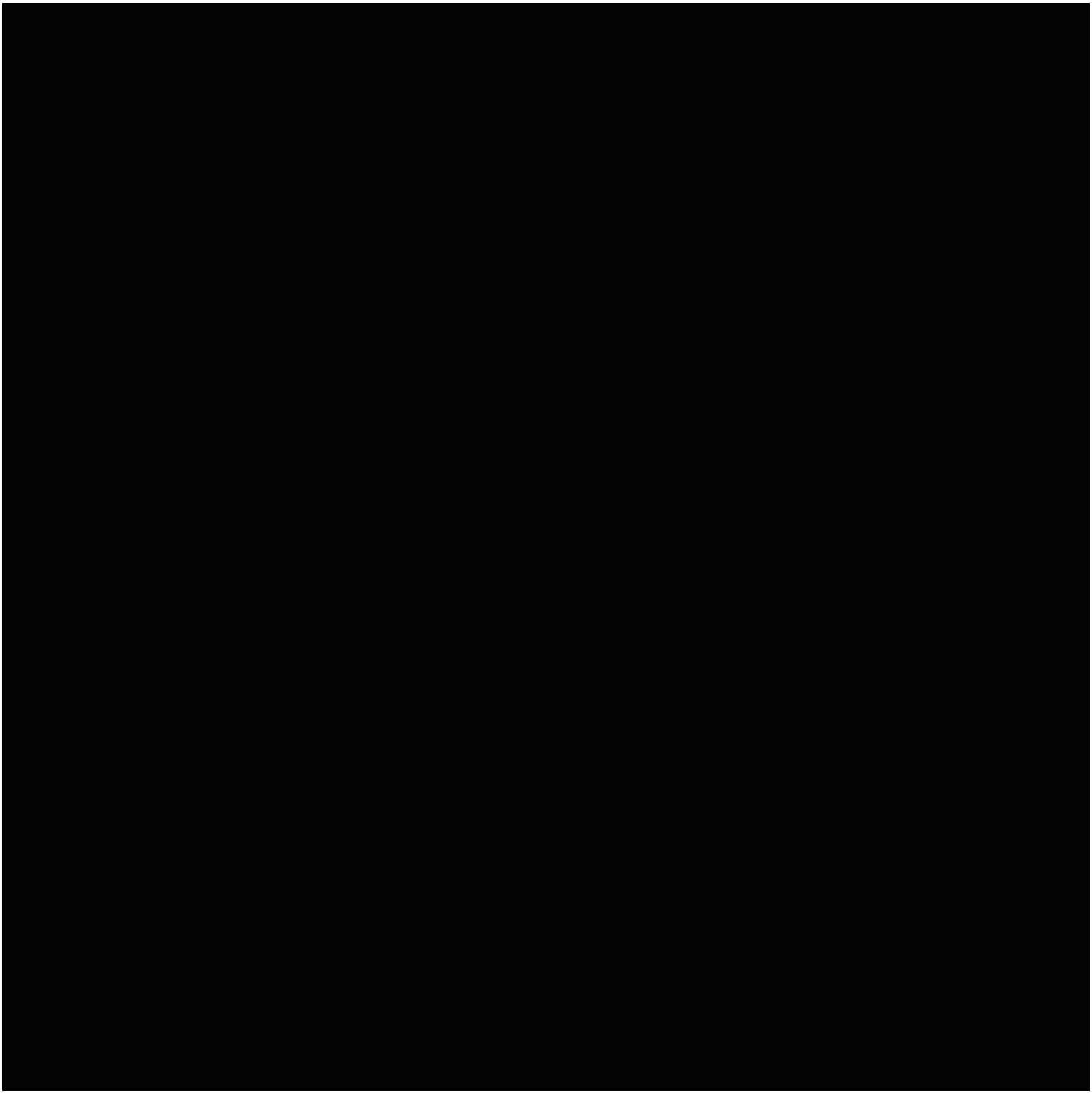
When you compare what we get when we get to freely negotiate, with a company like Spotify, vs. what we get when we are under the burden of an expansively interpreted "safe harbor," when you're negotiating with somebody like YouTube, you can see that you're not getting the value across the platforms that you should.

What's the single biggest change in the DMCA that you'd like to see?

Notice and stay down, instead of notice and take down. There are 100 copies of a song. We can't just say to YouTube "we didn't license this Pharrell song, take it down." They will not just take down all 100 copies. They'll take down only the one file that we've identified. We have to find every one of them, and notice them, and then they're taken down, and then immediately put right back up. You can never get all the songs off the system.

If we had a system where once a song was taken down, you had a filtering system that prevented it from going back up, we wouldn't have to be sending hundreds of millions of notices on the same content over and over again.

Maybe then we'd begin to make a difference with all the pirated copies on all of the websites. But as long as there isn't a stay down, we can't deal with that. It's just not possible.



RIAA CEO Cary Sherman | Jonathan Thorpe/JTHORPEPHOTO

The labels do have deals with YouTube. If they don't like those deals, why not negotiate better ones or walk away? All of them expire this year.

The way the negotiation goes is something like this: "Look. This is all we can afford to pay you," YouTube says. "We hope that you'll find that reasonable. But that's the best we can do. And if you don't want to give us a license, okay. You know that your music is still going to be up on the service anyway. So send us notices, and we'll take

'em down as fast we can, and we know they'll keep coming back up. We'll do what we can. It's your decision as to whether you want to take our deal, or whether you just want to keep sending us takedown notices."

That's not a real negotiation. That's like saying, "That's a real nice song you got there. Be a shame if anything happened to it."

So you're saying the labels aren't really free to walk away from YouTube — that their music stays up there whether they want it to or not.

We have experience with this. Because Warner Music, a few years ago, decided that they didn't want their music on YouTube, because it was hurting all the rest of their deals. So they didn't do a license with YouTube. A year later, they threw in the towel. What was that year like? They spent a fortune trying to take down their music. They could never even keep up with all the counter-notifications that were constantly being filed, so the music was going right back up anyway. And they were earning no revenues at all. So finally they threw in the towel, and accepted the licenses.

That's what it's like to negotiate, when somebody can claim the benefit of an expansive safe harbor. They're taking the benefit of a safe harbor that was intended for people who were passive, neutral intermediaries. People like Verizon, where the content is just passing through their system. They're not making money off of distributing content. YouTube does.

Katy Perry, among other people, is lobbying on behalf of the music business. It seems like getting rich musicians to press your case won't help you change the laws. Do you think there's a practical chance that will happen?

Two different questions. First: Katy Perry. The petition she filed makes clear that she's worried about the next generation of songwriters and artists that are coming up. She isn't complaining that she isn't making enough money.

She made that money in the era that you're complaining about. She made that money as a YouTube star.

Yeah. Well, the reality is that the industry is more stratified than ever. There are some people who have done really well. But it's harder and harder for more

musicians to make a living. Because the revenue that they're getting from streaming isn't keeping pace with the revenue that they used to be able to earn. We're trying to get to a point where the streaming ecosystem works for everybody.

In terms of whether Congress will do something about it? We don't know. It's hard to get anything through Congress. But Congress has been taking a look at the copyright law for 3 years now. We want them to understand that one of the most important things affecting the value and ability of copyright to survive, is to take a fresh look at the DMCA.

https://www.youtube.com/watch?v=CevxZvSJLk8

It's complicated, right? The labels used to be investors in YouTube, right before it sold to Google. Two of the labels are partners with YouTube in Vevo. It doesn't look like they're in real opposition. It looks like they're partners who don't like terms of a deal they did.

I think the record companies would like to be partners with YouTube. But it's a little hard to call it a partnership when it's so one-sided in terms of the negotiating leverage.

Some of the loudest voices against YouTube used to be the video companies – movie studios, TV companies. Viacom was the one who sued them. They're not vocal in the way that the music labels are now. Why aren't they joining you?

Maybe it's because YouTube is not the place where you go for your pirated movies. But it certainly is the place you go for your pirated... I shouldn't call it pirated. It's "user-uploaded." They're putting up an entire album, and a picture of the artist, and therefore YouTube has become the largest on-demand music service in the world.

————————-

I offered YouTube executives the chance to rebut Sherman's argument via a separate Q&A, but they declined. The company did point me to the response they offered when the RIAA criticized them last month:

"To date, Google has paid out over $3 billion to the music industry – and that number is growing year on year. This revenue is generated despite the fact that YouTube goes way beyond music to include popular categories such as news, gaming, how-to, sports and entertainment. And with the recent launch of the YouTube Music app, we recently launched a new, dedicated music experience with the goal to deliver even more revenue to both artists and the music industry more broadly. Past comparisons to other audio-only, subscription music services are apples to oranges."

YouTube and Google have also responded in more depth, via the comments they've filed to US Copyright Office as part of the study Sherman mentioned. Here's a passage that deals with many of the RIAA's complaints:

Some in the recording industry have suggested that the safe harbors somehow diminish the value of sound recordings, pointing to YouTube and blaming the DMCA for creating a so-called "value grab." This claim is not supported by the facts. As an initial matter, it is important to understand that YouTube has had license agreements in place with both major and independent record labels for many years; it is simply incorrect to say that YouTube relies on the DMCA instead of licensing works. Those pressing the "value grab" argument also assert that the royalty rates in these licenses are too low, allegedly because the DMCA's notice-and-takedown process makes it too difficult for record labels to withdraw their works from YouTube in the face of users re-uploading those works. This claim, however, ignores Content ID, which has been in existence since 2008 and which record labels (and many other copyright owners) use every day to monetize their works on YouTube. Thanks to Content ID, record labels do not have to rely solely on the DMCA's notice-and-takedown process on YouTube—they can remove any or all user-uploads of their works from the platform on an automated and ongoing basis. Indeed, since January 2014, over 98% of all YouTube copyright removal claims have come through Content ID. Although business partners can be expected to disagree from time to time about the price of a license, any claim that the DMCA safe harbors are responsible for a "value gap" for music on YouTube is simply false.

Code/Media 2016: *A model for making money in music videos*

How to make money with music videos | Vevo CEO Erik Huggers interview

CO EX. R-197

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-198

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-199

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-200

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

UNLIMITED LISTENING ON SPOTIFY WILL VANISH FOR U.S. EARLY ADOPTERS NEXT WEEK

By **Mike Flacy** — January 6, 2012 8:40 PM

According to the official Spotify Terms of Service, unlimited free music streaming will disappear at the end of next week for early adopters that started using Spotify in the United States on the launch date. Specifically mentioned in the ToS, it states " *The Spotify Service can be accessed as an ad-supported free-to-the-user service having no monthly cap on listening hours or a cap on number of plays of a unique track during the first 6 months following creation of your Spotify account, but thereafter a cap of 10 listening hours per month and a cap of 5 plays per unique track*." Therefore, users that started listening to Spotify on July 14, 2011 will be limited to 10 hours each month and won't be able to listen to the same song more than five times. That divides out to about 20 minutes of music each day during a typical 30-day month.

Spotify users that wish to continue listening on an unlimited basis will have to upgrade from the ad-supported version to a premium subscription. Broken into two different pricing plans, Spotify Unlimited costs $4.99 a month and allows unlimited music listening without advertisements. Spotify Premium is priced at $9.99 a month and adds the ability to download tracks for offline listening as well as provides mobile device support, music encoded at bitrates up to 320kbps and exclusive content such as early album releases.

After the unlimited music, six-month trial expires for American users, Spotify may see the user base shrink as music lovers jump over to other services like Pandora and Rdio. Pandora recently removed the 40-hour listening cap on the free, ad supported version of the service, but still offers the Pandora One service ($36 a year) for any users seeking an ad-free experience as well as higher bitrate encoding. Check out our Spotify Radio versus Pandora showdown for

more information. Rdio offers free music streaming, but the amount of time is dictated by a gauge at the top of the screen. However, the company also offers premium subscription plans. Rdio is also the only company that offers a family plan with a discounted rate on two or three unlimited streams at a time.

According to a recent article in Bloomberg Businessweek, some major artists haven't fully jumped on the streaming bandwagon and are still skeptical of music services like Spotify. Musicians and groups such as Adele, Tom Waits, Coldplay and The Black Keys don't believe they will make as much money from streaming as they would with sales on iTunes and other sources. Some of these bands plan to copy Hollywood's distribution plan and stagger an album release between physical, digital and streaming services. Similar to a company like Netflix, Spotify would get access to new music after an album has already spent an exclusive period of time in other retail channels.

PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Library of Congress
Washington, D.C.

In re	)	
DETERMINATION OF ROYALTY RATES AND TERMS OF MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords III)	)	Docket No. 16-CRB-003-PR (2018-2022)

SUPPLEMENTAL WRITTEN REBUTTAL TESTIMONY OF DR. JEFFREY A. EISENACH, PH.D.

Expert Witness for Copyright Owners

March 1, 2017

CONTENTS

I. INTRODUCTION AND SUMMARY OF FINDINGS

1. My name is Jeffrey A. Eisenach. I am a Managing Director and Co-Chair of the Communications, Media and Internet Practice at NERA Economic Consulting ("NERA"). I submitted a Direct Report in this matter ("Direct Report") on behalf of the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together referred to as "Copyright Owners") on October 31, 2016. I submitted a Rebuttal Report in this matter ("Rebuttal Report") on behalf of Copyright Owners on February 15, 2017. My qualifications were listed in, and my CV was attached to, my Direct Report.

2. I submit this supplemental report to address certain relevant materials that were produced by Google and Spotify after the deadline for submission of my Rebuttal Report. I understand that these documents were produced pursuant to orders of the Copyright Royalty Judges on motions to compel made by the Copyright Owners, I limit this Supplemental Report solely to topics concerning the newly produced documents.

II. THE YOUTUBE SOUND RECORDING LICENSE AGREEMENTS (SECTION III(E) OF REBUTTAL REPORT)

3. In my Rebuttal Report, I responded to the arguments of Google's expert Dr. Gregory Leonard, who opined that the YouTube licenses were not good benchmarks for this proceeding.[1] As I explained, I believe the YouTube license agreements are suitable benchmarks for this proceeding, and that they support the Copyright Owners' proposed rates. I was able to discuss in my Rebuttal Report some of the reasons why this is the case, including that the rights at issue in the licensing of reproductions of musical works accompanying audiovisual works are

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[1] See Rebuttal Report at ¶¶56-66.

highly comparable to those at issue in this proceeding.[2] Additionally, as stated by other experts in this proceeding and by industry participants, YouTube is viewed as a direct competitor to interactive streaming services.[3]

4. At the time of the filing of my Rebuttal Report, Google still had not produced the YouTube sound recording license agreements. I was thus unable to present a conclusive assessment of the YouTube benchmark, but was instead required to rely on estimates from my Direct Report of the relevant terms of those agreements based on public sources.[4]

5. Now that I have received the actual agreements between YouTube and the sound recording copyright owners, I am able to directly verify the terms of these agreements. My review indicates that the terms of those licenses confirm their value as suitable benchmarks that are both consistent with other benchmarks and supportive of the Copyright Owners' rate proposal. My review also shows that Dr. Leonard's arguments for dismissing these benchmarks are unfounded.

6. Specifically, I examined YouTube licenses with record labels [redacted]. I also examined the [redacted]

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[2] See Rebuttal Report at ¶¶57-58.
[3] See Rebuttal Report at ¶¶59-64.
[4] Direct Report at ¶101. Those reports stated that YouTube generally pays 55 percent of advertising revenue to content providers. Based on this information, I inferred that YouTube pays 40 percent to the record labels and 15 percent to publishers. The 40/15 split between the labels and publishers results in a ratio of 2.67:1 for sound recording rights to musical works rights.

[redacted].[5] These agreements cover the period 2012 to 2019, and so are generally contemporaneous with the publisher agreements which show publishers receiving [redacted]. The terms of the label agreements as they apply to [redacted] – are summarized in Table 1.[6] Of the [redacted] while the [redacted]

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[5] In total, I reviewed [redacted] YouTube licenses with the [redacted]. The licenses summarized here are the most recent. A list produced by Google in this proceeding shows labels that signed the [redacted] (GOOG-PHONOIII-00005819)) (CO EX. R-208). It appears to show [redacted], and while the file as produced by Google appears to have corrupted entries, I count [redacted] with active agreements.

[6] [redacted] is defined as [redacted] which corresponds to [redacted] in the publisher agreements (See [redacted] (GOOG-PHONOIII-00005800 - GOOG-PHONOIII-00005817 at 5812) (CO EX. R-209) (hereafter, [redacted]); Direct Report at n. 93). Rates from the [redacted] are for [redacted], which are defined as [redacted] (See [redacted] (GOOG-PHONOIII-00004159 - GOOG-PHONOIII-00004194 at 4160)) (CO EX. R-210). Rates from the [redacted] are for [redacted], which are defined as [redacted] (See [redacted] (GOOG-PHONOIII-00004510 - GOOG-PHONOIII-00004552 at 4513) (CO EX. R-211) (hereafter, [redacted])). Rates from the [redacted] are for [redacted] which is defined as [redacted] (See [redacted] (GOOG-PHONOIII-00004658 - GOOG-PHONOIII-00004739 at 4696) (CO EX. R-212) (hereafter, [redacted])).

The rates shown in Table 1 are for YouTube's standard service, which is an ad-supported service that does not charge monetary fees to users.[8]

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[7] See (GOOG-PHONOIII-00005800 - GOOG-PHONOIII-00005817 at 5813-4) (CO EX. R-209) (GOOG-PHONOIII-00005819) (CO EX. R-208); (GOOG-PHONOIII-00004744 - GOOG-PHONOIII-00004763 at 4758-9) (CO EX. R-213) (hereafter,); (GOOG-PHONOIII-00004298 - GOOG-PHONOIII-00004316 at 4312-3) (CO EX. R-214) (hereafter,); (GOOG-PHONOIII-00004799 - GOOG-PHONOIII-00004850 at 4820-2) (CO EX. R-215) (hereafter,); (GOOG-PHONOIII-00004362 - GOOG-PHONOIII-00004380 at 4376-7) (CO EX. R-216) (hereafter, the); (GOOG-PHONOIII-00004020 - GOOG-PHONOIII-00004050 at 4029) (CO EX. R-217) (hereafter,); (GOOG-PHONOIII-00005327) (CO EX. R-218); (GOOG-PHONOIII-00004133 - GOOG-PHONOIII-00004151 at 4147-8) (CO EX. R-219) (hereafter,); (GOOG-PHONOIII-00004510 - GOOG-PHONOIII-00004552 at 4519) (CO EX. R-211); (GOOG-PHONOIII-00005330 - GOOG-PHONOIII-00005331) (CO EX. R-220); (GOOG-PHONOIII-00004658 - GOOG-PHONOIII-00004739 at 4680) (CO EX. R-212); (GOOG-PHONOIII-00005324 - GOOG-PHONOIII-00005326) (CO EX. R-221). Note:

[8] I note that

7. Thus, [redacted] I note that, as Google's expert, Dr. Leonard should have had access to these agreements when he crafted his Direct Report. His failure to consider fully these YouTube license benchmarks renders his benchmark analysis deficient.

III. [redacted] (SECTION IV(C) OF REBUTTAL REPORT)

8. My Rebuttal Report also responds to arguments in the direct report of Leslie Marx on behalf of Spotify that the Copyright Owners' proposed rates may [redacted] In this section, I noted unconfirmed media reports indicating that the record labels were investors in Spotify (something that I had also inferred in my Direct Report, also based

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YouTube did not launch a premium subscription service that charged fees to users until October 2015, when it launched YouTube Red, well after the royalty terms of the YouTube licenses were negotiated. (See "Meet YouTube Red, the ultimate YouTube experience," YouTube (Oct. 21, 2015) available at https://youtube.googleblog.com/2015/10/red.html (last accessed Feb. 24, 2017)) (CO EX. R-222). Moreover, YouTube is not a standalone premium service, but is offered as a bundle with Google Play Music, and [redacted] (See "Google Play Music," Google, available at https://play.google.com/music/listen (last accessed Feb. 26, 2017) (CO EX. R-223); "Join YouTube Red," YouTube, available at https://support.google.com/youtube/answer/6305537?hl=en-GB (last accessed Feb. 26, 2017)) (CO EX. R-224) ([redacted]

[9] Direct Report at Table 9.

[10] Rebuttal Report, ¶¶ 100-105.

on public sources), and explained that these investments could explain why Spotify alone has an unlimited ad-supported program.[11]

9. However, at the time I submitted by Rebuttal Report, [redacted], and so my analysis did not delve further into this topic.

[redacted][12]

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[11] Rebuttal Report at ¶ 103.

[12] *See* [redacted] (SPOTCRB0013789 – SPOTCRB0013804 at SPOTCRB0013790) (CO EX. R-225); see also [redacted] (SPOTCRB0013774 – SPOTCRB0013788 at SPOTCRB0013775) (CO EX. R-226); [redacted] (SPOTCRB0013852 – SPOTCRB0013879 at SPOTCRB0013853) (CO EX. R-227)

11. [redacted] Industry analyses reported Spotify's valuation at $200 to $300 million USD in 2010.[13] [redacted][16] As I noted in my Rebuttal Report, industry reporting indicates Spotify received financing at a valuation of $8.5 billion in 2015.[17]

12. Table 2 below summarizes [redacted]

[redacted] (SPOTCRB0013880 – SPOTCRB0013894 at SPOTCRB001388) (CO EX. R-228).

[13] Rubert Neate, "Daniel Ek profile: 'Spotify will be worth tens of billions,'" The Telegraph (Feb. 17, 2010), available at http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/media/7259509/Daniel-Ek-profile-Spotify-will-be-worth-tens-of-billions.html; (CO EX. R-229); Marcus Jerrang, "Spotify valued at $300 million," Macword (Aug. 13, 2010), available at http://www.macworld.co.uk/news/apple/spotify-valued-300-million-3235298/. (CO EX. R-230)

[14] See [redacted] (SPOTCRB0013805 - SPOTCRB0013820 at SPOTCRB0013806) (CO EX. R-231). Euros were converted to dollars using the average annual exchange rate of dollars to Euros in 2011 of 0.748 (€4,952,618 ÷ 0.748 = $6,621,147). See "Yearly Average Currency Exchange Rates Translating Foreign Currency into U.S. Dollars," U.S. Internal Revenue Services, available at https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates (last accessed Feb. 27, 2017) (CO EX. R-232).

[15] See SPOTCRB0013805 - SPOTCRB0013820 at SPOTCRB0013816 (CO EX. R-231).

[16] See [redacted] (SPOTCRB0013902) (CO EX. R-233).

[17] See Rebuttal Report at ¶36.

TABLE 2:

Sources: SPOTCRB0013805 - SPOTCRB0013820 at SPOTCRB0013806 and SPOTCRB0013816 (CO EX. R-231); SPOTCRB0013902 (CO EX. R-233); Rebuttal Report at ¶36; "Yearly Average Currency Exchange Rates Translating Foreign Currency into U.S. Dollars," U.S. Internal Revenue Services (available at https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates). (CO EX. R-232) Note: [1] . [2] Euros were converted to dollars using the average annual exchange rate of dollars to Euros in 2011 of 0.748 (€4,952,618 ÷ 0.748 = $6,621,147). [3] .

13. As shown in Table 3,

[18] Andrew Ross Sorkin and Evelyn M. Rusli, "Spotify Raises Investments at $1 Billion Valuation," The New York Times, available at https://dealbook.nytimes.com/2011/02/21/spotify-raises-new-investments-at-1-billion-valuation/) (CO EX. R-234).

TABLE 3:

Sources: HFA0000001 (CO EX. R-235).

14. . . .

15. As I noted in my Rebuttal Report, Spotify has the only unlimited and full catalog ad-supported streaming service in the U.S., which appears to be because Spotify is the only standalone service that

[redacted].[19] In my opinion, it is reasonable to conclude that [redacted] Further, it is also reasonable to attribute Spotify's competitive success and high market share in the interactive market to [redacted]. Accordingly, Dr. Marx's [redacted] are unfounded. To the contrary, [redacted].

[19] Rebuttal Report at ¶¶101-103.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: March 1, 2017

Jeffrey Eisenach

APPENDIX A

Materials Reviewed by Jeffrey A. Eisenach, Ph.D.

Restricted Documents

[redacted] (GOOG-PHONOIII-00005800 - GOOG-PHONOIII-00005817).

[redacted] (GOOG-PHONOIII-00004744 - GOOG-PHONOIII-00004763).

[redacted] (GOOG-PHONOIII-00004298 - GOOG-PHONOIII-00004316).

[redacted] (GOOG-PHONOIII-00004799 - GOOG-PHONOIII-00004850).

[redacted] (GOOG-PHONOIII-00004362 - GOOG-PHONOIII-00004380).

[redacted] (GOOG-PHONOIII-00004159 - GOOG-PHONOIII-00004194).

[redacted] (GOOG-PHONOIII-00004020 - GOOG-PHONOIII-00004050).

[redacted] (GOOG-PHONOIII-00005327).

[redacted] (GOOG-PHONOIII-00004133 - GOOG-PHONOIII-00004151).

[redacted] (GOOG-PHONOIII-00004510 - GOOG-PHONOIII-00004552).

[redacted] (GOOG-PHONOIII-00005330 - GOOG-PHONOIII-00005331).

[redacted] (GOOG-PHONOIII-00004658 - GOOG-PHONOIII-00004739).

[redacted] (GOOG-PHONOIII-00005324 - GOOG-PHONOIII-00005326).

SPOTCRB0013789 – SPOTCRB0013804.

SPOTCRB0013774 – SPOTCRB0013788.

SPOTCRB0013852 – SPOTCRB0013879.

SPOTCRB0013880 – SPOTCRB0013894.

SPOTCRB0013805 - SPOTCRB0013820.

SPOTCRB0013902.

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Bates Number	Filename
GOOG-PHONOIII-00005819	[redacted]
HFA00000001	[redacted]

News and Journal Articles

Marcus Jerräng, "Spotify Valued at $300 Million," Macworld (Aug. 13, 2010), available at http://www.macworld.co.uk/news/apple/spotify-valued-300-million-3235298/ (last accessed Feb. 28, 2017).

Rupert Neate, "Daniel Ek Profile: 'Spotify Will Be Worth Tens of Billion,'" The Telegraph (Feb. 17, 2010), available at http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/media/7259509/Daniel-Ek-profile-Spotify-will-be-worth-tens-of-billions.html (last accessed Feb. 28, 2017).

Andrew Sorkin and Evelyn Rusli, "Spotify Raises Investments at $1 Billion," The New York Times (Feb. 21, 2011), available at https://dealbook.nytimes.com/2011/02/21/spotify-raises-new-investments-at-1-billion-valuation/ (last accessed Feb. 27, 2017).

Press Releases

"Meet YouTube Red, the ultimate YouTube experience," YouTube (Oct. 21, 2015) available at https://youtube.googleblog.com/2015/10/red.html (last accessed February 24, 2017).

Websites

"Google Play Music," Google, available at https://play.google.com/music/listen (last accessed Feb. 26, 2017).

"Join YouTube Red," YouTube, available at https://support.google.com/youtube/answer/6305537?hl=en-GB (last accessed Feb. 26, 2017).

"Yearly Average Currency Exchange Rates Translating Foreign Currency into U.S. Dollars," U.S. Internal Revenue Services, available at https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates (last accessed Feb. 27, 2017).

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YouTube Official Blog

Broadcast Yourself

Meet YouTube Red, the ultimate YouTube experience

Wednesday, October 21, 2015

For years, YouTube's fans have been telling us they want more—more choice when watching their favorite content, more ways to support their favorite creators and, above all, the option to watch their favorite videos uninterrupted.

On October 28, we're giving fans exactly what they want. Introducing YouTube Red -- a new membership designed to provide you with the ultimate YouTube experience.

YouTube Red lets you enjoy videos across all of YouTube without ads, while also letting you save videos to watch offline on your phone or tablet and play videos in the background, all for $9.99 a month. Your membership extends across devices and anywhere you sign into YouTube, including our recently launched Gaming app and a brand new YouTube Music app we're announcing today that will be available soon.

YouTube Music is designed to make discovering, watching and listening to music easier than ever. Any song or artist you choose on YouTube Music will start you on a personal journey through one of the richest music catalogs; just sign in, tap a track you love, and see where your music takes you. And as a special bonus - YouTube Red works with Google Play Music, so subscribe to one and automatically get access to the other.

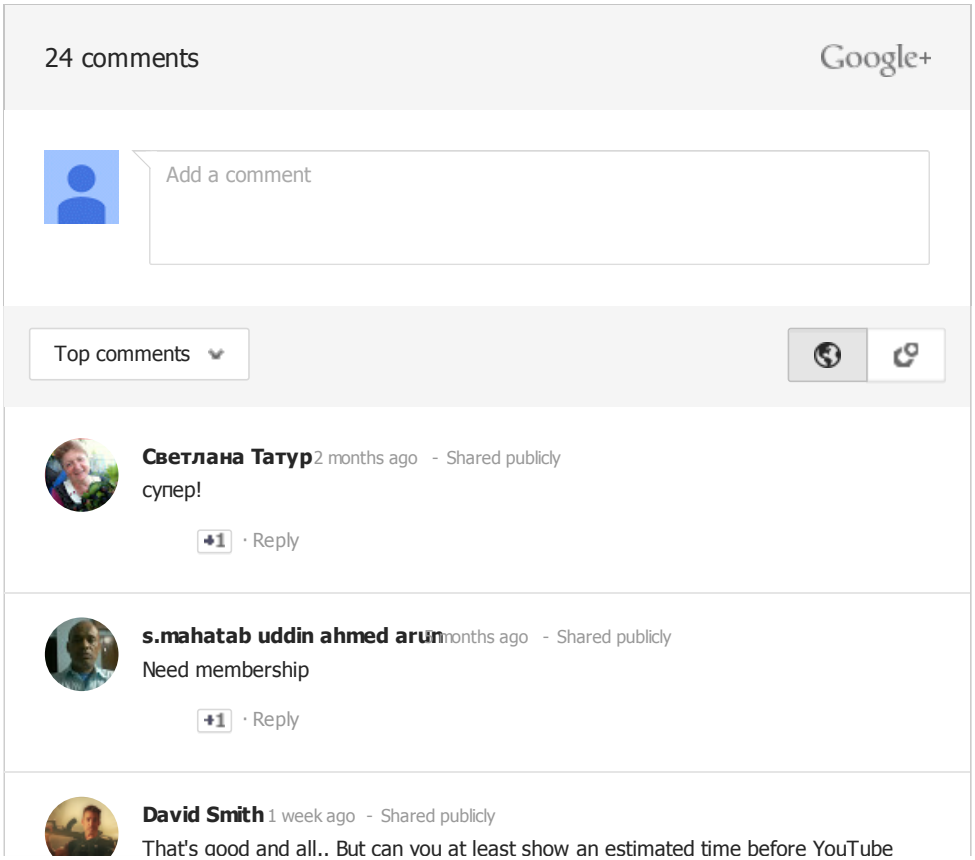
And starting early next year, YouTube Red will get even better with member-only access to new, original shows and movies from some of YouTube's biggest creators. You can read all about Originals coming to YouTube Red here.

We're working to bring YouTube Red and our YouTube Music, Gaming and Kids apps to more countries soon. And don't worry! The free, ad-supported version of YouTube we all know and love isn't going anywhere. You'll still be able to enjoy YouTube, along with the YouTube Kids, Gaming and Music apps free of charge. But with YouTube Red, you'll

be able to support the people who make your favorite videos while watching what you want, when you want, on any device you want, uninterrupted.

Viewers in the U.S. can try YouTube Red for free with a one month trial on October 28 and YouTube Music will be coming soon.

Matt Leske, Senior Product Manager, recently watched "The Juice Challenge."



Red is available in Sweden?

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HaroldMillerFor SanFranciscoMayor 1 months ago - Shared publicly
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David Beppu 2 weeks ago - Shared publicly
Red_trial_UnlimExt@google.com

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Mark Erickson 1 month ago - Shared publicly
Google claims this will let "you save videos to watch offline on your phone or tablet" No way. This feature does NOT work on my iPad using IOS 10. Looking for a refund

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Sondra Donahoo 1 month ago - Shared publicly
Need to get my YouTube red on my new phone my last phone died on me

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Mark U 1 month ago - Shared publicly
thanks for wrecking the vocaloid community on youtube with your shitty new yt red copyright system

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When are you planning on releasing red in europe?.. or at least sweden ;)

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Labels: YouTube Red

Google Play Music

Your mood. Your activities. Your tastes. Music that gets you.

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Bring your music along

Add up to 50,000 songs from your computer and stream them anywhere for free.

What you'll get

Access 35 million songs on-demand and ad-free

Listen across all of your devices on Android, iOS, and the web

Download anything and listen even when you're not connected

Features	Free	Unlimited
Listen on Android, iOS, and the web	●	●
Upload up to 50,000 of your own songs	●	●
Discover and subscribe to podcasts	●	●
Radio for your mood, activities and situations	●	●
Ad-free, uninterrupted listening	○	●
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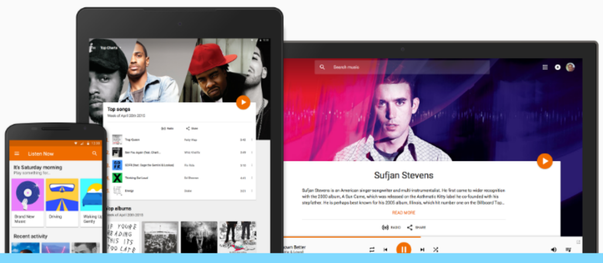
Download your music and play it offline	○	●
YouTube Red included. Learn more.	○	●

SIGN IN



Taking requests

Search for songs, artists, genres, and more to instantly start radio stations.

Join YouTube Red

YouTube Red is a paid membership, available in certain countries, that gives you an amplified video and music experience across YouTube, YouTube Music, YouTube Gaming and YouTube Kids. Learn more about the benefits of a YouTube Red membership below.

- Ad-free videos
- Save offline
- Background play
- YouTube Red Originals
- Free Google Play Music subscription

A few notes: YouTube Red benefits are not compatible with rented/purchased movies and TV shows, or paid channel subscriptions. Not all benefits may be available on third-party sites that embed YouTube content. Finally, your YouTube Red membership also helps support YouTube creators.

Start your YouTube Red membership

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Daniel Ek profile: 'Spotify will be worth tens of billions'

Daniel Ek started his first business when he was just 14. He turns 27 this weekend and believes his current company, the music streaming service Spotify, could soon be worth "tens of billions".

Email

Spotify founders Martin Lorentzon and Daniel Ek

By Rupert Neate, City Reporter (Technology), in Barcelona

9:34PM GMT 17 Feb 2010

Comment

"The music industry is currently worth $17bn (£10.8bn); it's going to be $40bn or $50bn soon. There will only be four or five players left in a few years," he says. "If that's the case, we will end up with a company worth tens of billions."

Ek, who refuses to disclose how much of the company's equity he still

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holds, says he is "never going to be interested in selling" and wants to create a European powerhouse the size of software giant SAP.

"I never look at prices," he says of the company's recent $200m valuation when it raised $50m from investors, including Hong Kong billionaire and Facebook investor Li Ka-shing. "I'm just interested in building a company that doesn't necessarily change lives but adapts people's behaviour."

Spotify – which has 7m users in the UK, Spain, France, Sweden, Norway and Finland – is heralded as the potential saviour of the music industry, which is struggling against pirate downloads. The service allows users to listen to more than 8m songs for free, or charges £9.99 a month for an advert-free version.

Ek concedes that Spotify does not generate record labels as much cash as paid-for downloads, but says without it the labels would be losing even more to pirates.

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"For every play, are they getting as much as if someone paid to download? No, but on the other hand there are many more transactions happening on Spotify.

"We are now one of [the record labels'] biggest partners in terms of digital music. We are a substantial revenue source for the whole of the music industry."

The idea for Spotify struck Ek in 2002 when Napster, the controversial file-sharing website, stopped working and Kazaa, another download site, was taking over. "I realised that you can never legislate away from piracy," he says. "Laws can definitely help, but it doesn't take away the problem. The only way to solve the problem was to create a service that was better than piracy and at the same time compensates the music industry – that gave us Spotify."

Ek says Spotify and the major record labels, which hold undisclosed equity stakes in the business, are working together to get more people to pay for music. Last month Spotify said 250,000 subscribers, about 5pc of its total users, had signed up to its premium service.

"I'm absolutely convinced we will have millions of paying subscribers within the next couple of years," he says. "We don't know how we're going to get them but we are going to do it, and we're going to do it without forcing people to upgrade."

He says the company is "growing aggressively" at the expense of turning a profit and will soon complete its much-delayed expansion into the US. It is also actively considering entering other territories.

"America is going very well," he says, although he concedes that preparations have taken longer than expected because it has been difficult to educate potential US partners about the benefits of a "radical new business model".

He says Spotify US will be an "evolved" version of the service currently available in the UK and is likely to including popular elements of the social networking sites Twitter and Facebook, which drive the majority of users to Spotify.

wave through Sky Europe takeover

Netflix to produce Crouching Tiger, Hidden Dragon sequel

Spotify is also planning to expand the service beyond the PC and the smartphone to
living room entertainment devices, including the Xbox and the PlayStation.

Ek says Spotify might not even restrict itself to music but could expand the "freemium" model to books and video content. "Spotify is a platform, it could be expanded to other types of content. We're really only a one-year-old company, this is just the early days. I'm turning 27 this weekend, we've got plenty of time to look into other things."

Daniel Ek: CEO and co-founder, Spotify

Career history founded Advertigo, the online advertising company acquired by TradeDoubler; senior role at Nordic auction company Tradera (acquired by eBay). Also CTO at Stardoll, the fashion & entertainment community for tweens.

Favourite book *The Long Tail* by Chris Anderson. He was so inspired by it that he gave copies to Spotify staff.

Favourite track Daft Punk's *Harder, Better, Faster, Stronger.*

Email

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Spotify valued at $300 million

After an investment from Napster founder Sean Parker, Swedish online music service Spotify is valued at $300 million.

by Marcus Jerräng Computer Sweden , IDG News Service | 13 Aug 10

On 17 February, 2010, Swedish online music service Spotify received a €11.6 million investment from Sean Parker, co-founder of Napster and former CEO of Facebook, according to documents retrieved by Computer Sweden from the Trade Register of Luxembourg, where Spotify's parent company is registered. The investment has given Parker a 5 percent stake in the company and a place on its board of directors.

This latest investment puts the valuation of Spotify as a whole at €230 million ($300 million), up from a previous valuation of €190 million just a year ago.

Parker is the latest in a string of investors flocking to inject money into the Sweden-based company. Spotify raised more than €50 million in share premiums last year, according to the company's recently filed annual report for 2009, also retrieved from the Trade Register of Luxembourg.

The primary investors have been Nordic venture capital firms Northzone Ventures and Creandum, Germany-based VC firms Wellington Partners and Hommels Holding, and Chinese businessman Li Ka-shing, owner of Hutchison Wampoa and part of mobile operator 3. Last fall it was also revealed that Spotify had sold an 18 percent share in the company to record labels Sony BMG Music, Universal Music, Warner Music, EMI and Merlin for an insignificant amount of money.

Swedish founders Martin Lorentzon and Daniel Ek still control the majority of the shares in the company.

According to the annual report, the parent company's total assets as of Dec. 31, 2009, were €83.9 million, the bulk of which lies in its subsidiaries in Sweden and the U.K. The Swedish subsidiary Spotify AB has a net book value of €40 million, and the net book value of Spotify Ltd in the U.K. is €11.4 million.

Spotify's parent company in Luxembourg reported a €0.6 million loss for the financial year 2009, while the Swedish subsidiary reported a small profit of €1.5 million.

Widely popular in Europe, the music service has been struggling to enter the crucial U.S. market, thus far failing to reach the necessary deals with U.S. record labels. Earlier this week U.S. entertainment magazine Billboard reported that Sean Parker was set to head Spotify's U.S. operations and to reboot stalled negotiations with the record labels. However, Spotify representatives have since described these claims as inaccurate.

Spotify is now looking at a much-delayed U.S. launch later this autumn.

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Yearly Average Currency Exchange Rates
Translating foreign currency into U.S. dollars

You must express the amounts you report on your U.S. tax return in U.S. dollars. Therefore, you must translate foreign currency into U.S. dollars if you receive income or pay expenses in a foreign currency. In general, use the exchange rate prevailing (i.e., the spot rate) when you receive, pay or accrue the item.

The only exception relates to some qualified business units (QBUs), which are generally allowed to use the currency of a foreign country. If you have a QBU with a functional currency that is not the U.S. dollar, make all income determinations in the QBU's functional currency, and where appropriate, translate such income or loss at the appropriate exchange rate.

A taxpayer may also need to recognize foreign currency gain or loss on certain foreign currency transactions. See section 988 of the Internal Revenue Code and the regulations thereunder.

Note: Payments of U.S. tax must be remitted to the U.S. Internal Revenue Service (IRS) in U.S. dollars.

Currency exchange rates

The Internal Revenue Service has no official exchange rate. Generally, it accepts any posted exchange rate that is used consistently.

When valuing currency of a foreign country that uses multiple exchange rates, use the rate that applies to your specific facts and circumstances.

Note: The exchange rates referenced on this page do **not** apply when making payments of U.S. taxes to the IRS. If the IRS receives U.S. tax payments in a foreign currency, the exchange rate used by the IRS to convert the foreign currency into U.S. dollars is based on the date the foreign currency is converted to U.S. dollars by the bank processing the payment, not the date the foreign currency payment is received by the IRS.

Yearly average currency exchange rates

For additional exchange rates, refer to Foreign Currency and Currency Exchange Rates.

To convert from foreign currency to U.S. dollars, divide the foreign currency amount by the applicable yearly average exchange rate in the table below. To convert from U.S. dollars to foreign currency, multiply the U.S. dollar amount by the applicable yearly average exchange rate in the table below.

Yearly Average Exchange Rates for Converting Foreign Currencies into U.S. Dollars

Country	Currency	2016	2015	2014	2013	2012	2011	2010
Afghanistan	Afghani	70.645	63.653	59.771	57.822	53.130	48.817	48.409
Algeria	Dinar	114.431	104.883	84.242	83.339	81.301	76.525	78.471
Argentina	Peso	15.359	9.617	8.448	5.704	4.738	4.299	4.077
Australia	Dollar	1.400	1.345	1.154	1.078	1.005	1.008	1.134
Bahrain	Dinar	0.395	0.395	0.394	0.395	0.395	0.394	0.394
Brazil	Real	3.632	3.468	2.451	2.249	2.035	1.742	1.838
Canada	Dollar	1.379	1.329	1.149	1.071	1.040	1.029	1.072
Cayman Islands	Dollar	0.886	0.885	0.883	0.873	0.872	0.868	0.868
China	Yuan	6.910	6.489	6.394	6.446	6.573	6.732	7.050
Denmark	Krone	7.000	6.991	5.844	5.843	6.025	5.571	5.847
Egypt	Pound	10.462	8.044	7.399	7.185	6.348	6.211	5.908

Euro Zone	Euro	0.940	0.937	0.784	0.783	0.809	0.748	0.785
Hong Kong	Dollar	8.073	8.062	8.065	8.067	8.068	8.096	8.080
Hungary	Forint	293.083	290.638	242.076	232.771	234.421	209.338	216.583
Iceland	Krona	126.256	137.471	121.574	127.323	130.282	120.906	129.851
India	Rupee	69.956	66.768	63.469	60.936	55.911	49.124	47.774
Iraq	Dinar	1236.453	1231.234	1228.786	1225.266	1224.581	1230.715	1230.020
Israel	New Shekel	3.997	4.052	3.723	3.759	4.014	3.724	3.887
Japan	Yen	113.138	125.911	110.101	101.517	83.008	82.931	91.342
Lebanon	Pound	1593.639	1588.880	1591.284	1589.155	1583.096	1581.575	1579.773
Mexico	Peso	19.435	16.505	13.840	13.275	13.695	12.943	13.151
Morocco	Dirham	10.279	10.206	8.828	8.829	9.064	8.478	8.829
New Zealand	Dollar	1.494	1.492	1.255	1.270	1.285	1.316	1.444
Norway	Kroner	8.745	8.392	6.558	6.117	6.056	5.835	6.291
Qatar	Rial	3.791	3.790	3.794	3.796	3.798	3.791	3.793
Russia	Rouble	69,685	63.659	40.118	33.165	32.407	30.626	31.651
Saudi Arabia	Riyal	3.903	3.903	3.902	3.901	3.902	3.902	3.906
Singapore	Dollar	1.437	1.430	1.318	1.302	1.300	1.308	1.418
South Africa	Rand	15.319	13.281	11.286	10.037	8.553	7.562	7.638
South Korean	Won	1211.121	1179.128	1098.233	1142.933	1175.380	1153.728	1206.268
Sweden	Krona	8.910	8.775	7.138	6.780	7.048	6.755	7.498
Switzerland	Franc	1.025	1.001	0.952	0.964	0.976	0.923	1.085
Taiwan	Dollar	33.586	33.089	31.566	30.945	30.849	30.693	32.814
Thailand	Baht	36.778	35.679	33.841	32.027	32.456	31.893	33.227
Tunisia	Dinar	2.237	2.044	1.771	1.695	1.629	1.469	1.502
Turkey	New Lira	3.146	2.834	2.276	1.982	1.874	1.748	1.569
United Arab Emirates	Dirham	3.821	3.821	3.821	3.821	3.821	3.821	3.821
United Kingdom	Pound	0.770	0.681	0.632	0.665	0.656	0.649	0.673
Venezuela	Bolivar (Fuerte)	9.447	6.562	6.555	6.312	4.473	4.474	4.384

References/Related Topics

- Foreign Currency and Currency Exchange Rates
- Miscellaneous International Tax Issues

Page Last Reviewed or Updated: 03-Feb-2017

CO Ex. R-233

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

Spotify Raises Investments at $1 Billion Valuation

By ANDREW ROSS SORKIN and EVELYN M. RUSLI FEBRUARY 21, 2011 5:37 PM

Rasmus AnderssonDaniel Ek, co-founder and chief executive of Spotify.

Spotify, the online music service, has raised new financing from investors including Kleiner Perkins Caufield & Byers at a valuation of more than $1 billion, a person briefed on the matter told DealBook on Monday.

The investment round also included DST Global, the Russian investment firm that has also taken big stakes in Facebook and Groupon.

Under the deal, Kleiner Perkins will invest $50 million for a nearly 5 percent stake, this person said, speaking on condition of anonymity because the financing talks were confidential. The round, which could be announced as early as this week, will total about $100 million, this person added.

The company is expected to use the bulk of the funding for its expansion plans and to create new features for users, this person said

A Spotify representative was not immediately available for comment.

News of Kleiner Perkins's involvement was reported on Monday by Sky News. News of DST's involvement was reported on Monday by TechCrunch.

Spotify, which was founded in 2006 and is based in Sweden, has become one of the most popular music-streaming services. The company, considered a rival to Apple's iTunes, has gained considerable traction in Europe and now claims more than 10 million users.

PREVIOUS POST
Blockbuster Receives $290 Million Initial Takeover Bid

NEXT POST
BHP to Pay Chesapeake $4.75 Billion for Shale Gas Assets

The company allows users to access online music for free through an advertising-supported service. It also offers a premium version with a monthly subscription plan. It encourages users to build playlists and share their selections with friends.

It does not yet operate in the United States, though it is working on revising its agreements with major music labels to take on American customers.

Spotify's existing investors include Sean Parker, the co-founder of Napster and a former president of Facebook; the investment firm Wellington Partners; the Hong Kong billionaire Li Ka-shing; and Northzone Ventures.

Kleiner Perkins, among Silicon Valley's biggest and best-known venture capital firms, has recently stepped up efforts to invest in Web companies with a social-networking component, notably with the creation late last year of its $250 million sFund.

It has already poured money into the likes of Twitter, leading the messaging company's $200 million financing round in December; the coupon purveyor Groupon; and the social-gaming giant Zynga.

Michael J. de la Merced contributed reporting.

I.P.O./OFFERINGS, **MEDIA**, DST, KLEINER PERKINS CAUFIELD & BYERS, LI KA-SHING, SEAN PARKER, SPOTIFY, WELLINGTON PARTNERS

CO Ex. R-235

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

findings of fact and conclusions of law and June 22 as a date for reply filings and just wanted to propose that on behalf of all parties.

JUDGE BARNETT: Thank you, Mr. Marks. We'll take it under advisement.

MR. MARKS: Thank you.

JUDGE BARNETT: Mr. Semel?

MR. SEMEL: Thank you, Your Honor. We have -- you've already sworn in the first witness, Dr. Jeffrey Eisenach.

JUDGE BARNETT: I have. And, Dr. Eisenach, if you could begin by saying and spelling your name for the record.

THE WITNESS: Of course. Is the sound okay? Can you hear me? Good, thank you.

Jeffrey August Eisenach, J-e-f-f-r-e-y, A-u-g-u-s-t; the last name is E-i-s-e-n-a-c-h.

DIRECT EXAMINATION

BY MR. SEMEL:

Q. And, Dr. Eisenach, could you tell us what is your profession?

A. Good morning, Mr. Semel.

Q. Good morning.

A. I'm an economist.

Q. And do you have any specialties within

the field of economics?

A. I do. I specialize in microeconomics, regulatory economics, and the economics of industrial organization, and particularly with applications to markets involving communications, media, and the Internet.

Q. And can you give us a brief overview of your educational background in the field of economics?

A. Yes, I have a Bachelor's in economics from Claremont McKenna college and a Ph.D. in economics from the University of Virginia.

Q. And can you also give us a brief overview of your professional experience in the field of economics?

A. Well, I've taught economics. I have practiced economic consulting for about 15 years. I've worked in think tanks and also worked for the Federal Government at the Federal Trade Commission and the Office of Management and Budget.

Q. And have you authored peer-reviewed publications in the field of economics?

A. Yes, I've offered -- authored numerous peer-reviewed articles in peer-reviewed publications.

Q. And have you taught higher education in the field of economics?

A. Yes. I'm currently an adjunct faculty member at Scalia Law School, George Mason law school, where I teach regulated industries. I previously taught at Harvard's Kennedy School of Government, at VPI, and -- and VPI.

Q. And have you ever testified as an expert witness in the field of economics?

A. Yes, I've testified and submitted expert reports in about 40 matters involving litigation and regulatory proceedings in a number of countries, including the U.S., Australia, South America, and the United Kingdom.

Q. And has your professional work involved economics of copyrights and intellectual property?

A. Yes, it has. I've written scholarly articles on copyright issues. I have testified on intellectual property and copyright issues, both in the U.S. and abroad. And I'm an expert in an ongoing arbitration matter, the RMLC, the SESAC litigation that has been going on up in New York.

Q. And has any court or tribunal ever failed to recognize your economic expertise?

A. No.

MR. SEMEL: At this time, Your Honors, I would offer Dr. Jeffrey Eisenach as an expert witness in microeconomics, the economics of industrial organizations, and regulatory economics.

MR. ISAKOFF: No objection.

JUDGE BARNETT: I heard it, but I didn't --

MR. ISAKOFF: That was me, Your Honor.

JUDGE BARNETT: Thank you, Mr. Isakoff. Dr. Eisenach is so qualified.

MR. SEMEL: Thank you.

BY MR. SEMEL:

Q. Dr. Eisenach, did you submit written testimony in connection with this proceeding?

A. Yes, I did.

Q. So I'll ask you to turn to the binder in front of you and take a look at the first three tabs, which bear the numbers H-3027, H-3033, and H-3393, and ask you are these correct copies of the reports you submitted in this proceeding, with your signature towards the back of each?

A. They appear to be.

Q. Thank you.

MR. SEMEL: Your Honors, at this time, we'd offer into evidence hearing Exhibits 3027, 3033

and 3393.

MR. ISAKOFF: No objection, Your Honor.

JUDGE BARNETT: 3027, 3033, and 3393 are admitted.

(Copyright Owners Exhibit Numbers 3027, 3033, and 3393 were received into evidence.)

MR. SEMEL: Thank you.

BY MR. SEMEL:

Q. Dr. Eisenach, did you offer expert opinions in the written testimony that we've just identified?

A. I did. And I've prepared some slides. I think we've actually managed to get the first one up already. So if we could move to the next slide, I can summarize the -- the issues upon which I offered expert opinions.

Q. Great. Thank you.

How did you come to the topics on which you offered opinions?

A. Well, I was offered -- I was asked to look at two different sets of issues or two different assignments. The first is to provide my expert economic opinion on the reasonable -- reasonableness of the rates and terms put forward by the Copyright Owners for the Subpart B and Subpart C

licenses for the term being considered in this proceeding, 2018 to 2022, and whether those rates are consistent with the requirements set forth in Section 801(b) of the copyright Act.

And then, secondly, to assess the validity of the analysis and opinions put forward by the Services' economic experts.

JUDGE STRICKLER: Excuse me, Dr. Eisenach. Good morning.

THE WITNESS: Good morning.

JUDGE STRICKLER: I have -- I have a question for you. Do you consider the -- in the first bullet point, the two assignments to be discrete, one being to determine the reasonableness of the rates and, secondly, to determine whether or not the rates were consistent with the requirements of 801(b), or did you think of that as a combined analysis?

THE WITNESS: Yeah, well, I think of it holistically, I think, at the end of the day, where it's only set of standards here that the rates need to meet. We're guided by Section 801(b) of the Copyright Act, and I understand that.

My approach to assessing rates reasonable under the statutory guidelines is to begin by

seeking evidence on the fair market value of the rates. And then in -- secondarily, to seek to understand whether or not any of the requirements of Section 801(b) would require adjustments to those fair market value rates.

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. And can you give us a brief overview of some of your main findings in your opinions?

A. Yes. If we can go to the next slide. And I'll walk very briefly through these because we're going to hit them as we go along. First, as we just mentioned, that the 801(b) standards can be informed using a market-based benchmark. Second, that the rate for interactive sound recording licenses paid by the Services to the labels provides a robust benchmark for the fair market value.

Thirdly, that the Copyright Owners' proposal falls well within the reasonable range that I established based on that benchmarking exercise. Last -- or, fourthly, that the Services' arguments about disruption and availability are incorrect.

And, finally, that the Services' rationale for adjusting the existing rate structure is unsound and also ultimately incorrect.

Q. And just to clarify, these are findings that you -- that are in both your direct and your -- split between your direct and rebuttal reports?

A. Yes, primarily the first three findings primarily in my direct report, and the final two more in the nature of rebuttal.

Q. And going to your benchmark analysis, can you give us an overview -- I know you started in response to Judge Strickler's question -- give an overview of your methodology with respect to that?

A. Yes. So looking at the next slide, really just three straightforward steps. First to estimate a reasonable range for the fair market value of the rights at issue by using benchmarking. Second and importantly, I think to assess against contextual factors. I think it's important always, in doing exercises like this, to look at developments in the market, technological marketplace and -- and others, to assure that you're living in the real world, as it were.

And then, finally, as I mentioned, to consider the need for possible adjustments to reflect the 801(b) criteria.

Q. And in looking at the 801(b) criteria, how did you evaluate those criteria for use in your

opinions?

A. Well, broadly speaking -- and I looked in part at the way the CRB has done this in the past, as I understand it -- the first three criteria, and I would say as an economist also, are broadly consistent with fair market value market-based rates.

The fourth criteria, minimizing disruption, may or may not be something that comes out of natural negotiations in the marketplace. So that one, in particular, is one that you have to take into consideration to determine whether there would be adjustments from a fair market value rate.

Q. And -- and is this benchmarking approach that you're using, is it different from other approaches you've seen in this proceeding?

A. Well, it is. And if we can see the next slide, again, I think we're hitting the same points repeatedly, but let me now distinguish my approach from -- and the approach taken by some of the Service experts.

I do begin by seeking to establish the fair market value of the rates, based on current voluntary bargains in the marketplace, and then move to assessing how those might be affected by

consideration of the 801(b) standards.

My understanding of the Service experts' approach to some extent, particularly Dr. Katz and -- and Dr. Marx, is to really begin with the 801(b) standards to embrace the current 2012 settlement as a benchmark and under the shadow of the compulsory license and to try to embrace that as a -- as a strength, that somehow that agreement would embody the 801(b) standard simply because it was negotiated under the shadow of the license.

I have two -- several problems with that. It's inherently circular. It provides no information about market values and, in particular, about current market values.

Essentially, what we're estimating is the market -- is the parties' predictions of what the Judges would decide in the event of a rate case. And if we go to the next slide, you know, I think there are problems with all of these aspects. The first is simply, you know, the underlying problem with looking at an agreement negotiated under the shadow of a license. It shifts bargaining power from the compelled party to the uncompelled party by the very nature of the exercise.

And as we'll talk about in establishing

fair market value, one of the three basic criteria is that the parties to the deal are not compelled. So Number 1 is the shifting of bargain power, bargaining power.

Second, there's nothing in bargaining theory which suggests that parties reach agreements that would satisfy a third-party arbitrator. And I was here for Dr. Katz's testimony. There was a long discussion about this, and I think Dr. Katz ultimately conceded that point. I'm not sure Dr. Marx so much has conceded that point, but what -- what the -- what the shadow may do arguably is establish disagreement points.

If your best -- if each party's best available alternative is to go to court, then each of them will seek to try to figure out what would happen if they did that. Their estimate of that, their prediction of that, would be their disagreement point.

But within those agreements, there's -- but beyond those disagreement points, there's nothing that suggests that they would reach terms that would satisfy, for example, the 801(b) standards.

Thirdly, even in the unlikely event that

1 the prior settlement perfectly predicted what the
2 Judges would have done -- and I think that's not
3 likely or even plausible -- that would not make it a
4 perfect predictor of what they would do today. And
5 for two reasons.
6 One is that Judges change. Standards
7 change. The framework of analysis changes. So
8 whatever might have happened in 2012, even if all
9 the facts were the same, wouldn't necessarily be
10 what would be decided today, given five more years
11 of precedent, analysis, progress of the art, of
12 assessing these issues.
13 But even if that hadn't changed, dramatic
14 changes have occurred since the 2012 settlement,
15 which I think just flatly disqualify it as a
16 benchmark for anything, any prediction of what the
17 outcome would be today. One of those things being
18 that the Copyright Owners no longer regard the 2012
19 settlement as a reasonable -- as satisfying their
20 disagreement point.
21 If we can go to two more slides --
22 JUDGE STRICKLER: Before you move on,
23 just staying with this slide for a second, if I
24 might.
25 THE WITNESS: Yes, sir.

JUDGE STRICKLER: The first bullet point with regard to the compulsory license shifting the bargaining power away from the compelled party, that is away from the licensors.

THE WITNESS: Right.

JUDGE STRICKLER: One of the Services' experts, I don't recall who it was, in response, in rebuttal, said that the shift is really not as -- that dramatic as you say because the licensees' walk-away power, which we -- which they retain, is rather weak, because walking away in this must-have situation really means going out of business.

So while they have the option to do that, no doubt, it's a rather weak hand -- I'm paraphrasing now -- a rather weak hand to play. How would you respond to that?

THE WITNESS: Well, you know, I think that's a very important point in this proceeding. And -- and it's in the slides for later, but let me go ahead and address it now.

The benchmarks that I'm looking at in this proceeding are benchmarks negotiated -- recent benchmarks negotiated between firms, new entrants into the marketplace like Google, Amazon, and Apple.

There are two things that are important

about the identity of those firms and the nature of those negotiations. The first is that we are talking about Apple, Amazon, and Google. And I think someone joked there's more market capitalization represented in this room than maybe any other courtroom in history today. Three very large firms, and that's relevant because bargaining power is in part related to the ability to withstand risk. It's in part related to negotiating acumen. All of those things are at their pinnacle when you're talking about firms like Google, Apple, and Amazon.

But, 0secondly, and I think even more importantly from an economic perspective, we're talking about firms who are making decisions; the rates we're looking at are decisions that are made during the course of the consideration of whether to enter markets.

So it may have been Dr. Leonard who said the essence of hold-up power is sunk costs. It's the fact that, as you said, you go out of business. Well, these firms for the most part weren't in the business.

And the business is changing so fast that even if you're in it, there is -- I don't think

1 you're locked in to anything in particular, but
2 thinking just about the point of entry, these firms
3 are making a decision, and as they make that
4 decision -- I think it was Mr. McCarthy who talked
5 about bets. And he said every quarter at Spotify we
6 sit down -- I think he said quarter -- we sit down
7 and we look at the opportunity to make bets, to make
8 investments in alternative businesses. How are we
9 going to spend our scarce capital in order to
10 maximize our rate of return?
11 Well, that -- in my experience, that
12 exercise happens in every major corporation. So as
13 Google, Apple, and Amazon are sitting down to decide
14 whether or not to enter the market for interactive
15 streaming or to continue innovating in the market,
16 to continue introducing new products, as they're
17 making those decisions, they're thinking about these
18 rates.
19 And they're sitting across the table from
20 the publishers. And the publishers' ability -- or
21 the -- or the labels. And the Rights Owners'
22 ability to extract rents, extract quasi rents, is
23 what we call them in economics, from the -- from the
24 Services in that context is limited by the
25 difference between the interactive services'

1 investment return and the return on the next best
2 thing.
3 And it may be smart cars. It may be
4 drones. It may be rockets to Mars. These people
5 are engaging in lots of investments. But your
6 hold-up capability is limited by the return on the
7 next best investment.
8 And when your Apple, Google, and Amazon,
9 or for that matter -- for that matter Pandora, you
10 have lots of different investment alternatives. And
11 I think your ability to hold up -- the ability of
12 the publishers or the rightsholders to hold up those
13 firms is extremely limited by that fact.
14 JUDGE STRICKLER: But do the
15 rightsholders really suffer very much if Amazon,
16 Google, and Apple decide to go to Mars, instead of
17 licensing music because the threat is not a great
18 threat, I think one of the arguments is made,
19 because the Copyright Owners can still license to
20 Spotify, to Pandora, and to any other interactive
21 streaming service, so the threat -- they may --
22 those larger companies may well act on the threat,
23 but it's not particularly costly to the Copyright
24 Owners?
25 THE WITNESS: But -- but the relevant

point -- I'm an empiricist at the end of the day, and the relevant point -- I'll come back to that -- let's look at what happened in the marketplace. They didn't choose -- those firms did not choose. So the benchmarks that I'm looking at are benchmarks of actual agreements entered into by those firms under those circumstances.

And so that's the -- that's the way I -- I come to the conclusion that disproportionate bargaining power is not -- on behalf of the Copyright Owners is not reflected in the agreements that I've witnessed, that I have --

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. And you mentioned at the end of your last slide, you were talking about changes to the market. Just briefly, did you -- did you evaluate market changes in your --

A. I did, if we just look at the next two slides, you know, very quickly. Just two aspects of change that I think are relevant to the -- whether the 2012 agreement as used by the Service experts is -- is a comparable bargain or provides insight into current values or current outcomes in any sense.

The first is that streaming has expanded

dramatically from about 5 percent of the market in 2011, that's when the 2012 agreement was being negotiated, to 35 percent in -- and this is -- that number is the first half of 2016 number. We now have full 2016 numbers from a couple days ago, which I think are about 40 percent of the market for the full year for 2016.

And if we look at the next slide, we see the entry that has occurred during this period. And just a completely different set of players. Not only the large firms that I mentioned but firms with business models that involve incorporating interactive services into larger bundles and platforms into -- into the ecosystems of companies like Apple, Amazon, and -- and Google.

Q. So looking then at your benchmarking approach, what criteria did you apply to -- let's say, to start the analysis, to select the potential benchmarks that you're going to use?

A. So two sets of criteria. One going to the question of whether a bargain represents fair market value, and the second going to the question of whether it's comparable. We're looking at the three criteria that I apply on this slide to -- to assess whether a bargain is a -- constitutes a

1 bargain that -- that's indicative of fair market
2 value.
3 And these are three criteria I think you
4 find in any valuation textbook. I actually cite the
5 textbook recently authored by Dr. Zmijewski, who I
6 think has appeared here. He's my former partner, is
7 the only reason I can pronounce his name. And
8 Dr. Zmijewski's textbook is the -- is the citation
9 that I used, but you can find these anywhere.
10 A willing and unrelated buyer and seller,
11 and those are both important criteria unrelated. It
12 will be one that we'll come back to. Neither party
13 being compelled to act. We've already talked about
14 the significance of that in this case. And then
15 both parties being reasonably informed on relevant
16 information. I think in these cases we're looking
17 at sophisticated parties generally.
18 Then moving to the next slide, five
19 criteria. And this is bread and butter for probably
20 everyone in this room, certainly for the Judges.
21 You know, criteria that one would apply to determine
22 whether a bargain is a comparable bargain. Are the
23 legal rights conveyed the same or comparable rights?
24 Are the downstream uses to which the rights are
25 being put comparable in terms of value and the value

being generated?

Are the markets, particularly geographic markets, comparable? Are we using benchmarks from outside the U.S.? And we want to pay attention to that if we are. Are the time periods comparable? And in this case, 2012 agreements versus agreements which are current. We never have the luxury of -- when we're setting rates in the future, we never have -- have the luxury of looking at concurrent bargains, but we can look at bargains which are at least current bargains.

And then parties. Are the parties similarly situated in terms of issues like bargaining power? And so those are -- those are the five criteria for -- that I apply for comparable bargains.

Q. Thank you. And at this time, I've got a slip sheet into our demonstrative to make sure we didn't flip over.

JUDGE BARNETT: Thank you.

MR. SEMEL: Unfortunately, the benchmark agreements are generally considered restricted so I expect the rest of his direct will be a restricted session.

JUDGE BARNETT: Okay. For those in the

hearing room who are not privy to restricted or confidential information, relevant to this case, please wait outside.

And this will cut across the various Services, correct?

MR. SEMEL: It will, yes.

JUDGE BARNETT: So Services' executives, and in-house counsel and whatnot will be also excluded.

(Whereupon, the trial proceeded in confidential session.)

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1 O P E N S E S S I O N
2 CROSS-EXAMINATION
3 BY MR. ISAKOFF:
4 Q. You're Eisenach. I'm Isakoff. Let's see
5 if we can not get confused as to which one of us is
6 which, okay?
7 A. I'll do my best, Mr. Isakoff.
8 Q. Thank you. Your job, as you testified on
9 direct examination, was to opine as to whether the
10 Copyright Owners' proposal in this proceeding was
11 reasonable; is that right?
12 A. Yes, simple one word, that's a fair --
13 fair word, yes.
14 Q. All right. And you were also consulted
15 in connection with that proposal, correct?
16 A. Was I involved in developing the
17 proposal?
18 Q. I asked whether you were consulted in
19 connection with it.
20 A. I don't know. I don't understand the
21 question. It's very vague.
22 Q. Could we put up Dr. Eisenach's deposition
23 transcript, page 204? And starting at lines 22.
24 "Question: I'm just going to ask for a
25 yes or no on that. Not what you told them, but

whether you were consulted in connection with the NMPA's rate proposal, yes or no?"

Mr. Janowitz says you can answer that.

"Answer: Yes."

Were you asked that question and did you give that answer?

A. Yes, I did.

Q. All right.

A. And thank you for clarifying.

Q. Can we put up -- can we put up slide 1, please?

JUDGE BARNETT: Before we go there, is there an exhibit number on the deposition transcript?

MR. ISAKOFF: Yes. It is 6028.

JUDGE BARNETT: Thank you.

(Pandora Exhibit 6028 was marked for identification.)

BY MR. ISAKOFF:

Q. Okay. This is the Copyright Owners' proposal, correct?

A. That's correct, yes, the rate -- that's the rate and the -- those are the rates from the Copyright Owners' proposal, that's correct.

Q. All right. And it says .0015 per-play.

Is that equivalent to 15 cents per 100 plays?

A. Yes, it is.

Q. Somehow in my head, I can 15 cents and 100 plays better than what .0015 is. And it's -- or $1.06 per user per month, whichever is greater, correct?

A. Correct.

Q. And so it could end up being more than 15 cents per 100 plays, if, in fact, the per user per month prong kicks in, right?

A. That's correct.

Q. And it applies to every stream, even those that are under 30 seconds, sometimes referred to as skips. Do you understand that's the Copyright Owners' proposal?

A. That's my understanding.

Q. Okay. And what you did was you used your benchmark analysis to test the reasonableness of the Copyright Owners' proposed structure, and you did not attempt to benchmark any other structure, did you?

A. Well, I -- I -- that's -- I did not benchmark any other structure, that's correct.

Q. You didn't attempt to see whether a reasonable benchmarking analysis might validate a

1 different headline rate, let's say, than the
2 10.5 percent that's currently in effect?
3 A. Yes, I -- I assessed whether the
4 Copyright Owners' proposal was supported by
5 benchmarks based on marketplace values, as I
6 testified this morning, that's correct.
7 Q. All right. But you didn't do any similar
8 benchmarking analysis using a different structure
9 such as percentage of revenue, did you?
10 A. The -- the benchmarking exercise was
11 conducted in the context of the structure of the
12 Copyright Owners' proposal.
13 Q. Okay. So if the Copyright Owners'
14 proposed structure were not accepted, your opinion
15 really wouldn't have any application, would it?
16 MR. SEMEL: Objection, Your Honor, calls
17 for legal conclusion.
18 JUDGE BARNETT: Overruled.
19 THE WITNESS: The -- as stated in -- as
20 expressed in my reports, my analysis expresses
21 values in terms of per-subscriber -- per-user rates
22 and per-play rates.
23 The conversion of those rates into
24 percentages of revenues is not something which I did
25 in the context of my report. The values upon which

my calculations are based would not be limited to per-play or per-user, a per-play or per-user structure for rates.

BY MR. ISAKOFF:

Q. Let's go to slide 2, please. Now, you would agree that these are the 801(b) factors with which we're all familiar?

A. You have quotes around them, so I'll assume they're correct, yes.

Q. Okay.

JUDGE BARNETT: Mr. Isakoff, could you move that mic just a little bit in your direction?

MR. ISAKOFF: Okay.

JUDGE BARNETT: Thank you.

MR. ISAKOFF: I was afraid of being too loud. Sometimes people are so close to it that, one of the songwriters in particular, I wasn't quite sure what -- what to do with myself during that. But anyway.

BY MR. ISAKOFF:

Q. Now, your view as I heard it on direct examination, and I think you said the same thing in your report, is that basically you regard the first three factors as essentially equivalent to a traditional fair market value analysis and that then

factor D would suggest that if a fair market value analysis would disrupt the industry, then you consider that too. Did I get that right?

A. It's not the way I phrased it. I think I said -- I don't think I used the word "equivalent." I think I used the word "consistent with," but I won't quibble with you.

Q. In fact, it's not as if it's a two-part standard, that one says fair market value unless there's disruptive impact, right? It doesn't say that?

A. No, it doesn't say that.

Q. Now, I believe it's your testimony today and also really is a large part of your rebuttal report starting at page 12, that looking at industry practices that would otherwise be governed by the 801(b) -- 801(b) factors are less appropriate for use as a benchmark than things that are completely outside that shadow, correct?

A. I don't -- I think you're misinterpreting. Let me go to -- where -- where would you like me to begin?

Q. I was just referring, frankly, to your direct testimony today, that basically it's your -- it's your opinion that where contractual deals are

1 struck in an area where the 801(b) factors would
2 apply, if they didn't reach agreement, that you
3 should ignore those in setting a benchmark in this
4 case, correct?
5 A. No, I don't think I've said that, and I
6 don't think that's my opinion. My -- my opinion is
7 that the 2012 settlement and the direct agreements
8 reached directly subject to -- to that settlement,
9 with that settlement as a back-stop and an
10 alternative, that that 2012 agreement is not a valid
11 benchmark in this case for two reasons.
12 One being the fact that the market has
13 changed so dramatically both in terms of the size
14 and the nature of the market and in terms of the
15 participants. And, secondarily, because or, in
16 addition, not necessarily secondarily, because the
17 premise put forward by Dr. Marx, in particular,
18 Dr. Katz to some extent, some of the other experts
19 occasionally referencing it, the premise that a
20 voluntarily negotiated agreement where the
21 alternative would be to go before a third-party
22 arbitrator would reflect the criteria that would be
23 applied by the third-party arbitrator, had the trial
24 occurred, is a faulty premise.
25 Q. Okay. Let's -- well, let's go back a

1 little bit to the materials that you relied on for
2 your opinions in this matter. Could we call up
3 Appendix A of Dr. Eisenach's first report, which I
4 believe is Exhibit 3027. Okay.
5 And these -- this lists for several
6 pages -- it looks like about seven pages of
7 materials you relied on or eight pages? Is that
8 right?
9 A. Do I have that?
10 Q. You have it in the binder that the
11 Copyright Owners put up there. It's the smaller
12 binder.
13 A. Yes, I see that.
14 Q. Okay. And this includes a number of
15 contracts?
16 MR. SEMEL: To be clear, are you in the
17 direct report now?
18 MR. ISAKOFF: Yes. Yes, we are. The
19 first report, Exhibit 3027, Appendix A.
20 THE WITNESS: So is this page A-1,
21 materials reviewed?
22 BY MR. ISAKOFF:
23 Q. That's where I'm starting.
24 A. Okay.
25 Q. Okay. And then you list a variety of

contracts starting at the bottom on page A-1 and going, it looks like, for about another four pages through A-5?

A. I don't know if we're looking at the same -- I apologize. I have -- I have a document that says at the top materials reviewed and the contracts --

Q. Are you looking at Appendix A to your initial report?

A. Well, I thought so. Oh, I'm looking at -- I apologize. I'm very sorry. I was in Appendix A to my rebuttal report. Let's get to the right place. We are now on the same page.

Q. Now we're in the right place, you list for about eight pages the materials you relied on for your initial report; is that correct?

A. Yes.

Q. Okay. And that includes a whole lot of contracts starting at A-1, going through, it looks like, A-5?

A. Yes.

Q. And that includes both musical works agreements and sound recording agreements?

A. Yes.

Q. And it includes some YouTube agreements

for musical works rights, but not for the sound recording rights because you only got those later, right?

A. Yes.

Q. And those you cite and reference in your supplemental report?

A. Yes.

Q. Which, for the record, is Exhibit 3393?

A. Yes.

Q. Okay. And -- and I'd like you to turn your attention to page A-3 of the appendix to your first report, Exhibit 3027. And toward the bottom of the page, third from the bottom, you list some contracts from 2013 going to the next page, '13, '14 --

A. What page are we on?

Q. Bottom of A-3, third from the bottom. Let's start there.

A. Okay. And I see it. 2013 and then I see a 2012 and then I see one without a date.

Q. Right.

A. Then some with 2013 and '14 on the next page.

Q. Okay. Well, we'll get to the specifics of these when we get to closed session, but these

are sound recording agreements that you considered, correct?

A. Looking at the names of the parties, they all appear to be sound recording agreements, yes.

Q. All right. Well, we'll look at the contracts themselves. We can -- we can reserve that.

And you also considered, if you go to page A-8, toward the bottom of the page, the second from the bottom, that is the CRB's decision in SDARS I; is that right?

A. That's what it's usually referred to, yes.

Q. Okay. And then right below that is the CRB's decision in Phono I?

A. I -- I believe those are the references to those documents, sure.

Q. Okay. When you relied on them, you had them available to you?

A. Yes.

Q. Okay. And you cite them in the report, correct?

A. I believe they're cited in the report, yes.

Q. Okay. All right. And then if you go to

page A-9, the third item is SDARS II, is that right, the one from April 17, 2013?

A. I take your word for it. I believe that's the right Federal Register reference.

Q. Okay. Well, I assume you're familiar with these documents that you relied on, correct?

A. Yes, but all of these documents have very similar names. You're asking me is this a particular decision at a particular time. There are multiple decisions in these matters, and I'm taking your word that this is the final decision that you're telling me it is --

Q. Well --

A. -- but I assume it is.

Q. We'll show it to you. Some of them, anyway. And then the next one is Judge -- is a decision in the Pandora/ASCAP case; is that right? Page A-8, A-9?

A. Yes, that's correct.

Q. Okay. And then I guess about the -- the second to last item before you get to industry reports, that's Phono -- that's Web IV, correct? That's the one of this panel that came out last spring?

A. Helpfully, we put Web IV in parenthesis

there, so we know that's -- we know that's true.

Q. Okay. So -- so let's go back to our discussion of the 801(b) factors. And that's what applies here, right?

A. Yes.

Q. And -- and some of the materials you relied on did not concern rate-making proceedings where 801(b) applied, but maybe a willing buyer/willing seller standard, that kind of thing?

A. Well, the willing buyer/willing seller standard applies in Web IV, for example.

Q. Right. Okay. And let's -- I know you mentioned this in your direct testimony, your added -- well, I want to bring this up because of what it says about your view of 801(b).

You mentioned that you testified before a subcommittee of the Judiciary Committee of the House of Representatives back in November of 2012. Do you recall that?

A. Yes, I recall that.

Q. Okay. And in your binder, binder 2, is Exhibit 1698.

A. Which volume do we have?

Q. It's volume 2. It's Exhibit 1698. The numbered exhibits in the binders are all

consecutively numbered. So if you see one of them, you'll see the others.

I apologize for the mountain of material we have here. It's a lot of paper in this case.

A. I did notice that.

Q. And so what you have up there, just for the record, is -- in addition to your three reports in the Copyright Owners' binder, is two binders of exhibits from us, plus your deposition exhibit -- deposition transcript, and, in case you want to use it, a calculator.

A. Appreciate that. So what tab am I at?

Q. You are on Exhibit 1698. They're in numbered order.

A. There we go.

MR. SEMEL: If I can ask, I have a little objection. Is this being used to impeach the witness? I'm not sure what we're doing with this.

JUDGE BARNETT: I'm not either, but it is marked restricted.

MR. ISAKOFF: Is this document marked restricted?

JUDGE BARNETT: Yes, it is.

JUDGE FEDER: Isn't it public testimony?

JUDGE BARNETT: It is public testimony.

Someone was overzealous with a restricted exhibit sticker.

MR. ISAKOFF: My copy was not. I apologize, Your Honor. It didn't realize it had been marked restricted by anybody.

JUDGE BARNETT: Is it, Mr. Semel, in fact, a restricted document?

MR. SEMEL: I actually don't know. It's not my document. That goes somewhat to my -- my objection, which is if this is not being used for impeachment, I'm not really sure what place it has.

JUDGE BARNETT: What's the purpose, Mr. Isakoff?

MR. ISAKOFF: The purpose is to -- to show what this -- this witness' understanding of the 801(b) factors is and his use of non-801(b)-related rates to derive an 801(b) rate, and I needed to show that in this witness' view, 801(b) factors result in lower than market rates.

And that's why I'm using this document. If you look at page 2 --

JUDGE BARNETT: The objection is overruled. You -- you may, Mr. Isakoff. And just for the record, this is not a restricted document; it's public testimony.

MR. ISAKOFF: It certainly isn't. I apologize, Your Honor.

BY MR. ISAKOFF:

Q. Dr. Eisenach, would you look to the second full paragraph on page 2 of this document?

A. Yes, I'm here.

Q. Okay. And line -- this had to do with your commenting on a proposal to amend a portion of the Copyright Act in such a way that the willing buyer/willing seller standard would be replaced with the 801(b) factors, correct?

A. For Section 114 licenses, that's correct.

Q. Right. And, in fact, it wasn't adopted, but this was your comment on the proposal to amend in that fashion, correct?

A. And that is correct, yes.

Q. Okay. And what you say here, and I'm reading from line 3 of paragraph 2, "that the proposal to replace the market-oriented willing buyer/willing seller standard with the uneconomic four-part standard under section 801(b)(1) of the Copyright Act of 1976" -- then skipping a few words -- "would represent a significant step in the wrong direction, both because the rates likely to emerge from the rate-setting process would be below those

that would emerge from a competitive market" -- and then skipping down to the last to last line -- "would create perverse incentives."

MR. SEMEL: If we're going to read it, I'd like to read -- if we're just reading in his testimony, I'd like -- I don't know what we're doing with this, but I'd like not to skip things.

JUDGE BARNETT: Mr. Isakoff, would you read the --

MR. ISAKOFF: I'll start --

JUDGE BARNETT: -- paragraph in its entirety?

MR. ISAKOFF: I will. I will.

BY MR. ISAKOFF:

Q. "I am referring, of course, to the proposed Internet Radio Fairness Act" -- can I leave out the cite?

JUDGE BARNETT: You may leave out the citation.

BY MR. ISAKOFF:

Q. "While the IRFA contains a number of provisions designed to tilt the rate-setting process in favor of copyright owners and against copyright holders, at its core is its proposal to replace the market-oriented willing buyer/willing seller

standard with the uneconomic, four-part standard under Section 801(b) of the Copyright Act of 1976 (the '801(b) standard'). To do so would represent a significant step in the wrong direction, both because the rates likely to emerge from the rate-setting process would be below those that would emerge from a competitive market, and thus reduce economic welfare, and because the 'non-disruption' standard contained in Section 801(b)(1)(D) would create perverse incentives that are fundamentally at odds with the innovative, dynamic nature of the market for online music."

Was that your testimony before the House subcommittee?

A. That's correct.

Q. And is that your view of the 801(b)(1) factors -- (b)(1) factors now?

A. No.

Q. Okay. And if you'll turn to page 3 of your testimony of November 12, 19 -- 2000 -- I'm sorry, November 28, 2012, third full paragraph.

"Second, while IRFA would almost certainly produce the lower royalty rates its supporters seek, there is no valid economic or public policy basis for forcing content providers to

subsidize webcasters by charging them below-market rates."

Is it your -- was that your testimony then?

A. This passage -- the answer is yes, that was my testimony then. But this passage does not refer just to the 801(b) standard, and I would like the opportunity, and I'm sure you will give it to me, to come back and explain my view of the 801(b) standard then and now.

This passage, in particular, though, I'll point out, refers to IRFA. Which had a number of different provisions, as I think was quoted in the first quote that you mentioned, in addition to imposing the 801(b) standard on the Section 114 license.

Q. Okay. And then you attached to your testimony I think what you referred in your direct exam today as a lengthy law review article. Is that right?

A. That's correct.

Q. Okay. Can we turn to page 24 of that attachment. Okay. And I'm going to start -- look at the last paragraph on this page. "To summarize, while it is theoretically possible for the 801(b)

1 standard to result in the same rates as under the
2 WBWS standard, there is no question that the two
3 standards are -- as one supporter of the IRFA
4 recently agreed -- 'starkly different.'" Starkly
5 different being in quotes. "Nor is it surprising
6 that, as one knowledgeable observer recently noted,
7 'the change from the willing buyer/willing seller
8 standard to the 801(b) standard is widely
9 anticipated to significantly lower the royalty rates
10 that on-line radio services pay.'"
11 And end quote. Is that part of your law
12 review article that you submitted to the House
13 subcommittee?
14 A. Yes, it is. And I can -- will point out
15 and, again, I'll take -- take the moment when you
16 choose to give it to me, but to point out that this
17 was -- this is testimony in a law review article
18 written in the context several years ago, which is a
19 public policy context, in which consideration was
20 being given to imposing a new statutory standard on
21 the 114 license.
22 Part of that standard referred to
23 replacing the 801(b) -- the willing buyer/willing
24 seller standard, which as I've testified, I think
25 typically led to a market-based rate, with the

801(b) criteria. Part but not all of it.

Two things differ between the context there and -- two things in particular differ between the context there and the context here. The first is that IRFA was an effort to pass legislation which I think would have been interpreted -- it would have had a number of provisions and would correctly have been interpreted as a determination by Congress to alter the balance of bargaining rights between Pandora and other interactive services, but Pandora lobbying for the change. Pandora and other non-interactive services on the one hand, and the labels on the other hand.

So in the public policy context, this was understood as an effort to achieve the result which I'm describing here through means that included the 801(b) standard but also included other statutory provisions and the legislative history that would have come along.

But, secondly and most importantly, the provisions that the -- the arguments which I cite on page 24 -- I think you directed me to part of page 24 -- if you go up to the previous paragraph, what you see is I say the most meaningful way to interpret this, the best way to understand it -- if

we go to the previous page, you'll see that I say that the best way to understand the impact of the 801(b) non-disruption standard is to examine how it is invoked in an actual proceeding.

And I then go on -- so that's right at the bottom of the page there. And if you want to just go to the next page, you'll see that what I'm now referencing is the arguments that have been put forward by the XMSirius experts in the then ongoing SDARS II proceeding, which not surprisingly advocated an expansive interpretation of 801(b).

And my concern, particularly in the context of the threat of new congressional legislation and the statutory interpretation that could have come with that, was that those interpretations being put forward by the XMSirius experts at the time would be embraced by the Board.

And to make a long story short, that didn't happen. As I cite in my direct report, the Board reiterated in SDARS II the previous 801(b) standard, which it had -- which it had applied in the previous SDARS case, and I think in Phonorecords maybe also. And that is the standard that we operate under today. And that is the standard which forms the basis for my opinion that we begin with

fair market value and adjust for disruption.

It doesn't necessarily mean there wouldn't be a disruption. Doesn't necessarily mean there wouldn't be an adjustment, just that that's the -- that's the order of business.

JUDGE BARNETT: Could I ask --

BY MR. ISAKOFF:

Q. Are you finished? I was going to ask what the question was because I've forgotten it.

JUDGE BARNETT: Dr. Eisenach, was this published in a separate journal?

THE WITNESS: CommLaw -- maybe slightly edited, but CommLaw Conspectus, which is the law review of Catholic University.

JUDGE BARNETT: And when was this published?

THE WITNESS: That would be on my CV, maybe a year later.

JUDGE BARNETT: A year after your testimony before Congress?

THE WITNESS: It was -- it was published after my testimony, but I don't recall the date.

JUDGE BARNETT: Okay. Thank you.

MR. ISAKOFF: Could I have the question I asked back before that long speech?

THE REPORTER: "Question: Can we turn to page 24 of that attachment. Okay. And I'm going to start" --

Then you read the quote. Do you want me to read all that?

MR. ISAKOFF: No.

THE REPORTER: And then you say, "Is that part of your law review article that you submitted to the House subcommittee?"

MR. ISAKOFF: All right. Okay.

BY MR. ISAKOFF:

Q. I am going to ask your indulgence and wait for the questions that I ask. We're counting time in this proceeding. And it seems to me that whether I choose to elicit such a long narrative response is my choice. And that your counsel can ask questions on redirect, even sometimes leading questions.

A. I'll be concise as I can.

Q. Wait for a question, please.

So is -- now, I think you said something about the -- you were concerned that -- how the CRB was going to interpret 801(b) might change in the SDARS II proceeding and that, as it turned out, it didn't, correct?

A. Correct.

Q. Okay. And what you were -- you say that your comments about it result -- that the 801(b) standard would result in lower rates than under the willing buyer/willing seller standard was based on a fear that the CRB was going to change its earlier interpretation of 801(b) as it then existed to that point; is that right?

A. Particularly if the legislation had been passed, yes.

Q. Okay. But you don't really say that anywhere, either in your testimony or in this article, do you?

A. Say what?

Q. Say that your concern is that the CRB is going to change its interpretation of how the 801(b) standards apply in order for you to reach your view that that's why the rates would be below fair market value, right?

A. I think that's the entire interpretation of the answer that I just gave that you didn't like.

MR. ISAKOFF: Well, in that case, Your Honor, I would like to move for admission of this document.

MR. SEMEL: I object, Your Honor. I'm

not really sure what it is being admitted for.

MR. ISAKOFF: So that the -- so that the Judges will have the opportunity to evaluate this witness' answer in the context of the actual article at their leisure. Should they -- should they choose to spend it that way.

JUDGE BARNETT: Exhibit 1698 is admitted.

(Pandora Exhibit Number 1698 was received into evidence.)

MR. ISAKOFF: Thank you.

JUDGE BARNETT: And, Mr. Isakoff, leisure assumes information not in evidence.

MR. ISAKOFF: I -- believe me.

JUDGE BARNETT: We're all in that same boat.

MR. ISAKOFF: I appreciate that, Your Honor.

BY MR. ISAKOFF:

Q. Now, let's talk a little bit about factor D. Can we go back to slide 2.

Okay. Factor D has to do with disruptive impact on the structure of the industries involved, correct?

A. That's correct.

Q. And in your report, Exhibit 3027, your

opening report, written direct testimony, at paragraph 125 -- let's pull that up. No, no, I'm sorry paragraph 25. I apologize.

Okay. In line 3, you describe the 801(b)(1) factor with regard to minimizing any disruptive impact as somewhat controversial. That's line 3.

And a sentence down says, "However, I note that the Board has embraced a constrained interpretation of the non-disruption standard."

The term "constrained interpretation," that's your own, correct?

A. Yes.

Q. That's not something you lifted from any of the sources that you relied on?

A. It's not in quotes, so I hope not. I don't believe -- I don't believe so. I would put it in quotes if I had.

Q. And in your view, if the Copyright Owners' rates were adopted, and let's -- and just as a supposition, the Spotify Free ad-supported service had to completely close because they regarded it as unsustainable, you would not regard that as disruptive unless the result was that consumers no longer had access to music, correct?

A. I think that's -- I think that's a very hypothetical question. I don't believe that, as we talked about, I think, at length at my deposition, the question of what would happen to the Spotify Free service is -- is a question where I believe it's possible that there would be some modifications that could be made in the Spotify Free service. I think it's unlikely that Spotify Free, as I testified this morning, would -- that Spotify would stop all together its Spotify Free service.

Q. I understand. You changed the hypothetical, but if the hypothetical is that the Copyright Owners' rates are adopted and Spotify, in its business judgment, determines that it cannot sustain a free ad-supported service, that you would not regard that as disruptive unless consumers no longer had access to music, correct?

MR. SEMEL: I would object, Your Honor. I know experts can consider hypotheticals, but this is just one variable in a hypothetical that he's asking. The witness has already said he disagrees with the foundation of the hypothetical.

MR. ISAKOFF: That's hardly a hypothetical.

JUDGE BARNETT: Overruled.

1 THE WITNESS: So, again, coming back to
2 my deposition -- and I'll give you the same answer
3 here as I gave you there, I think; if I don't, I'm
4 sure you will call it to my attention -- the -- the
5 word that's missing in the CRB's interpretation in
6 order for me to conclude that the disappearance of
7 the ad-supported service would violate this standard
8 is the word "service."
9 So looking at the bottom two or three
10 lines here, as a consequence such adverse impacts
11 threaten the viability of the music delivery, if the
12 word "service" appeared there, then I think one
13 would make an argument, you would make an argument
14 certainly, and I would consider the argument, that
15 Spotify Free constitutes a distinct service -- and
16 then we could argue about the definition of
17 service -- but a distinct service currently offered
18 under the license in question.
19 I don't see the word present, and I don't
20 interpret the sentence that way. So the music
21 delivery currently offered under the license takes
22 many forms. And -- and if Spotify Free in its
23 current form -- again, I don't know what it means to
24 go completely away.
25 If -- but if Spotify Free in its current

form were no longer available, I don't necessarily believe that that would implicate this standard.

JUDGE STRICKLER: Let me ask you a question, Dr. Eisenach. The standard in question, which is factor D, 801(b) --

THE WITNESS: Yes.

JUDGE STRICKLER: -- talks about the minimization of any disruptive impact on two -- one of two different things. One is the structure of the industries involved, and the other one is on generally prevailing industry practices.

So perhaps we take that one at a time. Do you think, using counsel's hypothetical, the -- if the Copyright Owners' rates would cause the elimination of the Spotify ad-supported, otherwise free tier, do you think that would be -- constitute a disruptive impact on the structure of the industries involved?

THE WITNESS: Not as I interpret structure as an economist. So I'd go back to the slide that I showed during my direct testimony, which shows that Spotify Free customers are, in fact, multiple-homing, which indicates to me that there are lots of services which are substitutes for Spotify Free in the eyes of consumers.

So the structure of an industry suggests that the availability of -- of something the consumers regard as representing a distinct product offering would go away. And I think the evidence we have from -- from that is that consumers regard many services as being reasonably comparable.

JUDGE STRICKLER: And the second prong of -- of subsection D refers to the minimization of any disruptive impact on prevailing industry practices.

Do you think the elimination of the Spotify ad-supported service would constitute -- if Copyright Owners' rates were adopted, would constitute a disruptive impact on prevailing industry practices?

THE WITNESS: Your Honor, I -- I have to say I feel we are three layers down. I don't mean to challenge your question. I'm happy to engage in the dialogue. Don't get me wrong, but -- but I --

JUDGE STRICKLER: In the statute.

THE WITNESS: Right, but I -- I feel like we're three layers now down a hypothetical.

The -- so let me -- if you read the last sentence one more time, and let me try to interpret it.

JUDGE STRICKLER: Sure. I think I'll

leave out the first part.

THE WITNESS: Yeah, leave out the first part. Sure.

JUDGE STRICKLER: Here it is. To minimize any disruptive impact on generally prevailing industry practices.

THE WITNESS: I think there the word that I would look at is the word "minimize." So it can't possibly mean any rate change would have an impact on prevailing industry practices. We talked earlier about the mechanical prong, which would have a very significant impact if it were removed on prevailing industry practices.

So I -- I think I would say -- I couldn't say that it would have zero impact. A prevailing -- I'm going to make two points here.

I can't say it would make zero impact on Spotify's industry practice, which is prevailing as to Spotify.

JUDGE STRICKLER: Spotify prevails in terms of market share, doesn't it?

THE WITNESS: Well, but -- but it is, you know, perhaps significant, that Spotify appears to be unique in offering an unlimited full-catalogue free service, ad-supported service. And -- and I

1 think kind of going more broadly to this issue of
2 Spotify Free, it is unquestionably a distinct
3 service, different from other offerings in the
4 marketplace, not offered by any of the other
5 services for reasons that are, as an economist,
6 difficult to understand. If it is as important as
7 Mr. McCarthy or the Services suggest it is, one
8 would expect other Services to also be offering it,
9 and yet they're not.
10 In my supplemental report, I --
11 MR. ASSMUS: Your Honor, I just can tell
12 where the witness is going. His supplemental report
13 is largely restricted. I just want to remind the
14 panel and the witness that we should be in
15 restricted session.
16 JUDGE STRICKLER: Why don't we hold off
17 on the supplemental.
18 MR. ISAKOFF: We kind of strayed a little
19 from the hypothetical, and I still never got an
20 answer. And I'd like to go back to it, if I may.
21 THE WITNESS: If I can -- I can just --
22 JUDGE STRICKLER: Let him finish his
23 answer.
24 THE WITNESS: Yeah, if I can without --
25 without going --

JUDGE STRICKLER: I promise not to interrupt your flow after.

JUDGE BARNETT: Gentlemen --

THE WITNESS: Without going into the supplemental --

JUDGE BARNETT: The court reporter can record one voice at a time, and we want a complete record. Go ahead.

THE WITNESS: My apologies. Thank you.

I think that -- I'll just leave it at this, and then perhaps come back. I think that a practice which is engaged in by one service but not by any other service is -- however large the service, is not prevailing across the industry, which even if the service has a large market share.

JUDGE STRICKLER: Maybe this is the last question. Taking what you just said as so, part of -- your testimony and the testimony of others is that the Services are all competing for market share. They're all trying to capture the market.

So if one service happens to be successful in capturing the market or a portion of the market, say Spotify capturing the so-called free tier, the ad-supported service, would that disqualify that as constituting a generally

prevailing industry practice because one firm was successful in either getting in early or successfully out-competing all the other services in capturing that particular tier of the market? Why should that be a basis to disqualify it as a generally prevailing industry practice?

THE WITNESS: Well, I think the question is -- goes to causality. Why is it that other services -- simply the fact that Spotify has a very large share of the ad-supported free market in the specific form which is Spotify Free, which is not very far removed from, let's say, Pandora. Pandora is not interactive service, not qualitative -- arguably that different, so we're talking about like this (indicating).

But if the -- the question that I ask is if that service is value creating, why would other Services not offer it, other providers not offer it, even if they didn't have a large market share? It would still presumably serve the same function. I just don't see an economic reason why one service is doing this and nobody else is.

JUDGE STRICKLER: Thank you.

BY MR. ISAKOFF:

Q. Okay. So I would like to get, if I

can -- and maybe the answer is a very simple one -- is it fair to say that your view of disruption under the fourth 801(b)(1) factor would not be triggered if the Copyright Owners' rates, if adopted, caused Spotify to determine it had to close its ad-supported service so long as consumers had access to music in some other way?

MR. SEMEL: Objection, asked and answered, Your Honor.

MR. ISAKOFF: It has not been answered.

JUDGE BARNETT: Overruled. Can you answer that question directly, Dr. Eisenach?

THE WITNESS: I -- I do not think that it would -- I don't think that the -- I do not think that the ad-supported service would completely disappear. I think it's possible that there would be changes. That having been said, if -- if Spotify did not offer its ad-supported services, the substitutes which are -- the other on-line music which would be available to consumers would not -- would not constitute a loss -- a material loss of availability to consumers. And, lastly, I would come back -- so the answer to that question is no.

But I also come back and say the interpretation of the availability standard that

you're putting forward here is different from the interpretation of the availability standard that I understand, which goes to the availability of musical works. So -- so we're mixing availability and disruption.

BY MR. ISAKOFF:

Q. All I'm asking you is a question.

A. But the answer to your question is no.

Q. I wasn't putting forward anything. The answer to the question is no, and that's what I was looking for. Very simple.

Okay. Let's go to slide 3. And what I would like to do is I have about -- I can't tell exactly how long this is going to take, maybe not long -- but go a little while, then I have to go closed. So maybe that would be the right time for a lunch break.

Slide 3, this summarizes your two methodologies where Method 1, you're doing it to test the per-play rate, and -- the Copyright Owners', and then -- and what you do there is you're subtracting in the sound recording market the freely negotiated interactive sound recording per-play that you derive, per-play rate that you derive, you're subtracting from that the non-interactive sound

recording rate that's determined under the willing buyer/willing seller regime, under 114.

And you're dividing that by this ratio that you've developed of sound recording to musical works, correct?

A. Correct.

Q. Okay. And then the second method you used, you do this to develop both per-play rates and per-user per-month rates. And what you do there is you take the same sound recording interactive streaming per-play rates that you've derived, and in the case -- and in the case of the per user per month, the rate you derive for a monthly rate, and you then divide that by the same ratio and then subtract what you say is the performance piece of the mechanical works right to get your mechanical right. Is that right?

A. That's correct.

Q. Okay. All right. Well, we'll get into the weeds on that. But, actually, I think I've got to go closed now because I want to talk about -- we talked about a hypothetical impact. Let's talk about the real impact. And for that, we need to close the courtroom.

JUDGE BARNETT: Okay. We will at this

point ask anyone in the room who has not signed the nondisclosure certificate in this case, to please wait outside.

(Whereupon, the trial proceeded in confidential session.)

C O N F I D E N T I A L S E S S I O N

BY MR. ISAKOFF:

Q. Okay. Could we put up Dr. Katz's corrected written rebuttal testimony, and it's Exhibit 886. And I'm looking for page 7.

MR. SEMEL: I'm sorry, Your Honor. But this is their rebuttal case. This is literally their rebuttal testimony. And I'm not sure how -- why it has a place being an exhibit in their cross-examination of our witness. He's going to come and testify presumably to this testimony.

JUDGE BARNETT: Well, what's the objection?

MR. SEMEL: The objection is that it's not being used to impeach the witness and it's not in evidence. So I'm not sure what -- it's just his testimony. He's just putting things up that he wants to -- that he wants show.

MR. ISAKOFF: That's not true at all.

MR. SEMEL: I would say ask the witness a question; if he wants to impeach his answer, then bring up a thing to impeach his answer.

MR. ISAKOFF: I'm not going to impeach him with Dr. Katz's report. This witness has already testified both as a direct and rebuttal

witness. He's criticizing Dr. Katz. This is just foundational for some of the facts and figures that this witness was examined about in his deposition.

And I think it's just a useful guide. We can develop this in a more difficult and cumbersome way if we want, but this is an easy way just to summarize what -- what the actual effective rates currently are as compared to what the Copyright Owners are proposing. It's easy enough to develop it through the spreadsheets, and I'll do that if Mr. Semel really wants me to go through that route.

MR. SEMEL: If I may, the problem I have is, I think he has just explained, he's calling this foundational. It's not evidence. It's in the record, yet he basically is trying to put his rebuttal case on now.

JUDGE BARNETT: Sustained.

BY MR. ISAKOFF:

Q. Okay, all right. Let's -- all right. We -- you would agree, would you not, that the effective rates for all interactive streams taken as a whole in 2015 weren't 15 cents per 100 but were 5 cents per 100, correct?

A. I don't have that number in front of me. If you want to represent that, but I -- I don't know

that I've got that number sitting in front of me.

Q. Well, I'm certainly not going to represent it. We're going to develop it right here, right now.

Let's go to Spotify Exhibit 1033 in evidence. I believe it's the end of your volume 1. And 1033 is a very lengthy spreadsheet that is, in fact, your backup to your expert report, your initial written direct testimony, correct?

A. Yes. And I'm looking forward -- you say it's --

MR. SEMEL: I just want to clarify. I believe it's only part of it.

MR. ISAKOFF: Part of it? Well, the good news is I'm only going to be dealing with about three or four pages of this lengthy document.

THE WITNESS: That is good news. Where are we? That's not at the end. It's in the middle.

BY MR. ISAKOFF:

Q. It's 1033.

A. Okay.

Q. Yeah. It's the big fat spreadsheet there.

A. Right. Okay.

JUDGE BARNETT: Which page?

MR. ISAKOFF: Well, we haven't quite gotten there. We're just dealing with the exhibit first.

BY MR. ISAKOFF:

Q. And if you'll look at page 16 -- can you put that up, please? Now page 16, the column M. This has the total at line 89 of all of the mechanical royalty payments made in 2015, correct? 69 million dollars?

A. It would -- well, we can't -- we can't see the row headings.

Q. Well, then let's go to page 14 where we have all the row headings or lines.

A. We have to parse these together.

Q. Well, that's what we'll do. 64 through 88 lists all the Service -- Services, and those correspond to the same lines on page 16, resulting in a total on line 89 of about 60 million dollars in mechanical royalty payments, correct, 2015?

A. Well, I'm confused. So, first of all, this is my spreadsheet and I'm familiar with the spreadsheet. I'm familiar in looking at it in Excel format. And I'm not confident -- trying to distinguish the numbers on page 15 from the numbers on page 16 was a little hard to do here. Probably

documentation would explain that. So the numbers on -- the columns on page 15 are also labeled MW mechanical royalties and service revenue. But then we have different --

Q. Are you saying you don't know how to read this spreadsheet?

A. I'm saying I'm used to looking at this spreadsheet on an Excel format, and I'm not sitting here -- as I worked with the spreadsheet, but I'm not sitting here recalling how columns I through R --

Q. I'm told the Excel is up on the screen right now.

A. Oh.

Q. Does that help you?

A. Well, I think -- I think I'd want to look at the spreadsheet more, but let's -- let's assume -- you are representing to me that column M represents --- on page 16 represents totals?

Q. I'm not going to represent anything to you, Dr. Eisenach. This is your spreadsheet.

A. Right.

JUDGE BARNETT: We'll take our noon recess at this time, give Dr. Eisenach an opportunity, if he has his spreadsheet available and

computer available, to look at it and see if he can figure out.

MR. ISAKOFF: Can I ask just a couple of questions before we break for lunch?

JUDGE BARNETT: You may.

BY MR. ISAKOFF:

Q. Okay. Would you please put up on the screen Exhibit 1697.

A. If I can --

Q. I'm going to ask some questions.

A. I was going to answer -- I was going to answer your prior question, but go ahead.

Q. Let's ask this question. Were you shown Exhibit 1697 at your deposition as Exhibit 7?

A. It looks familiar, yes.

Q. And that's the one that uses these very same numbers but has the computation for 5 cents per 100 at the bottom there?

A. That's correct.

Q. Okay. And do you recall testifying that you could not verify that calculation without comparing?

A. Without comparing --

Q. That's what you said. I guess to your spreadsheet.

A. If the sentence ends with comparing, that sounds like a transcription error, but comparing wouldn't make sense without comparing to what.

Q. Do you -- do you recall saying that you're sure that you will do the comparison before your trial testimony?

A. I -- I don't recall that, but I --

Q. Did you do that?

A. No, I -- I do -- I do recall this -- this number, and I do recall the 5 cents, yes, .0005. In fact, the 5 cents I think I mis- -- I think I testified incorrectly in my direct testimony, misremembered, and I think I said I may be incorrect.

I think I may have said 15 cents, including the Spotify ad-supported service. So I think -- I think that's the number I may have been trying to reference earlier.

Q. All right.

MR. ISAKOFF: Your Honors, I think this is a fine time to break for lunch. We have no objection to Dr. Eisenach doing whatever he needs to do with his own spreadsheet. We would ask that he not consult with anybody while he's on cross-examination.

JUDGE BARNETT: That goes without saying. Thank you, Mr. Isakoff.

MR. ISAKOFF: Thank you.

JUDGE BARNETT: And, counsel, my colleagues and I have consulted about the schedule of post-trial or post-hearing materials. We will accept proposed findings of fact and conclusions of law on May 4th and reply findings of fact and conclusions of law on May 24th.

I told you I'm already on SiriusXM. So we'll be at recess for one hour.

(Whereupon, at 12:02 p.m., a lunch recess was taken.)

(Whereupon, the trial resumed in open session.)

O P E N S E S S I O N

AFTERNOON SESSION

(1:05 p.m.)

JUDGE BARNETT: Please be seated.

MR. ISAKOFF: May I proceed, Your Honor?

JUDGE BARNETT: Yes, you may, Mr. Isakoff. Are we open or closed?

MR. ISAKOFF: We are closed.

JUDGE BARNETT: Okay.

(Whereupon, the trial proceeded in confidential session.)

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O P E N S E S S I O N

BY MR. ISAKOFF:

Q. Can we put slide 3 back up. Okay. We're now going to go back to your methodology, and when it gets down to specific numbers we will close again.

But -- so I have this slide up just to remind us where we are. Let's go to page 6 of Dr. Eisenach's opening report, Rich. And would you highlight the beginning of the last bullet?

And I was struck by the words you used here because I heard them again on direct examination a couple of times today, that you adopt a straightforward and robust benchmarking approach that involves two main steps.

And I think if you turn to paragraph 36, Rich, you use the same words straightforward and robust, and we don't have to take a look at it, but I think you used the word robust again in paragraph 38, and I heard it as robust and straightforward. Is that the same as fair and balanced?

A. I don't think fair and balanced is an economic term.

Q. Is straightforward an economic term?

A. Well, I think straightforward is a

descriptive term for the methodology that I applied.

Q. Okay. Would you call it balanced?

A. I wouldn't know what balanced means in this context. If balanced means unbiased, then I would call it unbiased.

Q. Okay. Would you call it not manipulative?

A. I would not call it manipulative.

Q. And you would say you were not cherry-picking either?

A. I was not cherry-picking, that's correct.

Q. Okay. All right. So let's talk about your Method 1 where you start with the all-in sound recording interactive rates and the all-in sound recording non-interactive rates.

And you subtract one from the other to get a value for interactivity which you equate to a concept that doesn't really quite exist on the sound recording side, to the mechanical works right on the musical -- I mean the mechanical right on the musical works side, correct?

A. Yes.

Q. Okay. And to do that, you looked at sound recording interactive service agreements, all of which are unregulated, correct?

A. Correct.

Q. And every single one of those contracts that you looked at, maybe there was a couple of exceptions for Amazon Prime, all contained percentage-of-revenue prongs, at least prongs if not exclusively, correct?

A. I think all of them would have included both the per-user or the vast, again, without going through them one-by-one, per-user or percentage-of-revenue and typically per-user being the --

Q. Well, we're in open session. So maybe we shouldn't get into the details of this.

A. Fair enough.

Q. And the non-interactive sound recording information that you reviewed is subject to the willing buyer/willing seller backstop of Section 114, correct?

A. That's correct.

Q. So you are subtracting a regulated rate from an unregulated rate, correct?

A. Yes, that's correct.

Q. Okay. And I think that you used the term -- I know you did in your report -- we don't have to go there every time I say this, because maybe you

will agree, that the sound recording agreements were "freely negotiated." Do you recall using that terminology?

A. I wouldn't -- without going to the phrase, I believe they satisfy the fair market value standards. I am not denying using the phrase. I don't recall using it but I may have.

Q. Okay. Let's go to paragraph 37 of your opening report. Before we do that, did you reread your report before testifying here today?

A. Yes.

Q. When?

A. Over the last couple of days.

Q. Okay. All right. Line 3 says they are freely negotiated in an unconstrained marketplace. Do you see that?

A. Yes.

Q. Is that referring to the sound recording interactive service agreements?

A. Yes.

Q. And you also, I think, have the belief that they are not substantially affected by the record labels' undue bargaining power or market power, correct?

A. And as I -- yes, undue market power would

be the phrase I would use.

Q. Okay.

A. Excuse me, bargaining, I apologize, undue bargaining power.

Q. Okay.

JUDGE STRICKLER: How do you distinguish between bargaining power and undue bargaining power?

THE WITNESS: Well, you know, I think it is at the end of the day a subjective determination. I don't think there is any empirical or precise definition. I think you look at the ability of one party to a negotiation to extract value from the deal by -- from a deal between the two of them by virtue of the lack of choices available to the other party.

And so in this case you have the publishers and the labels who have rights which one does need to have if one wants to go into the interactive or non-interactive service business, depending on what we're talking about.

But, on the other hand, you have in my view Services who are not compelled to go into that business.

So in my view you have reasonably balanced power.

JUDGE STRICKLER: So the market power is not undue because you have companies -- and I assume you are talking about -- I am not going to assume anything.

What companies are you talking about that you say have the ability to exit the market and, therefore, there is no undue bargaining power operating against them?

THE WITNESS: Well, at the time that these agreements were negotiated, I think what is important here is you have a very dynamic marketplace in which new services are being launched all the time.

So even for companies that are in the market, Amazon, for example, is negotiating to launch a new service. And it has the option of launching that service or not launching that service. Pandora is negotiating to launch a new service.

What we see, in fact, is that we see services, the rates which are negotiated by Services which are in the process of entering, being identical to or comparable to the rates being negotiated by Services which are already in.

So the fact -- which indicates that

whatever is happening, the rightsholders are not utilizing whatever, their must have ability to discriminate even against the firms who have already launched.

JUDGE STRICKLER: I think you said a moment ago that those larger firms have the ability to not launch the new product because -- you didn't say this, I will say this, you tell me if it is what you meant -- they are so large that their survival is not at stake as to whether or not they can -- their survival is not at stake if they choose not to enter into that particular market?

THE WITNESS: Not only -- yes, that's correct.

JUDGE STRICKLER: So in that sense it's not really market power that you're talking about. You are just talking about corporate power because the market power would reflect the relative value of the inputs that are necessary to make a profit in that market.

It sounds like what you are saying is that these companies, particularly but not necessarily exclusively, Amazon, Apple, and Google, have such size that they can -- they don't care about market power. They operate outside of the

market power constraint because of their conglomerate-type nature, if you will.

THE WITNESS: Here would be my --

JUDGE STRICKLER: Do you agree with that or disagree with that?

THE WITNESS: Well, if I could explain a little, I -- I would interpret it just a little bit differently. What I believe we have going on in these markets are one-on-one negotiations, bargaining. And that's fundamentally different from kind of the neoclassical model of price makers and price takers.

So when Google and the publishers are sitting across the table from each other, what's relevant, the concept of market power becomes a little -- I am not sure of the right concept to apply.

The concept that really has probative power in my view is bargaining power, negotiating leverage.

And that's a different concept. It is not so much about values, the marginal revenue product of an input, for example, which we think about in the neoclassical world. It is about best alternatives to a negotiated agreement.

So my approach in this market is to think about prices set between parties who are in the Nash world dividing equally between them, if bargaining power is reasonably evenly divided, equally between them the value of the deal relative to the next best alternative to a negotiated agreement.

JUDGE STRICKLER: And the next best alternative that you are speaking of for these larger companies is to invest their capital somewhere else?

THE WITNESS: In the next bet down the line.

JUDGE STRICKLER: So in a sense we're really looking at these large companies, if I understand your testimony correctly, as investors in the market who can take their capital that may well have been generated internally and move it to some other alternative in the same way that, if you read Mr. Pakman's testimony, venture capitalists have to decide where to put their money.

Amazon, Google, Apple, by way of example, can take their money and put it wherever they think they're going to get the greatest return across markets, not necessarily within this market?

THE WITNESS: I can't improve on that

description. That's exactly the way I see it, yes.

JUDGE STRICKLER: Thank you.

BY MR. ISAKOFF:

Q. And I would like to talk about some of this a little bit more in open session, since I know that's what we prefer to do where we can, but we're going to have to get into the contracts.

But just to be very precise, the data that you're relying on as your benchmark is interactive sound recording contracts between Services and labels during 2015, correct, with those contracts that produced the royalties in 2015, correct? It is all 2015 data?

A. Yes, that's correct.

Q. Okay. Let's go to Exhibit 1460 in your binder. I will tell you which binder in a second. That is the second item in Binder 2. This is 1460 in evidence.

A. I see that.

Q. Okay. And this is the CRB decision in the Web IV case from last May, correct?

A. It appears to be, yes.

Q. Okay.

A. It appears to be.

JUDGE STRICKLER: Is this Volume 2 of 2?

MR. ISAKOFF: Volume 2 of 2.

JUDGE STRICKLER: The exhibit number again? I'm sorry.

MR. ISAKOFF: 1460. The second item, I think.

BY MR. ISAKOFF:

Q. And if you would turn, please, I am going to walk a little bit through some of the things that the Judges said and just maybe get some of your reactions to them.

If you will turn first to the page that has 26332 in the upper left-hand corner.

MR. SEMEL: Your Honor, I would just object, outside the scope based on that description that we're going to walk through things the Judges said and get his reaction to them.

MR. ISAKOFF: He relied on this in his report. He says so. And this concerns the state of the very benchmark that he used in 2011 to 2014, some of the very same agreements that he attached --

JUDGE BARNETT: Thank you, Mr. Isakoff. At this point, Mr. Isakoff, you can ask questions about it but you don't have to go through and read it. We're familiar with it.

MR. ISAKOFF: Okay.

BY MR. ISAKOFF:

Q. Are you -- well, okay. Well, are you familiar with the -- are you familiar with the notion that in Web IV the Judges were trying to determine a rate under willing buyer/willing seller standard, which is somewhat less stringent than the one at issue here?

A. Without, without adopting your characterization of the standards, I don't know what stringent means but, yes, they were trying to apply the willing buyer/willing seller standard.

Q. And you understand that the position of the Judges was that they had to set a rate that reflected a market that was effectively competitive?

A. Yes, I do.

Q. Okay. And you understand that in that case there was unrebutted testimony and evidence that there was a complementary oligopoly on behalf of the record companies who had every incentive to fight such a finding and failed, correct?

MR. SEMEL: Again, objection. I feel like he is trying to put in the Web IV evidence into this case somehow.

JUDGE BARNETT: What's the legal basis of your objection?

MR. SEMEL: Outside the scope. I mean, I think he is just putting in evidence from Web IV.

JUDGE BARNETT: Mr. Isakoff, how is it relevant?

MR. ISAKOFF: It is directly relevant. It is the very same contracts in many cases, which I am going to go through when we go to closed session. The data that was at issue there was 2011 to 2014. The contracts are multi-year contracts. All of this data is 2015, identical market.

This was litigated. This Panel made findings based on litigation. The rule, Federal Rule of Evidence 201 allows judicial notice. There is absolutely no question of the intense relevance of this decision, which he also relied on in his report, for the basic notion that he could rely on sound recording interactive streaming agreements and make no adjustment, even while this Panel made a 12 percent adjustment specifically because it found a complementary oligopoly.

JUDGE STRICKLER: When you say he relied -- I'm sorry, go ahead.

JUDGE BARNETT: It might be better if you just ask him the questions about the contracts and then if there is some contradiction you find in the

Web IV determination, you can refer back to that. We don't need to go through Web IV.

MR. ISAKOFF: The point is, Your Honors, that Web IV involved the very same evidence, a slightly displaced one-year period, and he is relying on the sound recording rates without making any adjustment, contrary to what this Panel did.

JUDGE BARNETT: I heard you. I heard you say that. Thank you.

Now, ask him the questions and then you can refer back to the Web IV determination, if necessary.

MR. SEMEL: If we may just before we proceed, just because I am concerned, I feel like counsel just outlined the factors for issue preclusion or collateral estoppel but failed to note that we were not party to Web IV.

And I feel like he is trying to import evidence and use it in this proceeding against people who are not parties to that proceeding without it actually being in evidence.

JUDGE BARNETT: Well, he is not importing anything. We can take official notice of what's in our records and go from there.

MR. SEMEL: Thank you.

MR. ISAKOFF: That's exactly the way I'm using it, Your Honor, is official or judicial notice, not collateral estoppel.

BY MR. ISAKOFF:

Q. You made no adjustment to the sound recording royalty data that you used for 2015 for any complementary oligopoly effect, did you?

A. No, I did not.

Q. And you do recall that this Panel made a 12 percent adjustment?

A. If I may, the Panel made, as I understood it, and we talked about this in my deposition, the Panel -- and I feel at great risk both being an economist and sitting in front of the Panel, you are asking for my interpretation, so I will give it to you.

My understanding of that as I read it was that the -- there were two things going on there. First of all, the determination that there was a 12 percent effect of steering that was occurring in the non-interactive market which was not present in the interactive market, and that that 12 percent impact should be taken into account in making an adjustment from a benchmark for the interactive market to a non-interactive market.

So that's my understanding of that.

Q. Okay. And you didn't understand that the 12 percent steering adjustment was used to measure the adjustment of what would make the benchmark effectively competitive and that you think it is because there was the ability to steer in the non-interactive market that made the adjustment?

A. The -- the -- I don't have -- I don't have an economic opinion on how the Court was interpreting. I told you my understanding is that it came from the 12 percent.

I just don't have an economic interpretation of what the Court was -- I have read the decision more than once, but I don't have an economic interpretation of how that was decided.

Q. And you believe that it is not appropriate to make a similar adjustment to your 2015 data here because you are not adopting the opinion necessarily embraced by the CRB in Web IV, correct?

A. Well, I think the -- A, that is correct. I am not -- I don't have an opinion on the findings of the CRB in Web IV.

Again, just to repeat my prior answer to make sure the point is clear, the adjustment made in

Web IV, as I understood it, was an adjustment to reflect differences in the market for interactive services and non-interactive services.

And the separate question of the nature of the market power identified in the interactive services market is one that I don't have a clear -- I read the decision. I don't have a clear understanding of what the Court was doing in that respect.

Q. Now, do you recall that the data to which the adjustment of 12 percent was made concerned the period 2011 to '14?

A. I will accept that. I don't recall that sitting here now.

Q. Okay.

MR. ISAKOFF: Does counsel have an objection if I point out -- point that out in Web IV, specifically page 26405, left-hand column?

MR. SEMEL: Your Honor, I just think we're well beyond the scope of his direct. We're just going through Web IV.

JUDGE BARNETT: That objection is overruled.

BY MR. ISAKOFF:

Q. All right. Well, you can take my word

for it it's at 26405, which gives you the time frame.

Is it fair to say that you distinguish your 2015 data from what was before the CRB in Web IV because these concerned agreements reached years ago?

A. I think I may have used the phrase "years ago" in my -- in my deposition.

Q. And, in fact, many of the same agreements that produced the data that was being looked at for 2011 to 2014 were still in effect in 2015, the year covered by your data?

A. I think that's possible.

Q. Well, we will look. In fact, I think now is a good time to close the courtroom.

JUDGE BARNETT: We are going to enter a restricted session. If you are in the hearing room and do not have rights to hear or observe restricted material, please wait outside.

(Whereupon, the trial proceeded in confidential session.)

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O P E N S E S S I O N

BY MR. WETZEL:

Q. Dr. Eisenach, this morning you discussed your Method 1 calculation to arrive at an implicit mechanical rate for sound recordings. Do you recall that testimony?

A. Yes, I do.

Q. And for streaming services, you analogized the mechanical right and musical works to the reproduction rights in sound recordings; is that correct?

A. Yes.

Q. Your calculation of an implicit mechanical rate was based on your understanding that interactive services pay record labels for reproduction and public performance rights; whereas non-interactive services require only the statutory public performance right for sound recordings, correct?

A. Yes.

Q. And you infer that the difference between non-interactive streaming payments and interactive streaming payments is for reproduction rights as opposed to public performance rights of sound recordings made in connection with interactive

streams, right?

A. I think that's representative of the incremental value, yes.

Q. But non-interactive services pay record labels or SoundExchange for reproduction rights in addition to public performance rights, don't they?

A. I'm not sure what you mean.

Q. Non-interactive services pay for a Section 114 license covering public performance rights?

A. Right.

Q. And for a Section 112 license covering reproductions of sound recordings, in connection with non-interactive streaming, don't they?

A. When they -- when they engage in non-interactive streaming.

Q. And the statutory rates set by the Copyright Royalty Board historically bundled the payments for public performance and reproduction rights to record labels into a single rate, don't they?

A. I'm not sure I understand your question. Are you asking about a part of the law? I'm not sure I'm --

Q. Is it fair to say that your analysis

doesn't account for the value of the reproduction rights conveyed by the Section 112 license or to any equivalent rights conveyed in direct licenses between sound recording companies and non-interactive streaming services, does it?

A. I'm not sure whether it does. The 112 license you will remind me is the license for -- describe the 112 license.

JUDGE BARNETT: It is sometimes referred to as ephemeral.

THE WITNESS: I had a feeling we were talking about the ephemeral license. I wouldn't think that would be a material difference, but thank you for the question.

BY MR. WETZEL:

Q. You made no adjustment for the 112 license?

A. That's correct.

Q. Okay. Do you agree that access to music on-demand is a substantial value separate and apart from the value obtained from listening to the music, correct?

A. Yes.

Q. And that's because you receive access to an entire library for unlimited listening; is that

correct?

A. Yes. You are putting it in terms of listening to music as opposed to access to music. I would say ownership of music as opposed to access. We're talking about sort of qualitative terms here, but I agree that there is a separate value for access.

Q. Well, let me refer you to your rebuttal testimony.

A. Okay.

Q. Paragraph 51, if we can put that up on the screen. It is 3033. Do you see where it says in the second sentence, "access to music on-demand is a substantial value separate and apart from the value obtained from listening to music?"

A. Thank you. In that context I think that's correct.

Q. And that's because you receive access to an entire library for unlimited listening, correct?

A. Yeah, that's correct.

Q. And you agree that the access value exists whether the subscriber plays ten songs or 10 million songs, correct?

A. That's correct.

Q. And that's why on-demand services market

the size of the catalogues that they offer, correct?

A. The value -- the options value is, yes, is what they are marketing there.

Q. You view the size of the music library to which a Service offers access as a differentiating feature of the Services, don't you?

A. Yes.

Q. Now, I want to discuss some of your testimony earlier today about the difference between micro-synch licenses and synch licenses.

A. Yes.

Q. You noted this afternoon that there was an important difference between full catalogue micro-synch licenses, on the one hand?

A. Right.

Q. And one-off synch licenses involving just one work on the other hand. Do you recall that testimony?

A. Yes.

Q. Your primary benchmarks in this case are full catalogue licenses, correct?

A. I think I used both the full catalogue licenses and the one-off licenses, but I may be -- you may be correct.

Q. The Pandora licenses that you rely on

each include the rights to the publishers or the performing rights organizations?

A. I apologize. I misunderstood your question. Do you mind, the licenses that you referred to in your question were the benchmarks being the sound recording licenses for interactive services; is that what you mean?

Q. We will get to those.

A. Okay.

Q. But there were a series of licenses that you discussed and used in your calculations, correct?

A. Correct. I'm sorry, I thought you were referring just to the full catalogue synch licenses. You are talking about all of the benchmarks? The benchmarks which I relied upon more broadly in my analysis are full catalogue licenses, that is correct.

Q. The Pandora licenses are full catalogue licenses offering a license to the rights to the publishers and performing rights organizations entire catalogues or repertoires, correct?

A. Yes.

Q. And the YouTube licenses, you rely on each include the rights to the publishers or the

record labels' entire catalogues also, correct?

A. Yes, that's correct.

Q. And the Section 114 license is a blanket license, correct?

A. Yes.

Q. And the interactive sound recording licenses between Services and labels that you discussed with Mr. Isakoff this morning are licenses that provide rights to the labels' catalogues as opposed to individual sound recordings, correct?

A. Yes.

MR. WETZEL: I have no further questions.

JUDGE BARNETT: Mr. Assmus?

MR. ASSMUS: Yes, Your Honor, we need to return to closed session quickly. It will be very brief.

JUDGE BARNETT: Okay.

(Whereupon, the trial proceeded in confidential session.)

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Proof of Delivery

I hereby certify that on Wednesday, October 20, 2021, I provided a true and correct copy of the Volume V.B - Designated Phonorecords III Records and Testimony to the following:

Zisk, Brian, represented by Brian Zisk, served via ESERVICE at brianzisk@gmail.com

Amazon.com Services LLC, represented by Joshua D Branson, served via ESERVICE at jbranson@kellogghansen.com

Apple Inc., represented by Mary C Mazzello, served via ESERVICE at mary.mazzello@kirkland.com

Spotify USA Inc., represented by Joseph Wetzel, served via ESERVICE at joe.wetzel@lw.com

Joint Record Company Participants, represented by Susan Chertkof, served via ESERVICE at susan.chertkof@riaa.com

Powell, David, represented by David Powell, served via ESERVICE at davidpowell008@yahoo.com

Google LLC, represented by Gary R Greenstein, served via ESERVICE at ggreenstein@wsgr.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

Signed: /s/ Benjamin K Semel