Electronically Filed
Docket: 21-CRB-0001-PR (2023-2027)
Filing Date: 04/26/2022 07:57:33 PM EDT

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
LIBRARY OF CONGRESS
Washington, D.C.

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

WRITTEN REBUTTAL STATEMENT OF SPOTIFY USA INC.

Volume 4A
Designated Phonorecords III Testimony

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April 22, 2022

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN DIRECT TESTIMONY OF LESLIE M. MARX, PHD
(On behalf of Spotify USA Inc.)

NOVEMBER 1, 2016

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I. Qualifications

(1) I am the Robert A. Bandeen Professor of Economics at the Fuqua School of Business at Duke University. In addition, I am a Partner at Bates White, LLC, a professional services firm that performs economic and statistical analysis in a variety of industries and forums. I specialize in microeconomics, particularly the fields of industrial organization and applied game theory. I received my PhD in Economics from Northwestern University and my BS in Mathematics from Duke University, where I graduated summa cum laude and was the valedictorian.

(2) Prior to joining the faculty at Duke, I was an Associate Professor of Economics and Management at the W.E. Simon Graduate School of Business Administration at the University of Rochester. I have taught PhD-level courses in game theory and industrial organization, and MBA courses on managerial decision analysis, managerial economics, managerial game theory, and environmental economics.

(3) From 2005 to 2006, I was the Chief Economist for the Federal Communications Commission (FCC). Among other things, a focus of my work was competition issues in media markets and markets for multichannel video programming distribution.

(4) *In re Petition of Pandora Media, Inc.*, I served as a testifying expert on behalf of Pandora Media, Inc., in its litigation with the American Society of Composers, Authors, and Publishers (ASCAP). I provided an opinion regarding reasonable royalty terms for Pandora's blanket license for the ASCAP repertory based on an analysis of the extent to which relevant benchmarks reflected competitive fair market value. The court ultimately adopted key aspects of my analysis and set a rate within the range of rates that I proposed.

(5) Throughout my career, I have pursued a research program focusing on auctions, procurement, cartels, and collusive behavior. My research incorporates my training in economic theory and econometrics. I have authored papers in many areas relevant to antitrust analysis, including papers examining the conduct of the vitamins cartel, papers related to collusion at auctions, and papers on coordinated effects related to merger analysis. These and other of my professional papers have been published in peer-reviewed publications, as shown in my attached curriculum vitae. I am the coauthor of a recent book published by MIT Press titled *The Economics of Collusion: Cartels and Bidding Rings*.[1]

(6) In addition to my teaching responsibilities at Duke University, I have been involved in the education of federal judges on antitrust economics. I have twice been paired with another economist to teach the

[1] Robert C. Marshall and Leslie M. Marx, *The Economics of Collusion: Cartels and Bidding Rings* (Cambridge, MA: MIT Press, 2012).

sessions on “Cartels” and “Agreement and Facilitation Practices” at the Antitrust Law & Economics Institute for Judges, cosponsored by the American Bar Association Section of Antitrust Law and the Law & Economics Center at George Mason University School of Law. I have also taught sessions on the economics of cartels and the economics of mergers to participants in the ABA’s Antitrust Master’s Program.

(7) Additional information about my previous testifying experience and my professional experience as an economist, including publications and affiliations, is included in my curriculum vitae, attached as Appendix A.

II. Scope of charge

(8) I was retained by Spotify USA Inc. ("Spotify") to help determine the reasonable terms and rates for interactive streaming royalty payments under Section 115 of the Copyright Act. Section 115 grants a compulsory license that allows for the making and distributing of physical and digital phonorecords of a songwriter's work, once a phonorecord of that work has been distributed to the public with the permission of that artist. Songwriters are due "mechanical royalties" under this license. Mechanical royalties are a component, along with performance royalties, of the royalties currently paid by interactive streaming services to holders of musical works rights.[2]

(9) In making my determination, I was advised that the reasonable terms and rates for interactive streaming mechanical royalty payments should achieve the following statutory objectives, known as the four 801(b) factors:[3]

A. To maximize the availability of creative works to the public.

B. To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions.

C. To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication.

D. To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

(10) In forming my opinion, I reviewed documents and data from Spotify and those made available through discovery, as well as publicly available documents. All documents cited in this report are listed in Appendix C. I reserve the right to incorporate into my analysis any new information or data that may become available.

[2] In this report, I sometimes refer to the holders of musical works rights collectively as "publishers."

[3] 17 U.S.C. § 801(b)(1).

III. Summary of opinions

(11) The 801(b) factors indicate that reasonable terms and rates for royalty payments should maximize the availability of creative works to the public (factor A), divide profits from supplying those works in a way that gives copyright owners and copyright users each a "fair return" according to their relative contributions (factors B and C), and minimize the disruptive impact on current industry structure and practices (factor D).

(12) The interpretation of each of these factors can be informed by economics. For factor D, current interactive streaming and permanent digital download (PDD) mechanical royalty rates provide a benchmark for future rates based on current industry practices. An economic interpretation of factor A is that the royalty structure should "maximize the pie" of total producer and consumer surplus, and take into account consumer benefits as well as transfers between copyright holders and copyright users. An economic interpretation of factors B and C points to a commonly used economic approach, the Shapley value, which provides an algorithm for dividing the profits generated by an agreement among the relevant parties based on their relative contributions. This operationalizes the concept of fair return based on relative contributions.

(13) Benchmarking exercises indicate a reasonable mechanical royalty rate would yield a total musical works percentage of revenue royalty rate for interactive streaming services of [redacted] implying an effective mechanical royalty rate of [redacted] in the case of Spotify. This represents a reduction in the current mechanical royalty rates, but not a dramatic change from current practice.

(14) 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. Although the current rate structure has a headline rate based on a percentage of revenue, the formula used to determine royalty rates for paid subscribers includes a $0.50 per-subscriber minimum, which can supersede the percentage-of-revenue calculation.[4] A high per-subscriber rate structure discourages interactive streaming services from expanding the market to consumer groups, such as students, with a higher elasticity of demand for streaming. Alternative per-unit rate structures, such as per-stream royalty fees, can similarly distort the incentives of interactive streamers, particularly at high levels. In addition, 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").

[4] There is also an $0.80 per-subscriber minimum that currently provides some protection to interactive streaming services from a potentially higher royalty fee based on sound recording payments. It serves the useful purpose of preventing a potentially dramatic increase in rates above what the 801(b) factors would call for, but that protection would better come through a closer tie to the headline percentage-of-revenue rate of 10.5% than through a per-subscriber minimum.

Therefore, I conclude that the mechanical royalty rate should be set as a percentage of revenue and not determined by the number of subscribers or number of streams. In cases where revenue is difficult to attribute to a particular service, per-subscriber or per-stream minimums can serve a useful purpose, but in that case they should be set to approximate an appropriate percentage-of-revenue rate rather than supersede it.

(15) Finally, an approach that allocates returns to an agreement based on relative contributions can address the "fair return" provisions of 801(b). The Shapley value provides such an approach. Implementing the Shapley value in this context involves developing a model of the industry where the costs and contributions of upstream rights holders and downstream distribution channels are used to determine "fair" royalty rates.[5] The baseline model that I implement, along with variations, indicates that the royalty rates paid by interactive streaming services are currently too high under a range of reasonable parameter values. This corroborates my benchmark analysis, which indicates that interactive streaming mechanical royalty rates should decrease.

(16) The remainder of this report explains these conclusions in more detail.

[5] Throughout this report, I use "upstream" to refer to owners of musical works and sound recording copyrights, and "downstream" to refer to music distribution channels such as interactive streaming.

IV. Music distribution and its evolution

(17) Consumers today have more options than ever before to access recorded music—from terrestrial and satellite radio to Internet streaming, PDDs, and CDs. Even vinyl records are making a comeback.[6] Technology has facilitated new patterns in music listening and new business models, as discrete albums have given way to, for example, user-created playlists and custom "stations" tied to particular musical genres. Technology has also facilitated piracy, presenting a challenge to the music industry. In addition to recorded music, live music performances continue to be an important source of revenue for performers and an important way to access music.

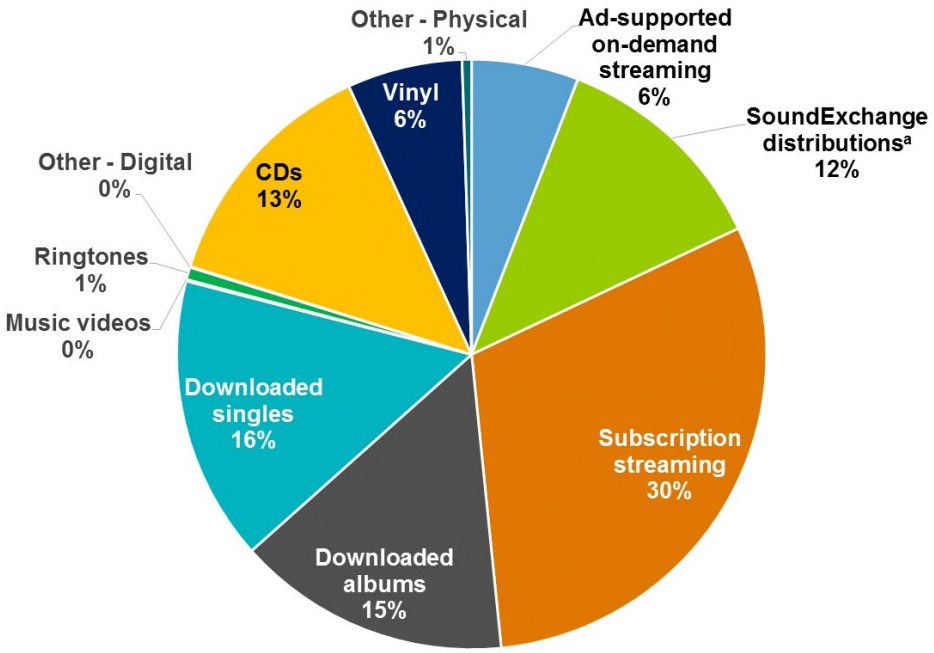
IV.A. Current recorded music distribution channels

(18) Figure 1 summarizes share of revenue from the main recorded music distribution channels for the first half of 2016.[7]

[6] Neil Shah, "The Biggest Music Comeback of 2014: Vinyl Records," *Wall Street Journal*, Dec. 11, 2014, *available at* http://www.wsj.com/articles/the-biggest-music-comeback-of-2014-vinyl-records-1418323133.

[7] With the exception of SoundExchange distributions, this revenue represents an estimate of what downstream consumers pay to access music content. For SoundExchange distributions, the revenue represents the royalties that are collected upstream, and thus understates downstream revenue. Terrestrial radio is not included.

Figure 1: 2016H1 Music industry recorded music revenue by distribution channel



Source: RIAA 2016 Mid-Year Shipments Memo.
a. "SoundExchange distributions" includes non-interactive streaming, satellite radio, and Cable TV music services.

IV.A.1. Streaming services

(19) Interactive streaming services made up roughly 36% of industry revenue in the first half of 2016. Non-interactive streaming services made up less than 12% of industry revenue for the same time period.[8,9] This distribution channel includes, among others, Spotify, Pandora, and YouTube, which has become a popular online channel for audio content.[10]

(20) Interactive streaming services enable users to receive a transmission of a sound recording selected by or on behalf of the listener.[11] Non-interactive streaming offers a service in which users cannot choose

[8] This arises from ambiguity in how the RIAA reports revenue for SoundExchange distributions.

[9] Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 3, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

[10] Rethink Music, "Fair Music: Transparency and Payment Flows in the Music Industry—Recommendations to Increase Transparency, Reduce Friction, and Promote Fairness in the Music Industry," Berklee Institute for Creative Entrepreneurship, Jul. 3, 2015, 19, *available at* https://www.berklee.edu/sites/default/files/Fair%20Music%20-%20Transparency%20and%20Payment%20Flows%20in%20the%20Music%20Industry.pdf.

[11] 17 U.S.C. § 114(j)(7).

a specific track or artist, but are provided a pre-programmed or algorithmically-determined combination of tracks.[12]

(21) The type of user engagement promoted by interactive streaming services is sometimes called "lean forward" or "active" listening, in contrast to non-interactive services promoting "lean back" or "passive" listening.[13] Interactive streaming services such as Spotify provide a number of features that are more characteristic of passive listening, however. For example, curated playlists and radio-like features are often a part of an interactive streaming service alongside the on-demand streaming component.[14] In the other direction, non-interactive streaming services such as Pandora do offer users a measure of control over listening that one-way terrestrial and satellite radio do not offer, such as the ability to seed a station with a favored artist or song and the ability to skip songs fairly frequently.[15]

(22) Interactive streaming services tend to have larger catalogs of songs and relatively more paid subscribers than non-interactive streaming services, which rely more heavily on an ad-supported model.[16] Some interactive streaming services, including Spotify, have both an ad-supported, free-to-user product as well as a paid subscription service.

IV.A.2. Purchased music

(23) Physical and digital purchases made up approximately 52% of industry revenue in the first half of 2016, including about 20% for physical purchases and 32% for digital purchases.[17] Physical purchases tend to bundle an album of songs onto one CD or record, whereas digital purchases allow the option of per-song purchasing. According to data from the Recording Industry Association of

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[12] SoundExchange, "Licensing 101," accessed Aug. 24, 2016, http://www.soundexchange.com/service-provider/licensing-101/.

[13] In a *Business Insider* article, for example, Ajay Kalia, a Spotify employee, refers to "lean back" listening. Alex Heath, "How Spotify is getting so good at picking the right music," *Business Insider*, Sep. 5, 2015, *available at* http://www.businessinsider.com.au/INSIDE-SPOTIFY-AND-THE-FUTURE-OF-MUSIC-STREAMING-2015-9#COMMENTS.

[14] SNL Kagan, "Economics of Internet Music & Radio," *S&P Global Market Intelligence*, Apr. 2016, at 14–24. *See also*, Spotify's ad-supported service limits the number of skips to six per hour on mobile devices Spotify, "Spotify Free," accessed Oct. 31, 2016, *available at* https://support.spotify.com/us/account_payment_help/subscription_options/spotify-free-on-your-mobile-phone/.

[15] Pandora, for example, allows multiple skips per hour for its ad-supported service, and unlimited skips per hour for its premium service. Micah Singleton, "Pandora Launches Pandora Plus, an Improved Version of its $5 Subscription Service," *The Verge*, Sep. 15, 2016, *available at* http://www.theverge.com/2016/9/15/12924910/pandora-plus-improved-subscription-service.

[16] SNL Kagan, "Economics of Internet Music & Radio," S&P Global Market Intelligence, Apr. 2016, at 14–24. *See also* Pandora Media Inc., Annual Report (Form 10-K) (Feb. 18, 2016), at 5.

[17] This calculation excludes synchronization royalties. Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 3, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

America (RIAA) for 2015, the average digital per song price is $1.10.[18] Unlike in the case of streaming, purchased music conveys a permanent ownership right.

IV.A.3. Satellite and terrestrial radio services

(24) Satellite radio offers consumers largely ad-free music, among other content. SiriusXM, the only satellite radio service in the United States, has an inventory of more than 175 channels, over 70 of which are music channels.[19] SiriusXM's primary source of revenue is subscription fees.[20] As with terrestrial radio, listeners have no control over which songs they listen to on satellite radio, beyond picking a station.

(25) Although terrestrial radio is not included in the above revenue breakdown, it continues to be a major source of music for listeners. As of June 2016, there were 6,714 commercial FM radio stations in the United States.[21] According to one survey, Americans spend more than half of their listening time listening to terrestrial radio.[22]

IV.A.4. Blurring of distinctions between channels

(26) Although these discrete distribution channels are subject to varying statutory (and non-statutory) royalty rates, there has been some migration of features across channels, so that the distinctions between channels are in some cases blurring. For example, Spotify, the largest interactive streaming service, pays the statutory interactive streaming rates for its streaming services, but also offers its subscribers radio and playlist services that are more akin to non-interactive streaming services such as those offered by Pandora. Also, terrestrial stations have, in recent years, begun offering their content via online streaming.

IV.B. Piracy

(27) While technology has created new music distribution channels, it has also facilitated the piracy of musical works. Piracy can be defined as the unauthorized copying of copyrighted material, and it is against the law.[23] Music piracy is a *de facto* distribution channel that does not contribute to music

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18 *Id.* at 2.

19 SiriusXM, "What is SiriusXM?" accessed Aug. 24, 2016, *available at* http://www.siriusxm.com/whatissiriusxm?hpid=02010022. Sirius XM Holdings Inc., Annual Report (Form 10-K) (Feb. 2, 2016), at 2.

20 Sirius XM Holdings Inc., Annual Report (Form 10-K) (Feb. 2, 2016), at 22.

21 Federal Communications Commission, "Broadcast Station Totals as of June 30, 2016," news release, July 8, 2016, *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-340211A1.pdf.

22 Edison Research, "Share of Ear: Americans' Share of Time Spent Listening to Audio Sources Q4 2015," Feb. 2, 2016, at 3, *available at* http://www.slideshare.net/westwoodone/share-of-ear-q4-2015.

23 Recording Industry Association of America, "Resources & Learning: About Piracy," accessed Sep. 20, 2016, http://www.riaa.com/resources-learning/about-piracy/.

revenue but instead decreases revenue generated by other channels. Common forms of piracy include downloading music from a file-sharing site, peer-to-peer file sharing, and using stream-ripping software or mobile apps to copy music.[24] While file-sharing sites remain the most popular method of accessing pirated music, followed by peer-to-peer file sharing sites, the practice of ripping music from YouTube and from web-based music sites is on the rise.[25]

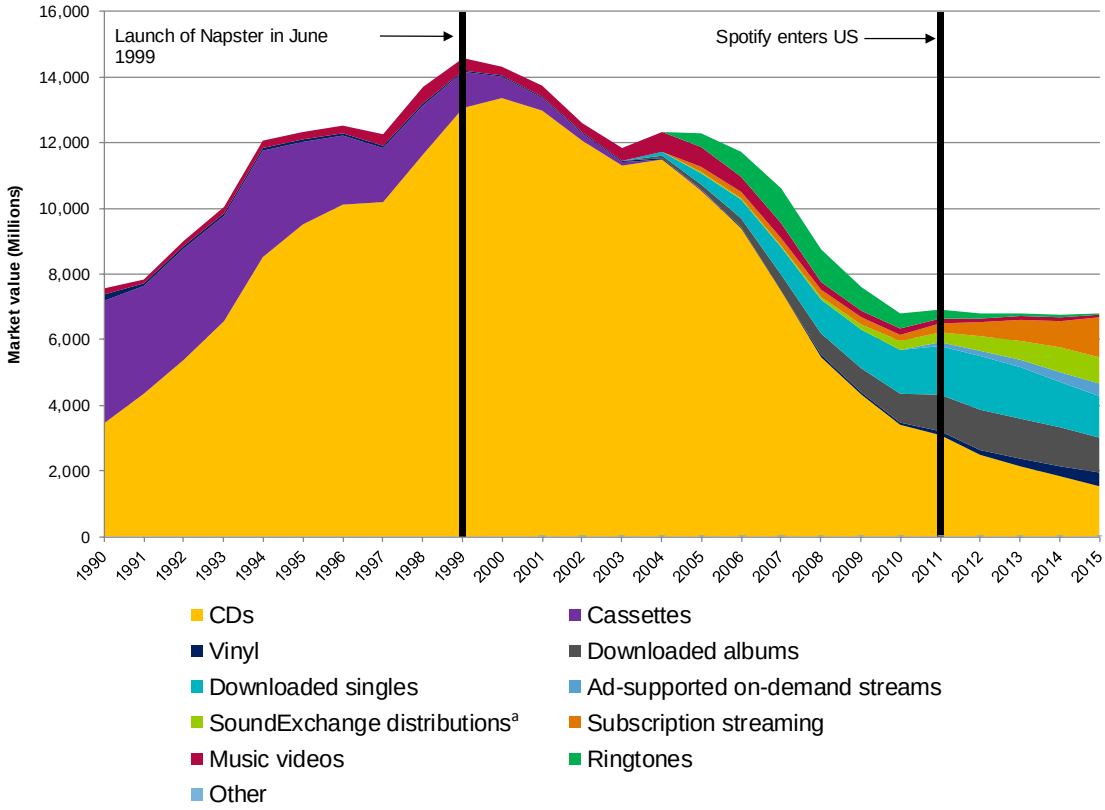
(28) Piracy has had a substantial impact on music industry revenue. As seen in Figure 2, the original launch of the file-sharing service Napster in 1999, which facilitated a rise in piracy, coincided with a sharp decline in recorded music industry revenue, widely attributed to piracy. This rapid decline ceased alongside the entry of Spotify and the rise of streaming services. By 2016, industry revenue had grown for two years in a row for the first time since their peak in the late 1990s. This growth has been attributed in part to streaming services.[26]

[24] *Id*.

[25] Paul Resnikoff, "How Music Piracy Is Completely Changing in 2016," *Digital Music News*, May 5, 2016, *available at* http://www.digitalmusicnews.com/2016/05/05/what-music-piracy-really-looks-like/.

[26] Lucas Shaw, "The Music Industry Is Finally Making Money on Streaming," *Bloomberg*, Sep. 20, 2016, *available at* http://www.bloomberg.com/news/articles/2016-09-20/spotify-apple-drive-u-s-music-industry-s-8-first-half-growth.

Figure 2: US Music industry revenue by distribution channel over time



Source: RIAA US Sales Database.
a. "SoundExchange distributions" includes non-interactive streaming, satellite radio, and Cable TV music services

(29) [redacted] Some may be dedicated pirates who will never switch to a different distribution channel. Available evidence, however, indicates that streaming services have been effective in attracting customers who are not dedicated pirates but who engage in "casual" piracy alongside other forms of music listening. Although it is nominally free, piracy can involve significant hassle and potentially a legal and/or moral cost to the user. Interactive streaming provides easy access to content via a user-friendly interface and the ability to stream specific songs on demand, as well as music discovery algorithms and other added features, that may make it more attractive than piracy, even with a nominally higher cost for the paid tier (and the same nominal cost for the ad-supported tier).

(30) [redacted]

[redacted]

[redacted]

(31) Spotify studies have found that in mature markets for interactive streaming – markets in which interactive streaming has a relatively long history and high penetration rate – piracy has fallen significantly. [redacted]

IV.C. Trends in music distribution

(32) As shown in Figure 2, the music industry experienced a decline in revenue over the last decade that has recently started to reverse. The last decade has also seen a dramatic shift in the form of distribution from physical sales to digital content such as PDDs and streaming services. The bulk of the decline in industry revenue occurred after the advent of Napster in 1999, and industry revenue stopped decreasing alongside the rise of streaming starting in 2010.

(33) Over the last five-and-a-half years, revenue attributed to all forms of streaming rose from 7% to 48% of recorded music revenue, according to RIAA estimates.[30] This share increase has coincided with a large increase in the number of paid streaming subscriptions, which increased 131.6% from the first half of 2014 to the first half of 2016. Within all digital content, streaming accounted for the majority of revenue in the first half of 2016.[31]

(34) Physical sales have declined rapidly in the United States over the last decade. PDDs have also declined as streaming services have increased. From the first half of 2015 to the first half of 2016, US revenue for digital single and album downloads declined approximately 22% and 11.4%, respectively. During the same period, revenue from ad-supported and subscription-based streaming grew by 23.6% and 112%, respectively.[32]

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[28] *Id.* at 98.

[redacted]

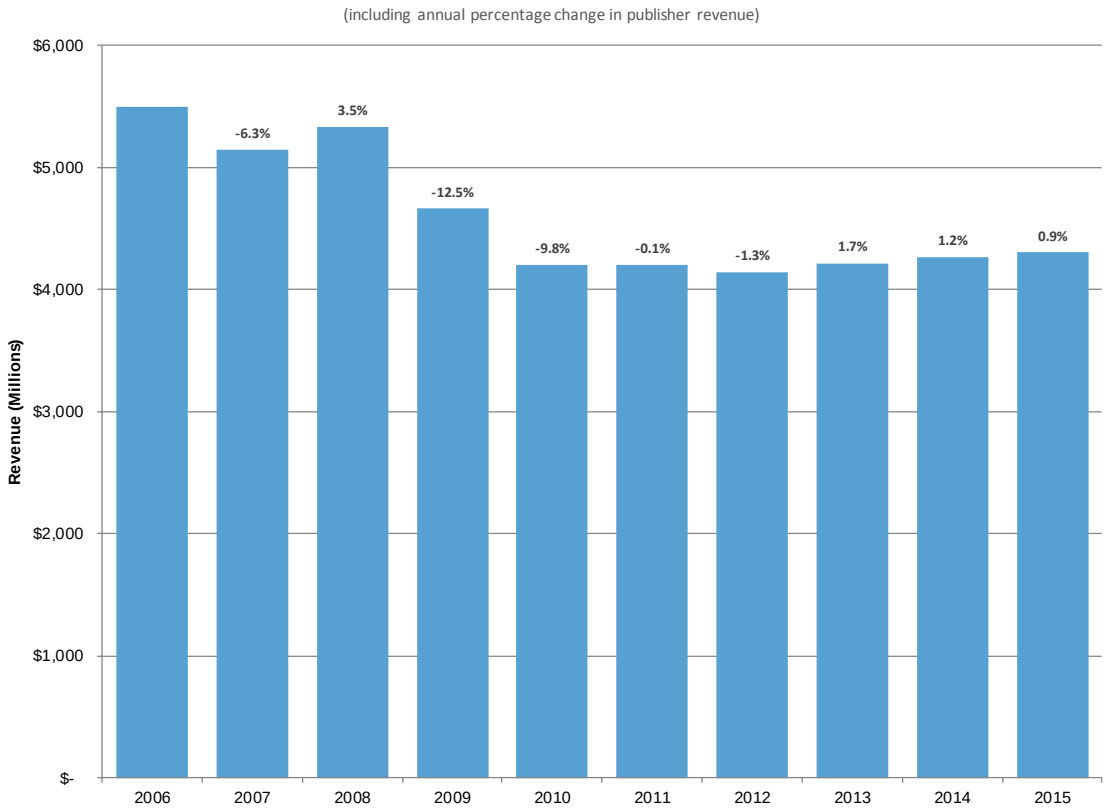
[30] Joshua P. Friedlander, "News and Notes on 2015 RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Sep. 15, 2016, 2, http://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf. *See also* Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 2, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

[31] Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 1-2, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf. *See also* Lucas Shaw, "The Music Industry Is Finally Making Money on Streaming," Bloomberg, Sep. 20, 2016, *available at* http://www.bloomberg.com/news/articles/2016-09-20/spotify-apple-drive-u-s-music-industry-s-8-first-half-growth.

[32] Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 3, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

(35) Music publishing industry revenue has increased slightly in recent years, as shown in Figure 3. This has coincided with an increase in paid streaming and an increase in overall music listening.[33]

Figure 3: US music publishing industry revenue, 2006–2015 (2015 dollars)



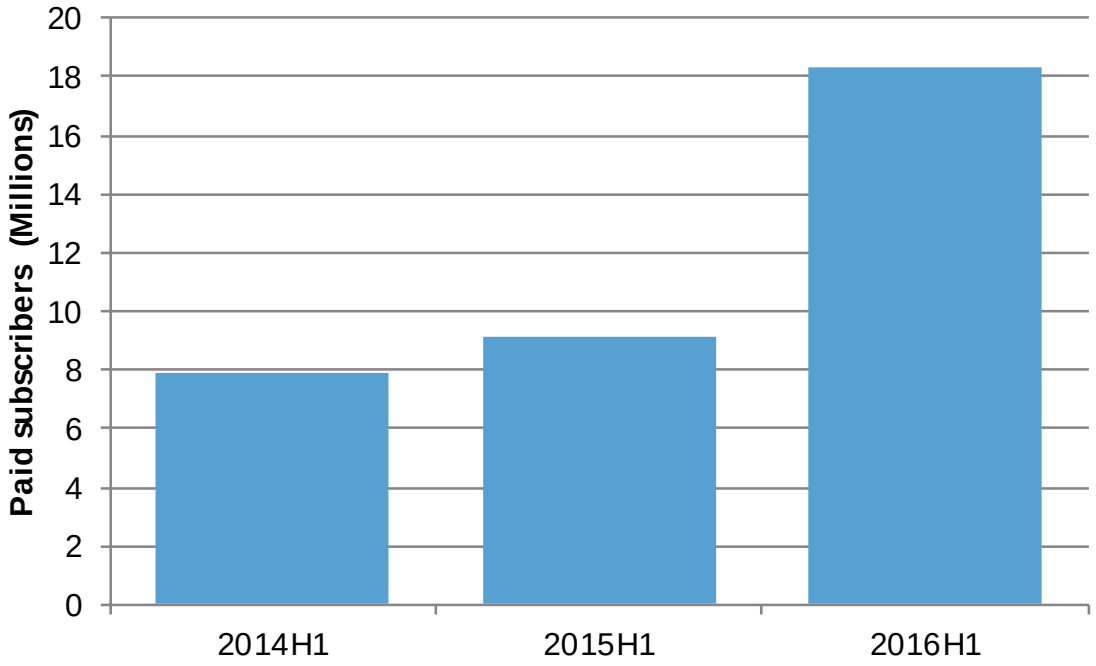
Source: 2015 IBISWorld Music Publishing Report at 34.

[33] *See* footnote 30. *See also* MusicWatch study: Annual Music Study 2015, Report to Spotify Ltd., June 2016, at 33.

V. The interactive streaming industry

(36) The interactive streaming industry has grown rapidly in recent years, a trend that is expected to continue. [redacted] In the United States, use of paid streaming has accelerated dramatically with the continued growth of Spotify [redacted]. As seen in Figure 4, from the first half of 2014 to the first half of 2016, subscribers to paid streaming services increased by 131.6%.[35]

Figure 4: US paid streaming subscribers



Source: RIAA 2016 Mid-Year Shipments Memo.

(37) The interactive streaming industry is made up of firms of different sizes and business models. [redacted]

[34] [redacted]

[35] Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Oct. 19, 2016, 1, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

[36] In October 2016, Amazon launched its Music Unlimited service as a more direct competitor to the top streaming services. Unlike the streaming service offered as a free component of Amazon Prime, which offered about 2 million

[redacted]

Note: These figures were calculated by excluding Pandora, a non-interactive streaming service, to get global interactive streaming share estimates. SoundCloud launched an interactive streaming service after February 2016, and so is not listed on this chart.[37]
a. Deezer entered the US market in July 2016.[38]

V.A. Value created by interactive streaming

(38) Interactive streaming creates value in a number of different ways for consumers and artists. For consumers, interactive streaming provides immediate access to an extensive catalog of songs beyond what most individual owners could accumulate, allowing free sampling and experimentation with new music. Not only is the marginal cost to a user of listening to new music on a streaming service zero, but listeners do not incur the added cost and hassle of file storage and file management.[39] For songwriters and performers, the data generated by interactive streaming can facilitate greater understanding of their listening audience relative to CD purchases or PDD, as I explain in more detail below.

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songs, Music Unlimited will have a library of tens of millions of songs. It will be available to Prime members at a discount rate of $7.99 per month. For those who are not members, it will be available for $9.99 per month. Ben Sisario, "Amazon Pairs Its Speaker with Streaming Music, at a Bargain Price," *New York Times*, Oct. 12, 2016, *available at* http://www.nytimes.com/2016/10/12/business/amazon-music-apple-spotify.html?_r=0.

37 SoundCloud, "Introducing SoundCloud Go," news release, Mar. 29, 2016, *available at* https://blog.soundcloud.com/2016/03/29/introducing-soundcloud-go/.

38 Deezer, "Deezer Launches Direct to Consumers in US with the Most Personalized Music Discovery Platform," news release, July 19, 2016, *available at* http://www.deezer-blog.com/press/deezer-launches-direct-to-consumers-in-u-s-with-the-most-personalized-music-discovery-platform/.

39 "Marginal cost" is defined as the increase in total cost resulting from an additional unit of output. Streaming subscription prices do not increase with the amount of music consumed. Thus, consumers face a zero marginal cost of listening to additional music.

[redacted]

[redacted]

(41) [redacted] New and lesser-known artists benefit from listener experimentation. [redacted]

V.B. Impact of interactive streaming on other distribution channels

(42) Interactive streaming can both substitute for or complement music consumed through other distribution channels. To the extent that interactive streaming is complementary to other channels, total revenue will increase.[46] To the extent that it substitutes for consumption through other channels, the impact on total revenue is ambiguous, depending on the revenue generated by the alternative. Moving listening from terrestrial radio to interactive streaming, for instance, will generally increase copyright holder revenue. Displacing piracy will unambiguously increase revenue.

[redacted]

[46] For evidence that interactive streaming is complementary to other forms of music distribution, *see*, e.g., Godefroy DangNguyen, Sylvain Dejean, and François Moreau, "Are Streaming and Other Music Consumption Modes Substitutes or Complements?" Social Science Research Network (Mar. 16, 2012), accessed Oct. 31, 2016, *available at* http://ssrn.com/abstract=2025071.

[redacted]

(44) As I discussed earlier, the rise in streaming services has also coincided with a decline in purchases of CDs and PDDs. The additional revenue from streaming has helped the music industry replace the lost revenue from the decline in PDD and CD sales. Some of this decline in older platforms is due directly to migration to streaming. [redacted]

(45) As discussed in section IV.B, interactive streaming can increase total royalties by moving users away from services that collect fewer royalties. Piracy is the obvious example. [redacted]

[redacted]

[redacted] Because terrestrial radio pays significantly lower total royalties than interactive streaming, substitution from terrestrial radio to interactive streaming also increases music revenue.

(46) Streaming services may also be complementary to other revenue streams by promoting spending on music by, for example, exposing listeners to new composers and new artists. For example, Spotify's Discover Weekly feature compiles a personalized playlist for listeners based on their listening history and the listening history of others with similar taste in music. Discover Weekly is sent to any user who selects the service and is updated every Monday.[56]

(47) Finally, one form of revenue to musicians and copyright holders—live performances—lies outside of recorded music distribution channels but still generates substantial revenue for artists. Concert revenue has always been a primary source of revenue for performance artists.[57] Interactive streaming may contribute to higher live performance revenue by increasing overall music listening and helping to match listeners with artists. Spotify, for example, has a "Concerts" feature that recommends nearby concerts to users based on their listening habits.[58]

V.C. Example: Spotify

(48) Spotify, the largest interactive streaming service in the United States and globally as measured by subscribers and revenue, launched its interactive streaming service in 2008.[59] It became available in the United States in July 2011; as of October 2016 it is available in 60 countries.[60] The service offers an ad-supported, free-to-users tier as well as a paid tier, Spotify Premium.[61] As shown in [redacted]

[redacted]

56 Spotify, "Discover Weekly," accessed Sep. 20, 2016, https://support.spotify.com/us/using_spotify/playlists/discover-weekly/.

57 Figure 2 in Peter DiCola "Money from Music: Survey Evidence on Musicians' Revenue and Lessons About Copyright Incentives," *Arizona Law Review*, Volume 55, pp. 1-70. A survey of 5,000 artists shows that they made 28% of their collective revenue from live performances, compared to 12% from songwriting and sound recording royalties.

58 Spotify, "Personalized Concert Recommendations," news release, Nov. 11, 2012, *available at* https://news.spotify.com/us/2015/11/12/never-miss-another-show-with-personalized-concerts/

59 Spotify, "We've only just begun!" news release, Oct, 7, 2008, *available at* https://news.spotify.com/us/2008/10/07/weve-only-just-begun/.

60 Spotify, "Hello America, Spotify Here," news release, July, 14, 2011, *available at* https://news.spotify.com/us/2011/07/14/hello-america-spotify-here/. *See also* Spotify, "Where Is Spotify Available?" accessed Oct. 26, 2016, https://support.spotify.com/us/account_payment_help/subscription_options/full-list-of-territories-where-spotify-is-available/.

61 Spotify, "Choose your Spotify," accessed Sep. 20, 2016, https://www.spotify.com/us/subscriptions2.

[redacted]

[redacted]

(49) [redacted]

[redacted]

[redacted]

[64] Around the same time, Spotify made a mobile version of its ad-supported service available, which can explain some of the additional growth in ad-supported subscribers. *See*, Ellis Hamburger, "Spotify announces free streaming on Android and iPhone, but only in Shuffle mode," *The Verge*, Dec. 11, 2013, *available at* http://www.theverge.com/2013/12/11/5199692/spotify-announces-free-streaming-on-android-and-iphone-but-only-in.

[redacted]

(50) In addition to allowing subscribers to play songs of their choosing, Spotify also generates playlists for subscribers. These playlists, which can be compiled by Spotify's editorial team or algorithmically generated (or a combination of both), are often built around a genre or mood.[65] As an example, the Atmospheric Acoustic playlist features "[h]eady orchestrations scored by haunting strings and sensuous harmonies." As with a non-interactive service like Pandora, Spotify's service allows users to pick a song as a seed off which Spotify's algorithm can create a "radio station" containing music similar to the seed song.[66] Spotify also offers a Discover Weekly feature that provides a weekly 30-song playlist based on a user's listening habits.[67] These passive listening features mimic features of non-interactive services such as Pandora.

[65] David Pierce, "Inside Spotify's Hunt for the Perfect Playlist," *Wired*, July, 20, 2015, *available at* https://www.wired.com/2015/07/spotify-perfect-playlist.

[66] "Spotify Radio," TechBoomers, accessed Oct. 27, 2016, https://techboomers.com/t/spotify-radio.

[67] Patricia Garcia, "Why Spotify's Discover Weekly Is So Addictive," *Vogue*, May 30, 2016, *available at* http://www.vogue.com/13441042/spotify-discover-weekly-genius/.

[redacted]

(52) Spotify's service includes a social component that allows users to share their playlists with one another, providing another avenue for the discovery of new music. A user can, for example, share a song or playlist with a friend through the Spotify platform itself or through a social media platform like Facebook. Users can also share playlists through email and text.[70]

[redacted]

[70] Spotify, "Share Music," accessed Oct. 28, 2016, https://support.spotify.com/us/using_spotify/share_music/sharing-music/.

VI. Two interactive streaming business models: subscription and ad-supported

(53) Interactive streaming services operate through two primary business models: paid subscription services and ad-supported services provided free to users.[71] Paid subscription services generally offer more features than ad-supported services. For instance, Spotify's paid tier, Spotify Premium, provides ad-free listening and higher quality audio than its ad-supported tier.[72] Ad-supported free-to-user tiers generally offer interactive streaming with more limited functionality and an increased advertising presence.[73]

(54) These two types of interactive streaming services target two distinct types of listeners: those with a relatively high WTP for music and those who are primarily searching, at least initially, for a low-cost or no-cost option. This bifurcation in WTP is recognized by the industry,[74] and was discussed at length in the CRB *Web IV* decision, where the judges found that "the record is replete with evidence corroborating this [bimodal chasm.]"[75] They cite a survey conducted by an economic expert in the case and numerous industry witnesses as supporting the notion of one group with high WTP for streaming services and another group with little or no WTP out-of-pocket.[76] Although that case was specifically about non-interactive services, this distinction exists more generally among online music listeners.

(55) The purpose of Spotify's ad-supported tier is twofold. One purpose is to introduce potential subscribers to the Spotify service and create opportunities to upsell them with Premium only features. The second purpose is to provide a revenue-generating service to low WTP consumers who are unlikely to switch to a paid service.[77] [redacted]

[71] Spotify and Deezer, for example, both offer an ad-supported tier of service along with a paid subscription service.

[72] Spotify, "Go Premium. Be Happy," accessed Sep. 20, 2016, https://www.spotify.com/us/premium/.

[73] Spotify's ad-supported tier, for example, offers on demand access on desktop computers, but provides shuffle play on mobile devices, and limits the number of skips to six per hour on mobile devices. Spotify, "Spotify Free," available at https://support.spotify.com/us/account_payment_help/subscription_options/spotify-free-on-your-mobile-phone/.

[74] Glenn Peoples, "Business Matters: Study Says Consumers More Willing to Pay for Music Streaming—Except in Sweden," *Billboard*, May 31, 2013, *available at* http://www.billboard.com/biz/articles/news/digital-and-mobile/1565553/business-matters-study-says-consumers-more-willing-to.

[75] Determination, *In re Web IV*, at 69.

[76] Testimony of Daniel McFadden, *In re Web IV*, at 3.

[redacted]

[redacted]

(56) The current mechanical royalty rates for interactive streaming recognize this bifurcation in WTP by making headline rates a percentage of revenue, accommodating services that target lower WTP consumers by charging them less, and by not imposing a per-subscriber minimum fee on ad-supported services. A flat per-stream or per-subscriber fee applied to both paid and free services would change this structure and could significantly increase the royalty costs of ad-supported services relative to paid subscription services.

VII. Background on musical recording royalties

(57) US copyright law recognizes and protects two distinct types of ownership for music: the underlying musical work created by songwriters and the sound recording that an artist performs.[78]

(58) Within these two types of ownership, there are three general categories of rights: public performance rights, reproduction and distribution ("mechanical") rights, and synchronization rights.[79] Although distribution platforms generally pay royalties for both musical works and sound recordings, it is common for them to only have to pay for public performance, mechanical, *or* synchronization rights.[80] For instance, non-interactive streaming services pay only performance royalties, and sellers of PDDs pay only mechanical royalties. Interactive streaming services, in contrast, pay both public performance and mechanical royalties.[81]

(59) Economic decisions are driven by total payments to musical works rights holders and total payments to sound recording rights holders, whatever their sub-components. In my analysis, therefore, I focus on these total payments and analyze mechanical royalties as one piece of the overall musical works payment made to publishers and songwriters.

VII.A. Sound recording royalties

(60) Sound recording royalties are paid for the particular recording of a musical work.[82] Distributors of satellite radio, non-interactive streaming, interactive streaming, PDDs, and CDs are all required to pay some form of royalties to holders of sound recording rights.[83] Terrestrial radio is the only distribution channel in which holders of sound recording copyrights have no control over distribution and are not entitled to royalties.[84]

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[78] United States Copyright Office, "Copyright and the Music Marketplace," Library of Congress, February 2015, 27, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

[79] Ephemeral rights—the rights to make server reproductions of sound recordings to facilitate digital transmissions—are included under public performance rights, for example. Synchronization rights refer to the right to "use music in 'timed relation' to visual content." Synchronization rights are negotiated in the free market for both musical works and sound recording. *Id.* at 55-56, Appendix D. I do not directly address these rights in my analysis.

[80] One exception to this is terrestrial radio, which does not pay royalties for sound recordings. *Id.* at 87.

[81] *Id.* at Appendix D. Whether Section 115 licenses should apply to interactive streaming services may be a matter of legal dispute. I do not offer an opinion on that question here. For purposes of this report I take their application to interactive streaming services as given.

[82] *Id.* at 18.

[83] *Id.* at Appendix D.

[84] *Id.* at 43–44.

(61) Sound recording royalty rates for making and distributing CDs and PDDs, as well as operating an interactive streaming service, are established through direct negotiations with the copyright holder in the open market.[85] The sound recording digital public performance royalties paid by non-interactive streaming services, satellite radio, and "pre-existing subscription services," such as Music Choice, are set by statute. The CRB is responsible for setting statutory sound recording royalty rates for these distribution channels.[86]

(62) [redacted] statutory rates noted above are summarized in Figure 9 below.

Figure 9: 2016 US sound recording royalty rates

Platform	Sound recording royalty
Statutory rates	
Non-interactive transmission services (subscription)	$0.0022/play
Non-interactive transmission services (non-subscription)	$0.0017/play
Pre-existing subscription services	8.5% of gross revenue
Satellite digital radio services	10.5% of gross revenue
Terrestrial radio services	0
[redacted]	
[redacted]	[redacted]

Source: *Web IV* determination, SoundExchange, [redacted]

VII.B. Musical work royalties

(63) Musical works rights can be sorted into three general categories: performance, mechanical, and synchronization rights. Non-interactive streaming, radio, ringtones, and sales of PDD/CD pay either performance or mechanical royalties, but not both. Interactive streaming services pay both mechanical and performance royalties for musical works. Below, I give a brief overview of these two types of royalties for musical works.

VII.B.1. Performance royalties

(64) The large number of music performances makes it difficult for individual music composers to negotiate and collect rates from each party seeking to use their music. Performance rights organizations (PROs) aggregate the interests of the composers that they represent, and they negotiate and collect rates on their behalf. PROs acquire rights from composers of musical works and in turn

[85] *Id.* at 43.

[86] *Id.* at 46, 50.

[redacted]

grant "blanket licenses" that allow music users to play any of the musical works in the PRO's repertoire.

(65) There are three primary PROs in the United States: ASCAP, Broadcast Music, Inc. (BMI), and Society of European Stage Authors and Composers (SESAC). ASCAP and BMI together represent over 90% of songs available for licensing in the United States.[88, 89] Department of Justice (DOJ) consent decrees have established that PROs are required to grant a license to any user that applies, and must accept any music composer who wishes to be represented by the PRO.[90]

(66) Both BMI's and ASCAP's revenues have increased in recent years. In 2015, BMI's global revenue surpassed $1 billion, a 3.7% increase over 2014 revenue.[91] ASCAP's 2015 US revenue increased by 9.3% over 2014 revenue.[92]

(67) Figure 10 shows the statutory rates paid to PROs. [redacted]

[88] United States Copyright Office, "Copyright and the Music Marketplace," Library of Congress, February 2015, 20, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

[89] A fourth PRO, Global Music Rights (GMR), was founded in 2013 and also has a small presence.

[90] In 2014, ASCAP and BMI asked the DOJ to open an inquiry into the operation and effectiveness of the original 1941 consent decrees. ASCAP and BMI made a number of suggestions to change the consent decrees, including a proposal that would allow music publishers to "partially withdraw" from PRO blanket licenses. This would have allowed publishers to negotiate directly with digital services, such as Spotify and Pandora, in order to garner higher rates. United States Copyright Office, "Copyright and the Music Marketplace," Library of Congress, February 2015, 36, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf. *See also*, in August 2016, the DOJ rejected any modification of the consent decrees. With regards to partial withdrawal, the DOJ concluded that it could not "determine whether modification to permit partial withdrawal would be in the public interest." Department of Justice, "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, at 16, *available at* https://www.justice.gov/atr/file/882101/download. *See also*, BMI appealed the DOJ's decision and in September 2016, a New York federal judge ruled that the 1941 consent decrees did not necessarily prohibit fractional licensing. Kevin Penton, "Judge Sides With BMI Over DOJ On Music Licensing Deals," *Law360*, Sep. 16, 2016, *available at* http://www.law360.com/competition/articles/841250?nl_pk=ee4365fb-0074-43dd-880f-36.

[91] Broadcast Media Inc., "Annual Review: 2014–2015," Oct. 20, 2014, at 2, *available at* http://www.bmi.com/pdfs/publications/2015/BMI_Annual_Review_2015.pdf.

[92] American Society of Composers, Authors, and Publishers, "Our ASCAP: 2015 Annual Report," at 27, accessed Sep. 20, 2016, http://www.ascap.com/~/media/files/pdf/about/annual-reports/2015-annual-report.pdf.

Figure 10: Performance royalty rates paid to PROs[a]

Distribution channel	Performance royalty rate
CD or PDD	0%
Terrestrial radio stations (Radio Music License Committee)	3.7% of revenue
[redacted]	
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Source: Billboard, Radio Music License Committee, Spotify data.
a. RMLC's statutory rate in Figure 10 was calculated by taking the sum of its known rate of 1.7% to each of ASCAP and BMI and adding it to my estimate of its rates paid to other PROs (0.34%). This estimate was arrived at by calculating the average non-ASCAP/BMI rate as a percentage of the total PRO rate for non-interactive streaming, Spotify (ad-supported), and Spotify (subscription).

[redacted]

VII.B.2. Mechanical royalties

(68) Mechanical rights allow one to make and distribute copies of a musical work.[93] The CRB has responsibility for setting statutory mechanical royalty rates for musical works, which vary by distribution channel and by business model within the channel. Different rates apply for portable paid subscription services, free-to-user ad-supported services, bundled services, and other categories. Current mechanical royalty rates for interactive streaming are based on a settlement ratified by the CRB in 2009.[94]

(69) Headline rates for many types of interactive streaming services are an "all-in" 10.5%, including both public performance and mechanical royalties—public performance royalties are subtracted from 10.5% of revenue to derive mechanical royalty payments. But effective rates can be significantly higher than 10.5%. The formulas contain provisions, such as per-subscriber minimums or minimums based on sound recording payments, that can inflate the headline 10.5% number.

VII.B.3. Total musical work royalties

(70) Interactive streaming services, which pay separate performance and mechanical royalties for musical works, pay a relatively high fee for musical works rights compared to other distribution channels.

[93] The Harry Fox Agency (HFA), representing over 48,000 publishers, administers the mechanical license for musical works, collecting fees from copyright users and distributing them to holders. Mechanical licenses can also be directly issued and administered by publishers. United States Copyright Office, "Copyright and the Music Marketplace," Library of Congress, February 2015, 21, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

[94] Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding; Review of Copyright Royalty Judges Determination; Final Rule and Notice, 37 C.F.R. § 385 (2009).

(71) Figure 11 shows musical work royalty rates for CDs, PDDs, and interactive streaming.[95] Interactive streaming services pay significantly more than other channels, in part because they pay both mechanical and performance royalties. [redacted]

Figure 11: Typical musical work royalty payment by distribution channel

Distribution channel	Mechanical royalty rate	Performance royalty rate	Total musical works royalty rate
CDs or PDDs	$0.096 per song (weighted average)	0	$0.096 per song (weighted average) (7.7%-8.7% of revenue)
Terrestrial radio stations (Radio Music License Committee)	0	3.7%	3.7% of revenue
[redacted]			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

VIII. Current mechanical royalty calculations for interactive streaming services

(72) Interactive streaming mechanical royalties are calculated based on different statutory formulas depending on the type of interactive streaming service offered. The formulas often take an "all-in" approach to calculating musical works royalties, defining a total musical works royalty pool and deducting performance royalties paid to PROs to determine the mechanical license royalty pool. The exception is a mechanical-specific per-subscriber royalty rate that in some cases takes precedence over the "all-in" royalty pool and can create total musical works royalties that are greater than the "all-in" musical works headline rate.

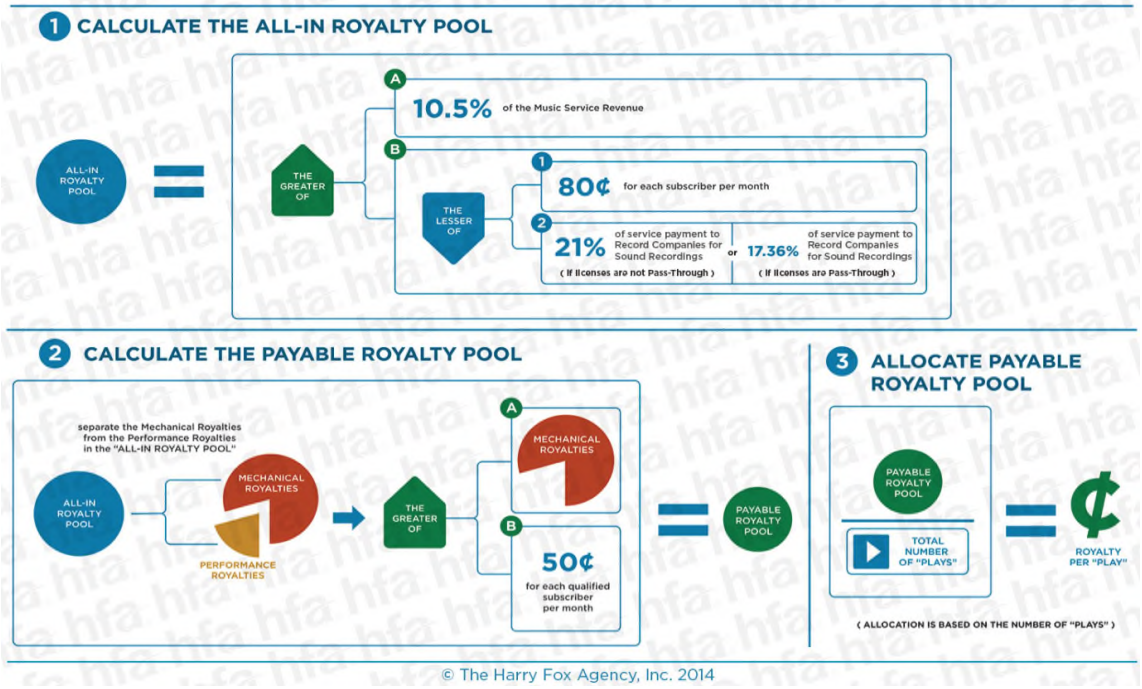
(73) The statute determines which of these formulas applies. The most common formulas for interactive streaming services are the formula for "standalone portable subscriptions, mixed use," which applies to most paid subscriber services, and the formula for "free non-subscription ad-supported services," which applies to ad-supported services.[96]

VIII.A. Royalty formula for paid subscriber subscriptions

(74) The flowchart in Figure 12 graphically explains the statutory formula for mechanical royalties for a large category of paid subscriptions.

[redacted]

Figure 12: Mechanical royalty formula for standalone portable subscriptions, mixed use



Source: The Harry Fox Agency.

(75) Under this formula, there are four possible determinants of mechanical royalty rates: the 10.5% headline rate (Step 1A), the lesser of 21% of sound recording payments rate and the $0.80 per-subscriber per-month rate (Step 1B), and the $0.50 per-subscriber minimum rate (Step 2). In all cases except the $0.50 per-subscriber minimum payment, payments to PROs are deducted from the total royalty pool to determine mechanical royalty payments. Thus, the $0.50 per-subscriber minimum has no connection to a service's PRO payments.

(76) [redacted] Using 2015 revenue, subscriber months, PRO payments, and sound recording payments identified in [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

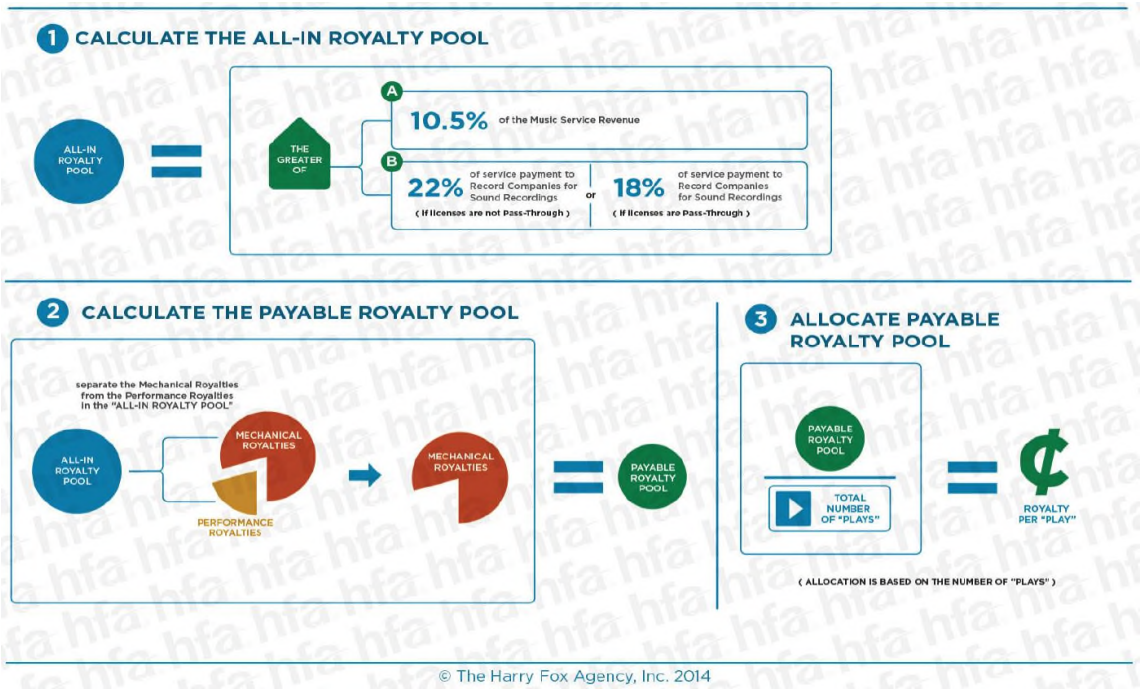
[99] Spotify, Apple Music, Tidal, Google Play, YouTube Red, Rhapsody, Groove Music, Deezer, and Amazon Unlimited all offer standard monthly individual subscriptions for $9.99. Some charge more, if the subscription is purchased on Apple's app store, to cover the app store costs (for instance, Spotify charges $12.99 for subscriptions purchased through Apple's app store to cover the 30% of the headline price that Apple charges). Chris Welch, "Spotify urges iPhone customers to stop paying through Apple's App Store," *The Verge*, Jul. 8, 2015, *available at* http://www.theverge.com/2015/7/8/8913105/spotify-apple-app-store-email.

[redacted]

VIII.B. Royalty formula for ad-supported subscriptions

(81) Figure 17 is a flowchart describing the statutory royalty rate for ad-supported interactive streaming services.

Figure 17: Mechanical royalty formula for free non-subscription ad-supported services



Source: The Harry Fox Agency.

[redacted]

(82) Under this formula, there are two possible determinants of mechanical royalty rates: the 10.5% headline rate and the 22% of sound recording payments rate.[101] In both cases, payments to PROs are deducted from the total royalty pool to determine mechanical royalty payments.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

VIII.C. Summary

[redacted]

[redacted]

IX. An economic approach to determining royalties

(87) The US Constitution's Copyright Clause is intended to "promote the Progress of Science and useful Arts…by securing for limited Times to Authors…the exclusive Right to their respective Writings."[103] A copyright on a musical work or a sound recording exists to protect the rights of creators to receive appropriate compensation for their creations. From an economist's point of view, copyrights are designed to reduce the problem of free-riding.[104] If a creator of a work had no copyright, imitators could easily copy and profit from that work without incurring the cost of creation, thereby reducing the profits of the original creator and diminishing their incentive to create in the first place. This dynamic can result in under-provision of new works, reducing social welfare.[105]

(88) The incentives of creators, however, are not perfectly aligned with society's interests either.[106] Because the copyright owners have market power over their unique musical work or sound recording, they have an incentive to over-price and thus under-supply works relative to the level that would maximize social welfare. Thus, the rights granted by copyrights are statutorily limited, for instance, in their length and breadth, and in some cases in the level of pricing allowed.

(89) In the current setting, the mechanical license fee paid to musical work rights holders is statutorily mandated to account for objectives that an unconstrained profit-maximizing creator of works would not explicitly take into account, such as "maximizing the availability of creative works to the public" and providing the copyright user a "fair income under existing economic conditions."[107] Although the exact weights are unspecified, the 801(b) factors indicate that the royalty rate should take into account overall social welfare, in addition to the welfare of the parties involved in the transaction, in a way that a market solution typically would not.[108]

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[103] United States Constitution, Article I, § 8, clause 8.

[104] *See* Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th ed. (London: Pearson Higher Ed, 2005), 526–35.

[105] The extent to which increased compensation upstream actually results in new works being created is an empirical question. Ku, Sun, and Fan (2009), for instance, find that increasing protection under the copyright law (by, for example, extending the length of the copyright) does not increase the number of new works created. *See* Ku, Sun and Fan, "Does Copyright Law Promote Creativity? An Empirical Analysis of Copyright's Bounty," *Vanderbilt Law Review*, 62, no. 6 (2009): 1669–1746.

[106] *See*, Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* (London: Pearson Higher Ed, 2005), 548–50.

[107] 17 U.S.C. § 801(b)(1).

[108] Private transactions between two parties can often impose negative externalities on a third party. Negative externalities are costs imposed on parties as a result of an economic transaction in which they do not participate. For example, environmental pollution has a cost to society that is the consequence of the production and sale of automobiles, that neither the buyer nor the seller has an incentive to account for in a private transaction. For a more detailed description of externalities and social welfare, *see*, Robert S. Pindyck and Daniel L. Rubinfeld, Microeconomics, 7th edition, Pearson Education, Inc., 2009, 645-648.

(90) Economics can inform a reasonable statutory mechanical license fee in a number of ways. First, economics can inform analysis of existing rates that may provide reasonable benchmarks for future rates. Second, economics can inform the appropriate *rate structure* from an economic efficiency standpoint. By "rate structure," I mean whether royalties are determined by number of plays, number of subscribers, revenue, or some other metric. That choice can affect economic efficiency, returns to copyright owners and users, costs to final consumers, and overall social welfare. Third, an economic approach to the "fair" division of surplus—the Shapley value—can provide insight into the appropriate division of the gains from trade between creators of musical works and developers of interactive streaming services, although this approach does not take into account the surplus of final consumers and thus may overstate royalties relative to what the 801(b) factors would dictate. In my analysis, I consider all of these approaches in order to evaluate common predictions in both level and structures of rates called for by these methods.

(91) Each of these economic approaches corresponds to one or more of the 801(b) factors. The use of existing benchmarks speaks generally to the fourth 801(b) factor of "minimizing disruptive impact" on existing industry practices. Economic analysis of the appropriate rate structure informs the analysis of "maximizing the pie" of surplus created by interactive streaming in a way that benefits final consumers, as well as copyright owners and users in the aggregate, corresponding with the first 801(b) factor of "maximizing availability of creative works to the public." The Shapley value approach provides a way of allocating producer surplus among copyright owners and users according to relative contributions, which speaks to the second and third 801(b) factors related to "fair returns" and appropriate division of joint surplus according to relative contributions.

IX.A. Using benchmarks to inform reasonable royalty rates

(92) In other proceedings before the CRB, privately negotiated contracts have provided benchmarks as a starting point to determining statutory rates under the "willing buyer, willing seller" standard.[109] For instance, the CRB found in the *Web IV* proceeding that privately negotiated royalties between music labels and *interactive* streaming services for sound recordings provided, with appropriate adjustment, an appropriate benchmark for determining statutory rates paid by *non-interactive* streaming services for sound recording rights.[110]As previously discussed, such a direct benchmarking from private rates to determine statutory rates is less appropriate in this case because market-determined rates may differ from those called for by the 801(b) factors.[111] In addition, without access to the specific

[109] The "willing buyer, willing seller" standard, which applies, for example, to non-interactive streaming sound recording rates determined by the CRB, attempts to mimic the rates and terms that would have been negotiated in a competitive marketplace, between a willing buyer and willing seller. This contrasts with the 801(b) standard, which specifically eschews the willing buyer, willing seller standard in favor of the objectives set in section 801(b). 17 U.S.C § 114(f)(2)(B) and (f)(5)(C) (2015).

[110] Determination, *In re Web IV*, at 66.

[111] *See* section VII.B.

negotiations surrounding a particular contract, it is difficult to know whether there are exchanges in value elsewhere that are not spelled out in the contract.[112]

(93) That said, there are two potential benchmarks for future mechanical royalty rates: existing statutory rates for interactive streaming mechanical licenses and statutory rates for PDD/CD mechanical licenses, which would be extended through 2022 under a recent agreement between copyright owners and licensees.[113] Considering the existing statutory mechanical royalty rates as a benchmark for determining a new mechanical royalty rate is appropriate, given the 801(b) mandate to minimize any disruptive impact on generally prevailing industry practices.[114]

IX.B. Using economic theory to inform reasonable rate structure

(94) As discussed in section VIII, current statutory mechanical royalty rates for interactive streaming services are a complicated function of downstream revenue, music label payments, per-subscriber fees, and performance royalties.[115]

(95) The structure, as well as the nominal level, of royalty rates is an important determinant of industry outcomes. The rate structure affects both downstream pricing and overall surplus, which in turn affects the total availability of music.

(96) Upstream per-play or per-song costs can encourage over-pricing and, accordingly, under-consumption downstream. This inefficiency is greater the higher the per-play or per-song rate. In addition, royalty rates that are a function of the number of subscribers, without distinguishing between the income from and valuation of different subscribers, discourage efficient discounting plans, such as family or student discounts. Flat per-play or per-subscriber rates applied to both paid and ad-supported tiers can discourage the offering of an ad-supported tier. All these outcomes hinder the goal of the first 801(b) factor: maximizing the availability of creative works to the public.

(97) Royalties based on a percentage of revenue offer fewer distortions than per-play or per-subscriber fees. In particular, such a structure gives streaming services a greater ability to pursue low WTP customers through discount plans and ad-supported services. A percent-of-revenue structure also

[112] In addition, differences in business models among interactive streaming services mean that it is not clear that any one of these firms could be considered "similarly situated" to another for benchmarking purposes. Apple, Google, and Amazon, the major interactive streaming services aside from Spotify, [redacted] The specific conclusion that private agreements with Apple are not an appropriate benchmark for statutory rate setting to other streaming services was noted in the recent Pandora–ASCAP rate-setting case. Opinion & Order, *In re Petition of Pandora Media, Inc.*, 1:12-cv-08035-DLC, 1:41-cv-01395-DLC-MHDF. 738 (S.D.N.Y. Mar. 14, 2014) at 86–88.

[113] Determination of Rates and Terms for Making and Distributing Phonorecords (*Phonorecords III*), 81 Fed. Reg. 48,371 (July 25, 2016).

[114] 17 U.S.C. § 801(b)(1)(D).

[115] Payments to PROs are also used in the calculation. These formulas are described in more detail in section X.A.1.

encourages the "all-you-can-eat" downstream pricing (in this case, "all you can stream") that is typical of interactive streamers. Setting the price of marginal downstream listening at its marginal cost of zero induces more music consumption and variety than per-song or per-album pricing.

(98) Setting royalties as a percentage of revenue has a potential downside if interactive streaming revenue is difficult to separate from other forms of revenue. In that case, basing royalties on the number of subscribers or streams might serve the purpose of defining royalty payments more clearly. But even in that case, the per-subscriber or per-play fees should be calibrated to approximate an appropriate percentage-of-revenue rate. Under the current rate structure, the per-subscriber rate equates to a percentage-of-revenue rate far outside current market reality.

IX.C. Using the Shapley value to inform reasonable royalty rates

(99) The second and third 801(b) factors speak to allocations of profits among copyrights owners and copyright users based on fairness and relative contributions to the final product. Although there is not a uniquely defined concept of fairness in economics, the Shapley value provides a framework for allocating benefits from an agreement according to relative contributions and outside options.[116] Although this method does not necessarily determine the market allocation of surplus, it provides useful insights into a "fair" allocation of surplus reflecting relative contributions.

[116] Lloyd S. Shapley, "A Value for N-Person Games," in Harold W. Kuhn and Albert W. Tucker, *Contributions to the Theory of Games* (Princeton, NJ Princeton University Press, 1953) as cited in Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015, footnote 26. The basic idea of Shapley value is that every entity gets its average marginal contribution to the entities who arrive in a hypothetical market before it, where the average is taken over all possible arriving orders.

X. Determination of reasonable interactive streaming mechanical royalties

(100) In this section, I use the three approaches outlined above to determine a reasonable level and structure of mechanical royalties for interactive streaming services. No single approach yields an exact answer to the question of what rate satisfies the 801(b) factors, but all approaches corroborate my conclusion that a reasonable mechanical royalty rate is lower than the current rate and that $0.50 the per-subscriber fee component of that formula should be removed, except in cases where interactive streaming revenue is difficult to separate from other forms of revenue.

X.A. Benchmark approach

(101) There are two potential benchmarks for the interactive streaming mechanical royalty rate: existing statutory interactive streaming rates and mechanical rates for the PDD/CD channel.

X.A.1. Existing statutory rates for interactive streaming

(102) The use of existing interactive streaming statutory rates as a benchmark fulfills factor D, minimizing disruption to the industry relative to existing industry practices. I thus use existing statutory mechanical rates for interactive streaming as one benchmark.

(103) Although this is a helpful starting point, the current structure of rates leads to potential economic inefficiency, as explained in more detail in section X.B. Also, as discussed in section X.C, aside from changes in the rate structure, the 801(b) factors argue for a reduction in the levels of current statutory rates. Thus, any movement away from existing rates should be in the direction of lower rates [redacted]

X.A.2. PDD/CD rates

(104) The underlying principle of using PDD/CD rates as a benchmark for interactive streaming rates is that compensation to musical works rights holders for comparable channels of distribution should be comparable, so that the statutory royalty rate structure does not create artificially favored or disfavored forms of distribution that are out of line with underlying demand. Using PDD/CD statutory rates for musical works royalties, industry standards for converting song sales to number of

[117] The $0.80 per subscriber top-line minimum in the mechanical royalty formula serves the purpose of preventing a substantial increase in rates from current levels. That fee could usefully be reduced, [redacted]

streaming plays, and data from industry sources and from the largest interactive streaming service (Spotify), one can compare rights holder compensation from on-demand streaming to that from PDD/CD sales.[118]

(105) I apply this logic using two alternative measures of equivalence between compensation from PDD/CD sales and interactive streaming. The first equilibrates the per-song fee of PDD/CD to the per-stream fee of streaming. The second equilibrates royalties as a percentage of per-song revenue of PDD and CD sales and royalties as a percentage of revenue of interactive streams.

(106) The compensation paid to musical works rights holders is the sum of the total performance royalties and mechanical royalties that they receive. My focus is on the total payment to musical works rights holders, although given the total payment and the amount of performance royalties paid by streaming services, one can back out their mechanical royalty.

X.A.2.a. Using PDD/CD per-song fee equivalent as a benchmark

(107) To convert per-song (PDD/CD) fees to equivalent per-play (streaming) fees, equation (1) below sets the PDD per-song mechanical fee—the only musical works royalties paid on PDDs—equal to the sum of the interactive streaming per-play performance and mechanical fees, with the latter adjusted by a conversion ratio to equalize purchases and streams.[119]

$$(1)\ (PDD\ mechanical\ license\ fee) = (IS\ per\text{-}play\ performance\ royalty + IS\ per\text{-}play\ mechanical\ royalty) \times (PDD\ equivalent\ number\ of\ plays).$$

(108) The inputs to this equation are calculated as follows. The PDD mechanical license fee is calculated as the weighted average of the PDD/CD mechanical license fee for songs five minutes or less and songs greater than five minutes: $0.091 per copy for the former and $0.0175 per minute or fraction thereof for the latter.[120] Lacking more precise data, I conservatively assume that songs longer than five minutes have an average length of eight minutes. Based on this assumption, the PDD/CD mechanical license fee is $0.096 per song. I use the conversion ratio of PDDs to streams of 1:150, calculated by

[118] This principle of equalizing rates of return across different platforms has some similarities with that underlying the approach of W. Baumol and G. Sidak, "The Pricing of Inputs Sold to Competitors", *Yale Journal of Regulation* 11, no. 1 (1994): 171–202. They propose an efficient component pricing rule whose purpose is to ensure that the bottleneck owner (in our case, the copyright holder) should get compensation for access from all downstream market participants, whether existing or new entrants, that leaves him as well off as he would have been absent entry. Baumol and Sidak recognize that entrants may expand the market. To the extent that Spotify attracts new listeners, publisher revenue will rise above what it would have been before Spotify's entry.

[119] As indicated in section VII.B, PDD/CD sales pay no performance royalties, thus this equation sets equal total payments per song from PDD/CD and streaming. All calculations ignore administrative fees deducted from payments to publishers.

[redacted] For statutory rates, *see* "Royalty rates for making and distributing phonorecords," 37 C.F.R § 385.3.

the RIAA based on comparative consumption patterns of downloads and streams. I also explore the sensitivity of my calculations to an alternative conversion rate of 1:137 derived in a recent academic paper by Aguiar and Waldfogel.[121] Using a different methodology, these authors arrive at a conversion ratio slightly lower than that of the RIAA.

(109) With these inputs, I obtain the following:

$$(2)\ (IS\ per\text{-}play\ performance\ royalty + IS\ per\text{-}play\ mechanical\ royalty) = \frac{\$0.096}{150}.$$

(110) Solving this equation yields a value for the per-play total streaming royalty of $0.00064.

(111) As I explain elsewhere in this report, a per-play royalty for streaming introduces inefficiencies and would represent a departure from the current practice of using a percentage-of-revenue headline rate. I am thus calculating per-play royalty rate solely as an intermediate calculation to find an appropriate percentage-of-revenue rate. The per-play royalty rate can be translated to a percentage-of-revenue rate using Spotify's data on streaming and revenue.[122] [redacted]

(112) These calculations are summarized in Figure 22.

[redacted]

[121] Recording Industry Association of America, "RIAA Debuts Album Award with Streams," Feb. 1, 2016, *available at* http://www.riaa.com/riaa-debuts-album-award-streams/. *See also* Aguiar and Waldfogel estimate that 137 Spotify streams displace one PDD. Luis Aguiar and Joel Waldfogel, "Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?" (working paper, National Bureau of Economic Research, Cambridge MA, 2015) [hereinafter Aguiar and Waldfogel (2015)].

[redacted]

X.A.2.b. Using PDD/CD percentage of revenue as a benchmark

(113) An alternative way to use PDD/CD rates as a benchmark is to calculate the percentage of PDD/CD revenue that current per-song royalty rates imply, and then to apply that percentage of revenue to interactive streaming. Digital sales have a per-song revenue of $1.10 and physical sales have a per-song revenue of $1.24.[127] The weighted average royalty paid per song, taking into account the percentage of songs under five minutes and assuming that songs longer than five minutes are all eight minutes long, is [redacted] for digital sales and [redacted] for physical sales. If interactive streaming pays this same royalty of [redacted], then its imputed mechanical royalty rate would be [redacted]

[redacted]

Figure 23: Implied mechanical royalty calculation using PDD/CD percentage of revenue

Format	Input: Tracks shipped (Millions)	Input: Dollar value (Millions)	Per-track price	Weighted average royalty per track	Total royalty rate (% track price)	Performance royalty (% track price)	Mechanical royalty (% track price)
Digital	2,115	$2,317.60	$1.10	$0.096	[redacted]	[redacted]	[redacted]
Physical	1,229	$1,520.80	$1.24	$0.096	[redacted]	[redacted]	[redacted]

Source: RIAA 2015 Year-End Shipments memo and Spotify data.

X.A.2.c. Summary of PDD/CD benchmark results

(115) Figure 24 summarizes the results of using PDD/CD as a benchmark using either a per-stream equivalent or a percentage-of-revenue equivalent approach. They predict a range of [redacted] of revenue for total musical works royalties, implying [redacted] of revenue for mechanical royalties alone given current PRO rates that Spotify pays.

Figure 24: Interactive streaming mechanical royalty rate based on PDD/CD benchmark[128]

Benchmark	Total interactive streaming royalty payment to musical works rights holders	Existing interactive streaming performance royalty	Interactive streaming imputed mechanical royalty
Per-song fee equivalence (%)	[redacted]	[redacted]	[redacted]
Per-song % royalty equivalence	[redacted]	[redacted]	[redacted]

[redacted] RIAA 2015 Year-End Shipments memo and Spotify data.

[127] RIAA 2015 Year-End Shipments memo [redacted]

X.B. Using economic theory to determine appropriate rate and price structure

(116) A core principle in microeconomics is that economic efficiency increases as price moves closer to marginal cost.[129] Gains from trade can be shared through lump-sum payments or other methods that do not distort the level of output. This result can be implemented, for instance, through two-part tariffs that charge price equal to marginal cost alongside a lump-sum or subscription fee.[130]

(117) In the current setting, where the marginal costs of providing rights to a particular musical work and streaming it to the consumer are effectively zero, economic efficiency is best achieved with marginal upstream and downstream prices that approach zero, with appropriate upstream compensation achieved via transfers rather than prices above cost.[131]

(118) The economic concepts of surplus, deadweight loss, and economic efficiency provide a useful context for discussing these principles, and more broadly how the form and level of royalties can affect copyright holders, users, and final consumers. I first discuss these concepts generally and then discuss how they apply to the current proceeding.

X.B.1. Background on surplus and economic efficiency

(119) The creation of a product or service that consumers value more than its cost creates value for society. The value that a product or service creates—its *total surplus*—is the sum of two components: the value that consumers place on the product above the price they pay, which is referred to as *consumer surplus*, and the payment that producers receive net of their cost, or *producer profit*.

(120) When a producer prices a product above its marginal cost, consumers who value the product more than its cost to produce but less than the price will not purchase it. Thus, some value-enhancing transactions do not take place. This creates a *deadweight loss* for society and reduces total surplus.[132] This deadweight loss is sometimes labeled *economic inefficiency*. It reduces the total value available to be divided among producers and consumers. The economically efficient outcome, in contrast, maximizes total surplus.

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[129] The first welfare theorem in economics says that the allocation of resources is efficient in a general equilibrium with perfect competition. In a perfectly competitive market, price equals firms' marginal cost. *See* for example, B. Douglas Bernheim and Michael D. Whinston, "Microeconomics," Second Edition, McGraw-Hill Irwin, 2014, p.561, and pp. 561-562, 601-602.

[130] For example, cable TV payments are structured as lump-sum subscription fees and not as a per-minute usage fee because the marginal cost of watching a show is close to zero.

[131] There are small incremental costs of providing streaming services, but most costs involved in the delivery of streams to consumers are fixed. A marginal cost of zero is a close approximation of true costs of delivery.

[132] "Deadweight loss" is defined as a reduction in total surplus (producer + consumer benefits) due to an inefficient allocation of resources.

(121) Thus, economic efficiency normally requires that price be equal to marginal cost. However, for products with essentially zero marginal cost, such as digital music, this creates a problem. Setting a price of zero means that a supplier does not earn the revenue required to cover its fixed costs and so will not provide the good at all. One way this problem can be addressed while maintaining economic efficiency is by charging a fixed amount, such as a subscription fee, for the right to purchase multiple units of a product, while pricing individual units at or close to marginal cost.[133] This type of pricing may exclude users whose total value from the product is less than the subscription fee, but users who purchase the subscription have an incentive to access the economically efficient amount of the product. Thus, the use of subscription fees can reduce economic inefficiency and thereby increase total surplus relative to the use of positive per-unit prices.

(122) Although debates over reasonable royalties tend to focus on the question of dividing surplus between copyright holders and copyright users, a royalty structure that reduces economic inefficiency increases the total value available to be divided, which can benefit both sides. In addition, the first 801(b) factor highlights the importance of "maximizing availability" to the *public* in setting a reasonable mechanical royalty rate, which suggests a consumer surplus standard and counsels for considering factors beyond just the profits of upstream and downstream producers.

X.B.2. Economic efficiency of interactive streaming pricing model

(123) Economic principles applied to music listening imply that efficiency is enhanced if the consumers face a marginal price of music equal to marginal cost, as in the interactive streaming pricing model. These efficiencies tend to increase the volume and variety of consumer listening relative to a model in which consumers pay "cost plus markup" on each song or album purchased, as in the PDD/CD permanent ownership model.

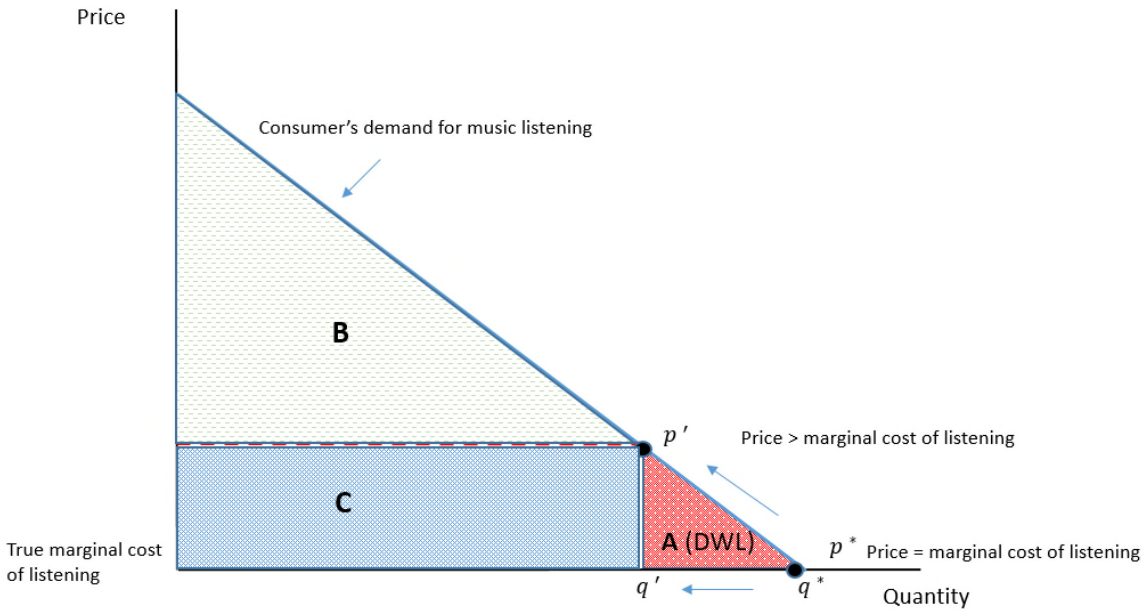
(124) This concept is illustrated in Figure 25. Consider a single consumer's purchases of songs or streams, under two scenarios. In the first scenario, the consumer faces a price of marginal listening approximately equal to zero, the marginal cost of streaming. In the second scenario, the consumer faces a marginal listening price greater than marginal cost, because of pass-through of an above-cost per-unit royalty, markup of marginal price above cost, or extra costs incurred by the channel that are higher than the cost of streaming (such as printing of CDs).

(125) In the first scenario, facing a marginal cost of zero, a listener consumes up to the efficient point q^*—consuming all music that produces value to them above the marginal cost of producing it. This creates consumer surplus, and total surplus, of **A+B+C** in Figure 25. In the second scenario, facing a marginal price above zero, the consumer reduces consumption to q', at the point where the marginal

[133] Examples include Amazon Prime, Netflix, health clubs, and to a lesser extent warehouse clubs (in the last, price is not literally marginal cost but is generally lower than that available outside the club).

value of extra consumption equals the price. This creates an inefficiency, as measured by the deadweight loss triangle **A**, which reduces social surplus by **A** and reduces consumer surplus by **A** + **C**.[134] The marginal production encouraged by the subscription model encourages more music listening and experimentation with music for which consumers may have low or uncertain value—in the example, all music between *q'* and *q**.

Figure 25: Efficiency of pricing marginal consumption at zero



(126) In this example, a consumer who subscribes to a streaming service that prices marginal listening at zero, as all interactive streaming services currently do, consumes the efficient amount of music, more than if they faced a positive price for incremental listening. Deadweight loss can still be created under this model, however, to the extent that low WTP consumers are priced out of the paid subscription market. Offering a separate tier of service targeted to low WTP consumers, such as a free-to-user ad-supported service, can mitigate this other source of deadweight loss.

X.B.3. Efficiency benefits of ad-supported services

(127) As discussed in section VI above and at length in the *Web IV* decision, there is a bimodal distribution of consumers' WTP for streaming services, with a large group unwilling to pay much or anything at all out-of-pocket for streaming services. The main alternatives for this low WTP group are other free services or piracy.

[134] **C** is transferred from consumers to producers, and so doesn't represent a loss to total surplus.

(128) An ad-supported service does not charge consumers a fee but charges a "price" via watching or hearing ads, which generates revenue for the producer and may still be acceptable for low WTP consumers. To the extent that these consumers receive value from streaming but are not willing to pay much or anything out-of-pocket, total and consumer surplus is increased by offering them ad-supported services. By generating some revenue from these consumers, even if not to the same level as paid subscribers, such services can increase total royalty payments.

(129) Current royalty rates support the existence of ad-supported service by not imposing a per-subscriber or per-stream minimum on ad-supported services and by scaling royalties for such services to their revenue or to sound recording payments. [redacted] cause a loss of surplus as affected users move to no revenue or low revenue channels, such as piracy, in response.

X.B.4. Inefficiency of per-play or per-subscriber royalties

(130) The subscription model provides an efficiency benefit because the price of a play is equal to the marginal cost of roughly zero—a subscriber faces the true marginal cost of playing a song over the internet and thus consumes music at the efficient level. When subscribers face a per-play royalty cost of zero, interactive streaming services have the appropriate incentive to encourage music listening at the margin.

(131) In contrast, if interactive streaming services faced a positive per-play royalty cost, they would have a diminished incentive to attract and retain high-use consumers, the very type of consumers who create the most social surplus through their listening. They would also have an incentive to discourage music listening among the high-use consumers they retain. The higher the level of per-play royalties is, the more this incentive might affect the behavior of interactive streaming services. Such discouragement as a response to this kind of perverse incentive is not just a theoretical possibility. It is seen, for instance, in the actions of fitness centers once they have sold a membership.[135]

(132) A flat per-subscriber fee also can reduce economic efficiency. The higher the per-subscriber fee, the less the incentive for interactive streaming services to expand the set of users by offering terms, such as student and family discount plans, under which users with a lower WTP can participate in the service. To the extent that users with a lower WTP are also users who are more likely to switch to

[135] According to *The Atlantic*, gyms make most of their money from those who use them least. "One way to build a financially efficient gym is to make it appear really financially inefficient for gym rats*:* 'Commercial health clubs need about 10 times as many members as their facilities can handle, so designing them for athletes, or even aspiring athletes, makes no sense.'" Derek Thompson, "This is Why You Don't Go to the Gym," *The Atlantic*, Jan. 13, 2012, *available at* http://www.theatlantic.com/business/archive/2012/01/this-is-why-you-dont-go-to-the-gym/251332/.

piracy if streaming is too expensive, a per-subscriber fee may mitigate the positive effect that streaming can have on decreasing piracy.

(133) In contrast to per-play or per-subscriber fees, a royalty based on a percentage of revenue aligns the incentives of the interactive streaming service with surplus maximization. Under this royalty structure, actions by the interactive streaming service that increase revenue benefit both the interactive streaming service and rights holders. Per-unit fees that are equal to marginal cost and lower subscription prices to lower WTP consumers both increase economic efficiency. Thus, aa percentage-of-revenue format for mechanical royalties is generally superior to a per-subscriber or per-play fee in supporting economic efficiency.

X.B.5. Rationale for per-subscriber or per-play fees in some circumstances

(134) [redacted] Their use in some circumstances may be a response to difficulties in allocating revenue for bundled products. For example, Amazon Prime is a subscription service that charges a single fee for many related services, including interactive streaming. Or such royalties may be used as a way of allocating risk for new, unproven business models.[137] Such circumstances, however, do not arise for most streaming services today. In addition, even in cases with bundled products or new services where a per-subscriber or per-play fee may be useful, such a fee should be set at a level that mimics an appropriate percentage of royalty amount for market conditions, not supersede it by a significant amount.

X.B.6. Summary

(135) Economic efficiency would be improved by removing the $0.50 per-subscriber fee floor from the paid subscriber mechanical royalty formula. In addition, history has shown that a per-play royalty is not a necessary part of a mechanical license fee. Its introduction would yield perverse downstream incentives, as discussed above, which run counter to the 801(b) factor of maximizing the availability of works to the public.

[redacted] *See also*, the Web IV decision also decided in favor of maintaining a per-play structure. Determination, *In re Web IV* at 1.

[137] Because 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.

X.C. Using the Shapley value to determine a "fair" allocation of surplus

(136) I use the Shapley value to corroborate my determination of reasonable royalties for interactive streaming using the benchmark approach, and to investigate the extent to which this approach is in keeping with the 801(b) factors calling for a "fair" allocation of surplus between copyright holders and users.

(137) Fairness is not a uniquely defined concept in economics. Nonetheless, certain economic models provide algorithms for dividing surplus among contributors according to a measure of their relative marginal contributions. The Shapley value has this property and a number of other desirable properties.[138] The Shapley value reflects the fairness requirements of the 801(b) factors in the sense that every entity's payoff is determined by its average marginal payoffs under alternative arrangements—a measure of its relative contribution to the joint surplus. It provides a comparison to a hypothetical market with a "fair" allocation of surplus.[139]

(138) The merit of the Shapley value in royalty settings was recognized by the CRB in its recent decision with regard to the distribution of cable royalty funds.[140] The CRB judges explained that "the Shapley value analysis not only enriches the development of the relative market value standard, but it also would allow the Judges in this proceeding to carry out their statutory mandate to distribute the deposited royalties by comparing the parties' respective valuation methodologies to that optimal standard, to determine which of their methodologies more closely reflects the optimal hypothetical market."

(139) Following the Judges' suggestion, I use the Shapley value to evaluate the validity of my benchmark approach. As the Judges also note, the Shapley value often suffers data availability problems.[141] Some of the required inputs can only be estimated imprecisely. I investigate the sensitivity of the results to a

[138] These properties are efficiency (all surplus is distributed to the coalition of entities), symmetry (payoffs only depend on contributions), linearity (payoffs depend on the profits of coalitions linearly), and dummy axiom (the entities who do not contribute to any coalitions do not get any payoff). *See* Andreu Mas-Collel, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995), 682. The basic idea of the Shapley value is that "each player gets 'his average marginal contribution to the players that precede him,' where averages are taken with respect to all potential orders of the players." *See* Uriel G. Rothblum, "Combinatorial Representations of the Shapley Value Based on Average Relative Payoffs," in Alvin E. Roth, *The Shapley Value: Essays in Honor of Lloyd S. Shapley* (Cambridge, UK: Cambridge University Press, 1988), Lloyd S. Shapley, "A Value for N-Person Games," in Harold W. Kuhn and Albert W. Tucker, *Contributions to the Theory of Games* (Princeton, NJ: Princeton University Press, 1953) as cited in Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015, footnote 26.

[139] The Shapley value does not account for consumer surplus or for relative risks undertaken by the various entities. These two factors, identified by the 801(b) criteria, would tend to call for lower royalty payments by interactive streaming services

[140] Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015.

[141] *Id.*, footnote 33. "The Shapley model provides a reasonable working solution for regulators…. However, it does suffer from a particularly pressing problem—that of data availability," citing Richard Watt, "Fair Copyright Remuneration: The Case of Music Radio," *Review of Economic Research on Copyright Issues* 7, no. 2 (2010): 21–37.

reasonable range of estimates. Due to the abstractions and simplifications I use to achieve workable approximations, the royalty rates calculated in this section should not be viewed as perfect estimates. However, the Shapley value does provide insights about the directional change for fair royalty rates relative to current values.

X.C.1. Intuition behind the Shapley value

(140) I have personal experience with the Shapley value, and since it illustrates the concept I think it is useful to share it here.[142] While on vacation earlier this year, my family took a boat ride to an island with another family. We were able to save some money on the booking by doing it jointly, so we did that. There were four people in my family (my youngest son JJ was under the age of 10 and so was free, so I am not counting him) and five in the other family. The boat trips were priced as follows:

- $500 for a group of 4
- $800 for a group of 8
- $100 for each additional person added to a group

(141) As you might expect with 9 in our group, we made our booking as a group of 8 plus one extra person, for a total of $900. But then the question arose how to split the cost between us. We could have split the cost 50-50, but that didn't seem quite fair because my group had four people and theirs five.

(142) Here is how we thought about it. If my family had travelled alone, the cost would have been $500. Adding the other family increased the cost to $900, an increase of $400. But if the other family travelled alone, they would have to pay $600, and so adding my family increased the cost above that by $300.

(143) Thus, my family's contribution to cost is $500 if we go first and $300 if we go second, for an average of $400. The other family's contribution to cost is $600 if they go first and $400 if they go second, for an average of $500. And that's how we divided the cost -- we each paid our average contribution to the cost. My family paid $400 and the other family paid $500. Those were our Shapley values.

(144) The idea of the Shapley value is that each party should pay according to its average contribution to cost or be paid according to its average contribution to value. It embodies a notion of fairness.

[142] While this example concerns allocation of costs, while the model presented here concerns allocation of value created, the intuition is similar.

X.C.2. Delineation of the entities contributing to value

(145) The Shapley value depends on how I delineate the entities contributing to a particular outcome. A version with N entities needs to specify the values of the $2^N - 1$ possible subsets of entities. Therefore, a version with many entities runs into workability problems because it is difficult to estimate the values of all $2^N - 1$ possible combinations of entities. Determining a workable solution requires some abstraction and simplification from the number of entities and potential entities involved in the music industry.

(146) At a high level, the entities that work together to create and distribute music to consumers are music distributors and copyright holders of sound recordings and musical works. Each is necessary for musical products to be provided to consumers.[143] Rights holders create the works and distributors add to the value by facilitating their acquisition and consumption. To estimate the royalty rates of interactive streaming services while capturing their potential substitution effect on other music services, one has to at least treat music distributors as two entities or channels: interactive streaming and other music distribution services. In the baseline calculation, I treat rights holders as one upstream entity, reflecting the broad overlap in ownership between publishers and record labels. In Appendix B, I explore the robustness of these results by ungrouping the copyright holders into two separate entities: musical works copyright holders and sound recording copyright holders.[144]

X.C.3. Estimation of revenue and costs

(147) The calculation of the Shapley value depends on the total value created by all of the entities together and the values created by each possible subset of entities. These values are functions of the associated revenue and costs.[145] In this section, I define a copyright user's *profit* as its revenue minus its non-content cost (i.e., cost excluding royalty payments). Then, the value created by copyright users (downstream) and copyright owners (upstream) is the copyright users' profit minus the copyright owners' non-content cost (i.e., cost excluding payments to other copyright owners or to creators of musical works and sound recordings).

(148) To calculate the Shapley value, I need estimates for each upstream entity's non-content cost and each downstream channel's profit.

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[143] Ultimately, songwriters and artists create the musical works and sound recordings. They typically do not bargain directly with distributors, however. Their compensation is generally a function of the (separate) deals they reach with publishers and record labels. I do not model that negotiation here, and the results of that negotiation would not affect the key points I make in this section.

[144] Musical works' royalty rate is lower in a Shapley value model with two substitutable publishers than in one with only one publisher; it is higher in a Shapley value model with two substitutable interactive streaming firms than in one with only one interactive streaming firm.

[145] Note that internal transfers among the contributors of an agreement are not part of the value created by an agreement.

X.C.3.a. Upstream

(149) The three major music publishers, Sony/ATV Music Publishing ("Sony/ATV"), Warner/Chappell Music, and Universal Music Publishing Group ("UMPG"), together control over 60% of the music publishing market.[146] The three major labels, Sony Music Entertainment, Inc., Warner Music Group, and Universal Music Group ("UMG"), account for roughly 65% of US recording industry revenue.[147] The majority of revenue on each side of the market is thus earned by the same three companies.

(150) Among these three copyright holders of musical works and sound recordings, only Warner Music Group's 2015 publicly available data breaks down its cost by geographic region and by source in enough detail to estimate the amounts needed.[148] Therefore, I use Warner Music Group's financial data and market share to estimate the upstream firm's non-content costs. The estimated upstream non-content costs are summarized in Figure 26. Details of the estimates are in Appendix B.1.a.

Figure 26: Total estimated upstream non-content costs

Musical work copyright holders' total non-content costs	Sound recording copyright holders' total non-content costs	Total upstream non-content costs
$424 million	$2.605 billion	$3.028 billion

Source: *See* Appendix B.1.a.

(151) The above cost corresponds to upstream cost when all entities work together to create value. To calculate Shapley values, I also need to know upstream costs if only one of the downstream channels is active. In a hypothetical market involving the upstream copyright holders and only a subset of the music distributors, there could be lower demand with correspondingly lower costs. Thus, I assume that upstream non-content costs shrink proportionally to downstream profits in the hypothetical markets involving only a subset of music distributors.

X.C.3.b. Downstream

(152) My estimates of downstream revenues and costs mostly rely on the following sources: RIAA's "News and Notes on 2015 RIAA Shipment and Revenue Statistics," Spotify's financial data, Pandora's 2015 10-K and Sirius XM's 2015 10-K.[149,150,151,152]

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[146] United States Copyright Office, "Copyright and the Music Marketplace," February 2015, 19, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

[147] *Id.* at 23.

[148] Warner Music Group, Annual Report (Form 10-K) (Dec. 10, 2015), at 43–44, 50.

[149] Joshua P. Friedlander, "News and Notes on 2015 RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Sep. 15, 2016, 2, http://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf.

[redacted]

[151] Pandora Media Inc., Annual Report (Form 10-K) (Feb. 18, 2016).

(153) The estimates are summarized in Figure 27 and the details are in Appendix B.

Figure 27: Total estimated downstream revenues and profits

Interactive streaming's revenue	[redacted]	Other music distributors' total revenue	Other music distributors' profit	Total downstream revenue
$1.604 billion	[redacted]	$8.514 billion	$3.576 billion	$10.118 billion

Source: *See* Appendix B.1.b.

X.C.3.c. Estimation of substitution effects

(154) Although different music distribution channels have different features, they are to some extent substitutes for one another because they all have the same fundamental feature: distributing music to consumers. Therefore, in the hypothetical market involving copyright holders and all music distribution channels except interactive streaming, one would expect some substitution from interactive streaming to other distribution channels, which would raise the profits of other distribution channels. Similarly, if the only music distributor were interactive streaming, its profit would also increase due to substitution from other channels. Because it is difficult to determine the exact value of this substitution effect, I consider a range of possible substitution effects in my Shapley value calculations.

X.C.3.d. Summary

(155) If an entity has a positive marginal contribution to total value, then its Shapley value is positive. This says that entities that contribute to value should earn a positive payoff. [redacted] music publishers and record labels earn large positive profits. [redacted]

X.C.4. Calculation of Shapley values in the baseline model

(156) In the baseline model Shapley value calculations, I consider the allocation of values among three entities: a representative copyright holder of musical works and sound recordings, a representative interactive streaming channel, and a representative music distributor that provides all music distribution services except interactive streaming.

(157) I consider a wide range of possible substitution effects between the representative interactive streaming channel and the other representative distribution channel. The key results are summarized

[152] Sirius XM Holdings Inc., Annual Report (Form 10-K) (Feb. 2, 2016).

in [redacted] The details of the calculation and results are in Appendix B. I find that interactive streaming's Shapley value ranges from [redacted] other music distributors' Shapley value ranges from [redacted] and copyright holders' Shapley value ranges from [redacted]

(158) Using Shapley values and each entity's revenue and cost, I can estimate reasonable royalty payments. Each downstream channel's total royalty payment equals its profit minus its Shapley value, because its profit is the sum of its total payoff and its transfer to upstream rights holders. Each upstream entity's total royalty income equals its non-content cost plus its Shapley value, because its final payoff is the difference between its total royalty income and its non-content cost. The sum of the downstream royalty payments is the same as the sum of the upstream royalty income.

(159) Given possible substitution effects, interactive streaming's total royalty payments range from [redacted] other distributors' total royalty payments range from [redacted] and copyright holders' royalty income range from [redacted]

(160) In terms of percentage of its revenue, the estimated interactive streaming's total royalty rate ranges from [redacted]

[redacted]

(161) Given that Spotify's current royalty payment as a percentage of revenue is above [redacted]

[redacted]

(162) In this baseline calculation, musical works copyright holders and sound recording copyright holders are modeled as one representative copyright holder. This assumption captures the observation that the majority of royalty revenue is earned by the same three companies. To check the robustness of this approach, I relax this assumption in Appendix B.

X.C.5. Alternative Shapley value calculations

(163) In Appendix B, I consider alternative assumptions where the upstream music industry is modeled as two entities: a representative copyright holder for musical works and a representative copyright holder for sound recordings. This alternative shows that interactive streaming's total royalty payments range from [redacted] of its revenue, musical work copyright holders' total royalty income as a percentage of upstream revenue ranges from [redacted] and sound recording copyright holders' total royalty income as a percentage of upstream revenue ranges from [redacted]

(164) Although the royalty rate in this alternative calculation is higher than the baseline calculation it again shows that Spotify's total upstream royalty payment is higher than what is implied by the Shapley value.[153]

[153] Because both sound recording copyright holders and musical copyright holders must be active in order to create value, there are two "must-haves" in the alternative calculation compared to one "must-have" in the baseline calculation. Therefore, the upstream entity has more market power and consequently higher payoffs than the baseline calculation.

XI. Conclusion

(165) I conclude, based on an economic interpretation of the 801(b) factors, that mechanical royalty rates should decrease, yielding reasonable total musical works rates in a range of [redacted] with imputed mechanical rates in the case of Spotify of [redacted] In addition, [redacted] should be removed or adjusted so it does not supersede a reasonable headline royalty rate. Finally, no new or increased per-stream or per-subscriber fees should be imposed in any revision to the rates

(166) Figure 29 shows the range of rates that are predicted by the benchmarking analysis that I develop in this report and how they would affect Spotify's mechanical royalty rate and total musical works royalties. All these rates are lower than Spotify's existing effective mechanical royalty rates. The conclusion that rates should decrease is supported by my Shapley value calculations, which demonstrate that across a range of reasonable parameter values, the overall royalty rate for interactive streaming services should decrease.

Figure 29: Summary of reasonable royalty rates

Approach	Implied total musical works rate for interactive streaming (% of revenue)	Implied mechanical royalty rate to Spotify (% of revenue)
Current paid subscriber rate without minimums	10.5%	[redacted]
Current ad supported subscriber rate without minimums	10.5%	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[redacted]

(167) [redacted] As discussed in section X.B, a percentage-of-revenue royalty rate is more efficient than either per-play or per-subscriber royalties. [redacted]

(168) Throughout this analysis, I have been guided by the 801(b) factors, which call for maximizing the value of creative works to the public, affording both rights holders and rights users a fair return on their investments and risks, and minimizing disruption from current industry practices. Creating a rate structure that is economically efficient by removing per-play or per-subscriber royalties speaks to the first criterion. Allocating returns across contributors according to their relative contributions, as in the

Shapley value, addresses the second and third. Benchmarking to musical works royalty rates for interactive streaming and PDDs addresses the fourth.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31st day of October 2016 in Durham, North Carolina.

Leslie M. Marx

Appendix A. Curriculum vitae for Leslie M. Marx

A.1. Summary of experience

Leslie M. Marx is the Robert A. Bandeen Professor of Economics at the Fuqua School of Business at Duke University. She served as Chief Economist of the Federal Communications Commission from August 2005 through August 2006. She is an expert in auctions, vertical contracting, antitrust liability, and cartels.

Dr. Marx has published extensively in peer-reviewed journals and elsewhere on topics related to industrial organization, applied game theory, auctions, procurements, and collusion. Her published work includes papers on collusive mechanisms, incentives in procurement contracting, slotting allowances, and exclusive dealing.

A.2. Areas of expertise

- Antitrust damages
- Antitrust liability
- Auctions
- Collusion
- Game theory
- Industrial organization
- Procurements

A.3. Testimony

Sworn testimony over the last five years:

- Expert report and testimony in arbitration involving two large telecommunications companies: 2016.
- *In re Urethane Antitrust Litigation*, No. 08-cv-05169 (D.N.J.). Expert report, deposition, and trial

testimony: 2013–2016.

- *In re Anderson News, L.L.C. v. Am. Media, Inc.*, No. 09-cv-2227 PAC (S.D.N.Y.). Expert report and deposition: 2014.
- *In re Petition of Pandora Media, Inc.*, No. 12-cv-8035 (S.D.N.Y. filed 2013). Expert reports and declaration and deposition and trial testimony: 2013–2014.
- *In re Urethane Antitrust Litig.*, MDL No. 04-1616 (D. Kan. filed 2004). Rule 26 Disclosure and deposition testimony, 2013. [Daubert Hearing, 2016]
- *In re TFT-LCD (Flat Panel) Antitrust Litig.*, MDL No. 07-1827 (N.D. Cal. Filed 2007). Expert reports and deposition testimony: 2011–2014.
- *In re Elec. Carbon Prod. Antitrust Litig.*, No. 05-6042 (D.N.J. filed 2006). Expert report: 2009.

A.4. Education

- PhD, Economics, Northwestern University
- MA, Economics, Northwestern University
- BS, Mathematics, Duke University

A.5. Editorial boards

- *American Economic Journal*: Microeconomics, Editorial Board, 2007 to present
- *International Journal of Game Theory*, 2009 to present
- Referee: *American Economic Review, Econometrica, Games and Economic Behavior, International Journal of Industrial Organization, Journal of Economic Theory, RAND Journal of Economics, Review of Economic Studies, Review of Industrial Organization*
- *Journal of Economic Literature*, Editorial Board, 2010–2012

- *Games and Economic Behavior*, Advisory Editor, 2010–2012
- *International Economic Review*, Associate Editor, 2002–2005

A.6. Publications

A.6.a. Research papers in academic journals

- "Club Good Intermediaries." With Simon Loertscher, Forthcoming in *International Journal of Industrial Organization.*
- "A Long Way Coming: Designing Centralized Markets with Privately Informed Buyers and Sellers." With Simon Loertscher and Tom Wilkening. *Journal of Economic Literature* 53, no. 4 (2015): 857–97.
- "Antitrust Leniency with Multi-Market Colluders." With Claudio Mezzetti and Robert C. Marshall. *American Economic Journal: Microeconomics* 7, no. 3 (2015): 205–40.
- "Buyer Resistance for Cartel versus Merger." With Vikram Kumar, Robert C. Marshall, and Lily Samkharadze. *International Journal of Industrial Organization* 39 (2015): 71–80.
- "Effects of Antitrust Leniency on Concealment Effort by Colluding Firms." With Claudio Mezzetti. *Journal of Antitrust Enforcement* 2, no. 2, (2014): 305–32.
  - Winner of Best Economics Article—2015 Antitrust Writing Awards.
- "An Oligopoly Model for Analyzing and Evaluating (Re)-Assignments of Spectrum Licenses." With Simon Loertscher. *Review of Industrial Organization* 45, no. 3 (2014): 245–73.
- "Plus Factors and Agreement in Antitrust Law." With William E. Kovacic, Robert C. Marshall, and Halbert L. White. *Michigan Law Review* 110, no. 3 (2011): 393–436.
  - Winner of the 10th Annual Jerry S. Cohen Memorial Fund Writing Award for the best antitrust piece during the prior year.

- "Bidder Collusion at First-Price Auctions." With Giuseppe Lopomo and Peng Sun. *Review of Economic Design* 15, no. 3 (2011): 177–211.
- "Carbon Allowance Auction Design: An Assessment of Options for the U.S." With Giuseppe Lopomo, David McAdams, and Brian Murray. *Review of Environmental Economics and Policy* 5, no. 1 (2011): 25–43.
- "Coordinated Effects in the 2010 *Horizontal Merger Guidelines*." With Wayne-Roy Gayle, Robert C. Marshall, and Jean-Francois Richard. *Review of Industrial Organization* 39, no. 1 (2011): 39–56.
- "The Economics of Contingent Re-Auctions." With Sandro Brusco and Giuseppe Lopomo. *American Economic Journal: Microeconomics* 3, no. 2 (2011): 165–93.
- "Break-Up Fees and Bargaining Power in Sequential Contracting." With Greg Shaffer. *International Journal of Industrial Organization* 28, no. 5 (2010): 451–63.
- "Slotting Allowances and Scarce Shelf Space." With Greg Shaffer. *Journal of Economics & Management Strategy* 19, no. 3 (2010): 575–603.
- "Cartels as Two-Stage Mechanisms: Implications for the Analysis of Dominant-Firm Conduct." With Randall D. Heeb, William E. Kovacic, and Robert C. Marshall. *Chicago Journal of International Law* 10, no. 1 (2009): 213–31.
- "Individual Accountability in Teams." With Francesco Squintani. *Journal of Economic Behavior & Organization* 72, no. 1 (2009): 260–73.
- "Quantitative Analysis of Coordinated Effects." With William E. Kovacic, Robert C. Marshall, and Steven P. Schulenberg. *Antitrust Law Journal* 76, no. 2 (2009): 397–430.
- "The 'Google Effect' in the FCC's 700 MHz Auction." With Sandro Brusco and Giuseppe Lopomo. *Information Economics and Policy* 21, no. 2 (2009): 101–14.

- "The Vulnerability of Auctions to Bidder Collusion." With Robert C. Marshall. *Quarterly Journal of Economics* 124, no. 2 (2009): 883–910.
- "Cartel Price Announcements: The Vitamins Industry." With Robert C. Marshall and Matthew E. Raiff. *International Journal of Industrial Organization* 26, no. 3 (2008): 762–802.
  - Awarded the 2009 Paul Geroski Best Article Prize for one of the best two articles published in the *International Journal of Industrial Organization* in 2008.
- "Bidder Collusion." With Robert C. Marshall. *Journal of Economic Theory* 133, no. 1 (2007): 374–402.
- "Exploring Relations Between Decision Analysis and Game Theory." With Jules van Binsbergen. *Decision Analysis* 4, no. 1 (2007): 32–40.
- "Rent Shifting and the Order of Negotiations." With Greg Shaffer. *International Journal of Industrial Organization* 25, no. 5 (2007): 1109–25.
- "Upfront Payments and Exclusion in Downstream Markets." With Greg Shaffer. *RAND Journal of Economics* 38, no. 3 (2007): 823–43.
- "Economics at the Federal Communications Commission." *Review of Industrial Organization* 29, no. 4 (2006): 349–68.
- "Inefficiency of Collusion at English Auctions." With Giuseppe Lopomo and Robert C. Marshall. *B.E. Journal of Theoretical Economics* 5, no. 1 (2005).
- "Opportunism and Menus of Two-Part Tariffs." With Greg Shaffer. *International Journal of Industrial Organization* 22, no. 10 (2004): 1399–414.
- "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity: Comment." With Greg Shaffer. *American Economic Review* 94, no. 3 (2004): 796–801.

- "The Joint Determination of Leverage and Maturity." With Michael J. Barclay and Clifford W. Smith, Jr. *Journal of Corporate Finance* 9, no. 2 (2003): 149–67.
  - Winner, Outstanding Paper in Corporate Finance, 1997 Southern Finance Association Meetings.
- "Adverse Specialization." With Glenn M. MacDonald. *Journal of Political Economy* 109, no. 4 (2001): 864–99.
- "Insurer Ownership Structure and Executive Compensation as Complements." With David Mayers and Clifford W. Smith, Jr. *Journal of Risk and Insurance* 68, no. 3 (2001): 449–63.
  - Winner, Outstanding Paper in Financial Services, 1998 Southern Finance Association Meetings.
- "Dynamic Voluntary Contribution to a Public Project." With Steven A. Matthews. *Review of Economic Studies* 67, no. 2 (2000): 327–58.
- "Adaptive Learning and Iterated Weak Dominance." *Games and Economic Behavior* 26, no. 2 (1999): 253–78.
- "Odd-Eighth Avoidance as a Defense Against SOES Bandits." With Eugene Kandel. *Journal of Financial Economics* 51, no. 1 (1999): 85–102.
- "Payments for Order Flow on NASDAQ." With Eugene Kandel. *Journal of Finance* 54, no. 1 (1999): 35–66.
- "Predatory Accommodation: Below-Cost Pricing Without Exclusion in Intermediate Goods Markets." With Greg Shaffer. *RAND Journal of Economics* 30, no. 1 (1999): 22–43.
- "Process Variation as a Determinant of Bank Performance: Evidence from the Retail Banking Study." With Frances Frei, Ravi Kalakota, and Andrew Leone. *Management Science* 45, no. 9 (1999): 1210–20.

- "Efficient Venture Capital Financing Combining Debt and Equity." *Review of Economic Design* 3, no. 4 (1998): 371–87.
  - Winner, Koç University Prize for the Best Paper of the Year in *Review of Economic Design*.
- "The Effects of Transaction Costs on Stock Prices and Trading Volume." With Michael J. Barclay and Eugene Kandel. *Journal of Financial Intermediation* 7, no. 2 (1998): 130–50.
- "Cost Effective Use of Muscle Relaxants: A Decision Analysis." With Jeffrey S. Rubenstein, Wendy Colin, Darryl Jackson, Craig Lockwood, and Janice Molloy. *Pediatrics* 100, no. 3 (1997): 451–52.
- "NASDAQ Market Structure and Spread Patterns." With Eugene Kandel. *Journal of Financial Economics* 45, no. 1 (1997): 35–60.
- "Order Independence for Iterated Weak Dominance." With Jeroen M. Swinkels. *Games and Economic Behavior* 18, no. 2 (1997): 219–45.

A.6.b. Research papers published in books and conference volumes

- "Leniency, Profiling and Reverse Profiling: Strategic Challenges for Competition Authorities." With Claudio Mezzetti. In *Anti-Cartel Enforcement in a Contemporary Age: The Leniency Religion*, edited by C. Beaton-Wells and C. Tran, McLean, VA: Hart Publishing, 2015.
- "Tacit Collusion in Oligopoly." With Edward Green and Robert C. Marshall. In *Oxford Handbook on International Antitrust Economics*, vol. 2, edited by Roger D. Blair and D. Daniel Sokol, 464–97. Oxford, UK: Oxford University Press, 2015.
- "Section 1 Compliance from an Economic Perspective." With Robert C. Marshall. *William E. Kovacic: An Antitrust Tribute Liber Amicorum*, vol. 2, edited by Nicolas Charbit and Elisa Ramundo, 293–302. New York: Institute of Competition Law, 2014.
- "What Next? Cartel Strategy After Getting Caught." With Robert C. Marshall and Claudio

Mezzetti), forthcoming in *Competition Law and Economics: Beyond Monopoly Regulation*, East-West Center and Korea Development Institute Monograph Series, Edward Elgar.

- "Economics and the Efficient Allocation of Spectrum Licenses." With Simon Loertscher. In *Mechanisms and Games for Dynamic Spectrum Access*, edited by Tansu Alpcan, Holger Boche, Michael L. Honig, and H. Vincent Poor. Cambridge, UK: Cambridge University Press, 2014.
- "Tacit Collusion in Oligopoly." With Edward Green and Robert C. Marshall. In *Oxford Handbook of International Antitrust Economics*, edited by Roger D. Blair and D. Daniel Sokol. Oxford, UK: Oxford University Press, forthcoming.
- "The Economics of Auctions and Bidder Collusion." With Robert C. Marshall and Michael J. Meurer. In *Game Theory and Business Applications*, 2nd ed., edited by Kalyan Chatterjee and William F. Samuelson, 339–70. New York: Kluwer Academic Publishers, 2014.
- "Coordinated Effects in Merger Review: Quantifying the Payoffs from Collusion." With William E. Kovacic, Robert C. Marshall, and Steven P. Schulenberg. In *Annual Proceedings of the Fordham Competition Law Institute: International Antitrust Law & Policy*, edited by Barry E. Hawk, 271–85. Huntington, NY: Juris Publishing, Inc., 2007.
- "Lessons for Competition Policy from the Vitamins Cartel." With William E. Kovacic, Robert C. Marshall, and Matthew E. Raiff. In *The Political Economy of Antitrust*, vol. 282, edited by Vivek Ghosal and Johan Stennek, 149–76. New York: Elsevier, 2007.
- "Bidding Rings and the Design of Anti-Collusion Measures for Auctions and Procurements." With William E. Kovacic, Robert C. Marshall, and Matthew E. Raiff. In *Handbook of Procurement*, edited by Nicola Dimitri, Gustavo Piga, and Giancarlo Spagnolo, 381–411. Cambridge, UK: Cambridge University Press, 2006.

A.6.c. Books

- *The Economics of Collusion: Cartels and Bidding Rings*. With Robert C. Marshall. Cambridge, MA: MIT Press, 2012.

A.7. Honors and awards

- Outstanding paper awards as listed above
- Outstanding Antitrust Litigation Achievement in Economics Finalist, American Antitrust Institute, October 2016
- Outstanding Antitrust Litigation Achievement in Economics Finalist, American Antitrust Institute, October 2014
- Game Theory Society, Council Member, 2013 to present
- FCC Woman Leader, Minority Media and Telecommunications Council, April 2013
- Top 100 Women in Antitrust, *Global Competition Review*, March 2013
- Business School Professor of the Week, *Financial Times*, July 2012
- Alfred P. Sloan Doctoral Dissertation Fellowship, 1993–1994
- Teaching Honor Roll, Simon School of Business, University of Rochester, 1999, 2001
- National Science Foundation Graduate Fellowship, 1989–1992
- Mary Love Collins Memorial Scholarship, 1989–1990
- Julia Dale Memorial Award in Mathematics, 1989
- Marie James Postgraduate Scholarship, 1989
- Phi Eta Sigma Graduate Scholarship, 1989
- Valedictorian, Duke University, 1989
- Alice M. Baldwin Scholarship, 1988–1989

- Faculty Scholar Award, Duke University, 1988–1989
- Phi Chi Theta Foundation Scholarship, 1988–1989
- Phi Eta Sigma Senior Award, 1988–1989
- Golden Key National Honor Society Scholarship, 1987–1988
- National Merit Scholarship, 1985
- Phi Beta Kappa Scholarship, 1985

Appendix B. Shapley value analysis

(170) In this section, I provide the details of inputs to the Shapley value analysis and details of the calculations of the baseline and alternative Shapley value.

B.1. Inputs to the Shapley value analysis

(171) This section provides details to the estimates of upstream non-content costs and downstream profits used as inputs for the Shapley value analysis.

B.1.a. Upstream

(172) Warner Music Group's FY 2015 total global music publisher revenue is $482 million; artist and repertoire costs are $272 million; total selling, general, and administrative expenses are $70 million; depreciation and amortization costs are $69 million.[154] Therefore, its global music publishing non-content cost ($70 million + $69million = $139 million) is 28.8% of its global revenue.

(173) Warner's US music publishing revenue is $191 million.[155] I use its US music publishing revenue and the ratio between its global music publishing non-content cost and revenue to estimate its US music publishing non-content cost: 28.8% * $191 million, which is $55 million.

(174) According to Warner's 10-K, its 2014 music publishing market share is 13%.[156] I use Warner's publishing market share and publishing non-content cost to estimate the total cost of musical work copyright holders: $55 million / 13%, which is $424 million.[157,158]

(175) Similarly, I use Warner's data to estimate sound recording copyright holders' non-content cost. Its FY 2015 global recorded music revenue is $2.501 billion; artist and repertoire costs are $725 million;

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[154] Warner Music Group, Annual Report (Form 10-K) (Dec. 10, 2015), at 37, 52-53. "The principal costs associated with our Music Publishing operations are as follows:

- Artist and repertoire costs—the costs associated with (i) paying royalties to songwriters, co-publishers and other copyright holders in connection with income generated from the exploitation of their copyrighted works and (ii) signing and developing songwriters; and
- General and administrative expenses—the costs associated with general overhead and other administrative expenses."

[155] Warner Music Group, Annual Report (Form 10-K) (Dec. 10, 2015), at 40.

[156] *Id.* at 12.

[157] For clarity, I display a few digits for revenue and costs, but the underlying calculations are done using all information available. Therefore, although 55/0.13 is approximately 423, the unrounded cost is actually a bit more than $55 million, which gives the ratio as approximately 424.

[158] I assume non-content cost is proportional to revenue for simplification.

product costs are $531 million; total selling, general and administrative expenses are $902 million; and depreciation and amortization costs are $228 million.[159] Therefore, its global sound recording non-content cost is $902 million + $228 million = $1.130 billion, which is 45.2% of its global recorded music revenue.[160]

(176) Warner's US recorded music revenue is $980 million.[161] I use its US recorded music revenue and the ratio between its global recorded music non-content cost and revenue to estimate its US recorded music non-content cost: $980 million * 45.2% = $443 million.[162]

(177) Warner's 10-K says its 2014 worldwide recorded music sale share is 17%.[163] This suggests that US sound recording copyright holders' non-content cost is $443 million / 17% = $2.605 billion.

(178) Therefore, upstream total non-content cost is $424 million + $2.605 billion = $3.028 billion.

(179) Figure 30 summarizes my estimates for upstream non-content costs:

Figure 30: Shapley value upstream non-content cost estimates

Musical work copyright holders' total non-content costs (C_1)	Sound recording copyright holders' total non-content costs (C_2)	Total upstream non-content costs (C_U)
$424 million	$2.605 billion	$3.028 billion

Source: *See* text.

B.1.b. Downstream

(180) According to RIAA's "2015 Year-End Industry Shipment and Revenue Statistics," the 2015 revenue for "Paid Subscription" and "On-Demand Streaming (Ad-Supported)" are $1.219 billion and $385

[159] Warner Music Group, Annual Report (Form 10-K) (Dec. 10, 2015), at 40, 50.

[160] *Id.* 36. "The principal costs associated with our Recorded Music operations are as follows:

- *Artist and repertoire costs*—the costs associated with (i) paying royalties to artists, producers, songwriters, other copyright holders and trade unions; (ii) signing and developing artists; and (iii) creating master recordings in the studio;
- *Product costs*—the costs to manufacture, package and distribute products to wholesale and retail distribution outlets, the royalty costs associated with distributing products of independent labels to wholesale and retail distribution outlets, as well as the costs related to our artist services business;
- *Selling and marketing expenses*—the costs associated with the promotion and marketing of artists and recorded music products, including costs

to produce music videos for promotional purposes and artist tour support; and

- *General and administrative expenses*—the costs associated with general overhead and other administrative expenses."

[161] *Id.* at 40.

[162] *Id.* at 40.

[163] *Id.* at 12.

million, respectively.[164, 165] The sum of these two numbers, $1.604 billion, can be used as an estimate of total interactive streaming revenue.

(181) [redacted]

(182) According to RIAA, the estimated US recorded music industry's retail revenue is $7.016 billion. However, this number is calculated using "[e]stimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses" to approximate the revenue of digital radio services under statutory licenses ("like Pandora, SiriusXM, and other Internet radio"), so it underestimates these services' revenue.[167]

(183) Pandora's 2015 total revenue is $1.164 billion.[168] Using its US and non-US listener numbers, I estimate that its US revenue is approximately $1.134 billion.[169] Using Pandora's market share of Internet radio, I estimate the revenue of all Internet radio as $1.619 billion.[170]

(184) SiriusXM's 2015 total revenue is $4.570 billion.[171] Music revenue is likely approximately half of its total revenue, which yields 2015 music revenue of approximately $2.285 billion.[172]

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[164] Joshua P. Friedlander, "News and Notes on 2015 RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Sep. 15, 2016, http://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf.

[165] *Id.* at 2. The definition of "Paid Subscription" is given by footnote 3 of the RIAA document "2015 Year-End Industry Shipment and Revenue Statistics": "Streaming, tethered, and other paid subscription services not operating under statutory licenses." The definition of "On-Demand Streaming (Ad-Supported)" is given by footnote 4 of the same document: "Ad-supported audio and music video services not operating under statutory licenses." In addition, the RIAA document "News and Notes on 2015 RIAA Shipment and Revenue Statistics" describes the streaming categories as follows: "The streaming category includes revenues from subscription services (such as paid versions of Spotify, TIDAL and Apple Music, 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)."

[redacted]

[167] Joshua P. Friedlander, "News and Notes on 2015 RIAA Shipment and Revenue Statistics," Recording Industry Association of America, accessed Sep. 15, 2016, http://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf.

[168] Pandora Media Inc., Annual Report (Form 10-K) (Feb. 18, 2016), at 68.

[169] As of December 2014, Pandora is available in Australia, New Zealand and the United States. Pandora Media Inc., Annual Report (Form 10-K) (Feb. 18, 2016), at 69. Pandora had about 2 million registered users in New Zealand and Australia in 2014. Tim Westergren, "Pandora Hits 2 Million Registered Users in Australia and New Zealand!" Pandora (blog), July 16, 2015, http://blog.pandora.com/nz/pandora-hits-2-million-registered-users-in-australia-and-new-zealand/. Pandora had about 76.5 million listeners in total in 2014. Thus $1.164 billion * (76.5-2)/76.5 = $1.134 billion. Adam Levy, "Could Spotify Take Down Pandora Media Inc. in 2015?" *The Motley Fool*, Jan. 21, 2015, http://www.fool.com/investing/general/2015/01/21/could-spotify-take-down-pandora-media-inc-in-2015.aspx.

Pandora has about a 70% share of internet radio in the US. Thus, $1.134 billion/70% = $1.619 billion. Connie Guglielmo, "Pandora Plays Nice as Apple's iTunes Radio Spins Up," *Forbes*, Nov. 13, 2013, *available at* http://www.forbes.com/sites/connieguglielmo/2013/11/13/pandora-media-needs-a-new-music-royalty-deal-will-it-be-the-same-one-apple-got/#7ee6278d56e9.

(185) Therefore, my estimate of the downstream revenue underlying RIAA's "SoundExchange Distributions" ($803 million) is $1.619 billion + $2.285 billion = $3.904 billion. And my estimate of the total downstream revenue is $7.016 billion – $803 million + $3.904 billion = $10.118 billion.

(186) Given that interactive streaming's revenue is $1.604 billion, the total 2015 revenue of all other music distributors is approximately $10.118 billion – $1.604 billion =$8.514 billion.

(187) Other music distribution channels include PDD/CD, non-interactive streaming, satellite radio, and terrestrial radio. It is difficult to identify the non-content costs of all distribution channels. For example, CD production may be vertically integrated with music publishing and recording which makes the allocation of costs difficult. Due to limitation of data sources, I use a revenue-weighted average of internet radio's (estimated using Pandora's data) and SiriusXM's non-content costs as an estimate of other music distributors' non-content cost share of revenue and get 56%.[173] Therefore, I estimate other music distributors' profit as $8.514 billion * (1 – 56%) = $3.756 billion.

(188) The estimated downstream revenues and profits are summarized in the table below:

Figure 31: Shapley value downstream revenue and profit estimates

Interactive streaming's revenue (R_I)	Interactive streaming's profit (π_I)	Other music distributors' total revenue (R_O)	Other music distributors' profit (π_O)	Total downstream revenue (R_D)
$1.604 billion	$924 million	$8.514 billion	$3.576 billion	$10.118 billion

Source: *See* text.

B.2. Baseline Shapley value

(189) Consider the allocation of the joint surplus created by the music industry. In the simplest hypothetical market appropriate for the matter at hand, the music industry consists of three entities: copyright

[171] Sirius XM Holdings Inc., Annual Report (Form 10-K) (Feb. 2, 2016), at F-4.

[172] There are a few possible ways to estimate the share of SiriusXM's music revenue as a percentage of its total revenue. SiriusXM has an inventory of more than 175 channels, over 70 of which are music channels of different genres. The music channels' share of all channels is about 40%. SiriusXM, "What is SiriusXM?" accessed Aug. 24, 2016, http://www.siriusxm.com/whatissiriusxm?hpid=02010022. SiriusXM's "Mostly Music" package and its "News, Sports & Talk" package are both $10.99 per month. If one uses these two prices, then music revenue is about 50%. Moreover, SiriusXM's "All Access" package is $19.99 per month. If one uses the ratio between the "Mostly Music" package price and the "All Access" package price, one gets 55%. SiriusXM, "Our Most Popular Packages," accessed Oct. 28, 2016, http://www.siriusxm.com/ourmostpopularpackages?hpid=02010028&intcmp=SXM_HP-NAV_0916_DEF_HDR_SUBS_MPP. *See also* SiriusXM, "SiriusXM News, Sports & Talk," accessed Oct. 28, 2016, http://www.siriusxm.com/packages/sxmnewssportstalk.

[173] According to Pandora's and SiriusXM's 2015 10-Ks, Pandora's non-content cost is 62% of its revenue and SiriusXM's non-content cost is 51% of its revenue. Assuming SiriusXM's non-content cost related to music is also 51% of revenue related to music, the average non-content cost of internet radio and Satellite radio as a percentage of revenue is ($1,619 million * 62% + $2,285 * 51%) / ($1,619 million + $2,285 million) = 56%.

holders (denoted by U), interactive streaming services (denoted by I), and other music distributors (denoted by O).

(190) Let interactive streaming revenue, non-content cost, and profit be R_I, C_I, and π_I, respectively. By our definition, $\pi_I = R_I - C_I$. Similarly, let other music distributors' revenue, non-content cost, and profit be R_O, C_O, and π_O, respectively. Again, by our definition, $\pi_O = R_O - C_O$. Denote the downstream profit by π_D. Then $\pi_D = \pi_I + \pi_O$.

(191) Let musical work copyright holders non-content be C_1 and sound recording copyright holders non-content cost be C_2. Denote upstream total non-content cost by C_U. Then $C_U = C_1 + C_2$. Denote the ratio between upstream non-content cost and downstream profit by β, i.e. $\beta \equiv C_U/\pi_D$.

(192) Let ρ_I be the parameter of I's substitution effect on O. That is, if I did not exist, O would capture ρ_I's share of I's profit. Similarly, let ρ_O as the parameter of O's substitution effect on I. That is, if O did not exist, I would capture ρ_O share of O's profit.

(193) Denote the total value created by a coalition S by $v(S)$. The only combinations of entities that create non-zero values are $\{U, I\}$, $\{U, O\}$, and $\{U, I, O\}$.

(194) By definition, the total value created by all entities together is the difference between downstream profit and upstream cost: i.e.,

(1) $v(\{U, I, O\}) = \pi_D - C_U = (1 - \beta)\pi_D$,

(195) Given our definitions of ρ_I and ρ_O and our assumption that upstream cost is a share β of downstream profit, the total values created by $\{U, I\}$ and $\{U, O\}$ are

(2) $v(\{U, I\}) = \pi_I + \rho_O\pi_O - \beta(\pi_I + \rho_O\pi_O)$,

(3) $v(\{U, O\}) = \pi_O + \rho_I\pi_I - \beta(\pi_O + \rho_I\pi_I)$,

where $\pi_I + \rho_O\pi_O$ is downstream profit when the market only involves copyright holders and interactive streaming: $\beta(\pi_I + \rho_O\pi_O)$ is upstream non-content cost in this case; $\pi_O + \rho_I\pi_I$ is downstream profit when the market involves copyright holders and all other music distributors, and $\beta(\pi_O + \rho_I\pi_I)$ is upstream non-content cost in this case.

(196) Given three entities in the game, there are six (three factorial) possible orders by which the entities arrive in the market:

1. I, U, O
2. I, O, U

3. O, I, U
4. U, I, O
5. O, U, I
6. U, O, I

(197) The Shapley value of an entity is the average of its marginal contributions over all possible arrival orderings, that is

$$(4)\ Sh(I) = \frac{v(\{U,I,O\}) - v(\{U,O\})}{3} + \frac{v(\{U,I\})}{6} = (1-\beta)\left(\frac{(1-\rho_I)\pi_I}{3} + \frac{\pi_I + \rho_O\pi_O}{6}\right),$$

$$(5)\ Sh(O) = \frac{v(\{U,I,O\}) - v(\{U,I\})}{3} + \frac{v(\{U,O\})}{6} = (1-\beta)\left(\frac{(1-\rho_O)\pi_O}{3} + \frac{\pi_O + \rho_I\pi_I}{6}\right),$$

$$(6)\ Sh(U) = \frac{v(\{U,I,O\})}{3} + \frac{v(\{U,I\}) + v(\{U,O\})}{6}\ (1-\beta)\left(\frac{\pi_I + \pi_O}{3} + \frac{(1+\rho_I)\pi_I + (1+\rho_O)\pi_O}{6}\right).$$

(198) Denote I's total royalty payments as T_I, O's total royalty payments as T_O, and U's total royalty income as t_U. Then I have

$$(7)\ T_I = \pi_I - Sh(I) = \pi_I - (1-\beta)\left(\frac{(1-\rho_I)\pi_I}{3} + \frac{\pi_I + \rho_O\pi_O}{6}\right),$$

$$(8)\ T_O = \pi_O - Sh(O) = \pi_O - (1-\beta)\left(\frac{(1-\rho_O)\pi_O}{3} + \frac{\pi_O + \rho_I\pi_I}{6}\right),$$

$$(9)\ t_U = C_U + Sh(U) = C_U + (1-\beta)\left(\frac{\pi_I + \pi_O}{3} + \frac{(1+\rho_I)\pi_I + (1+\rho_O)\pi_O}{6}\right).$$

(199) Assuming ρ_I and ρ_O take the values of $1/4$, $1/2$ or $3/4$, I get the following Shapley values and royalties:

[redacted]

[redacted]

B.3. Alternative Shapley value

(200) Consider a hypothetical market of music creation and distribution consisting of four entities: copyright holders of musical works (denoted by U_1), copyright holders of sound recordings (denoted by U_2), interactive streaming services (denoted by I), and other music distributors (denoted by O). Assume the only combinations that create positive values are $\{U_1, U_2, I, O\}$, $\{U_1, U_2, I\}$, and $\{U_1, U_2, O\}$. The values created by these combinations can be denoted as $v(\{U, I, O\})$, $v(\{U, I\})$, and $v(\{U, O\})$, respectively.

With 4 entities, there are 24 (4 factorial) possible orders by which the entities arrive in the market. The Shapley value of each entity is

$$(10)\ Sh(I) = \frac{v(\{U,I,O\}) - v(\{U,O\})}{4} + \frac{v(\{U,I\})}{12} = (1-\beta)\left(\frac{(1-\rho_I)\pi_I}{4} + \frac{\pi_I + \rho_O\pi_O}{12}\right),$$

$$(11)\ Sh(O) = \frac{v(\{U,I,O\}) - v(\{U,I\})}{4} + \frac{v(\{U,O\})}{12} = (1-\beta)\left(\frac{(1-\rho_O)\pi_O}{4} + \frac{\pi_O + \rho_I\pi_I}{12}\right),$$

$$(12)\ Sh(U_1) = Sh(U_2) = \frac{v(\{U,I,O\})}{4} + \frac{v(\{U,I\}) + v(\{U,O\})}{12}$$
$$= (1-\beta)\left(\frac{\pi_I + \pi_O}{4} + \frac{(1+\rho_I)\pi_I + (1+\rho_O)\pi_O}{12}\right).$$

(201) The downstream firms' total royalty payments and the upstream firms' total royalty income are

$$(13)\ T_I = \pi_I - Sh(I) = \pi_I - (1-\beta)\left(\frac{(1-\rho_I)\pi_I}{4} + \frac{\pi_I + \rho_O\pi_O}{12}\right),$$

$$(14)\ T_O = \pi_O - Sh(O) = \pi_O - (1-\beta)\left(\frac{(1-\rho_O)\pi_O}{4} + \frac{\pi_O + \rho_I\pi_I}{12}\right),$$

$$(15)\ t_1 = C_1 + Sh(U_1) = C_1 + (1-\beta)\left(\frac{\pi_I + \pi_O}{4} + \frac{(1+\rho_I)\pi_I + (1+\rho_O)\pi_O}{12}\right),$$

$$(16)\ t_2 = C_2 + Sh(U_2) = C_2 + (1-\beta)\left(\frac{\pi_I + \pi_O}{4} + \frac{(1+\rho_I)\pi_I + (1+\rho_O)\pi_O}{12}\right),$$

where t_1 is musical work copyright holders' total royalty income and t_2 is sound recording copyright holders' total royalty income.

(202) As in the baseline calculation, I assume ρ_I and ρ_O take the values of $1/4$, $1/2$, or $3/4$. The Shapley values and royalties are:

[redacted]

Appendix C. Materials cited

Figure 34: Materials cited

Document type	Filename
Public	2008 launch.pdf
Public	2012.01.13 This Is Why You Don't Go to the Gym - The Atlantic.pdf
Public	2013.12.11 The Verge - Spotify announces free streaming on Android and iPhone, but only in Shuffle mode.pdf
Public	2014.12.11 WSJ - The Biggest Music Comeback of 2014_ Vinyl Records.pdf
Public	2015 Chapter 8 proceedings by Copyright Royalty Judges.pdf
Public	2016.03 RIAA-2015-Year-End-shipments-memo.pdf
Public	2016.03.29 SoundCloud - Introducing SoundCloud Go.pdf
Public	2016.05.05 Digital Music News - YouTube Is the New Pirate Bay, Study Shows.pdf
Public	2016.07.25 Fed Reg 2016-17437.pdf
Public	2016.09 RIAA 2016 -Midyear shipments memo.pdf
Public	2016.09.20 About Piracy - RIAA.pdf
Public	2016.09.20 Discover Weekly - Spotify.pdf
Public	2016.09.20 Spotify Fan Insights.pdf
Public	2016.09.20 The Music Industry Is Finally Making Money on Streaming - Bloomberg.pdf
Public	2016.10.12 The New York Times - Amazon Pairs Its Speaker With Streaming Music, at a Bargain Price.pdf
Public	2016.10.12 US Streaming services by tier.xlsx
Public	2016.10.24 17 USC 114.pdf
Public	2016.10.27 Spotify Radio - What It Is and How It Works.pdf
Public	37 CFR 385.3 - Royalty rates for making and distributing phonorecords.pdf
Public	4D_SX_WDT_Daniel_McFadden_NR.pdf
Public	51223 Music Publishing in the US Industry Report.pdf
Public	51223 Music Publishing in the US Industry Report.pdf
Public	80FR13423.pdf
Public	ASCAP 2015 annual report.pdf
Public	Aguiar Waldfogel 2015.pdf
Public	BMI_Annual_Review_2015.pdf
Public	Baumol Sidak 1994.pdf
Public	Bernheim and Whinston 561-562.pdf
Public	Business Matters_ Study Says Consumers More Willing to Pay for Music Streaming -- Except in Sweden _ Billboard.pdf
Public	CRB final rule 2009.pdf
Public	Could Spotify Take Down Pandora Media Inc.pdf
Public	DEEZER LAUNCHES DIRECT TO CONSUMERS IN U.S.pdf

Document type	Filename
Public	DOJ 2016 inquiry consent decrees.pdf
Public	DangNguyen Dejean Moreau (2012).pdf
Public	DiCola paper.pdf
Public	Edison Share of the Ear Q4 2015.pdf
Public	FCC - Terrestrial radio station count.pdf
Public	Fair music transparency report.pdf
Public	Judge sides with BMI over DOJ - Law360.pdf
Public	Ku Sun and Fan 2009.pdf
Public	Never Miss Another Show with Personalized Concert Recommendations _ News.pdf
Public	Pandora 2015 10k.pdf
Public	Pandora ASCAP decision.pdf
Public	Pandora Plays Nice As Apple's iTunes Radio Spins Up.pdf
Public	Pandora hits 2 million registered users in Australia and New Zealand! – Pandora Blog.pdf
Public	Pandora launches Pandora Plus, an improved version of its $5 subscription service - The Verge.pdf
Public	Patents and Technological Change_526-535.pdf
Public	Play free on mobile - Spotify.pdf
Public	RIAA US Sales Database screenshot.docx
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Public	SiriusXM 2015 10k.pdf
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Public	Spotify Free - Spotify.pdf
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Public	Spotify country availability.pdf
Public	Spotify premium features.pdf
Public	Spotify urges iPhone customers to stop paying through Apple's App Store - The Verge.pdf
Public	Subscriptions - Spotify.pdf
Public	The Constitution of the United States_ A Transcription.pdf
Public	U.S Copyright Office - Title 17.pdf
Public	USCO (2015) copyright-and-the-music-marketplace.pdf
Public	Use Apple Music in the Music app - Apple Support.pdf
Public	Vogue - Why Discover Weekly is so Addictive.pdf
Public	WarnerMusicGroup_10K_20151210.pdf
Public	Wired - Inside Spotify's hunt for the perfect playlist.pdf
Public	inside-spotify-and-the-future.pdf
Public	web-iv-determination.pdf
Restricted	MusicWatch – Annual Music Study 2015 – Report to Spotify Ltd. – June 2016
Restricted	CSI @ Spotify – Streaming Services – Competitive Landscape – February 2016

Document type	Filename
Restricted	Spotify US Launch – Messaging and FAQ (H13425-0001-013061)
Restricted	Spotify & Universal Publishing – November 1, 2016 (H13425-0002-001687)
Restricted	Spotify US Financial Spreadsheet (H13425-0008-001970)
Restricted	Spotify/UMG Update – February 2015 (H13425-0014-001048)
Restricted	Spotify – Performance, Industry impact & Freemium (H13425-0014-006268)
Restricted	MusicWatch – Spotify – Spring 2015 Research Agenda: Part 1 (H13425-0014-006358)
Restricted	Spotify's Impact on Music Piracy (H13425-0014-007014)
[redacted]	[redacted]
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Restricted	Pandora – Share of Ear Study – Edison Research – Q1 2016 (H13425-0032-0002385)
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Restricted	Spotify_Effective Rates
Restricted	Stargate - Lead Team Update
Restricted	US P&L #2 (H13425-0008-001132)
Restricted	MIDiA research - cross border listening

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN REBUTTAL TESTIMONY OF LESLIE M. MARX, PHD
(On behalf of Spotify USA Inc.)

FEBRUARY 15, 2017

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Figure 25: NMPA mechanical royalty revenue estimates, 2013–2016 78

I. Scope of charge

(1) I was retained by Spotify USA Inc. ("Spotify") to help determine the reasonable terms and rates for interactive streaming royalty payments under Section 115 of the Copyright Act. Section 115 grants a compulsory license that allows for the making and distributing of physical and digital phonorecords of a songwriter's work, once a phonorecord of that work has been distributed to the public with the permission of that artist. Songwriters are due "mechanical royalties" under this license. Mechanical royalties are a component, along with performance royalties, of the royalties paid by interactive streaming services to holders of musical works rights.[1]

(2) I filed my Written Direct Testimony on November 1, 2016.[2] In this report, I respond to the testimony of witnesses for the National Music Publishers' Association ("NMPA") and the Nashville Songwriters' Association International ("NSAI") (collectively, the "Copyright Owners") that were also filed on November 1, 2016.

(3) In forming my opinion, I reviewed the expert reports and witness statements submitted in this proceeding by the Copyright Owners, Amazon, Apple, Google, Pandora, and Spotify. I also reviewed documents and data from Spotify and those made available through discovery, as well as publicly available documents. All documents cited in this report are listed in Appendix A. I reserve the right to incorporate into my analysis any new information or data that may become available.

[1] In this report, I sometimes refer to the holders of musical works rights collectively as "publishers."

[2] Written Direct Testimony of Leslie M. Marx, PhD, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)* [hereinafter *Phonorecords III*] No. 16-CRB-0003-PR (CRB 2018–2022), Nov. 1, 2016 [hereinafter Marx Written Direct Testimony, *Phonorecords III*].

II. Summary of opinions

(4) The Copyright Owners' economists have concluded that the Copyright Owners' rate proposal, in which all interactive streaming services would pay the greater of $0.0015 per stream per month and $1.06 per user per month in mechanical royalties, is reasonable and consistent with the 801(b) factors governing this proceeding.[3,4]

(5) I disagree. These rates represent a significant change from current practice and a substantial increase in rates for interactive streaming services. Mechanical royalty rates for standalone portable subscription interactive streaming services would [redacted] across the industry. Mechanical royalty rates for ad-supported streaming would increase by [redacted]. Even if ad-supported streaming services lowered their costs under the new proposal by periodically removing the accounts of non-active users, with all of the disruption and cost that would entail, mechanical royalties for ad-supported streaming would still increase [redacted] over current rates. It also appears from my analysis that the [redacted] bundled offering would be particularly affected by the Copyright Owners' proposal, with a [redacted] increase in mechanical royalty rates.

(6) The rates advanced in the Copyright Owners' proposal mean that ad-supported streaming—a service that currently makes up more than half of all interactive streaming users—[redacted]. Even for paid subscription services, the rate structure proposed by the Copyright Owners discourages services from expanding listening by, for example, offering discounts to low WTP groups.

(7) The rate level and structure proposed by the Copyright Owners is a significant departure from current practice. The current rate structure varies by type of service. Paid subscription, ad-supported, and bundled subscription services, for instance, each have different rate formulas.[5] Within those formulas, a headline percentage-of-revenue rate is backstopped with a percentage of sound recording royalties

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[3] In addition, the Copyright Owners' proposal defines streams as all streams ([redacted]) and defines users as all subscribers, including non-active subscribers. These are both departures from current practice.

[4] For example, Dr. Eisenach says that "the rates proposed by the Copyright Owners are consistent with a reasonable range of rates based on the policy objectives of Section 115." Expert Report of Jeffery A. Eisenach, PhD, *In re Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018–2022), Oct. 31, 2016 [hereinafter Eisenach Expert Report, *Phonorecords III*], at ¶ 174. *See also* Expert Report of Marc Rysman, PhD, *In re Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018–2022), Oct. 28, 2016 [hereinafter Rysman Expert Report, *Phonorecords III*], at ¶¶ 61, 68. *See also* Expert Report of Joshua Gans, PhD, *In re Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018–2022), Oct. 31, 2016 [hereinafter Gans Expert Report, *Phonorecords III*], at ¶ 87.

[5] 37 C.F.R. § 385.13.

and/or per-user fees.[6] This rate structure has led to relatively lower rates on services targeting low WTP groups or casual users. Services targeted towards low WTP consumers have expanded listening and increased surplus and yield higher publisher compensation than free-to-user alternatives such as piracy or terrestrial radio.

(8) The current rate structure and level have supported a dynamic, growing interactive streaming industry that has led to reduced piracy, increased volume and variety of listening by consumers, and increased musical works payments to publishers. Arguing for a substantial departure from the status quo in the level and form of rates would require careful analysis of outcomes under the proposed new regime to ensure that these benefits are not undermined. The Copyright Owners' economists have not provided that analysis.

(9) Instead, the Copyright Owners' economists conclude that this substantial change in rate level and structure and its attendant disruptive effects on the industry is consistent with the 801(b) factors. They reach this erroneous conclusion because they misinterpret the 801(b) factors, conduct a misleading analysis of current rates and the impact of the Copyright Owners' proposal, and because they largely ignore the impact of the Copyright Owners' proposal on ad-supported streaming. The analyses they undertake that purport to show the consistency of the Copyright Owners' proposal with the 801(b) factors, such as Dr. Eisenach's use of a ratio of sound recording to musical works royalties and Dr. Gans's approach to the Shapley value and the Efficient Component Pricing Rule (ECPR), are applied in a limited and flawed way and imply disruptively high mechanical royalty rates. The Copyright Owners' economists make a number of additional errors in their analyses as well, which I detail throughout this statement.

[6] As I discuss in my Written Direct Testimony, economic analysis supports retaining current rates with a headline percentage-of-revenue rate with backstops, but without the current $0.50 per-user minimum. Marx Written Direct Testimony, *Phonorecords III*, at ¶ 14.

III. The Copyright Owners' proposal represents a substantial increase in royalty rates that would disrupt the interactive streaming industry

(10) The Copyright Owners have proposed to alter the structure and level of mechanical royalties, from a headline 10.5% of revenue rate with embedded per-user and percentage of sound recording royalty payment alternatives, depending on the service, to a flat fee for all services consisting of the greater of $0.0015 per stream and $1.06 per end user per month, under a broad definition of "streams" and "end users."[7] This rate proposal would substantially increase mechanical royalties and overall content costs for interactive streaming services. [redacted]. This is obscured in the reports of the Copyright Owners' economists, who find the proposal to be (1) reasonable in light of their interpretation of the 801(b) factors and (2) a small change from the current rate level.[8]

(11) Significantly higher royalty rates for interactive streaming services would lead to reduced accessibility of music to consumers. First, significantly higher royalty rates on paid streaming would likely lead to a reduction in the variety of services and possibly to higher-priced services to consumers. In addition, [redacted] subsequent movement towards piracy and less remunerative forms of listening could actually lower revenue for both copyright owners and copyright users, in addition to removing a popular way of accessing music. These outcomes are contrary to the 801(b) factors and the interests of all of the parties to the proceeding.

(12) Copyright Owners' economists, however, have done little analysis of the potential impact of the Copyright Owners' proposal on the industry or on consumers, except to assert based on a flawed analysis that it will have little impact on rates, and to conjecture that to the extent it does affect the industry, the industry will easily adjust.[9]

(13) In this Section, I analyze the impact of the Copyright Owners' proposal on interactive streaming services and on the industry and consumers more broadly.

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[7] Copyright Owners' Proposed Rates and Terms, *In the Matter of Phonorecords III*, No. 16-CRB-0003-PR, Nov. 1, 2016, (CRB 2018–2022). The Copyright Owners' proposal defines "streams" as the transmission of any portion of a sound recording of a musical work [redacted]. It defines "end users" as all users with access to the service, rather than active users. These expansive definitions relative to current practice are ignored by Copyright Owners' economists in their analysis but have a substantial impact on the effects of the Copyright Owners' proposal.

[8] *See* footnote 3. *See also* Gans Expert Report, *Phonorecords III*, at ¶¶ 81–83.

[9] *See, e.g.*, Rysman Expert Report, *Phonorecords III*, at ¶¶ 68, 92.

III.A. The Copyright Owners' proposal represents a substantial increase in rates over the status quo

(14) The Copyright Owners' proposal would significantly increase rates on interactive streaming services. In this section, I focus first on the impact on Spotify, and then the impact on the rest of the industry.

III.A.1. Impact on Spotify

(15) Spotify, the most popular interactive streaming service in the United States, would see [redacted] under the Copyright Owners' proposal.

(16) [redacted] shows Spotify's royalty payments under the current rate structure and under the Copyright Owners' proposal.[10] The Copyright Owners' proposal calls for per-user rates to be imposed on all "end users," defined as all individuals or entities that have "access to an offering," and so would apply to all consumers enrolled in the ad-supported service.[11] I also consider the extent to which Spotify could lower its rates by removing inactive users from its ad-supported service. There are thus two alternatives listed for Spotify's ad-supported service in [redacted]: one based on all subscribers and one based on monthly active users (MAUs).[12]

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[10] Whereas the current statutory formula contains distinct calculations for different business tiers (e.g., "standalone portable subscriptions, mixed use" and "free non-subscription/ad-supported services"), the Copyright Owners' proposal does not make this distinction and applies a uniform per-stream or per-user fee across all forms of interactive streaming. Although the Copyright Owners' proposed per-stream fee is higher than the per-user fee when applied to Spotify's subscription-based service separately, when the Copyright Owners' proposal is applied to all Spotify's streaming services, the per-user fee determines the rate. As shown in [redacted], under the Copyright Owners' proposal, Spotify's average monthly per-stream fee would be [redacted] and its average monthly per-user fee would be [redacted] for its paid subscription service during 2H2015–1H2016. [redacted], then [redacted], and its effective mechanical royalty payments on [redacted].

[11] Copyright Owners' Proposed Rates and Terms, *In the Matter of Phonorecords III*, No. 16-CRB-0003-PR, Nov. 1, 2016, (CRB 2018–2022), at B-12.

[12] "Monthly Active Users" is defined as end users who actually used the service in a given month.

(17) As shown in Figure 1, Spotify's overall mechanical royalties would [redacted] of revenue under the Copyright Owners' proposal. Reducing ad-supported subscribers to only monthly active users, which would entail significant disruption, as I discuss below, would still result in Spotify's paying [redacted] of its revenues for mechanical royalties alone, which would drive total royalty payments [redacted] of revenue. [redacted]

[redacted], contrary to the first 801(b) factor, and does not satisfy any notion of fairness that I am aware of, contrary to the second and third 801(b) factors.

(18) [redacted] illustrates the contrast between Spotify's rate proposal and the Copyright Owners' rate proposal on Spotify's royalty payments as a percentage of revenue. Under the Copyright Owner's proposal, Spotify would pay [redacted] of its revenues in royalties. Even if it reduced registered accounts on its ad-supported service to active users each month, it would still pay [redacted] of its revenues in royalties.

[redacted]

(19) [redacted] shows the impact of the proposal on royalty rates for Spotify's ad-supported service and its paid subscription-based service in terms of the percentage [redacted] in mechanical and total musical works royalty.

(20) [redacted] shows that the Copyright Owners' proposal [redacted] mechanical royalties on Spotify's ad-supported service [redacted], leading to a total musical works royalty [redacted].

(21) [redacted] in the wake of the Copyright Owners' proposal being implemented, mechanical royalty rates [redacted], leading to a more than [redacted] on total musical works royalties for that service alone. If [redacted] Copyright Owners' proposal being implemented, then [redacted], and its effective mechanical royalty payments on its paid subscription service would [redacted], as shown in [redacted].

(22) In response to the Copyright Owners' proposal, Spotify could try to cull non-active users from its ad-supported users. As shown in [redacted], [redacted], and a total musical works royalty [redacted]. In addition, it is not clear how Spotify would implement this culling of its users without substantial disruption to the user experience. For instance, if Spotify unregistered users who did not use the service each month, then casual users who might listen one month and not the next would need to repeatedly re-register to maintain access. Even users who are active users but have breaks in their listening due to, for example, travel, would find themselves unregistered under this scenario. [redacted], including those not interested in subscribing to a paid service.

III.A.2. Impact on other streaming services

(23) Other interactive streaming services would also be affected by the rate increase associated with the Copyright Owners' proposal. Figure 4 shows current royalties and those implied by the Copyright Owners' proposal for streaming services based on data submitted to the Harry Fox Agency (HFA) and publishers. It shows mechanical royalties increasing significantly for virtually all interactive streaming services.

(24) The weighted average of these increases is [redacted] of mechanical works royalties and [redacted] of musical works royalties.

(25) Figure 5 illustrates the impact of the Copyright Owners' on the mechanical royalties for Spotify and other streaming services that are party to this proceeding. Annual mechanical royalties would increase significantly under the Copyright Owners' proposal.

[redacted]

(26) Although the Copyright Owners' economists claim that the per-stream rates in the Copyright Owners' proposal represent little change to the status quo because they are roughly equal to current implicit per-stream mechanical royalty rates, this is based on an incorrect analysis of current rates and the rates implied by the Copyright Owners' proposal.[13] I discuss in more detail in Section VII the sources

[13] Dr. Eisenach's own numbers refute this proposition. In his Table 10, Dr. Eisenach calculates that total mechanical royalty payments by streaming services in 2015 were [redacted]. In his discussion of the growth in interactive streaming, Dr. Eisenach cites to Nielsen data to assert that there were about [redacted] total on-demand music streams in 2015. Applying the proposed Copyright Owners rate of $0.0015 per stream to the [redacted] estimated streams

of the discrepancy between the assertions of the Copyright Owners' economists–that the rates in the Copyright Owners' proposal differ little from current rates–and the reality that they substantially increase rates for virtually all services.

III.B. The effects of the Copyright Owners' proposal are [redacted] for ad-supported interactive streaming

(27) Spotify's ad-supported service offers more limited functionality than its paid subscription service. In addition to users periodically being exposed to ads, they receive lower quality audio, a limited number of skips, and no offline play capability, and they have limited access ("shuffle play" only) on mobile devices.[14]

(28) As I discuss in my Written Direct Testimony, Spotify's ad-supported service serves two main purposes: to introduce potential subscribers to the Spotify service and thereby create opportunities to upsell them to the paid subscription service, and to provide a revenue-generating service to low WTP consumers who are unlikely to switch to a paid service. The latter point is discussed, for instance, in an October 2016 Goldman Sachs Equity Report cited by Dr. Gans.[15] The report notes that ad-supported streaming "addresses consumers not able or willing to pay (therefore reducing piracy)."[16]

(29) [redacted]. Unlike its major competitors in interactive streaming—Apple, Amazon, and Google—[redacted].

(30) As [redacted] demonstrates, the ad-supported streaming business model would [redacted] by the Copyright Owners' proposal, which would lead to a [redacted] in mechanical royalties for that service. [redacted]

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results in royalty payments of over [redacted] current payments. Nevertheless, Dr. Eisenach concludes that "the proposed rates are directly in line with industry custom and practice and current market activity and expectations." Eisenach Expert Report, *Phonorecords III*, at ¶ 166.

14 Elyse Betters and Jake Smith, "Spotify Free vs. Spotify Premium: What's the Difference?" *Pocket-lint*, Dec. 30, 2014, http://www.pocket-lint.com/news/125771-spotify-free-vs-spotify-premium-what-s-the-difference.

15 Gans Expert Report, *Phonorecords III*, footnote 39.

16 Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, 4.

17 Any flat per-stream fee applied across all types of services would suffer this same flaw. For instance, the Apple proposal of $0.00091 per-stream total musical works royalty is less onerous in level than the Copyright Owners' proposal, but still substantially increases rates for ad-supported streaming, which Apple does not offer but that its largest competitor does. [redacted]

(31) [redacted] shows the impact on Spotify's total EBIT of [redacted], leaving aside the impact on paid subscriptions, which I discuss in the next section. [redacted] of total revenue if ad-supported royalties were based on all current subscribers, and to [redacted] of total revenue if it were based on active users.[19]

[redacted]

(32) These numbers accord with the view of Spotify executives, [redacted]. Spotify's CFO, Barry McCarthy, states in his Written Rebuttal Testimony that [redacted]

[redacted] Following Apple's proposal, the streams here are defined as a performance longer than 30 seconds. The per-stream equivalent figure given here changes monthly based on engagement. Note that Spotify does not currently pay royalties on a per-stream basis, and users do not pay per-stream but rather pay a monthly fee for access to the service. As I have discussed in my Written Direct Statement and in this statement, my analysis finds that per-stream royalty rates would harm total welfare and contravene the 801(b) factors.

18 [redacted]

19 [redacted]

20 Written Direct Rebuttal Testimony of Barry McCarthy, *In re Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018–2022) [hereinafter McCarthy Written Direct Rebuttal Testimony, *Phonorecords III*], at ¶ 11.

21 *Id.* at ¶ 17; Written Rebuttal Testimony of Paul Vogel, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, at ¶ 25.

(33) These alternatives often earn copyright holders inferior returns to ad-supported interactive streaming. For instance, if Spotify ad-supported streaming customers were to switch to terrestrial radio, musical works copyright holders would earn about of previous revenues per hour of listening. Likewise, if Spotify ad-supported streaming customers were to shift to some combination of radio, and ad-supported non-interactive streaming, total copyright earnings per hour would decrease, as shown in Figure 7.

22 McCarthy Written Direct Rebuttal Testimony, *Phonorecords III*, at ¶ 67.

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Figure 7: Relative royalties per hour for Spotify ad-supported interactive streaming, terrestrial radio, [redacted] and [redacted]

Description	Spotify ad-supported service (2-2015-1-2016)	Terrestrial radio (2015)	[redacted] (2015)	[redacted] ad-supported non-interactive (2016)
Musical works and sound recording royalty per hour	[redacted]	$0.0040	[redacted]	[redacted]
Musical works royalty per hour	[redacted]	$0.0040	[redacted]	[redacted]

Sources for terrestrial radio figure: ASCAP, "Our ASCAP," annual report, 2015, available athttps://www.ascap.com/-/media/files/pdf/about/annual-reports/2015-annual-report.pdf; BMI, "BMI Announces $1.060 Billion in Revenue, the Highest in Company's History," news release, Sep. 8, 2016, available at https://www.bmi.com/news/entry/bmi_announces_1.060_billion_in_revenue_the_highest_in_companys_history; Moody's, "Moody's downgrades SESAC's CFR to B3, affirms first-lien credit facilities at B2 and assigns Caa2 to new second-lien term loan; outlook stable," Apr. 7, 2015, https://www.moodys.com/research/Moodys-downgrades-SESACs-CFR-to-B3-affirms-first-lien-credit--PR_321914; Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016; Glenn Peoples, "Glenn Peoples: Pandora has its Mind on Your Money and Your on its Mind," Jun. 30, 2016, http://rainnews.com/glenn-peoples-pandora-has-its-mind-on-your-money-and-your-money-on-its-mind/; Nielsen, "Audio Today: Radio 2016 - Appealing Far and Wide," Feb. 25, 2016, http://www.nielsen.com/us/en/insights/reports/2016/audio-today-radio-2016-appealing-far-and-wide.html; Pandora, "Share of Ear Study," Q1 2016, (PAN_CRB115_00051433); Bret Kinsella, "Are Broadcast Radio Ad Loads Sustainable?" *XAPPmedia*, Mar. 24, 2015, https://xappmedia.com/are-broadcast-radio-ad-loads-sustainable/.
Sources for YouTube: Mark Mulligan, "State of the YouTube Music Economy," MIDiA, July 2016; PAN_CRB115_00026226_RESTRICTED.xlsx

[redacted]

Source for average song length for terrestrial radio: Lisa Yang et al. "Music in the Air: Stairway to Heaven." Goldman Sachs Equity Research, Oct. 4, 2016.

[redacted]

Notes:
(a) These figures address mechanical rates for an hour of music listening on each respective service. For example, while terrestrial radio contains ads, I calculate royalties for an hour of listening when songs are occurring. The per-hour figures for terrestrial radio rely on the assumption that an average song played on this service is 3.5 minutes.

[redacted]

(c) The per-hour figures for [redacted] and [redacted] assume an average song length of [redacted] minutes. This figure comes from [redacted] data, which provide total listening hours but do not specify whether those hours contain time spent listening to ads. I conservatively assume that the listening hours do include time spent listening to ads. If they do not include time spent listening to ads, per-hour rates would be slightly lower ([redacted] per hour for musical works only, and [redacted] per hour for sound recording and musical works royalties). There are no available data for average [redacted] song length, so I assume that it is also [redacted] minutes.
(d) To derive the terrestrial radio figures, I first estimate total terrestrial radio payments to PROs. To do this, I multiply total music revenue of terrestrial radio, as provided by the Radio Advertising Bureau, by [redacted], the percentage of gross revenue that licenses with BMI and ASCAP (along with my estimation of SESAC's payment) indicate is being paid in performance royalties. For the purpose of sensitivity, I also used an alternative method of estimating royalties paid by terrestrial radio. This alternative method entailed summing the estimated total royalties from terrestrial radio collected by BMI, ASCAP, and SESAC. This method yields lower royalties and thus a lower per-hour figure of [redacted] in musical works royalties per hour. I feature the former method in the table above to remain conservative.

(34) It is possible that [redacted] could therefore lead to lower revenues for Copyright Owners as well as interactive streaming services.

(35) In his analysis of ad-supported streaming services, Copyright Owners' industry expert Lawrence Miller nonsensically concludes that "with no per-play rate, there is no logical incentive for the services to maximize their ad-revenue beyond covering their own costs for these offerings."[24] On the contrary, Spotify has the same incentive to maximize ad revenue beyond its costs as any other firm—it earns profits from generating revenues above costs. To suggest otherwise portrays a misunderstanding of the interactive streaming industry, as well as basic economics.

(36) [redacted].[25]

(37) Spotify's ad-supported service makes up a substantial share of the overall interactive streaming market. In 2015, Spotify's ad-supported service accounted for more than [redacted] of all subscribers-months, as shown in Figure 8. [redacted].

[24] Expert Report of Lawrence S. Miller, *In the Matter of Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018–2022), Oct. 30, 2016 [hereinafter Miller Expert Report, *Phonorecords III*], at ¶ 32.

[25] [redacted]

[redacted]

[redacted]

(38) Figure 9 shows that Spotify's ad-supported service made up approximately [redacted] of all streams in 2015.

[redacted]

[redacted]

III.C. The effects of the Copyright Owners' proposal are also significant for [redacted] bundled music service

(39) [redacted] is the largest of the "bundled subscription service" interactive streaming offerings as defined in subpart B of 37 C.F.R. § 385.13.[26] [redacted] is offered as an additional service to subscribers of the [redacted] service.[27] However, few [redacted] users actually use

[26] A "bundled subscription service" is defined as "a subscription service providing licensed activity that is made available to end users with one or more other products or services (including products or services subject to other subparts) as a part of a single transaction." 37 C.F.R. § 385.13(a)(4). Rhapsody and Neurotic also offer a bundled service but have substantially fewer subscribers than Amazon.

[27] Amazon, "Prime," accessed Feb. 5, 2017, *available at* https://www.amazon.com/gp/dmusic/promotions/PrimeMusic.

the [redacted] service on a regular basis. As shown in Figure 10, [redacted] of [redacted] users are also active users of [redacted] in any given month, even though they have full access to [redacted].

[redacted]

[redacted]

(40) Under the current rate structure, [redacted] pays $0.25 in mechanical royalties per month per "active subscriber," defined as users who have made at least one play of licensed music in a given month.[28] Under the Copyright Owners' proposal, [redacted] would pay $1.06 rather than $0.25 per user and, even more significantly, it would pay the same $1.06 in mechanical royalties [redacted]."[29] As shown in Figure 11, the

[28] 37 C.F.R. § 385.13(a)(4).

[29] Daniel B. Kline, "How Many Prime Does Amazon Have (and Why It Matters)," *The Motley Fool*, Jan. 26, 2016,

cumulative effect would be to increase current mechanical royalties for [redacted] service by over [redacted], substantially higher than the [redacted] increase when considering only [redacted] active users.

[redacted]

(41) With a more than [redacted] increase in mechanical royalty payments, from [redacted], the ability of [redacted] to continue offering its bundled interactive streaming service to [redacted] subscribers would be affected by the Copyright Owners' proposal. The reason is fundamentally the same as in the case of ad-supported services: the structure of the Copyright Owners' proposed rates, with a uniform, high, per-user or per-stream rate across all types of services and all subscribers, makes it difficult to offer a service targeted to low WTP or occasional streamers. The current law accommodates these services, in the case of ad-supported services by removing per-subscriber minima, and in the case of bundled services by defining users as active users and not as all subscribers.

III.D. The Copyright Owners' proposal would also substantially impact paid subscription streaming and its consumers

(42) Although the most dramatic impact of the Copyright Owners' proposal would [redacted], it would also have a substantial impact on royalties for paid subscription services. The higher royalties would reduce the profitability of existing paid subscription services and give potential new entrants less incentive to enter the market. In addition, higher across-the-board royalties on paid subscription services based on streams or users, rather than on a percentage of revenue, reduces the incentive for services to offer

https://www.fool.com/investing/general/2016/01/26/how-many-prime-members-does-amazon-have-and-why-it.aspx.

discounts to lower WTP groups like students and families. An overall reduction in the competitiveness of the downstream market would harm consumers through fewer options and potentially higher prices.

III.D.1. Higher rates would affect downstream paid subscription interactive streaming competition

(43) As shown in Figure 3 above, mechanical royalties on Spotify's paid subscription service would [redacted], and total musical works royalties would [redacted], as a result of the Copyright Owners' proposal. [redacted] As [redacted] below shows, [redacted] royalty rates on subscription services alone would [redacted]. Including the impact on ad-supported services, EBIT would [redacted] if Spotify reduced ad-supported end users to only those currently active.

[redacted]

(44) Other paid subscription services would be affected as well. Figure 13 focuses only on the largest category of Subsection B services, standalone portable subscription, mixed use services. These would see an average [redacted] increase in mechanical royalties and a [redacted] increase in musical works royalties.

III.D.2. Copyright Owners' proposal discourages paid subscription interactive streaming services from expanding the listener base

(45) The Copyright Owners' proposal would apply uniform rates on all customer groups without regard to the revenue generated by them. One advantage of the top-line percentage-of-revenue rate in the current rate structure is that it means that royalties can be effectively discounted for lower WTP groups like students and family members, which generate less revenue per subscriber. This encourages efficient expansion of services to groups with lower WTP. In contrast, establishing a uniform rate for all users regardless of revenue generated discourages discount plans like student or family plans, which are currently offered by most of the major interactive streaming subscription services.

[30] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 14.

(46) shows current EBIT under the $0.50 per-subscriber minimum, which affects family and student plans to a greater degree relative to a headline 10.5% musical works royalty.

[redacted]

(47) The rate structure proposed by the Copyright Owners also penalizes expansion of streams per user for paid subscription services, to the extent that the per-stream rate binds on services. As I discuss in my

Written Direct Testimony, a per-stream rate imposes on streaming services a marginal cost that is higher than the social marginal cost, and gives services an incentive to limit streams even when consumers value these additional streams more than the social cost of providing them.[31] In the extreme, a per-stream rate gives streaming services an incentive to discourage existing subscribers from using the service as much as they might like to. It provides an incentive for streaming services to be more aggressive about requiring users to affirm that they are still listening, imposing additional hassle costs on users, and to inefficiently steer activities towards longer musical works (so that fewer streams would be counted during the user's listening time period) regardless of their value to users. A binding per-stream rate thus runs contrary to the first 801(b) factor. [redacted].

III.D.3. Consumers will be worse off as a result of the impact of the Copyright Owners' proposal on paid subscription services

(48) Interactive streaming services compete on price, quality, and innovation in a differentiated product industry. In addition to offering different tiers of service, such as ad-supported and paid subscription services, services are generally differentiated in their editorial content, technological infrastructure, user interface, song recommendation algorithms, integration with other social media, audio quality, and innovative activities, among other things. That differentiation is seen in the relative popularity of the different services despite generally comparable prices. For instance, Spotify entered the United States in 2011 and quickly became the largest interactive streaming platform in the country, despite the existence of long-time incumbent interactive streaming services like Rdio, which has since gone bankrupt and was purchased by Pandora in 2015, and Rhapsody, at similar prices.[32]

(49) Economics teaches that consumer and total surplus is reduced when competition is significantly reduced.[33] Significant reductions in competition in a differentiated product industry can be expected to lead to fewer options and higher prices for consumers.

(50) The Copyright Owners are asking for substantially higher royalty rates that could [redacted]

[31] *Id.* at ¶¶ 130–133.

[32] *See Id.* at ¶¶ 48, 78; *see also* Alissa Walker, "Rdio Is Being Acquired by Pandora," *Gizmodo*, Nov. 16, 2015, http://gizmodo.com/rdio-is-being-acquired-by-pandora-1742863433.

[33] Council of Economic Advisors, "Benefits of Competition and Indicators of Market Power," Council of Economic Advisors Issue Brief, Apr. 2016, at 1-2: "A long line of economic literature argues that competition among firms benefits consumers via lower prices…competition can benefit consumers in other ways as well: competition may lead to greater product variety, higher product quality, and greater innovation."

[redacted]. To the extent that the increase is not directly passed through to consumers, a cost increase would likely still indirectly be passed through in the form of a reduction in the number of competitors and a reduction in incentives to compete for low WTP customers.

(51) To the extent that the Copyright Owners' economists address consumer impact in their reports, it is to endorse higher downstream prices and to suggest, with little analysis, that higher royalties would not affect the competitiveness of the interactive streaming industry, even if the number of firms were drastically reduced.[34]

(52) For instance, Dr. Rysman asserts that as long as there is some competition downstream, consumers are "well-served."

> [E]ven if a change in royalty rate structure, despite its likely limited impact, somehow led some services to reduce investment, or even to exit the market entirely, it would not reduce the creative works available to the public. As long as some services are making these investments, consumers are well served.[35]

(53) This view of the importance of competition downstream is at odds with basic economics and antitrust theory and history, which find that the degree of competition, and not just the existence of "some" competitors, is an important predictor of the level of economic efficiency and consumer surplus produced by an industry.[36] Merger enforcement policy, as articulated in the U.S. Horizontal Merger Guidelines, is predicated on the idea that a reduction in the number of competitors in a market can lead to significant consumer harm through higher prices, lower quality, or reduced innovation.[37]

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[34] Rysman Expert Report, *Phonorecords III*, at ¶¶ 94–97.

[35] *Id.* at ¶ 70.

[36] Council of Economic Advisors, "Benefits of Competition and Indicators of Market Power," Council of Economic Advisors Issue Brief, Apr. 2016.

[37] U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, Washington DC, Aug. 19, 2010, 5.

IV. The Copyright Owners' proposal is inconsistent with the 801(b) factors

(54) The likely effects of the substantially higher rates proposed by the Copyright Owners run contrary to the 801(b) factors that govern the setting of rates in this proceeding.

IV.A. The Copyright Owners' proposal would not maximize the availability of creative works to the public

(55) As I explain in my Written Direct Testimony, an economic interpretation of the first 801(b) factor is that the royalty structure should "maximize the pie" of total producer and consumer surplus.[38] This includes consideration of both musical supply by songwriters and ongoing access by listeners.

(56) The substantial increase in mechanical royalty rates embedded in the Copyright Owners' proposal would change the economics of ad-supported and paid subscription services, as I detail in Section III. The higher rates would likely lead to a reduced variety of services available to consumers and could also lead to higher prices and an increase in piracy. In addition, the change in structure towards a per-play or per-user rate would also inhibit the efficient distribution of music by discouraging services from offering discounts to low WTP consumers and work counter to the "all-you-can-eat" listening model, as I explain in my Written Direct Testimony.[39] The cumulative result of these changes would be an increase in deadweight loss and a reduction of total surplus. This outcome is contrary to the 801(b) goal of maximizing availability of creative works to the public.

IV.B. The Copyright Owners' proposal would not provide a "fair return" reflecting relative roles

(57) As I discuss in my Written Direct Testimony, the concept of "fair return" is ambiguous in economics, but Shapley value calculations and common sense argue, if anything, towards an adjustment of rates away from entities that earn significant profits and towards those that earn negative profits, which would imply a lowering of rates from their current level.[40] The Copyright Owners would reverse this directionality and impose an additional large transfer from entities earning negative profits towards those earning significant positive profits.

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[38] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 12.

[39] *Id.* at Section X.B.

[40] *Id.* at ¶¶ 137–39, 161.

IV.C. The Copyright Owners' proposal would not minimize disruptive impact

(58) The Copyright Owners' proposal represents a departure from the level and form of current mechanical royalty rates. In level, it moves royalty rates upward. In form, it moves away from a percentage of revenue as a headline rate and replaces it with rates determined either by the number of users or, for the first time in the context of the mechanical royalty rate, by the number of streams. The Copyright Owners' proposal would thereby change the economics of the interactive streaming industry, in particular [redacted], and impose a new rate structure that would penalize the expansion of listening.

(59) This increase in rates and change in rate structure would be imposed on an industry that has been successful at delivering value to consumers and revenue to copyright owners under the current rate structure. Publisher and label revenue has been increasing in recent years, coinciding with the rise of interactive streaming.[41] Studies have shown that consumers who use interactive streaming are not only spending more time listening to music, but also listening to a greater variety of music.[42] Arguing for a such a substantial departure from the status quo in level and form of rates would require a careful analysis of outcomes under the proposed new regime to make sure that these benefits of the status quo are not undermined. The Copyright Owners' economists have not provided that analysis.

IV.D. Summary

(60) There is a conflict between the Copyright Owners' proposal and a reasonable economic interpretation of the 801(b) factors. It is instructive to consider how the Copyright Owners' economists reached the conclusion that a proposal that: (1) substantially increases rates and changes the form of rates compared to the status quo, (2) transfers money from unprofitable interactive streaming services to profitable publishers, and (3) risks significantly disrupting an industry that has been successful in delivering value to consumers and revenues to copyright holders, could be considered consistent with the 801(b) factors. I turn to that question in the next section.

[41] *Id.*, at Figure 2 and Figure 3; *see also* Nick Petrillo, "Major Label Music Production in the US," (Major Label Music Production Market Research Report NAICS 51222, Sep. 2016), at 35.

[42] *See* Mark Mulligan, "Borderless Hits and Curated Playlists," *MIDiA*, Apr. 2016, at 6. *See also* MusicWatch, "Annual Music Study 2015: Report to Spotify Ltd.," June 2016 (SPOTCRB0010863), at 33.

V. How did Copyright Owners' economists conclude that the Copyright Owners' proposal is consistent with the 801(b) factors?

(61) There are four main errors and a number of additional mistakes that lead the Copyright Owners' economists to conclude that the Copyright Owners' proposal is consistent with the 801(b) factors. I elaborate on each of these factors in the remainder of this report. Here I provide a short description.

V.A. The Copyright Owners' economists misinterpret the 801(b) factors

(62) The Copyright Owners' economists generally argue for an unconstrained market standard rather than an 801(b) standard, either by arguing that an unconstrained market outcome is superior to the 801(b) factors and should therefore be preferred, or that the 801(b) factors essentially call for an unconstrained market outcome.[43] The view that the 801(b) standard should be considered an unconstrained market standard is not consistent with the language of the statute or past interpretation of the statute, or the existence of the statute in the first place.

(63) Dr. Rysman, while favoring a market interpretation of 801(b)—"in my opinion, the stated policy objectives allow for the setting of a royalty rate that emulates a free market"—also provides interpretations of the 801(b) factors as something other than a market standard.[44] For the first factor, he focuses on songwriter incentives while ignoring the role of services in making music accessible and ignores the benefits to consumers of enhanced availability brought about by the interactive streaming model.[45] In his interpretation of the second factor, he introduces a notion of "fair" that is tied to a specific compensation model.[46] His interpretation of the third factor, regarding relative contributions, introduces an inapposite analogy to Netflix.[47] I discuss these issues in more detail in Sections IV.B, VI.C.2, and VI.C.3 below.

(64) In the case of the fourth 801(b) factor, Dr. Rysman dismisses concern with the disruptiveness of the Copyright Owners' proposal because, in his view, "the Copyright Owners' rate proposal will not be disruptive and will hardly be noticed within such a dynamic industry."[48] To the contrary, I expect that [redacted] that is used by the majority of streaming service consumers in the United States, is likely to be noticed. With regard to the fourth 801(b) factor, Dr.

[43] Rysman Expert Report, *Phonorecords III*, at ¶ 80. *See also* Eisenach Expert Report, *Phonorecords III*, at ¶ 24. *See also* Gans Expert Report, *Phonorecords III*, at ¶ 18-23.

[44] Rysman Expert Report, *Phonorecords III*, at ¶ 80.

[45] *Id.* at ¶ 69.

[46] *Id.* at ¶ 73.

[47] *Id.* at ¶¶ 86–89.

[48] *Id.* at ¶ 92.

Eisenach dismisses it as "controversial" and as deserving a "constrained interpretation."[49] [redacted]

V.B. The Copyright Owners' economists misinterpret the Copyright Owners' rate proposal

(65) The Copyright Owners' economists make some comparisons between current rates and rates under the Copyright Owners' proposals that imply that the Copyright Owners' rates are not a significant departure from current rates.[50] As I show in Section III, this is an error. The error has three main sources.

(66) First, the Copyright Owners' economists ignore [redacted] in making the comparison between current implied rates and proposed rates. This ignores one of the largest impacts of the Copyright Owners' proposed rates on the industry, [redacted]

(67) Second, the Copyright Owners' economists' presentation of current implicit per-stream mechanical royalty rates for paid subscription services gives the misleading impression that Copyright Owners' proposed rates are comparable to current implicit rates. Weighting the data correctly and focusing on current implicit per-stream mechanical royalty rates, which are of greater relevance than historical implicit per-stream rates, gives a more accurate picture of the impact of the Copyright Owners' proposal in light of current consumption patterns, and shows that the Copyright Owners' proposal would represent a significant increase in rates for paid subscription services as well. [redacted]

(68) Third, the Copyright Owners' economists tend to separately evaluate the reasonableness of the per-stream component and per-user components of the proposal compared to "average" current rates, while ignoring the "greater of" aspect of the rate proposal.[52] There is a logical flaw at the heart of this comparison. As a matter of mathematics, a proposal could mimic current average per-stream and per-

[49] Eisenach Expert Report, *Phonorecords III*, at ¶ 25.

[50] Rysman Expert Report, *Phonorecords III*, at ¶¶ 66, 68. *See also* Eisenach Expert Report, *Phonorecords III*, at ¶ 174.

[51] *See* NMPA00001647 (Citing HFA and publisher data from: SONY-ATV00005245, KOBALT00001225 - KOBALT00001683, KOBALT00000741 – KOBALT00000742, KOBALT00000743 – KOBALT00000744, KOBALT00000745 – KOBALT00000746, KOBALT00000747 – KOBALT00000748, SONY-ATV00005247); NMPA00001670 (Citing Data from The Harry Fox Agency, Sony/ATV, Kobalt MRI, and Audiam).

[52] Rysman Expert Report, *Phonorecords III*, at ¶ 66. *See also* Eisenach Expert Report, *Phonorecords III*, at ¶ 159.

user rates across all services, yet represent a substantially higher rate for each service, if services must pay the greater of the two.

(69) A simple numerical example illustrates this point. Consider two hypothetical streaming services, a "high-use" service in which 100 users each stream 1,200 songs per month and a "low-use" service in which 100 users each stream 200 songs per month. Suppose the high-use service currently pays $150 in mechanical royalties per month, and the low-use service pays $62 in mechanical royalties per month. *On average*, the two services pay $0.0015 per stream and $1.06 per user. One might argue, as the Copyright Owners' economists imply, that therefore a proposal consisting of those two rate prongs would represent no increase over current rates for the services. However, the "greater of" structure of the rate proposal means that the high-use service would be bound by the per-stream rate, and the low-use by the per-user rate. In this simple example, total mechanical royalties would increase from $212 to $284 as a result of the proposal—a 34% increase—rather than stay the same, as the simple "average" analysis would imply.

V.C. Dr. Eisenach uses a flawed ratio approach to determine rates

(70) The heart of the Copyright Owners' economic analysis of optimal rates for mechanical royalties is Dr. Eisenach's ratio approach to determining mechanical or musical works royalties. He argues that there is an appropriate ratio between sound recording payments and musical works payments across all music distribution channels and that this ratio should be the sole determinant of mechanical royalty rates for interactive streaming services. Dr. Eisenach argues that the appropriate ratio is found in the market and uses various proxies to determine the appropriate market ratio.

(71) The ratio of sound recording rates to musical works recordings varies by channel, setting, and regulatory regime. There is no one rate or narrow range of rates that guides every circumstance, nor should there be. And even if there were an appropriate ratio or narrow range of ratios between sound recording and musical works rates that should guide setting of royalty rates for all services in all settings, that ratio could be achieved by either raising or lowering sound recording or musical works rates. Dr. Eisenach implies that the only way to achieve the "correct" ratio is to raise the musical works rate to match a supracompetitive sound recording rate, leading to a supracompetitive musical works rate in contravention of the 801(b) factors.[53]

(72) Aside from this basic flaw in his approach, there are a number of other errors in Dr. Eisenach's ratio approach that I discuss in Section VIII below.

[53] As I discuss in Section VI.A.2 below, the sound recording market was found in *Web IV* to reflect supracompetitive rates even above the "willing buyer/willing seller" standard that governed that proceeding.

V.D. Dr. Gans applies the Shapley and ECPR models incorrectly

(73) Dr. Gans argues that the Copyright Owners' proposed rates are supported by the theoretical models of the Shapley value and ECPR. He uses both to argue narrow points in support of the Copyright Owners' rates but ignores the larger lesson of those two models.

(74) For instance, Dr. Gans uses the Shapley value to determine what he views as the appropriate ratio of payments between sound recording and musical works, but he does not use the model to determine the appropriate allocation of royalties between upstream copyright holders and downstream copyright users. This is particularly remarkable, given that the reason for this proceeding is to determine the appropriate royalties to be paid to upstream copyright holders by downstream copyright users. In addition, Dr. Gans simply assumes that sound recording profits reflect the Shapley value, rather than deriving it. When the Shapley value is correctly used to examine the allocation of value between copyright owners and copyright users, as I show in my Written Direct Testimony, it calls for lower payments by copyright users relative to current rates.

(75) In his application of the ECPR, Dr. Gans similarly makes mistakes due to erroneous or incomplete application of the underlying model. He uses the ECPR model to advocate in favor of higher rates without doing an empirical analysis of cannibalization and relative returns of other channels that such a conclusion would call for. He also claims that ECPR supports flat per-play or per-user rates for all services but ignores the fact that such a structure runs counter to the notion of opportunity costs that underlies the ECPR approach.

V.E. The Copyright Owners' economists make other substantial errors in their analysis

(76) In addition to the four major errors discussed above, the Copyright Owners' economists make other substantial errors that I discuss in Section X, including:

- Mischaracterizing the historical impact of interactive streaming on Copyright Owners;
- Mischaracterizing the impact of a percentage-of-revenue royalty structure versus a per-play or per-user royalty structure;
- Incorrectly concluding that the unbundling of tracks coincident with the decline of CDs calls for higher per-stream royalty rates; and
- Making an incorrect analogy to SiriusXM.

VI. Copyright Owners' economists' analyses rely on a flawed interpretation and analysis of the 801(b) factors

(77) Copyright Owners' economists' analyses of the Copyright Owners' proposal rely on an interpretation of the 801(b) factors that favors unconstrained rate setting by copyright owners contrary to the language of the statute and the history of regulation of musical works rates. I discuss below their flawed interpretations of each 801(b) factor and how those interpretations lead them to view a significant increase in musical works royalties as consistent with those factors.

VI.A. Copyright Owners' economists essentially advocate a market standard rather than an 801(b) standard

VI.A.1. Copyright Owners' economists point to unconstrained market rates as a benchmark for an 801(b)-determined rate

(78) Dr. Gans states that his goal is to determine rates that are "consistent with market rates and with the 801(b)(1) statutory standard."[54] Elsewhere he notes that a "free market outcome" is a good benchmark for regulatory rates and argues that such a market would be unconstrained by mandatory licensing "but not one that meets any specific, narrow definition of competitiveness."[55] Further, he views the market for sound recording rights as one that fits the definition of a "reasonably competitive market."[56] Essentially, he argues that an unconstrained market rate for sound recording represents a good baseline for determining the 801(b) rates. Dr. Eisenach similarly argues that the first three 801(b) factors call for a "fair market rate" and uses the sound recording market as a benchmark for a fair market, and he argues that the fourth should be construed narrowly.[57]

(79) The 801(b) standard is neither an unconstrained market standard nor a "willing buyer/willing seller" standard. As I discuss in my Written Direct Testimony, a reasonable interpretation of its language argues for a rate that takes into account consumer surplus in a way that an unconstrained market rate, particularly in a market with a large degree of market power, does not.[58]

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[54] Gans Expert Report, *Phonorecords III*, at ¶ 32.

[55] *Id.* at ¶ 32.

[56] *Id.* at ¶ 32.

[57] Eisenach Expert Report, *Phonorecords III*, at ¶¶ 24–25.

[58] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 89.

VI.A.2. Allowing publishers and labels to exercise substantial market power is inconsistent with the 801(b) standard

(80) As the *Web IV* proceeding acknowledged, due to the market power exercised by the music labels, sound recording rates for interactive streaming services are not currently negotiated in an effectively competitive environment.[59] In response, the *Web IV* court, in determining sound recording rates for non-interactive streaming services, adjusted interactive streaming service negotiated rates downward in part to mimic effective competition under a "willing buyer/willing seller" standard.[60]

(81) Licensors of musical works rights also have significant inherent market power, as has been recognized by the U.S. Department of Justice (DOJ). Licensing of *performance* rights has long operated under consent decrees enforced by the Antitrust Division of the DOJ designed to "prevent the anticompetitive exercise of market power" by ASCAP and BMI.[61] The consent decrees do not cover the setting of mechanical royalty rates, which are overseen by the Copyright Royalty Board (CRB) under the 801(b) standard.

(82) The inherent market power of publishers and labels comes about as a result of the aggregation of rights among the three major record labels and publishers—Sony, Universal, and Warner. These three entities collectively account for 58.2% of U.S. label revenues and 35.6% of U.S. publishing revenues.[62] While each owner of a musical works or sound recording right has some market power due to the uniqueness of its product, the aggregation of rights into large groups that streaming services "believe they must have" in order to compete in the marketplace creates significant market power on the part of labels and publishers.[63] The Federal Trade Commission concluded as much in its assessment of the proposed Vivendi-EMI merger, noting that "Commission staff found considerable evidence that each leading interactive streaming service must carry the music of each Major to be competitive."[64]

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[59] Determination, *In re Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recording (Web IV)*, No. 14-CRB-0001-WR (CRB 2015) [hereinafter *Web IV*] at 66–67.

[60] *Id.* at 65–66.

[61] "Statement of the Department of Justice on the Closing of the Antitrust Division's Review of the ASCAP and BMI Consent Decrees," Washington, DC, Aug. 4, 2016, 2.

[62] Nick Petrillo, "Major Label Music Production in the US" (Major Label Music Production Market Research Report NAICS 51222, Sep. 2016), at 26. *See also*, Nick Petrillo, "Music Publishing in the US: Market Research Report" (Music Publishing Market Research Report 51223, Oct. 2015), at 26.

[63] United States Copyright Office, "Copyright and the Music Marketplace," February 2015, 148, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf. *See also*, Determination, *Web IV*, at 121–22.

[64] Federal Trade Commission, "Statement of Bureau of Competition Director Richard A. Feinstein *In the Matter of Vivendi, S.A. and EMI Recorded Music*," news release, Sept. 21, 2012, *available at* https://www.ftc.gov/sites/default/files/documents/closing_letters/proposed-acquisition-vivendi-s.a.emi-recorded-music/120921emifeinsteinstatement.pdf. *See also* the *Web IV* decision, which discusses "supranormal pricing that arises from the impact of complementary oligopoly pricing that was well-documented and admitted in the filings with the

(83) Dr. Gans rejects the notion of market power in the sound recording market simply because, he notes, the market functions. He writes that "the orderly functioning of the interactive streaming sound recording market, outside of the compulsory licensing regime of the Copyright Act, provides evidence that notional anticompetitive concerns underlying the Copyright Act are not manifest in licensing with interactive streaming services."[65] There is no economic rationale for this statement. It is in the interest of sellers with market power to sell their product; the fact that transactions take place does not prove the existence of a competitive market.

VI.A.3. Copyright Owners proposal does not reflect the "market"

(84) Ironically, given the preference of the Copyright Owners' economists for market outcomes in this context, they support a proposal that would tend to [redacted], which the unregulated sound recording side of the market has facilitated. Their proposal would also completely do away with percentage-of-revenue rates that form a key part of unregulated rates negotiated between music labels and interactive streaming services.

(85) In addition, both sides in the *Phonorecords II* settlement voluntarily agreed to percentage-of-revenue rates for ad-supported services with no per-user or per-stream alternative.

VI.A.4. Summary

(86) The Copyright Owners' economists in some instances imply that the 801(b) factors should not set effective rates but instead just provide a baseline from which to negotiate rates.[66] In other instances, however, they seem to accept the language of 801(b) as meaning something other than an unconstrained market rate and try to define each of the four factors in economic terms.[67] Even in the latter cases, however, their economic interpretation of each factor leads them in the direction of an unconstrained market rate, not a rate based on the 801(b) factors.

VI.B. Copyright Owners' economists ignore the first 801(b) factor or interpret it with little regard for "the public"

(87) The first of the 801(b) factors reads:

- "(A) to maximize the availability of creative works to the public."

Federal Trade Commission by Universal, its economic expert and its counsel in connection with the Universal-EMI merger." Determination, *Web IV*, at 75.

[65] Gans Expert Report, *Phonorecords III*, at ¶ 13.

[66] *See* Eisenach Expert Report, *Phonorecords III*, at ¶¶ 24, 31–32.

[67] *See* Gans Expert Report, *Phonorecords III*, at ¶¶ 31–32.

(88) As I discuss in my Written Direct Statement, I interpret this factor to favor a rate structure that maximizes total surplus, including both producer and consumer surplus.[68]

(89) Dr. Rysman asserts that this factor calls for increasing the mechanical royalty rate, which, he argues, would increase investment in the production of music, all else equal, while not disturbing downstream investment.[69] Dr. Eisenach and Dr. Gans equate this factor alongside the other 801(b) factors to a market value with little other comment.[70] Because Dr. Rysman is the only one of the economists who tries to provide an interpretation of this factor other than as supporting a market rate, I focus on his response.

(90) In discussing the "availability of creative works to the public," Dr. Rysman focuses only on one component of this availability—the composition of musical works. Composition is one step in the process of making music available to consumers. Other steps include music recording and the transmission of recordings through a platform that is readily accessible by "the public." A breakdown in any of these steps may lead to deviation from factor A. For example, if songwriters are compensated such that they produce a large number of new musical works, but performers are compensated such that they have no incentive to record these works, the availability of creative works will not be maximized. Similarly, if both songwriters and performers are compensated such that there are a large variety of new performances, but distribution platforms have insufficient financial incentive to make these performances available to consumers, the availability of creative works will not be maximized. In missing this essential point, the Copyright Owners' economists fail to properly consider factor A, to which the Copyright Owners' proposal is contrary.

(91) Even if one accepts Dr. Rysman's interpretation of factor A, neither he nor any of the other Copyright Owners' economists have done any analysis of the impact of changes in royalty rates on music production. Available evidence suggests that, despite the decrease in total industry music revenues starting in 1999 and shown in Figure 2 of my Written Direct Testimony, the number of individuals in the U.S. Office of Employment Statistics category "music directors and composers" generally increased from 1999 to 2015. Likewise, the inflation-adjusted compensation of this category generally increased despite the overall music industry trend.[71]

(92) Nor do the Copyright Owners' economists produce any substantial analysis of the impact of the Copyright Owners' proposal on downstream interactive streaming services. As I show in Section III, it represents a substantial increase in royalty rates for interactive streaming services and [redacted]. The Copyright Owners'

[68] Marx Written Direct Testimony, *Phonorecords III*, Section X.B.

[69] Rysman Expert Report, *Phonorecords III*, at ¶¶ 69–70.

[70] Eisenach Expert Report, *Phonorecords III*, at ¶ 24. Gans Expert Report, *Phonorecords III*, at ¶¶ 31–32.

[71] Bureau of Labor Statistics, "Occupational Employment Statistics," Department of Labor, accessed Jan 1, 2017, https://www.bls.gov/oes/.

proposal would reduce the accessibility of music to the public and could result in increased prices for paid subscription services. Dr. Rysman does not incorporate these effects into his analysis of whether the Copyright Owners' proposal meets the first 801(b) factor. Dr. Rysman affirmatively points to an industry-wide increase in charges to the public as a way in which services could positively respond to the Copyright Owners' proposal.[72] Dr. Rysman's positive view of a price increase to consumers represents a significant deviation between his views and the first 801(b) factor.

VI.C. Copyright Owners' economists misinterpret the second and third 801(b) factors

(93) The second and third of the 801(b) factors read:

- "(B) To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions."
- "(C) To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication."[73]

VI.C.1. Copyright Owners' economists incorrectly equate factors B and C with an unconstrained market outcome

(94) The Copyright Owners' economists interpret the second and third 801(b) factors as calling for an unconstrained market rate.[74] For instance, Dr. Gans states that in the context of this proceeding, "a hypothetical unconstrained market for mechanical licenses is an appropriate analytical guide"[75] and that "sound recording licenses provide a benchmark for estimating a reasonable rate for musical works."[76]

(95) Such an interpretation is inconsistent with both precedent and market reality. Even the "willing buyer/willing seller" standard, which governs certain CRB proceedings and is more akin to a market

[72] Rysman Expert Report, *Phonorecords III*, at ¶¶ 93–95. It appears that in his report, Dr. Rysman is advocating for collusion among the interactive streaming services to coordinate on an industry-wide price increase to consumers: "Collectively the services could pass through the rate change to consumers without affecting their price points relative to each other." Dr. Rysman implicitly recognizes that competition among streaming services constrains the prices that they can charge to consumers—a key reason that competition is good—and seems to suggest that streaming services have available to them the option of acting collectively, something that in my understanding would be viewed under antitrust laws as price fixing.

[73] 17 U.S.C. § 801(b)(1).

[74] *See* Eisenach Expert Report, *Phonorecords III*, at ¶ 32. *See also* Gans Expert Report, *Phonorecords III*, at ¶ 31.

[75] *Id.* at ¶ 9.

[76] *Id.* at ¶ 9.

rate than an 801(b) standard, is not interpreted to be an unconstrained market rate.[77] CRB precedent, DOJ precedent, and economics all recognize the market power that is created by the aggregation of copyrights by upstream entities, which argues that the unconstrained market rate is not "effectively competitive."[78] The 801(b) standard is recognized as distinct from both an unconstrained market rate and a "willing buyer/willing seller" standard.[79]

(96) As I explain in my Written Direct Testimony, the Shapley value provides one way to assess a fair return reflecting the relative roles of copyright owners and copyright users.[80] The analysis in my Written Direct Testimony showed that the Shapley value calls for a lowering of rates from current levels.[81]

VI.C.2. Dr. Rysman incorrectly equates "fair" with a per-play royalty

(97) Dr. Rysman argues that a "fair" return means that "when a copyright is used more intensively, the copyright owners should see increased returns."[82] He then argues that this notion supports a per-play royalty over a percentage-of-revenue royalty.[83]

(98) Under the current royalty structure, however, returns to individual copyright owners do increase when their works are played with greater intensity. Once the total compensation is determined, compensation for an individual work is calculated on a per-play basis. If that is the definition of "fair," as Dr. Rysman suggests, then compensation for artists is already determined on a fair basis.

(99) Under a percentage-of-revenue rate, copyright owners are compensated more in aggregate when revenue increases. One would expect revenue to increase as use increases, because of increased ad placements, increased numbers of subscribers, and, potentially in the future, increased subscription prices.

(100) In addition, as I explain in my Written Direct Testimony, the "all you can eat" pricing model of the interactive streaming services supports an efficient amount of streaming.[84] Per-stream and per-user fees above the social marginal cost tend to create deadweight loss and reduce total surplus available

[77] For a definition of the "willing buyer/willing seller" standard, *see* Determination, *Web IV*, at 2.

[78] *Id.* at 121–22; *see also* Department of Justice, "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, at 2, 7, and 22.

[79] Determination, *Web IV*, at 2.

[80] Marx Written Direct Testimony, *Phonorecords III*, at ¶¶ 136–39.

[81] *Id.* at ¶ 161.

[82] Rysman Expert Report, *Phonorecords III*, at ¶ 73.

[83] *Id.* at ¶ 75.

[84] Marx Written Direct Testimony, *Phonorecords III*, at Section X.B.

from copyright usage.[85] Maximizing total surplus is beneficial for all parties—services, consumers, and rights holders—and a "fair" allocation can be determined once that surplus is maximized.

(101) I discuss this issue and the differences between percentage-of-revenue, per-play, and per-user royalties in more detail in Section X.B below.

VI.C.3. Dr. Rysman's Netflix analogy does not support his interpretation of the third 801(b) factor

(102) In evaluating the third 801(b) factor, Dr. Rysman writes that Netflix is a useful benchmark for the relation between rights holders and an interactive streaming service.[86] He supports this conclusion by noting that Netflix and other music streaming services that provide creative content over the Internet were uncertain when they began, disrupted traditional methods of consuming content, and have invested heavily in distribution.[87] Dr. Rysman goes on to note that content costs for Netflix have risen significantly over the last 10 years. In 2010, Netflix content costs were $300 million and rose to $2.2 billion in 2013. By 2016, Netflix was paying $4.4 billion in content costs.[88] The implication Dr. Rysman points to is that as Netflix became more established and grew its subscriber base, content providers increased the amount that they charged Netflix for licensed content. Dr. Rysman concludes from this example that he would expect content providers for streaming service to also raise prices if the market were operating as an efficient free market.[89] This use of Netflix as a benchmark for interactive streaming is flawed.

(103) Dr. Rysman's characterization of Netflix's increasing content costs is incorrect. Rather than representing increasing payments to rights holders for similar content, they partially represent an increase in the cost of original content, which Netflix pioneered in order to differentiate itself from its competitors. Netflix launched its first self-commissioned original content in February 2013 with *House of Cards* and released several other pieces of content that year, including *Orange is the New Black* and Season 4 of *Arrested Development*.[90] As of 2016, Netflix had 126 pieces of original content.[91] This includes *The Crown*, the most expensive TV series ever produced, with a reported cost of $130 million.[92] This show alone would equal almost half of Netflix's 2010 content costs. In this

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[85] *Id.* at ¶¶ 125–26.

[86] Rysman Expert Report, *Phonorecords III*, at ¶¶ 86–87.

[87] *Id.* at ¶ 86.

[88] *Id.* at ¶ 87.

[89] *Id.* at ¶ 88.

[90] The first Netflix exclusive series was *Lilyhammer*, which was released in partnership with a Norwegian broadcaster. *See* Richard Lawler, "Netflix Schedules Its Original Series 'House of Cards' for release February 1st," *Engadget*, Oct. 4, 2012, https://www.engadget.com/2012/10/04/netflix-house-of-cards-original-series-february-1/.

[91] Kim Masters, "The Netflix Backlash: Why Hollywood Fears a Content Monopoly," *Hollywood Reporter*, Sep. 14, 2016, http://www.hollywoodreporter.com/features/netflix-backlash-why-hollywood-fears-928428.

[92] Kevin Fallon, "Inside Netflix's $130 Million 'The Crown,' the Most Expensive TV Series Ever," *Daily Beast*, Nov. 2,

same time period, as Netflix has increased its exclusive content offerings, the service has reduced its catalog of licensed offerings. As of 2016, Netflix's U.S. content library shrank by about 40%, from over 9,000 titles in 2012 to just 5,100.[93] Thus, rising content costs in Netflix's case have little to do with more money being paid to rights holders.

(104) Another aspect that Dr. Rysman glosses over in his characterization of Netflix's content costs growth is the firm's global expansion from 2010 to 2016. Netflix first expanded outside of the United States in September 2010, when it began offering service in Canada. By 2013, the firm had expanded to Latin America, Central America, the Caribbean, the United Kingdom, Ireland, Scandinavia, and the Netherlands. Today, Netflix is available around the world, with the exception of a handful of locations such as China.[94] One would expect licensing costs to increase with an expansion of geographic rights.[95]

(105) Dr. Rysman provides none of this additional information as context to Netflix's rising content costs. He fails to mention the rise in Netflix's exclusive content offerings or global expansion. This leaves the misleading impression that the growth is driven by licensed content domestically, as he attempts to use Netflix's rising content costs as an implicit benchmark for interactive streaming services in the current proceeding.[96]

VI.D. Copyright Owners' economists virtually ignore the fourth 801(b) factor

(106) The fourth 801(b) factor reads:

2016, http://www.thedailybeast.com/articles/2016/11/02/inside-netflix-s-130-million-the-crown-the-most-expensive-tv-series-ever.html.

93 Adam Levy, "Netflix Inc. Content Costs Are Booming, But Its Library Is Shrinking," *The Motley Fool*, Jun. 20, 2016, http://www.fool.com/investing/2016/06/20/netflix-inc-content-costs-are-booming-but-its-libr.aspx.

94 *See* Netflix Inc., "Netflix Launches Canadian Service for Streaming Movies and TV Episodes over the Internet," news release, Sep. 22, 2010, *available at* https://media.netflix.com/en/press-releases/netflix-launches-canadian-service-for-streaming-movies-and-tv-episodes-over-the-internet-migration-1; Netflix Inc., "Netflix to Launch Service in Latin America and the Caribbean for Streaming TV Shows and Movies Later This Year," news release, Jul. 5, 2011, *available at* https://media.netflix.com/en/press-releases/netflix-to-launch-service-in-latin-america-and-the-caribbean-for-streaming-tv-shows-and-movies-later-this-year-migration-1; Netflix Inc., "Netflix to Launch Service in the UK and Ireland for Streaming Movies and TV Shows in early 2012," news release, Oct. 24, 2011, *available at* https://media.netflix.com/en/press-releases/netflix-to-launch-service-in-the-uk-and-ireland-for-streaming-movies-and-tv-shows-in-early-2012-migration-1; Netflix Inc., "Netflix Launches in Sweden, Denmark, Norway and Finland," news release, Oct. 18, 2012, *available at* https://media.netflix.com/en/press-releases/netflix-launches-in-sweden-denmark-norway-and-finland-migration-1; Netflix Inc., "Netflix Now Available in the Netherlands," news release, Sep. 11, 2013, *available at* https://media.netflix.com/en/press-releases/netflix-now-available-in-the-netherlands-migration-1; Netflix Inc., "Netflix Is Now Available Around the World," news release, Jan 6, 2016, *available at* https://media.netflix.com/en/press-releases/netflix-is-now-available-around-the-world.

95 Adam Levine-Weinberg, "Can Netflix Rein in Skyrocketing Costs?" *The Motley Fool*, Jun. 22, 2016, http://www.fool.com/investing/2016/06/22/can-netflix-rein-in-skyrocketing-costs.aspx.

96 Rysman Expert Report, *Phonorecords III*, at ¶¶ 86–88.

- "(D) To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices."

(107) In response to this factor, the Copyright Owners' economists:

1. Argue that it should be interpreted narrowly.[97]
2. Argue that the rates implied by the Copyright Owners' proposal do not differ much from the status quo and thus would have little disruptive impact.[98]
3. Suggest, with little justification, that to the extent rates that do differ from the status quo, interactive streaming services could take various business decisions that would leave them no worse off under the Copyright Owners' proposal.[99]

(108) Dr. Eisenach argues that the fourth 801(b) factor is in conflict with the other three factors and should be interpreted in a "constrained" fashion.[100] [redacted].

(109) The Copyright Owners' economists also argue that the Copyright Owners' proposed rates do not represent a material change over implicit per-play or per-user rates charged under the current regime.[102] As I show in Section VII below, this assertion is incorrect. It ignores [redacted], is based on a misleading impression of current rates, and ignores the "greater of" structure of the Copyright Owners' proposed rates.

(110) Finally, to the extent that Dr. Rysman acknowledges a possible rate impact of the Copyright Owners' proposal, he argues with little analysis that any increases "will hardly be noticed within such a dynamic industry."[103] He advances possible cost-reducing or revenue-enhancing responses by interactive streaming services to a rate increase and says that these responses will mitigate any

[97] Eisenach Expert Report, *Phonorecords III*, at ¶ 25.
[98] Rysman Expert Report, *Phonorecords III*, at ¶ 92. Eisenach Expert Report, *Phonorecords III*, at ¶¶ 171–173.
[99] Rysman Expert Report, *Phonorecords III*, at ¶¶ 94–101.
[100] Eisenach Expert Report, *Phonorecords III*, at ¶ 25.
[101] *Id.* at ¶ 25.
[102] Rysman Expert Report, *Phonorecords III*, at ¶ 92. Eisenach Expert Report, *Phonorecords III*, at ¶¶ 171–73.
[103] Rysman Expert Report, *Phonorecords III*, at ¶ 92.

VII. Copyright Owners' economists mischaracterize the Copyright Owners' proposal and its impact on royalty rates

(111) Dr. Rysman argues that the Copyright Owners' proposal would not be disruptive to the industry in part because it would represent little change or even a reduction from current implied per-stream or per-user rates.[105] Dr. Eisenach similarly finds the Copyright Owners' proposal to be within the range of existing implied rates, as does Dr. Gans.[106] All omit ad-supported interactive streaming from these comparisons.

(112) To the contrary, as I show in Section III, virtually all services would see a substantial increase in mechanical and total musical works royalty payments as a result of the Copyright Owners' proposal, and [redacted]. This disconnect between the actual impact of the proposal and Copyright Owners' experts' assertions that the proposal is little different from current rates follows from three primary errors by the Copyright Owners' economists:

1. They ignore the impact of the Copyright Owners' proposal on ad-supported streaming;
2. They give misleading impressions of current implicit per-stream mechanical royalty rates for paid subscription services; and
3. They ignore the "greater of" aspect of the Copyright Owners' proposal.

VII.A. Copyright Owners' economists ignore the impact of the Copyright Owners' proposal on ad-supported streaming

(113) In the comparisons of proposed per-stream rates to implicit current per-stream rates performed by Drs. Eisenach, Gans, and Rysman, all omit ad-supported interactive streaming from their comparisons. As I discuss in my Written Direct Testimony, ad-supported streaming is attractive to users with a lower WTP relative to those who opt for paid subscription services.[107] The bifurcation of WTP among consumers has been noted by the CRB in other contexts.[108] The current royalty rate structure, which calculates ad-supported royalties as a percentage of revenue, accounts for this difference in WTP.

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[105] *Id.* at ¶¶ 61–66 and Figure 7.

[106] Eisenach Expert Report, *Phonorecords III*, at ¶¶ 171–73. *See also* Gans Expert Report, *Phonorecords III*, at ¶¶ 83–84.

[107] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 14.

[108] *Id.* at ¶¶ 54–56. *See also* Determination, *Web IV*, at 70–71.

(114) The Copyright Owners' proposal does not account for this bifurcation of users, or any difference in user demand, and instead imposes uniform per-stream or per-user rates for all types of interactive streaming services sold to all customer groups. [redacted]

(115) Drs. Gans and Rysman provide no explanation as to why they omit ad-supported streaming from their comparison of current implied per-stream rates to rates under the Copyright Owners' proposal. Dr. Eisenach's explanation, in his footnote 127, is unclear, but appears related to his view that revenue for this service is "too low" because [redacted] and ad-supported services provide an on-ramp to paid services.[109] While I agree that one aspect of the ad-supported service is to provide an on-ramp to paid services, it also has another important aspect, namely to serve low WTP customers.[110]

(116) Regardless of Dr. Eisenach's explanation for why revenues and effective royalties on ad-supported services are currently lower than those on paid subscription services, or his speculation about why they are "too low," he and the other Copyright Owners' economists err in not calculating the impact of the Copyright Owners' proposal on ad-supported services. Ad-supported services currently make up a majority of subscribers and [redacted] of all streams in the industry.[111] By this omission, Copyright Owners' economists substantially understate the impact of the Copyright Owners' proposal on the interactive streaming industry.

VII.B. Copyright Owners' economists give misleading impressions of current paid subscription rates

(117) The Copyright Owners' economists, in their analysis of paid subscription services, argue that the Copyright Owners' proposed rates are not that different from current implicit per-stream mechanical royalty rates. [redacted].

[109] Eisenach Expert Report, *Phonorecords III*, footnote 127. Dr. Eisenach does not attempt to value this [redacted] or show how that equity share is distributed or how it might affect rates.

[110] Spotify, "Performance, Industry Impact & Freemium," Presentation (SPOTCRB0003951), at 15–29.

[111] *See* Figure 9.

VII.B.1. Copyright Owners' economists provide a misleading analysis of current implicit per-stream mechanical royalty rates

(118) Focusing on paid subscription streaming services, Drs. Rysman and Eisenach assert that the Copyright Owners' proposal of $0.0015 per stream represents little change over current (implicit) per-stream mechanical royalty rates. In support, they provide a series of calculations comparing per-stream mechanical royalty rates implied by the current rate structure with per-stream rates included as part of the Copyright Owners' proposal. These calculations and comparisons are misleading. They give the erroneous impression that the $0.0015 per-stream structure is roughly what the services currently pay.[112] That is inconsistent with the analysis that I present in Section III, which shows that the Copyright Owners' proposal would result in a significant increase to paid subscription interactive streaming services.

(119) One reason that the analysis of the Copyright Owners' economists is misleading is that, in much of their discussion, there is little accounting for the differences in scale and scope among interactive streaming services. For instance, Dr. Rysman's Figure 7 appears to visually show implicit per-stream rates that vary tremendously and that are mostly higher than the Copyright Owners' proposal of $0.0015 per stream. Figure 15 reproduces Dr. Rysman's Figure 7.

[112] Dr. Rysman indicated in his report "that there are numerous services that have paid effective per-play rates well above what the Copyright Owners propose…" Rysman Expert Report, *Phonorecords III*, at ¶ 63. Dr. Eisenach concluded that his benchmark analysis indicated "that the proposed rates fit with market practices and reasonable expectations." Eisenach Expert Report, *Phonorecords III*, at ¶ 173.

[redacted]

[redacted]

(120) However, many of the services he includes on this graph are of *de minimis* size. For instance, the highest rate he shows for 2015, at [redacted], belongs to "[redacted]," a service with [redacted] subscribers and [redacted] in revenues in that year in the United States.[113] Visually and analytically, all services are given equal weight.

(121) The graph also shows data from 2012 to 2015 and implicitly weights more distant years the same as more recent years. In general, as interactive streaming has become more accepted and accessible and overall listening has increased, streams per user have increased for virtually all services, [redacted], whose blended average mechanical royalty rate per stream has increased approximately [redacted] from 2015 to first half of 2016.[114]

[113] Rysman Expert Report, *Phonorecords III*, backup materials (NMPA00001670.xlsx (Citing Data from The Harry Fox Agency, Sony/ATV, Kobalt MRI, and Audiam)).

[114] [redacted]

(122) Dr. Rysman's approach hides the fact that based on more recent streaming figures, the Copyright Owners rates represent roughly a [redacted] per-stream rate than current payments for the paid subscription portion of the interactive streaming industry.

(123) Weighting his Figure 7 by revenue or subscribers and focusing on 2015 shows a more accurate picture of the data he presents. Figure 16, which weights Dr. Rysman's Figure 7 by service size (subscribers and revenue, separately), shows that the per-stream component of the Copyright Owners' proposal would represent a roughly [redacted] increase over 2015 average current implicit per-stream mechanical royalty rates for paid interactive streaming services.

[redacted]

(124) Dr. Eisenach does not attempt to calculate the current implicit per-stream rate as Dr. Rysman does, yet he purports to perform calculations of reasonable per-stream and per-user rates based on current practices. His conclusion is that "current" mechanical rates of [redacted] per-user month or [redacted] per play show that the rates derived from his benchmark analysis are "consistent with customary costs and

margins and industry practices."[115] This conclusion is incorrect, and the underlying calculations are based on erroneous assumptions.

(125) Dr. Eisenach starts by assuming that allocating 15% of streaming revenue for musical works royalties is current practice, and multiplies this by a baseline assumed $10.00 per month in revenue for a paid subscription streaming service to determine a $1.50 per-user per-month rate for all musical works as in line with "current practice." These assumptions are flawed. Paying 15% of revenue is more than most services pay for musical works in the United States—it is nearly 50% higher than the statutory "all-in" rate of 10.5%. In addition, although $9.99 per month is a common price for interactive streaming, free trials and student and family discounts mean that $9.99 per month per user is not the realized average per-user revenue for interactive streaming services. [redacted][116]

(126) In concluding that $1.50 per user per month for musical works rights is roughly current practice, Dr. Eisenach arrives at a rate that is more than 50% higher than current practice. [redacted].[117] And this per-user rate would not be applied to just paid streaming. It would apply to [redacted][118]

(127) Dr. Eisenach divides his assumed per-user revenue by industry average streams per user to find [redacted] per-stream mechanical royalty as a reasonable match to current practice. However, that rate would represent [redacted] current per-stream mechanical royalty rate for its paid services, and more than a [redacted] increase of the 2015 weighted average per-stream rate for the industry.[119] Dr. Eisenach's conclusion that his benchmark rates are not a departure from current practice is thus based on incorrect assumptions, leading to a substantial distortion of what is "current practice."

(128) [redacted].

[115] Eisenach Expert Report, *Phonorecords III*, at ¶ 173.

[116] [redacted].

[117] [redacted].

[118] *See* Figure 1. The [redacted] figure applies the Copyright Owners' rate to all subscribers. The [redacted] rate assumes Spotify continuously purges non-active ad-supported subscribers.

[119] The current per-stream mechanical royalty for the services highlighted in Drs. Eisenach and Rysman's expert reports (excluding locker services) weighted by streams is [redacted]. This value assumes for [redacted] the same ratio between PRO payments and mechanical royalties as a share of musical works royalties from 2014 applies to 2015. It also assumes that [redacted] PRO payments for 2015 were approximately equal to its mechanical royalties. Some services included in this weighted average, such as [redacted], do not have complete data for 2015.

[120] My analysis of Spotify's streaming data for its paid service in 2015 indicated that there were approximately billion streams of any length and approximately . Thus, Using 2H2015-1H2016 numbers, this ratio is .

[121] *See* Rysman Expert Report, *Phonorecords III,* Section V.

[redacted]

VII.C. Copyright Owners' economists ignore the "greater of" aspect of the Copyright Owners' proposal

(130) Although the Copyright Owners' economists focus on the per-stream aspect of the Copyright Owners' proposal, for the majority of services today the per-stream aspect of the Copyright Owners' proposal would not determine their rates. Instead, their rates would be determined by the $1.06 per-user rate. As shown in Figure 13, application of this rate to current paid subscription portable mixed use services leads to a [redacted] of the mechanical royalty rate, even if Copyright Owners changed their proposal to apply only to [redacted]

(131) As I discuss in Section V.B, as a matter of mathematics, even if the Copyright Owners' proposal mimicked current average implicit per-stream and per-user rates for interactive streaming services, the "greater of" aspect of the rate structure could mean that every service pays a significantly higher

rate. As I have also discussed, however, the Copyright Owners' proposal does not mimic current implicit per-stream and per-user rates, but is instead higher.

VIII. Dr. Eisenach's calculation of mechanical royalty rates based on ratios of sound recording to musical works rates is flawed

(132) Dr. Eisenach proposes to assess the appropriate rate for Section 115 licenses based on calculating the ratio of sound recording to musical works royalties in a variety of settings and applying that ratio to the interactive streaming market.

(133) As discussed below, Dr. Eisenach's approach is flawed in multiple ways. His use of this ratio approach has no foundation in economic theory. In addition, the copyright users he examines to determine the "market ratio" are not all similarly situated to streaming services, and their rates were determined under a variety of regulatory and non-regulatory circumstances. Also, he does not consider other ratios that fall outside of his range. Finally, Dr. Eisenach's methodology for arriving at a rate for Section 115 licenses, given his selected ratio, rests on unrealistic assumptions that artificially increase his suggested rates.

VIII.A. Dr. Eisenach provides insufficient economic foundation for his ratio approach

(134) Dr. Eisenach proposes a methodology that relies on identifying a "market-determined" ratio between royalty payments for sound recording rights and royalty payments for musical works rights to calculate appropriate mechanical royalty rates under the 801(b) factors. He provides no economically sensible explanation for why the ratios he proposes are appropriate for determining mechanical rates for interactive streaming services. In addition, Dr. Eisenach defines "market-based valuations" to be "fair market valuations determined by voluntary negotiations."[122] Yet his "observed" ratios are not "market-based" valuations because they are not all determined by voluntary negotiations, and they are not "fair market valuations" because even the ones that are negotiated did not take place in an effectively competitive market. Thus, while Dr. Eisenach is sometimes using negotiated rates for his ratios, these are not equivalent to fair market valuations.

(135) Dr. Eisenach claims to discuss the "economic relationship between the sound recording and musical works rights" in Section V.A. of his report, presumably in order to explain why the ratio between their valuations in other settings is an appropriate approach for this setting.[123] However, his analysis goes no further than the assertion that these rights are complementary inputs for "music users that

[122] Eisenach Expert Report, *Phonorecords III*, at ¶ 8.
[123] *Id.* at ¶¶ 76–80.

require both sound recording rights and musical works rights."[124] He states that "it is not necessary for my purposes to put forward a general theory of relative valuation," and he relies instead on "empirical observation of market-based outcomes."[125]

(136) In the absence of a "general theory of relative valuation," Dr. Eisenach's assumption that "the relative values of the two rights should be stable across similar or identical markets" has no grounding in economics.[126] He assumes a conclusion (stability), and from this conclusion he asserts the existence of a useful baseline from a disparate and widely varying set of ratios. Thus, not only does Dr. Eisenach neglect to explain why the ratio "should" be stable, his data show proposed ratios varying from a low of [redacted] to a high of [redacted], contradicting this stability assumption.[127] And as I discuss in Section VIII.C.5, considering the implied ratios in other music services expands this set further, to a high of [redacted].

VIII.B. Sound recording rates do not constitute an appropriate baseline under the 801(b) factors

(137) Dr. Eisenach's ratio approach attempts to set musical works rates from a baseline of sound recording rates based on a "market ratio." In doing so, he does not account for the substantial market power of the three major record labels in the market for sound recording rights. When sound recording rates are inflated by the exercise of market power over an "effectively competitive" benchmark, as the *Web IV* decision found with respect to sound recording royalties for interactive streaming services, then raising the musical works royalty to a sound recording baseline is inflating the musical works royalty rate to reflect the market power of music labels on the sound recording side, contrary to the 801(b) factors.[128]

(138) The fallacy of Dr. Eisenach's approach can be illustrated by the following example.

(139) Consider sales of a left shoe and right shoe, perfect complements for production of a pair of shoes, but one of little use without the other. Assume the market price of a pair of shoes, reflecting market power on the part of shoe producers, is $100, and the "market ratio" is 1:1: if sales are broken up into individual sales of left and right shoes, producers charge $50 for each.

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[124] *Id.* at ¶ 76.

[125] *Id.* at ¶ 79.

[126] *Id.* at ¶ 79.

[127] *Id.* at ¶ 79 and Table 9.

[128] The CRB in *Web IV* noted that "the Judges were presented with substantial, unrebutted evidence that the interactive services market is *not* effectively competitive." Determination, *Web IV*, at 66. According to the CRB, "[E]ven economists quite unwilling to assume that a given monopoly structure or oligopoly structure is inefficient and anticompetitive bristle at the idea that supranormal pricing arising from a complementary oligopoly is reflective of a well-functioning competitive market." *Id.*

(140) Now suppose that the price of left shoes is constrained to be $30, similar to the Copyright Owners' economists' argument that musical works royalties are currently constrained.[129] The price of right shoes will rise to $70, reflecting the $100 "market price" of a pair of shoes. Now suppose that shoe producers argue to lift the constraint on left shoes and implement a "market solution" based on the "market ratio" of 1:1. That would result in a total price of $140, which is above the market price of a pair of shoes. In this case, implementing a "market ratio" raises the price above what the market would charge. In this simple example, shoes would become unaffordable for some consumers and consumption would decline, resulting in a loss of consumer surplus and lower production.[130]

(141) Similarly, raising the musical works rate to attain a "market ratio" based on an already inflated sound recording rate results in supracompetitive musical works rates and overall rates. To the extent that the supracompetitive rates are passed through to final consumers, demand would drop and both consumers and producers would be worse off.

(142) Aside from this fundamental error, which renders the ratio approach unreliable, Dr. Eisenach's selection of ratios is flawed. Below, I discuss each of Dr. Eisenach's proposed ratios in turn.

VIII.C. Dr. Eisenach's proposed ratios are not reliable

(143) Dr. Eisenach does not include all music distribution channels in his analysis, but only those that he selects based on his assessment of which are close to market rates. But the ratios he presents, rather than indicating a stable "market ratio" of sound recording to musical works rates, represent a wide range of ratios, no one of which is particularly well suited as a baseline for determining mechanical royalties for interactive streaming services. In addition, he ignores other sound recording to musical works royalty ratios that are significantly above the range he presents.

(144) Below, I look at his proposed benchmarks in turn and then present ratios from a broader set of scenarios than Dr. Eisenach selects.

VIII.C.1. Section 115 licenses

(145) Dr. Eisenach's first benchmarks, which he uses to establish an upper bound of [redacted] on the ratio between sound recording and musical works royalties, derive from the existing structure of

[129] *See*, e.g., Gans Expert Report, *Phonorecords III*, Section III. In addition, Dr. Eisenach argues that the current rate structure was determined "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." If true, this would tend to inflate payments to sound recording rights holders, all else equal. Eisenach Expert Report, *Phonorecords III*, at ¶ 19.

[130] This is the same as saying that consumers base their decisions on the sum of the prices of the shoes, rather than the ratio of those prices. Similarly, copyright users make production decisions based on their total royalty costs rather than the ratio between various components of such costs.

payment for musical works rights under Section 115. This rate structure, as explained in Figure 12 and Figure 17 of my Written Direct Testimony, includes a prong for percent of sound recording payments of 21% or 22%.[131] The direct agreements that Dr. Eisenach examines for the same set of rights contain similar prongs.

(146) Dr. Eisenach proposes the ratios derived from the Section 115 agreements as an upper bound, rather than a direct benchmark. His justification is that the rates were initially established in 2008, prior to the success of streaming. I note that the rates were re-established in 2012, by which point the rapid growth in streaming was evident. The Recording Industry Association of America (RIAA) data underlying Figure 2 in my Written Direct Statement show that ad-supported streaming revenues increased by 50% from 2011 to 2012, and subscription streaming revenues increased by 61%.[132]

(147) As Dr. Leonard calculates in his Expert Witness Statement, a sound recording to musical works ratio based on Subpart A licenses that were recently ratified in the 2016 settlement yields a very different ratio of [redacted] in 2015.[133] Dr. Eisenach gives no explanation for ignoring this more recent Section 115 ratio, which lies outside of the range of ratios he presents.

VIII.C.2. Licenses for synchronization rights

(148) Dr. Eisenach's second benchmark, which he uses as a lower bound on his "market-based" ratio of sound recording payments to musical works payments, derives from licenses for synchronization ("synch") rights, which allow a musical composition to be synchronized with an audio-visual image. Synch royalty rates are a poor benchmark for streaming royalty rates.

(149) Both film and television production companies have the option of recording their own versions of songs, rather than paying royalties to use a pre-recorded song. For example, in the movie *Lost in Translation*, Bill Murray sings "More Than This," a 1982 hit by Roxy Music and written by lead singer Bryan Ferry.[134] In such a case, the movie producers would have paid the publisher that held the musical works rights for the song, but not the label that held the sound recording rights for songs performed by Roxy Music. This option gives the users of synch rights, such as movie producers, more bargaining power relative to the labels than would be the case with streaming services. Dr. Eisenach makes no attempt to adjust this benchmark to account for these differences or to adjust for

[131] Marx Written Direct Testimony, *Phonorecords III*, Figure 12 and Figure 17.

[132] *Id.* Figure 2.

[133] Amended Expert Witness Statement of Dr. Gregory K. Leonard, *In the Matter of Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018-2022), Nov. 1, 2016, [hereinafter Amended Leonard Expert Report, *Phonorecords III*] at ¶ 46.

[134] "Bryan Ferry," Internet Movie Database, accessed Feb. 11, 2017, *available at* http://www.imdb.com/name/nm0275069/#soundtrack. *See also* More Than This—Lost in Translation (Bill Murray & Scarlett Johansson)," YouTube, accessed Feb. 11, 2017, *available at* https://www.youtube.com/watch?v=dpwIbqm-umk.

the 801(b) factors. The resulting ratio of sound recording to musical works royalties is therefore not a good benchmark for streaming. This was recognized by the CRB in the *Phonorecords I* proceeding:

> The musical works inputs in the synch market are used in very different ultimate consumer products by different input buyers as compared to the target market and the input sellers may have different degrees of market power in the benchmark market as compared to the target market. The mere fact a musical work is used as an input in both the proposed benchmark market and the target market is not sufficient to overcome all the aforementioned fundamental differences between the proposed benchmark market and the target market even in a purely relative value analysis. Because of the large degree of its incomparability, the synch market "benchmark" clearly lies outside the "zone of reasonableness" for consideration in this proceeding. Therefore, we find this particular benchmark cannot serve as a starting point for the 801(b) analysis that must be undertaken in this proceeding.[135]

(150) Dr. Eisenach also fails to point out that, although contracts negotiated separately for synch rights generally pay similar royalties for musical works and sound recording rights, the same is not true for licenses that were not negotiated separately. As described by the U.S. Copyright Office:

> While parity may be commonplace for individually negotiated deals, the same does not seem to hold true for broader licenses with consumer-facing video services such as YouTube. Under an HFA-administered YouTube license, publishers are paid 15% of YouTube's net revenue from videos uploaded by non-record label users that incorporate HFA-controlled publishing rights and embody a commercially released or distributed sound recording (i.e., a lip sync video), and 50% of revenue from videos that incorporate HFA-controlled publishing rights but a user-created recording (*i.e.*, a cover recording)....By comparison, YouTube's standard contract for independent record labels reportedly allocates 45% of YouTube subscription music revenue to labels, as compared to 10% to publishers.[136]

(151) Dr. Eisenach's exclusive focus on individually negotiated synch rights is misleading. If he incorporated YouTube's synch rights licenses, his lower bound would be greater than [redacted]. Instead, as discussed in Section VIII.C.3. below, Dr. Eisenach introduces YouTube as a separate benchmark that does not factor into his lower bound.

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[135] Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA, 74 Fed. Reg. No. 15 (Jan. 26, 2009), at 4,519.

[136] United States Copyright Office, "Copyright and the Music Marketplace," February 2015, footnote 276, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

VIII.C.3. YouTube licenses

(152) Dr. Eisenach's third benchmark is YouTube's licenses with labels and publishers. Dr. Eisenach first discusses agreements with publishers, which he indicates have separate terms for "User Video[s] with commercial sound recording," "publisher audio-only" video, and "label produced videos."[137] However, he uses the [redacted] revenue sharing for "user video[s] with commercial sound recording" in his ratio approach, without adjusting for this [redacted] being a only one part of a more complicated contract. Absent knowledge of the trade-offs that may have been made between various rates agreed to by the parties, as well as the role of the lump-sum payments that some agreements include, it is difficult to assess the valuation of musical works embedded in the YouTube agreements.

(153) Because Dr. Eisenach apparently does not have access to agreements between YouTube and record labels, he derives his sound recording valuation from an aggregate number for total YouTube payments to content providers (55%), and subtracts the [redacted] as a proxy for musical works payments. This ignores the fact that the aggregate 55% includes YouTube payments for all uses, while the [redacted] includes intended payments for only one of many YouTube products that require payments to publishers. Dr. Eisenach himself reports that other uses require lower payments [redacted].[138] Thus, the actual payment to publishers is likely to be less than [redacted] of aggregate revenues, and the resulting ratio is likely to be greater than the [redacted] that Dr. Eisenach reports. For example, if actual payments to publishers are [redacted] of aggregate revenues, the ratio increases to [redacted].

VIII.C.4. Pandora opt-out rates

(154) Dr. Eisenach's fourth benchmark is the ratio between sound recording and musical works rates for Pandora. Dr. Eisenach uses the musical works rates that Pandora negotiated directly with publishers starting in 2012, the "opt-out rates," in the denominator of his ratio. Dr. Eisenach assumes that the differences between subsequent rounds of agreements from 2012 to 2016 reflect primarily a move away from regulation, rather than changes in market conditions or bargaining power. He de-emphasizes evidence that the publishers exercised significant market power in the determination of the opt-out rates.[139]

(155) Using the opt-out rates as a measure of "voluntary market agreements" for musical works, he constructs a ratio of sound recording to musical works rates over time.[140] In constructing his ratio, Dr.

[137] Eisenach Expert Report, *Phonorecords III*, footnote 93.

[138] *Id.* footnote 93.

[139] *See, e.g.*, Opinion & Order, *In re Petition of Pandora Media, Inc.*, 1:12-cv-08035-DLC, 1:41-cv-01395-DLC-MHDF. 738 (S.D.N.Y. Mar. 14, 2014) at 97. "Sony and UMPG each exercised their considerable market power to extract supra-competitive prices."

[140] Dr. Eisenach states that "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." Eisenach Expert Report, *Phonorecords* III, at ¶ 124.

Eisenach makes no attempt to account for the fact that Pandora's sound recording royalty payments have been determined by the CRB under a willing buyer–willing seller standard.[141] Instead, he claims that "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."[142] Dr. Eisenach constructs his ratio using sound recording rates that are adjusted to account for the market power of the labels in his numerator to arrive at an effectively competitive rate, and musical works rates that are not adjusted for the market power of the publishers in his denominator. The ratio of the two thus cannot reflect a market-determined relative value of musical works to sound recording. The denominator (musical works) is inflated by the market power of the publishers, while the numerator (sound recording) reflects a regulated rate. This has the effect of lowering the ratio, which in turn allows Dr. Eisenach to argue that "the value of the mechanical right for interactive streaming is greater than the current rates imply."[143]

(156) He further assumes, without providing any economic foundation, that the increase in musical works rates resulting from the opt-out agreements is not a one-time adjustment to deregulation but a linear trend that will continue in perpetuity.[144] Not surprisingly, his linear regression of the sound recording to musical works ratio predicts implausible rates over time, and he uses this projection as the basis for calculating his ratio. In addition, Dr. Eisenach uses a projection despite having actual observations. The actual contractual rate for 2018 is [redacted] of sound recording payments. This leads to an actual ratio of [redacted], rather than the [redacted] ratio his forecast predicts for 2018, both of which are higher than his projected 2020 ratio of [redacted].[145] This method, when applied to the whole sample period, has the effect of reducing the range of predicted ratios.

VIII.C.5. Dr. Eisenach's ratios represent a skewed sample of music distribution channels

(157) Section VII.A. above explains that Dr. Eisenach presents no economic justification for his view that there exists a stable ratio between sound recording and musical works rights that reveals their relative value to all users of these rights. Section VII.C. explains why the comparators selected by Dr. Eisenach do not constitute reliable benchmarks that reveal a stable ratio that should be applied to the determination of mechanical works royalties. Here I argue that, even if Dr. Eisenach's selections were reliable benchmarks for either sound recording or musical works rates alone, his construction of a ratio is problematic. Specifically, many of the component rates fall under different regulations, and some under no regulations at all. For example, YouTube licenses for musical works (both

[141] *See, e.g.*, Determination, *Web IV*, at 2.
[142] Eisenach Expert Report, *Phonorecords III*, at ¶ 124.
[143] *Id.* at ¶ 132.
[144] *Id.* at ¶ 129.
[145] *Id.* at Table 8.

performance and mechanical rights) are negotiated with a regulatory backstop, while YouTube licenses for sound recording are negotiated in an unregulated market. Pandora non-interactive streaming licenses for musical works (performance rights only) are negotiated with a regulatory backstop, while Pandora licenses for sound recording are regulated under a willing buyer/willing seller standard. Dr. Eisenach does not adjust for these differences.

(158) Dr. Eisenach's selected licenses result in a range of benchmarks between [redacted]. For reasons explained above, Dr. Eisenach's selected benchmarks bias his ratio downward, leading to a conclusion that musical works (and therefore mechanical works) payments must increase. A more complete review of actual payments in Figure 18 shows ratios of [redacted]. Figure 18 shows the ratio of sound recording to musical works royalties paid in 2015 by distribution channel, including a wider variety of ratios than those cited by Dr. Eisenach. All but one of the ratios is above the upper bound reported by Dr. Eisenach.

(159) In Figure 18, I also include the ratio calculated by Dr. Leonard in his Expert Witness Statement for Google.[146] Dr. Leonard computes the ratio of musical works to sound recording royalties for the sale of personal digital downloads (PDDs), and finds that it has decreased from [redacted] from 2006 to 2015.[147] This implies a ratio of sound recording to musical works of [redacted] in 2015.

[146] Amended Leonard Expert Report, *Phonorecords III* at ¶ 46.

[147] *Id.* at ¶ 46.

Figure 18: Comparison of sound recording to musical works royalty ratios from multiple sources

Distribution channel	% of revenue paid to labels	% of revenue paid to publishers	Ratio
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
Ratios based on actual payments			
Physical (2015)	48.00%	8.00%	6:1
Downloads (2015)	48.75%	7.29%	6.7:1
Streaming (ad-funded + subscription) (2015, interactive and non-interactive)	48.05%	8.05%	6:1
Streaming (subscription) (2015, interactive and non-interactive)	48.00%	8.00%	6:1

Note: Parenthetical dates indicate the year or range of years in which the relevant licenses were signed.
Source: Lisa Yang *et al.*, "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 58.
Eisenach Expert Report, *Phonorecords III*, Table 8 and 9, Amended Leonard Expert Report, *Phonorecords III*, at ¶ 46.

VIII.D. Incorrect implementation of the ratio approach

(160) Even if Dr. Eisenach's methodology for determining the appropriate benchmarks were correct, which it is not, his use of the ratio approach to argue that musical works royalties must rise is incorrect.

VIII.D.1. Formulas for calculating mechanical royalties

(161) As I describe above, Dr. Eisenach claims to rely on market-based rates for sound recording and asserts that the rates for musical works can be derived from these market-based rates ratios.[148] He aims to accomplish this by holding the sound recording rates fixed and raising the musical works rates. This ignores the possibility that, if there were a uniform appropriate ratio, it could be reached by lowering the sound recording rate rather than raising the musical works rate.

(162) Dr. Eisenach offers two methods for using his ratio to derive mechanical rates for interactive streaming services. In his Method 1, he solves for the mechanical rate for musical works (MR_{MW}) by setting it equal to the mechanical rate for sound recording (MR_{SR}) divided by his selected ratio for the

[148] Eisenach Expert Report, *Phonorecords III*, at ¶ 93.

value of sound recording to musical works (RV). Dr. Eisenach defines the mechanical rate for sound recording as being the difference between the interactive rate (SR_{IS}) and the non-interactive rate (SR_{NIS}), because non-interactive streaming services do not pay a mechanical royalty to record labels.

$$MR_{MW} = MR_{SR}/RV, \text{ where } MR_{SR} = SR_{IS} - SR_{NIS}$$

(163) Sound recording rates for non-interactive streaming services are typically determined by the CRB under a willing buyer–willing seller standard, whereas for interactive streaming the rates are unregulated. As stated in *Web IV* and other rate court proceedings, the willing buyer–willing seller standard is designed to account for the market power of the record labels in ways that unregulated rates do not.[149] Therefore, the difference in the two rates reflects differences in exercised market power as well as the value of interactivity.

(164) Because Dr. Eisenach ignores the possibility that the difference in sound recording rates for interactive relative to non-interactive services can be accounted for by a difference in how performance royalties are calculated in the two settings, he overestimates the value of the sound recording mechanical royalty paid by interactive streaming services, and thereby increases his estimate of the appropriate mechanical royalty for interactive streaming musical works.

(165) Dr. Eisenach's Method 2 derives the all-in musical works value by dividing the all-in sound recording royalty (SR_{IS}) by his selected ratio (RV), and then subtracting the musical works performance royalty (PR_{MW}) to obtain the mechanical works royalty (MR_{MW}) as a residual.

$$MR_{MW} = (SR_{IS}/RV) - PR_{MW}$$

(166) This method seems more straightforward and relies on fewer assumptions. However, the results from these methods ultimately depend on the inputs Dr. Eisenach uses.

(167) I have already discussed problems with Dr. Eisenach's inputs. Another is that Dr. Eisenach assumes that Spotify's sound recording payment should be left out of the average sound recording royalty that he uses as an input into his two methods of calculating the mechanical royalty. This has the effect of raising the average, and, because he holds sound recording rates fixed, results in a higher per-play musical works royalty payment. Dr. Eisenach argues that Spotify's partial ownership by the labels is responsible for Spotify's lower rate, without providing any analysis of those purported agreements or taking into account how the market power of the labels might inflate the royalty payments of the services that he includes in his average.

[149] According to the CRB, "[b]ecause the Majors could utilize their combined market power to prevent price competition among them by virtue of their complementary oligopoly power – as proven by the evidence of the pro-competitive effects of steering and the admissions of Universal and its agents discussed supra… - the Judges must establish rates that reflect steering, in order to reflect an 'effectively competitive market.'" Determination, *Web IV*, at 121.

(168) In applying his Method 1, Dr. Eisenach uses an average sound recording payment of [redacted] per 100 streams in his calculations, leaving out the Spotify payments.[150] From this, he derives a mechanical royalty rate for musical works ranging from [redacted] per 100 streams, with the variation explained by the range of benchmarks he proposes. If Spotify payments are included, using Dr. Eisenach's own data, the average sound recording payment is [redacted] per 100 streams. This would result in a mechanical royalty rate for musical works ranging from [redacted].

(169) In applying his Method 2, Dr. Eisenach uses an average musical works public performance payment of [redacted], excluding Spotify. He also calculates the all-in musical works rate by dividing the average sound recording payment of [redacted] per 100, excluding Spotify, by his proposed ratios. Subtracting the first number from the second, he arrives at a range of mechanical royalty rates for musical works of [redacted]. If Spotify payments are included, using Dr. Eisenach's own data and methodology, the average musical works public performance payment is [redacted] and the all-in musical works rate is between [redacted]. This would result in a mechanical royalty rate for musical works ranging from [redacted].

VIII.E. Summary

(170) Dr. Eisenach's ratio approach has no support in economic theory. His supposition that this ratio is stable across all copyright users is further contradicted by his own data, which show a wide dispersion of ratios across different channels. But even if this ratio approach were appropriate, Dr. Eisenach's implementation of the approach is incorrect and unreliable. His conclusion that musical works royalty rates must be increased rather than sound recording rates decreased to achieve this ratio has no basis. In addition, Dr. Eisenach selects a few specific copyright users as benchmarks to derive a set of ratios, but he does not adjust his benchmarks to account for relevant differences, or consider ratios outside of his favored range. His selections have the effect of biasing upward his estimates of the appropriate musical works mechanical royalty. Further, his methodology for deriving the appropriate musical works mechanical royalty includes unfounded assumptions. Finally, Dr. Eisenach uses current rates that are not representative of actual payments because he leaves Spotify payments out of his averages. This results in an additional bias in his results.

[150] Eisenach Expert Report, *Phonorecords III*, at ¶ 149.

IX. Dr. Gans's use of economic theory to support Copyright Owners' proposal is flawed and incomplete

(171) Dr. Gans's approach to determining that the Copyright Owners' rates are reasonable is to appeal to economic models that he claims support the Copyright Owners' rate proposals. Dr. Gans points to two particular economic models—the ECPR and the Shapley value—as supporting the Copyright Owners' proposal. In each case, a flawed and incomplete application of the model leads him to an erroneous conclusion.

(172) Dr. Gans states that the economic principles that underlie the ECPR "result in statutory rates that allow for recovery of opportunity costs and do not favor particular business models over others," and he claims that "prevailing rates are too low to compensate for opportunity costs overall."[151] To the contrary, I show in my Written Direct Testimony that the prevailing rates are higher than the rates that compensate Copyright Owners' opportunity costs for lost sales of CDs and PDDs, and I show here that this is even more true of other music distribution channels. Moreover, in applying his "business model neutrality" principle, he ignores the fact that subscription-based services and ad-supported services imply different opportunity costs for copyright owners, and so in a reasonable application of ECPR should pay different rates.[152]

(173) Dr. Gans also claims that "the rates proposed by the Copyright Owners are conservative relative to estimates derived using the Shapley value approach and benchmarks of outcomes in an unconstrained market."[153] However, as I explain below, his Shapley value analysis is incomplete and his benchmark is incorrect. As I discuss in my Written Direct Testimony, correct application of the Shapley value leads to the opposite conclusion.[154]

IX.A. Dr. Gans's application of ECPR does not support the Copyright Owners' proposal

(174) Dr. Gans makes two main points in his application of the ECPR: (1) interactive streaming's royalty rates should compensate for opportunity costs of cannibalization, but the prevailing rates are too low relative to this standard, and (2) interactive streaming's royalty rates should be business-model neutral, which he interprets to mean that they should have the same per-user and per-stream rates for

[151] Gans Expert Report, *Phonorecords III*, at ¶ 9.
[152] *Id.* at ¶ 54.
[153] *Id.* at ¶ 9.
[154] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 161.

all services, regardless of differences in type of service and the type of consumer they target. Both of these points are flawed.

(175) ECPR implies that interactive streaming's royalty rates should be set to compensate copyright owners for lost royalty income from other music distribution services, i.e. the copyright owners' opportunity cost. Dr. Gans implies that current rates are too low to provide this compensation, without performing any analysis to support that proposition. In my Written Direct Testimony I compare copyright owner returns on interactive streaming to those on PDD/CDs.[155] Here I provide a more complete analysis of cannibalization by comparing Spotify's average royalty payment per music listening hour (for the overall service) with other music distribution channels' average royalty payments per music listening hour.

(176) Suppose a copyright owner does not license its musical works to interactive streaming services. Then users of interactive streaming who would otherwise consume this copyright owner's works through interactive streaming may do the following: purchase a PDD or CD of the work, play the work through [redacted] or a similar service, listen to music without using an interactive streaming service (e.g., listen to radio or non-interactive streaming), play other copyright owners' musical works through an interactive streaming service, decide not to play any works at all, or play pirated versions of the works. The last three scenarios do not give the copyright owner of that work any royalty income. The first three scenarios give the copyright owner lower royalty income than what they would earn from Spotify under the current headline royalty rate of 10.5% of revenue.

(177) In the first scenario in which users purchase PDD/CD if a work is not available through interactive streaming, the copyright owners get 9.1 cents for recordings of a song 5 minutes or shorter, and 1.75 cents per minute or fraction thereof for those over 5 minutes. I show in my Written Direct Testimony that the interactive streaming musical work royalty rate that compensates copyright owners' opportunity cost even if all of interactive streaming's business comes from PDD/CD sales is 7.7–8.7%, lower than the current 10.5% headline rate, [redacted].[156]

(178) In the second scenario, in which users listen to [redacted] if a work is not available through interactive streaming, the musical work copyright owner earns [redacted] per music listening hour.[157] Instead, if the work is listened to on Spotify, the copyright owner earns [redacted] per music listening hour under the current rate, or [redacted] per music listening hour under the current 10.5% headline royalty rate.[158]

[155] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 115.

[156] *Id.* at ¶ 115.

[157] *See* Figure 7 for sources and notes.

[158] [redacted]

(179) In the third scenario, in which users listen to terrestrial radio, satellite radio, or non-interactive streaming if a work is not available through interactive streaming, the copyright owner would also earn lower royalties than from Spotify. Terrestrial radio's musical work royalty is $0.0026–$0.0040 per music listening hour. Using data in the Goldman Sachs report cited by Dr. Gans, the musical work royalty per music listening hour of SiriusXM, the only satellite radio service in the United States, is about $0.0050.[159] I use Pandora's royalty rate as an estimate of royalty rate of non-interactive streaming. My estimate of Pandora's average musical work royalty per music listening hour for both ad-supported and subscription-based services is [redacted].[160] [redacted]. These calculations are summarized in Figure 19.

[159] For terrestrial radio's royalty rate, *see* Figure 7. Goldman Sachs estimates that SiriusXM's total royalty rate per play million subscribers is $1,522. Its total royalty payments were $500 million in 2015, and sound recording royalty payments were $405 million in 2015. Therefore, its musical works royalty per play per subscriber are $1,522/1,000,000/500*(500-405) = $0.00029. The same report estimates that the average song length is 3.5 minutes. Therefore, on average, 17.14 songs are played in a music listening hour. This yields Sirius XM's musical works royalty per music listening hour as $0.00029*17.14= $0.0050. Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, 19, 21.

[160] *See* Figure 19.

Figure 19: A copyright owner's royalty income in various scenarios if it does not license its musical works to interactive streaming services

Listeners' consumption options if a copyright owner does not license its musical works to interactive streaming	A copyright owner's royalty income per music listening hour in each consumption scenario if it does not license to interactive streaming	Copyright Owner's royalty income per music listening hour from Spotify under current rate terms	Copyright Owner's royalty income per music listening hour from Spotify under the current headline rate (10% of revenue)
Listen via YouTube	[redacted]		
Listen via satellite radio	$0.0050		
Listen via terrestrial radio	$0.0040		
Listen via non-interactive streaming	[redacted]	[redacted]	[redacted]
Listen via a pirated channel	0		
Listen to other copyright owner's music on interactive streaming	0		
Do not listen to music	0		

Source for SiriusXM figure: Lisa Yang et al. "Music in the Air: Stairway to Heaven." Goldman Sachs Equity Research, Oct. 4, 2016.
Sources for terrestrial radio: *see* Figure 7.
[redacted].
Sources for non-interactive streaming: *see* Figure 7 and Pandora 2016 Q3 10Q.
[redacted].

Notes:
(a) The [redacted] and terrestrial radio estimates are the same as the estimates in Figure 7.
(b) Goldman Sachs estimates that Sirius XM's total royalty rate per play million subscribers is $1,522. Its total royalty payments were $500 million in 2015 and sound recording royalty payments were $405 million in 2015. Therefore, its musical works royalty per play per subscriber is $1,522/1,000,000/500*(500-405) = $0.00029. The same report estimates that the average song length is 3.5 minutes. Therefore, on average 17.14 songs are played in a music listening hour. This yields Sirius XM's musical works royalty per music listening hour as $0.00029*17.14= $0.0050. Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 19 and 21.
[redacted]

(180) [redacted]. Moreover, a copyright owner's opportunity cost is an average of its royalty income from all alternatives, some of which, such as piracy and not listening, do not generate royalty income at all. If the possibility of piracy, for example, is non-trivial, as the data suggest that it is, then copyright owners' opportunity costs would be even less than the average of the three royalty-generating scenarios. The Goldman Sachs report cited by Dr. Gans argues that streaming has proven to reduce illegal downloads, as does evidence I cite in my Written Direct Testimony.[161] Therefore, it is likely that Spotify's current musical works

[161] Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, 36. *See also*

royalty payment is higher than copyright owners' opportunity cost for musical works. This means that Dr. Gans's ECPR analysis argues for a reduction in royalties for interactive streaming.

(181) Dr. Gans's second point regarding ECPR is that "the rate structure for mechanical licensing should be neutral with respect to the business model for interactive streaming services." [162] However, this concept and the Copyright Owners' proposal work against the opportunity cost compensation idea of ECPR. The copyright owners' opportunity costs of subscription-based interactive streaming services and ad-supported interactive streaming services target people on different sides of a "bimodal chasm" in terms of their WTP for music, where the "bimodal" nature of people's WTP for music is noted by the CRB in the *Web IV* proceeding.[163] Dr. Gans's "business model neutrality" interpretation is thus inconsistent with the opportunity cost idea underlying the ECPR because the bimodal WTP leads to different opportunity costs for different services. Creating rates based on opportunity costs, as ECPR calls for, would therefore lead to different rates for paid subscription and ad-supported services, like the current rate structure, and unlike the Copyright Owners' proposal.

IX.B. Dr. Gans' Shapley value analysis does not support the Copyright Owners' proposal

(182) The Shapley value allocates surplus created by an agreement among a group of entities.[164] It is not a market allocation, and is not meant to model a market bargaining process, but rather is an attempt to distribute the gains from trade in an equitable way. It can be viewed as a "fair" allocation of surplus because it gives each entity in the joint effort its average marginal contribution.[165] The entities that

Marx Written Direct Testimony, *Phonorecords III*, at ¶¶ 27–31.

[162] Gans Expert Report, *Phonorecords III*, at ¶ 54.

[163] Determination, *Web IV*, at 70–71. The fact was also recognized by the *Phonorecords I* and *Phonorecords II* settlements, which set different rate formulas for paid and ad-supported services.

[164] The basic idea of the Shapley value is that "each player gets 'his average marginal contribution to the players that precede him,' where averages are taken with respect to all potential orders of the players." *See* Uriel G. Rothblum, "Combinatorial Representations of the Shapley Value Based on Average Relative Payoffs," in *The Shapley Value: Essays in Honor of Lloyd S. Shapley*, ed. Alvin E. Roth (Cambridge, UK: Cambridge University Press, 1988); Lloyd S. Shapley, "A Value for N-Person Games," in *Contributions to the Theory of Games*, eds. Harold W. Kuhn and Albert W. Tucker (Princeton, NJ: Princeton University Press, 1953) as cited in Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015, footnote 26.

[165] *See* Andreu Mas-Collel, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995), 679-684: "We shall now investigate a solution concept, the *value*, whose motivation is normative. It attempts to describe a reasonable, or 'fair', way to divide the gains from cooperation, *taking as a given* the strategic realities captured by the characteristic form. We study only the TU case, for which the theory is particularly simple and well established. The central concept is then a certain solution called the *Shapley value*." "It then turns out that $Sh_i(I, v)$ is the *average marginal contribution* i to the set of her predecessors, where the average is taken over all orderings (held to be equally likely)." *See* also Myrna Holtz Wooders and William R. Zame, "Values of large finite games," in in Alvin E. Roth, *The Shapley Value: Essays in Honor of Lloyd S. Shapley* (Cambridge, UK: Cambridge University Press, 1988), 198: "In other words, $Sh(v, i)$ is player i's average marginal contribution to coalitions in N. The Shapley value is a feasible, Pareto-optimal, and individually rational payoff. It is frequently interpreted as a representing a 'fair' payoff because it yields to each player his expected contribution."

work together to create and distribute music to consumers are copyright holders of sound recordings and musical works and, importantly, music distributors. However, Dr. Gans's one-sided Shapley value analysis ignores the contributions of any music distributors, which are necessary for the realization of music's value through music consumption. Thus, Dr. Gans's analysis is vacuous because no value would be created given the limited set of parties he considers.

(183) A key assumption of Dr. Gans's one-sided Shapley value analysis is that current record label profits are equivalent to the record label Shapley value (i.e., its average marginal contribution), an assertion that has no basis. As noted in Section VI.A.2, CRB precedent, DOJ precedent, and economics all recognize the market power that is created by the aggregation of copyrights by upstream entities. The three largest major record companies accounted for 58.2% of U.S. label revenues.[166] Record labels' profits reflect their market power and are likely higher than their Shapley value. Dr. Gans assumes this inflated profit level reflecting significant market power is the "fair" outcome, and then uses the observation that both labels' and publishers' rights are needed for interactive streaming to equate publishers' profit with labels' profit, which he argues suggests that a substantial increase in musical works royalties would be "fair".[167,168]

(184) I disagree. The results derived from Dr. Gans's flawed method are not "fair" and are inconsistent with the 801(b) factors. Dr. Gans estimates that the per-play musical works royalty rate is [redacted] for 2012–2015 based on his incomplete Shapley value analysis.[169] If this were Spotify's musical works royalty rate, its 2015 musical works royalty would be [redacted] of its revenue, which is [redacted] Spotify's current effective musical works royalty rate of [redacted].[170] Together with its effective sound recording royalty rate in 2015 of [redacted] its total royalty rate would be [redacted] of its revenue.[171] A royalty rate that would [redacted] is against the fairness and relative contributions components of the 801(b) factors, and likely not sustainable. It is also contrary to the fourth 801(b) factor.

(185) To calculate the Shapley values properly, both upstream and downstream participants' contributions need to be considered. This is what I do in my Written Direct Testimony. In my baseline model, I treat rights holders as one upstream entity, reflecting the broad overlap in ownership between publishers and record labels. I treat music distributors as two downstream entities: interactive streaming and other music distribution services, to capture interactive streaming's potential

[166] Nick Petrillo, "Major Label Music Production in the US" (Major Label Music Production Market Research Report NAICS 51222, Sep. 2016), at 26.

[167] "The label profits from interactive streaming services are used as benchmark Shapley values (row [10])." Gans Expert Report, *Phonorecords III*, at ¶ 77.

[168] "The symmetry of the labels' and publishers' rights in the interactive streaming business means that this framework results in symmetric treatment—an even division of profits between labels and publishers." *Id.* at ¶ 68.

[169] Gans Expert Report, *Phonorecords III*, Table 4.

[170] Marx Written Direct Testimony, *Phonorecords* III, Figure 11.

[171] These calculations use the revenue that Spotify reports to HFA, which I am told reflects the revenue Spotify generates.

substitution effect on other music services. In my alternative model, to check the robustness of the baseline model, I ungroup the upstream entity into two separate entities: musical work copyright holders and sound recording copyright holders. Due to data availability problems,[172] it is difficult to estimate all the inputs precisely. Because of the abstractions and simplifications I use to achieve workable approximations, the royalty rates calculated in the Shapley value section of my Written Direct Testimony should not be viewed as point estimates. However, the Shapley value, when applied correctly, does provide insights about the directional change for fair royalty rates relative to current values. Both my baseline model and my alternative model suggest that interactive streaming's mechanical royalty rates should be reduced from their current level. A main reason that Dr. Gans reaches implausible royalty rates is that his Shapley value calculation does not even include interactive streaming in his model. An application of the Shapley value without interactive streaming as an entity in the model is unlikely to allocate surplus fairly for interactive streaming.

(186) Moreover, every entity's Shapley value should be calculated from first principles instead of using values already reflecting complimentary oligopoly market power. That is what I do in my Written Direct Testimony. In my baseline model, I calculate the upstream entity's Shapley value based on its average marginal contributions.[173] In my alternative model, I calculate the Shapley value of musical work copyright owners and the Shapely value of sound recording copyright owners based on their average marginal contributions.[174] Dr. Gans does not perform these calculations. Instead, he simply uses the profit of sound recording copyright owners as their Shapley value without any justification. This is not a proper application of the Shapley value.

[172] Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015, footnote 33. "The Shapley model provides a reasonable working solution for regulators.... However, it does suffer from a particularly pressing problem—that of data availability," citing Richard Watt, "Fair Copyright Remuneration: The Case of Music Radio," *Review of Economic Research on Copyright Issues* 7, no. 2 (2010): 21–37.

[173] Marx Written Direct Testimony, *Phonorecords III*, ¶ 196, Equation (6).

[174] *Id.* ¶ 196, Equation (12).

X. Copyright Owners' economists make a series of other errors

(187) In addition to the errors discussed above, the Copyright Owners' economists make other errors that affect their analysis and conclusions.

X.A. Mischaracterizing the impact of interactive streaming on musical works rights owners

(188) The Copyright Owners' economists imply that the growth of interactive streaming has hurt royalties for publishers and songwriters. This assertion is contradicted by the data and is based on an incorrect focus on mechanical royalties rather than total royalties to musical works rights holders.

X.A.1. Copyright Owner revenues decreased since 1999 due to technological change and piracy, not interactive streaming

(189) The Copyright Owners' economists recognize that the music distribution industry has undergone substantial technological change since 1999, when CD sales dominated all other channels and the Internet had yet to emerge as an important channel for music distribution.[175] They compare revenues from physical and digital sales (as in Eisenach's Figure 4) and revenues from download and streaming platforms (Eisenach's Figure 5), documenting the transition from physical to Internet commerce.

(190) At the same time, the Copyright Owners' economists point to an increase in overall music consumption, an increase that they fail to link to the technological change they describe. Dr. Eisenach even states that "overall music consumption has never been higher *despite* rapid changes in music technology and declining revenues" (emphasis added).[176] Rather than recognizing that this increase generates consumer surplus and reflects a technological landscape and consumer options that have radically changed over time, they imply that "revenues for creators" should keep pace with the increase in music consumption regardless and therefore that streaming services should pay higher royalties. The Copyright Owners' economists fail to recognize the economic significance of the technological change, namely that the Internet has facilitated piracy, allowing low or no-cost consumption of music, which, among other technological changes, has changed consumer WTP for music. Thus, simultaneously, music consumption rose while music industry revenues fell. Technology and consumer preferences, rather than streaming services, were responsible.

[175] *See* Eisenach Expert Report, *Phonorecords III*, at ¶¶ 41–73. *See also* Miller Expert Report, *Phonorecords III*, at ¶¶ 16–22.

[176] Eisenach Expert Report, *Phonorecords III*, at ¶ 55.

(191) The Copyright Owners' economists present no evidence that interactive streaming has led to decreased copyright royalty payments, although some of their experts imply that this is the case. Dr. Eisenach claims that "the transition from downloads to streaming has further inhibited royalty payments" but provides just a single quotation from Spotify to support that statement. And Dr. Eisenach misrepresents that quotation—ascribing its meaning as the opposite of what it was actually conveying. He writes in a footnote supporting the idea that streaming has "inhibited royalty payments":

> 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"[177]

(192) He omits that this statement is in the context of Spotify saying that "its subscription service aims to regenerate this lost value by converting music fans from these poorly monetized formats to our paid streaming format, which produces far more value per listener." [178] In other words, Spotify is pointing to outlets like piracy as the reason for a decline in revenue and its paid interactive streaming service as a way to resuscitate that value.

(193) Dr. Eisenach reiterates this point later in his report, although with somewhat more ambiguous language, when he notes that "the transition from downloads to streaming *appears to have* further limited royalty payments" (emphasis added). [179] For this statement, he cites only an article in the *New Yorker* that provides a series of anecdotes but no economic analysis.

(194) The Copyright Owners' industry expert Lawrence Miller similarly writes, referring to "digital streaming services," that "it has been well publicized that the low effective per-play rates paid by some of these services—particularly those that are giving away the music for free—have resulted in dramatically decreased mechanical income on all songs, including major hits."[180] There are at least three problems with this statement. First, it refers only to "mechanical income" and thus glosses over the important fact that interactive streaming pays both mechanical and performance royalties, while permanent downloads and CDs pay only mechanical royalties. The correct economic comparison in evaluating relative compensation to publishers and songwriters of different channels is to compare all musical works payments, not just mechanical income. This is an error that many Copyright Owners' witnesses make, as I describe in more detail in Section X.A.2 below. Second, he again provides no evidence supporting this point other than the same *New Yorker* article that Dr. Eisenach cites, along

[177] *Id.* at ¶ 69.

[178] United States Copyright Office, "Copyright and the Music Marketplace," February 2015, footnote 362, *available at* http://copyright.gov/docs/musiclicensingstudy/copyright-and-the-music-marketplace.pdf.

[179] Eisenach Expert Report, *Phonorecords III*, at ¶ 69.

[180] Miller Expert Report, *Phonorecords III*, at ¶¶ 25-29.

with a *Wired* article written by a songwriter.[181] The *Wired* article contains anecdotes but no economic analysis and asserts that songwriters should be paid more because digital streaming services "enjoy enormous profits," which is incorrect.[182] No digital streaming service has reported any profits in the United States to date.[183] Third, although an ad-supported service does not require an out-of-pocket payment from users, it imposes a cost on them in the form of advertising, which, contrary to "giving away the music for free," means that an ad-supported service monetizes listening and pays associated royalties.

(195) In sum, although some of the Copyright Owners' economists imply that music streaming had depressed royalties for publishers and songwriters, none of them has conducted an analysis of the impact of interactive streaming on copyright royalties or the relative values generated by different distribution channels.

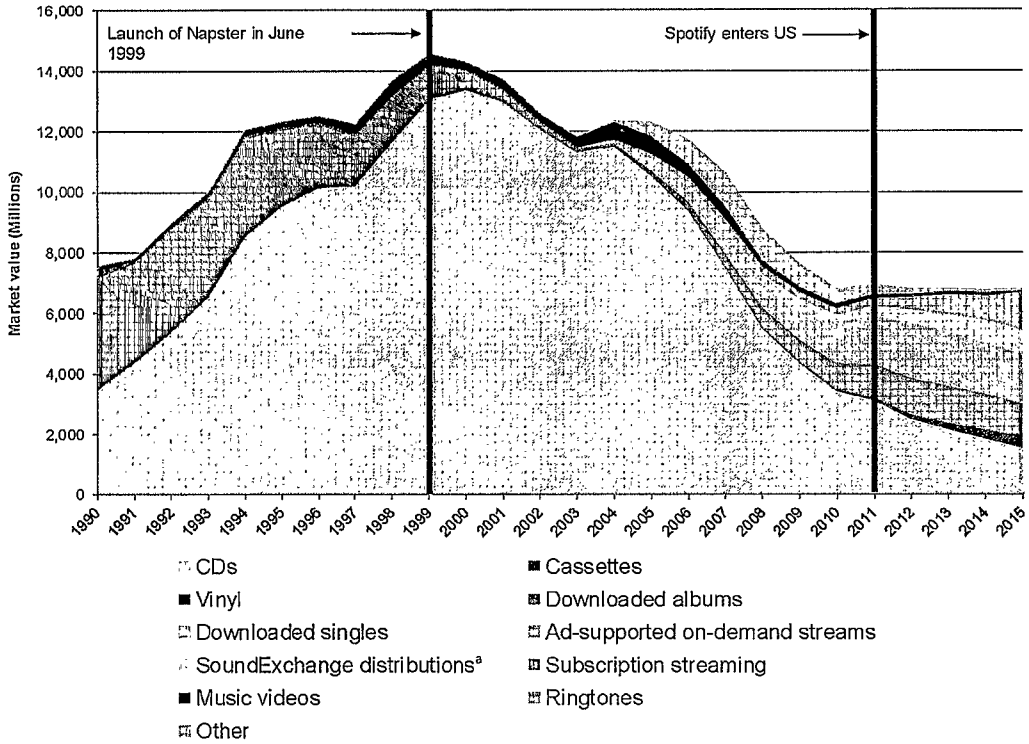
(196) Music streaming has contributed positively to music industry revenues since it was introduced. As I discuss in Section IX.A, interactive streaming generates more revenue that most other common music distribution channels. Figure 20 below, which appears in my Written Direct Testimony as Figure 2, indicates that music industry revenue declined precipitously well before the advent of streaming. Revenues began to drop shortly after the launch of Napster and other websites that facilitated the acquisition of music at low or no cost through piracy.

[181] John Seabrook, "Will Streaming Music Kill Songwriting?" *New Yorker*, Feb. 8, 2016, http://www.newyorker.com/business/currency/will-streaming-music-kill-songwriting. Aloe Blacc, "Aloe Blacc: Streaming Services Need to Pay Songwriters Fairly," *Wired*, Nov. 5, 2014, https://www.wired.com/2014/11/aloe-blacc-pay-songwriters.

[182] *Id.*

[183] *See* Jeremy Bowman, "Music Streaming Is a Money Pit," *The Motley Fool*, Sep. 18, 2016, https://www.fool.com/investing/2016/09/18/music-streaming-is-a-money-pit.aspx. *See also* Robert Cookson, "Losses Point to a Bleak Future for Music Streaming Services," *Financial Times*, Dec. 3, 2015, https://www.ft.com/content/160ad860-9840-11e5-95c7-d47aa298f769.

Figure 20: U.S. music industry revenue by distribution channel over time



Source: RIAA U.S. Sales Database.

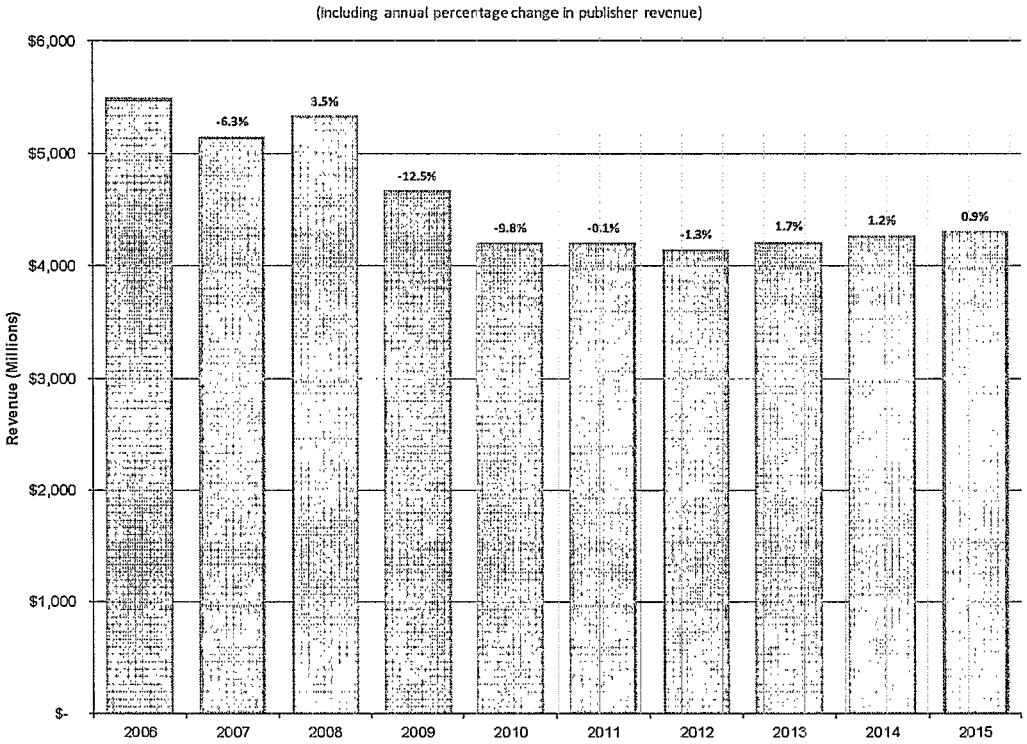
Notes:
(a) "SoundExchange distributions" includes non-interactive streaming, satellite radio, and Cable TV music services.

(197) Music industry revenues stopped declining with the advent of interactive and non-interactive streaming. As Figure 21 (Figure 3 of my Written Direct Testimony) shows, publisher revenues have been increasing for the last several years, alongside the rapid growth of interactive streaming.[184] Spotify's royalty payments to the labels and publishers have [redacted]

[184] Marx Written Direct Testimony, *Phonorecords III*, Figure 3.

[185] *See* NMPA00001647 (Citing HFA and publisher data from: SONY-ATV00005245, KOBALT00001225 - KOBALT00001683, KOBALT00000741 – KOBALT00000742, KOBALT00000743 – KOBALT00000744, KOBALT00000745 – KOBALT00000746, KOBALT00000747 – KOBALT00000748, SONY-ATV00005247); NMPA00001670 (Citing Data from The Harry Fox Agency, Sony/ATV, Kobalt MRI, and Audiam).

Figure 21: U.S. music publishing industry revenue, 2006–2015 (2015 dollars)

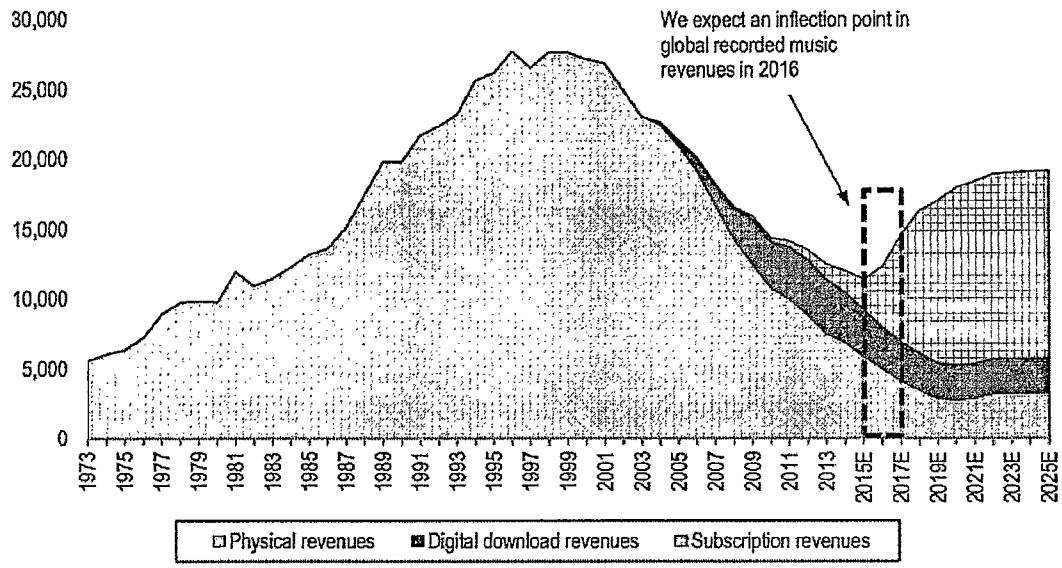


Source: 2015 IBISWorld Music Publishing Report at 34.

(198) The Credit Suisse report cited by Mr. Miller in his report states that 2016 is an "inflection point" in global recorded music revenues and predicts substantial growth in total global music revenue from that point on due to the rise of streaming services, despite further declines in physical and digital download revenues.[186] Figure 22 shows Credit Suisse's estimates for how global music industry revenues will grow after 2016.

[186] James Cook, "The Global Downturn in the Music Industry May Finally Be Over," *Business Insider*, Apr. 4, 2016, http://www.businessinsider.com/credit-suisse-global-downturn-music-industry-streaming-apple-note-2016-4.

Figure 22: Credit Suisse forecast of music industry revenue growth



Credit Suisse

Source: James Cook, "The Global Downturn in the Music Industry May Finally Be Over," *Business Insider*, Apr. 4, 2016, http://www.businessinsider.com/credit-suisse-global-downturn-music-industry-streaming-apple-note-2016-4.

(199) The Goldman Sachs report that Dr. Gans cites states that:

> [t]he 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 a 3% yoy growth in 2015, the fastest growth recorded since 1998. We expect growth to accelerate further from there, as confirmed by 1H16 trends. Three of the top 5 markets that have reported so far (the United States, Germany, France) posted c.6% revenue growth on average in 1H16, following flat performance in FY15."[187]

(200) It also states:

> 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

[187] Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 52.

to return to growth in 2015 following almost two decades of value destruction led by piracy and unbundling.[188]

(201) However, increased returns to all parties based on increases in revenues does not mean that it is appropriate for copyright owners to take an increasing share of the pie just because the pie is growing. As summarized by the Pandora-ASCAP decision and reflected in my Shapley value approach, returns to various parties in the industry should reflect their contribution: "A rights holder is, of course, entitled to a fee that reflects the fair value of its contribution to a commercial enterprise. It is not entitled, however, to an increased fee simply because an enterprise has found success through its adoption of an innovative business model, its investment in technology, or its creative use of other resources."[189]

(202) The Goldman Sachs Report provides information regarding the relative profitability of labels, publishers, and streaming services. Figure 23 indicates that publisher profits are considerably higher than label profits and that the largest non-interactive and interactive streaming services are conversely unprofitable.

Figure 23: Publisher, label, and streaming service margins

Entity	Percent of revenue
Publisher EBITA margins for subscription and ad-supported streaming	26%
Label EBITA margins for subscription and ad-supported streaming	15%
Pandora's margin	-14.6%
Spotify's EBIT margin	[redacted]

Source: Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 54, 58, and Pandora Media Inc., Annual Report (Form 10-K) (Feb. 16, 2016).
Note: *See* [redacted] for sources for Spotify's EBIT margin.

X.A.2. Copyright Owners' witnesses incorrectly focus on mechanical royalties rather than all musical works royalties when considering the impact of streaming

(203) As I explain in my Written Direct Testimony, economic decisions are driven by total payments to musical works rights holders and total payments to sound recording rights holders.[190] In particular, the fact that some musical works payments are labeled "performance" and some "mechanical" does not matter for interactive streaming costs or total musical works copyright holders' collections.

[188] *Id.* at 4.

[189] Opinion & Order, *In re Petition of Pandora Media, Inc.*, 1:12-cv-08035-DLC, 1:41-cv-01395-DLC-MHDF. 738 (S.D.N.Y. Mar. 14, 2014) at 127.

[190] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 59.

Performance and mechanical rates collectively flow to all copyright owners and their representatives. The current Section 115 rate, with the exception of the $0.50 per-user floor on some rates, is defined as an "all-in" rate, such that increases in performance royalties decrease mechanical royalties on a one-for-one basis. This is also a feature of some private agreements.[191] Analysis of the impact of interactive streaming on rights holders' revenue should therefore focus on musical works payments as a whole and not on any particular subcomponent.

(204) Copyright Owners' witness statements often make pronouncements regarding trends in *mechanical royalties* rather than *musical works royalties*. Trends in mechanical royalties paint a misleading picture of the impact of interactive streaming on music publishers. Because interactive streaming services divide their musical works payments between mechanical and performance royalties, while CDs and PDDs pay all of their musical works royalties in the form of mechanical royalties, it is natural for mechanical royalties to decrease as streaming displaces purchases, even if, as has occurred in recent years, performance royalties and total musical works royalties increase.

(205) Copyright Owners' witness statements often ignore the fact that unlike CD/PDD sales, musical work copyright owners' royalty incomes from interactive streaming include both mechanical royalties and performance rights royalties. For example, one of the Copyright Owners' witnesses, David Kokakis, claims that "over the past five years, UMPG and the music industry as a whole have experienced steady declines in the overall sale of physical product and digital downloads, and *the decrease in mechanical income from physical recordings and digital downloads has thus far had a larger impact than the growth in mechanical income from streaming services*"[192] (emphasis added). Another Copyright Owners' witness, Thomas Kelly, states, "Unless the *mechanical income* produced by streaming services materially increases, the trend we have seen means that SATV and its writers will increasingly suffer from continuing overall reductions in *mechanical income*"[193] (emphasis added).

(206) Similarly, David Israelite, president and CEO of NMPA, writes in his Written Direct Statement that "mechanical royalties paid to music publishers have continued to decrease year after year in recent history, to a point where I have never seen mechanical royalties, as a percentage of revenues paid to the music publishing industry, lower than they are presently."[194] He also writes that "according to revenue information collected by the NMPA from its members on an annual basis, the total U.S.

[191] *See* e.g., Apple-Universal Music Corp, "Confidential Subscription Service/Live Radio U.S. Short Form Agreement," Jun. 05, 2015, (UMPG00000912).

[192] Witness Statement of David Kokakis, *In the Matter of Phonorecords III*, at ¶¶ 1, 72. (David Kokakis is Executive Vice President/Head of Business & Legal Affairs, Business Development and Digital, Universal Music Publishing Group.)

[193] Witness Statement of Thomas Kelly, *In the Matter of Phonorecords III*, at ¶¶ 1, 61. (Thomas Kelly is Executive Vice President, Finance and Administration, at Sony/ATV Music Publishing LLC.)

[194] Witness Statement of David M. Israelite, *In the Matter of Phonorecords III*, at ¶ 68.

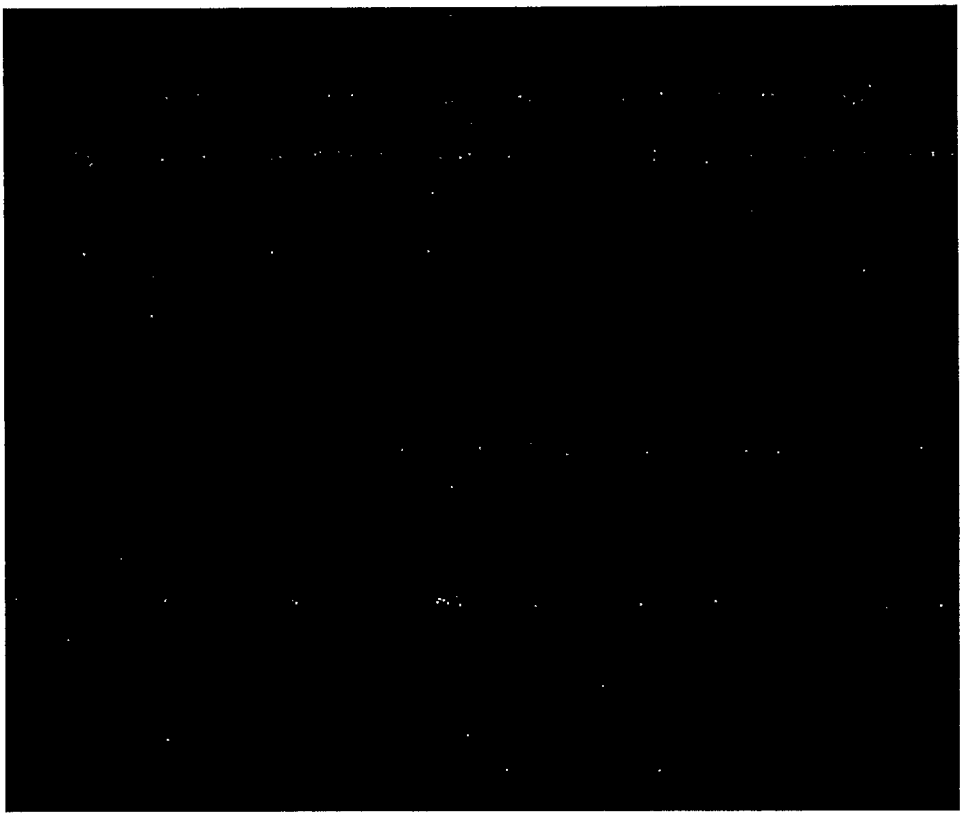
mechanical revenues for the songwriting and publishing industry decreased by [redacted] from 2013 to 2014, and by another [redacted] from 2014 to 2015."[195]

(207) These statements are misleading because they give the impression that the only royalties paid by interactive streaming to musical works copyright owners are mechanical royalties, and thus that interactive streaming has caused Copyright Owners' total musical works royalty income to drop. As shown in Figure 21, however, U.S. music publishing industry revenue has been increasing in the last few years, in contrast to the bleak picture painted by these witnesses. The difference between this pattern and the Copyright Owner witnesses' misleading statements occurs because interactive streaming pays both performance and mechanical royalties. Spotify's performance royalty payments to musical work copyright owners are similar to their mechanical royalty payments. Both omission of almost half of interactive streaming's musical work royalty payments and the increase of publisher's revenue in recent years help some Copyright Owner witnesses create the illusion that musical works payments are decreasing when they are actually increasing.

(208) Figure 24 presents NMPA estimates of publisher revenues by royalty type. It demonstrates that, alongside the rise of interactive streaming, [redacted].

[195] *Id.* at ¶ 70.

[redacted]



(209) As shown in Figure 25, the growth in mechanical royalty revenue from streaming has [redacted] so that even considered in isolation, mechanical revenues may increase in the future.

[redacted]

X.B. Mischaracterizing the impact of a percentage-of-revenue royalty structure versus a per-play or per-user royalty structure

(210) Headline percentage-of-revenue royalty rates have been the norm for interactive streaming since its inception. During this period, the popularity of streaming has grown, overall listening has grown, and variety of listening has grown; in recent years, publisher revenue has also grown.[196]

(211) As I discuss in my Written Direct Testimony, a percentage-of-revenue rate has an important advantage over per-stream and per-user fees in that it prices marginal streams at their true marginal cost, which reduces deadweight loss and increases total surplus created by interactive streaming.[197] This encourages socially beneficial listening and "maximizes the pie" of value created by interactive streaming, to the benefit of both service providers and rights holders.

(212) Percentage-of-revenue royalty rates are a common feature of licenses related to intellectual property. They are also common in the music industry. Percentage-of-revenue royalty rates are a feature of sound recording contracts for interactive streaming services and of contracts between streaming services and PROs for performance royalties.[198]

(213) It is against this economic backdrop that I evaluate Dr. Rysman's claims that royalty rates calculated as a percentage of revenue are "unnatural" and "unfair" and inferior to per-stream and per-user rates. Dr. Rysman gives five main reasons for this conclusion. According to Dr. Rysman,

1. Percentage-of-revenue rates have "no economic reason" behind them;[199]
2. Reported revenue can be manipulated;[200]
3. Percentage-of-revenue rates create an incentive to inefficiently forego present revenues;[201]
4. Percentage-of-revenue rates give streaming firms an "unfair advantage" over download services;[202] and
5. Percentage-of-revenue rates are inconsistent with prior CRB decisions.[203]

(214) I address each of these arguments in turn.

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[196] *See* ¶ (59) and ¶ (250).
[197] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 133.
[198] *See*, e.g., [redacted].
[199] Rysman Expert Report *Phonorecords III*, at ¶ 36.
[200] *Id.* at ¶¶ 43-45.
[201] *Id.* at ¶¶ 46-50.
[202] *Id.* at ¶¶ 51-52.
[203] *Id.* at ¶ 52.

X.B.1. Percentage-of-revenue royalty rates are commonly used

(215) In contrast to Dr. Rysman's assertion that there is "no economic reason" for a percentage-of-revenue rate, there is a clear economic rationale for such a structure, as evidenced by the economic literature on taxation cited below, and by its use in a variety of settings.

(216) The economics literature shows that an *ad valorem* tax can increase economic efficiency relative to a per-unit tax. For instance, in their investigation of dynamic market entry, and looking at the tax on a profit maximizing intermediary, Loertscher, Muir, and Taylor (2017) show that "a specific tax distorts the relative value of suboptimal trades…further reducing the welfare of buyers and sellers," whereas "an *ad valorem* tax levied as a percentage on the market maker's revenue will not affect the relative value of a suboptimal trade…and an *ad valorem* tax can be levied without affecting social welfare."[204]

(217) The Pandora-ASCAP Court similarly recognized the benefits of a percentage-of-revenue royalty when it wrote that "…with a single rate as a percentage of revenue a joint interest is created between the parties in the growth of the licensee's business."[205]

(218) Percentage-of-revenue fees are commonly used in a variety of settings. In franchise operations, for instance, an initial up-front fixed fee is often required for the franchise right and on ongoing franchise payments are set as a percentage of revenue.[206] Similarly, book publishing, drug licensing, and other patents commonly define royalties as a percentage of revenue.[207] This all occurs despite Dr. Rysman's

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[204] Simon Loertscher, Ellen V. Muir, and Peter G. Taylor, "Optimal Market Thickness and Clearing," January 5, 2017, *available at* http://ellenmuir.net/wp-content/uploads/2016/11/Market_Thickness-2017-01-05.pdf. *See also* Simon P. Anderson, Andre de Palma, and Brent Kreider, "The Efficiency of Indirect Taxes Under Imperfect Competition," *Journal of Public Economics* 81 (2001): 231–51.

[205] Opinion & Order, *In re Petition of Pandora Media, Inc.*, 1:12-cv-08035-DLC, 1:41-cv-01395-DLC-MHDF. 738 (S.D.N.Y. Mar. 14, 2014) at 96.

[206] Business format franchises tend to have a royalty percentage between 4% and 6% of gross sales. Jeff Elgin, "What's the Norm for Franchise Royalty/Residual Payment Percentages?" *Entrepreneur,* Oct. 1, 2009, *available at* https://www.entrepreneur.com/answer/221990. *See also,* McDonald's franchise agreement stipulates a royalty rate of 7% of gross sales for each franchised restaurant. McDonald's, "Amended and Restated Master Franchise Agreement for McDonald's Restaurants," Nov. 10, 2008, *available at* https://www.sec.gov/Archives/edgar/data/1508478/000119312511077213/dex101.html, 14.

[207] Many trade book publishers pay a royalty on the list price of a book. Vallery Peterson, "Book Advances and Royalties," *The Balance,* Feb. 24, 2016, *available at* https://www.thebalance.com/book-advances-and-royalties-2799832.*See also,* Licensing partnerships between biotechnology companies and pharmaceutical companies typically include "an ongoing percentage of the revenue stream for the approved drug." Christopher M. Schelling, "Drug Royalties in a Real Asset Portfolio," *Pensions&Investments,* Oct. 9, 2014, *available at* http://www.pionline.com/article/20141009/ONLINE/141009844/drug-royalties-in-a-real-asset-portfolio.*See also,* Toy companies typically pay a toy inventor a royalty of 2%–10% of gross sales. Toy Industry Association, Inc., "Toy Inventor & Designer Guide," 2014, *available at* http://www.toyassociation.org/App_Themes/tia/pdfs/resources/inventors/TIAToyInventorDesignerGuide.pdf, at 11.

assertion that "if input suppliers are paid a percentage of revenue, it is difficult to design a scheme for input suppliers to be paid appropriately."[208]

(219) Dr. Rysman has not compared total or consumer welfare under his proposed per-stream fee to that under a percentage-of-revenue fee. Instead, he points to the alleged "inappropriateness" and difficulty of designing such a royalty rate. The common use of percentage-of-revenue rates and the theoretical underpinnings of such a rate structure bely these arguments.

X.B.2. Percentage-of-revenue rates are not uniquely susceptible to manipulation

(220) Dr. Rysman argues that service revenue is "likely to be manipulated" by services to the detriment of copyright holders.[209] What enables this manipulation, he argues, is that service revenue is more opaque to publishers than number of plays or number of users.[210] He notes that, as a result, service revenue could be fraudulently manipulated by the services, resulting in underpayments to copyright owners.[211] He presents no evidence, however, that percentage-of-revenue payments, which have been used throughout the industry for many years in many different contexts, have been fraudulently manipulated.

(221) As a theoretical possibility, the argument that reported revenue could be fraudulently manipulated applies to per-stream or per-user fees as well.[212] None of the three is directly observed by publishers. Dr. Rysman argues that the number of users or number of streams could be approximately verified by an independent survey, but he fails to note that a good approximation for number of users or streams could be converted into an approximation of revenue by applying an approximate price per user.[213]

(222) Aside from outright fraud, Dr. Rysman argues that services with non-music offerings can determine the accounting of their streaming revenues such that they are effectively realized in other areas of the firm.[214] This argument does not apply to pure-play streaming services like Spotify, which make up a majority of subscribers and revenue for interactive streaming services. For services that do offer a variety of non-music services, like Amazon, alternative ways of calculating revenue are built into the existing rate structure. Amazon Prime currently pays $0.25 per subscriber for its bundled streaming services. In the case of standalone portable subscription services, mixed use, significantly under-

[208] Rysman Expert Report, *Phonorecords III*, at ¶ 36.

[209] *Id.* at ¶ 39.

[210] *Id.* at ¶ 43.

[211] *Id.* at ¶ 43.

[212] Note too that the Spotify rate proposal includes audit rights for publishers: Spotify Proposed Rates and Terms, In the Matter of Phonorecords III, Docket No. 16–CRB–0003–PR (2018–2022), Nov. 1, 2016, (CRB 2018–2022).

[213] Rysman Expert Report, *Phonorecords III*, footnote 45.

[214] *Id.* at ¶¶ 44–45.

reporting revenue would lead a service to pay the minimum of $0.80 and 21% of sound recording payments.[215,216]

X.B.3. Percentage-of-revenue rates do not distort intertemporal choices of services

(223) Dr. Rysman argues that percentage-of-revenue royalty rate structures causes services to shift revenues from the present to the future, and that this is inherently unfair to copyright holders.[217] In addition, he argues that this shift does not simply represent a shift of revenue, but a loss of revenue to copyright holders because future revenues may never be recovered but instead might be monetized in other services or might be lost if services fail.[218]

(224) In effect, Dr. Rysman argues that it is unfair for interactive streaming services to take a longer-run view of their own business while at the same time Copyright Owners' witnesses Peter Brodsky (Sony/ATV Music Publishing), David Kokakis (UMPG), Michael Sammis (UMPG), Annette Yocum (Warner/Chappell), Justin Kalifowitz (Downtown), and Lee Thomas Miller (songwriter), and Copyright Owners expert Dr. Lawrence Miller all discuss publishers' use of advances.[219] These advances imply that payments to artists and songwriters are disconnected in time from when their musical works are experienced by consumers. The reliance of publishers on advances also highlights that they are not behaving to maximize current profits, but rather taking a longer-run view of their business.

(225) Dr. Rysman has not advanced any argument as to why a percentage-of-revenue royalty rate causes a shift in pricing strategy towards pricing low in the present and higher in the future. Economists generally consider that firms maximize the present discounted value of future cash flows, whatever time path of prices that entails, and percentage-of-revenue royalty rates, or per-stream or per-user

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[215] In addition, current rates include an additional $0.50 per user minimum. I explain in my Written Direct Testimony why that fee is inefficient and should be removed. Marx Written Direct Testimony, *Phonorecords III*, at ¶ 135.

[216] In addition, the current rate structure may allow one to use a comparable standalone service from another service provider in certain situations. *See* the definition of "service revenue" in 37 C.F.R. § 385.11: "(5) Where the licensed activity is provided to end users as part of the same transaction with one or more other products or services that are not a music service engaged in licensed activity, then the revenue deemed to be recognized from end users for the service for the purpose of the definition in paragraph (1) of the definition of "Service revenue" shall be the revenue recognized from end users for the bundle less the standalone published price for end users for each of the other component(s) of the bundle; provided that, if there is no such standalone published price for a component of the bundle, then the average standalone published price for end users for the most closely comparable product or service in the U.S. shall be used or, if more than one such comparable exists, the average of such standalone prices for such comparables shall be used."

[217] Rysman Expert Report, *Phonorecords III*, at ¶ 49.

[218] *Id.* at ¶¶ 46–50.

[219] Witness Statement of Peter Brodsky, *In the Matter of Phonorecords III*, at ¶¶ 9, 29–33. Witness Statement of David Kokakis, *In the Matter of Phonorecords III*, at ¶¶ 6, 40–44. Witness Statement of Michael Sammis, *In the Matter of Phonorecords III*, at ¶¶ 24-27. Witness Statement of Annette Yocum, *In the Matter of Phonorecords III*, at ¶¶ 13–23. Witness Statement of Justin Kalifowitz, *In the Matter of Phonorecords III*, at ¶¶ 14–19. Witness Statement of Lee Thomas Miller, *In the Matter of Phonorecords III*, at ¶ 6. Miller Expert Report, Phonorecords III, at ¶¶ 45–50.

royalty rates for that matter, do not change that basic logic.[220] In addition, there is a limitation of such shifting of revenues built into the current rate structure due to backstops based on percentage of sound recording royalty payments or number of users.

X.B.4. Percentage-of-revenue rates do not inherently give streaming services an "unfair advantage" over download services

(226) Dr. Rysman asserts that a revenue-based royalty rate gives interactive streaming services an "unfair competitive advantage" over download services.[221] He concludes that this difference in rate structure has "led to an accelerated displacement of downloads in favor of streaming."[222]

(227) Dr. Rysman presents no evidence that differences in rate structures have led to accelerated displacement of downloads by streaming. Nor does he present any analysis comparing the level of royalties paid by the PDD and CD channel to the level of royalties paid by the interactive streaming channel.

X.B.5. Percentage-of-revenue rates are not inconsistent with prior CRB decisions

(228) Finally, Dr. Rysman argues that because some prior CRB decisions have favored per-play fees over percentage-of-revenue fees, per-play fees should be favored in this context. He cites primarily the *Webcaster I* decision from 2002, which instituted a per-play rate structure for non-interactive streaming.[223] That rate structure was recently ratified in the *Web IV* decision.[224] Other CRB decisions have ratified a percentage-of-revenue reimbursement, however, most recently *SDARS II*.[225] The CRB in *SDARS I* notes that:

> The parties to this proceeding, at least initially, all proposed a revenue-based metric and, while there were some differences in the definition of revenues in their initial proposals, no party has submitted any evidence regarding the impossibility of applying or complying with a revenue-based metric. That is not surprising, inasmuch as the parties have until now lived under a revenue-based regime. Therefore, the parties are most familiar, and perhaps most comfortable, with the operation of a

[220] Shareholders receive cash from the company in the form of a stream of dividends. So PV(stock) = PV(expected future dividends). Brealey Myers and Allen, *Principles of Corporate Finance* (New York: McGraw-Hill Irwin, 2006), 61.

[221] Rysman Expert Report, *Phonorecords III*, at ¶ 51.

[222] *Id.* at ¶ 51.

[223] *Id.* at ¶ 52.

[224] Determination, *Web IV*, at 1.

[225] Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2011-1 CRB PSS/Satellite II, 78 Fed. Reg. No.74 (Apr. 17, 2013) [hereinafter *SDARS II* Determination], at 23,056.

revenue-based metric. The value of such familiarity lies in its contribution towards minimizing disputes and concomitantly, keeping transactions costs in check.[226]

(229) The common thread in these recent decisions is maintenance of status quo rate structures, not in moving broadly to per-play or per-user rate structures.

(230) In the case of interactive streaming, the *Phonorecords I* and *Phonorecords II* proceedings, agreed to by representatives of both Copyright Owners and users, ratified a headline percentage-of-revenue rate, with percentage of sound recording and per-user prongs as possible alternatives. Instituting a per-stream rate in an industry where none has existed is a stark change to the status quo. The Copyright Owners' economists have not provided a compelling justification that the current rate structure violates the 801(b) factors. As I discuss in Section (238), the industry is thriving under the current structure. Relatedly, it is notable that the agreements that Dr. Eisenach points to as baselines for his ratio test generally are based on percentage-of-revenue, not per-play or per-user structures.[227]

X.C. The unbundling of tracks does not call for higher per-stream royalty rates

(231) Dr. Gans's claim that "the per-track mechanical rates should have been adjusted upwards for downloads to account for the change in the mix of tracks being sold" is flawed.[228] He estimates the increase of mechanical royalty due to unbundling, using as examples hypothetical albums for which 10, 11, or 12 tracks are streamed. He assumes on average 20% of the tracks on these albums are not streamed, so the three examples he considers are albums with 12.5, 13.8, and 15 tracks.[229]

(232) His calculation has three steps. In the first step, he calculates the mechanical royalty per album using $0.091 multiplied by the number of tracks. For example, in the first case he considers where 10 tracks are streamed, an album has 12.5 tracks, so the mechanicals per album is $0.091*12.5 = $1.14. In the second step, he estimates the "repriced mechanicals" for each track by multiplying a track's fraction of plays of the album and the mechanicals per album. For example, the fraction of plays of an album of the most popular song in his 12.5 tracks example is 29.8%, so this track's "repriced mechanicals" is 29.8%*$1.14 = $0.339. In the third step, he estimates the "weighted average mechanical per track" by calculating the weighted average of "repriced mechanicals," using each track's fraction of plays again.[230]

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[226] Determination, *In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services (SDARS I)*, Docket No.2006-1 CRB DSTRA [hereinafter *SDARS I*], at 28.

[227] Eisenach Expert Report, Phonorecords III, at ¶¶ 86, 87, 97, 101, and Table 5.d

[228] Gans Expert Report, *Phonorecords III*, at ¶ 24.

[229] *Id.* Table 2, rows [10] and [11].

[230] *Id.* at ¶ 24, Table 2.

(233) Dr. Gans's main mistake in this analysis is that he considers the absolute demand decrease of unpopular songs and the relative demand increase of popular songs, but he ignores the absolute demand increase of popular songs. Unbundling the album reduces the purchase of some unpopular songs, but this does not necessarily mean Copyright Owners' total royalty income will drop, because unbundling may also increase the purchase of some other songs. For simplicity, assume each CD has 10 tracks and is sold for $10. Assume a digital download costs $1. Suppose a consumer's music budget is $20. Before unbundling, they buy two CDs and copyright owners get 20 tracks*9.1 cents=$1.82 from this consumer. After unbundling, the consumer may purchase eight tracks they like from each of these two CDs and four tracks they like from a third CD. Although two tracks from the first two CDs are indeed not purchased by this consumer due to unbundling, copyright owners still get 20 tracks*9.1 cents=$1.82 because unbundling allows this person to buy songs they like. In this example, the Copyright Owners' royalty income does not drop due to unbundling. Moreover, consumer surplus—the total amount of consumer benefit less price paid—increases due to unbundling.

(234) In addition, the unbundling of music occurred well before the onset of interactive streaming, as CDs were increasingly replaced by PDDs sold through outlets such as the iTunes Store. The recent subpart A settlement could have increased rates due to this unbundling, were it appropriate, but did not.

X.D. Dr. Rysman's SiriusXM analogy is flawed

(235) Dr. Rysman states that the Copyright Owners' proposal "will hardly be noticed within such a dynamic industry."[231] He argues that "producers of goods and services can adapt to higher input prices by increasing revenue, reducing other costs or allowing the firm's capital to absorb the increased input cost."[232] He uses SiriusXM as a case to support his point that "to offset the increase in royalty expenditures, services can also take advantage of favorable trends in other expense lines and metrics."[233]

(236) Both Dr. Rysman's claim that the Copyright Owners' rate proposal will not be disruptive and his use of SiriusXM as an example to support his claim are flawed. The Copyright Owners' rate proposal, in its most basic application, would [redacted].[234] [redacted].[235] In *SDARS I*, the SDARS sound recording royalty rate was increased from a range of

[231] Rysman Expert Report, *Phonorecords III*, at ¶ 92.
[232] *Id.* at ¶ 93.
[233] *Id.* at ¶ 98.
[234] *See* [redacted].
[235] Rysman Expert Report, *Phonorecords III*, at ¶ 92.

2.0% to 2.5% of revenues, to 6.0% of gross revenues for 2007 and 2008, 6.5% for 2009, 7.0% for 2010, 7.5% for 2011, and 8.0% for 2012.[236] In *SDARS II*, SiriusXM's sound recording royalty as a percentage of gross revenue was increased from 8.0% in 2012 to 9.0% for 2013, 9.5% for 2014, 10.0% for 2015, 10.5% for 2016, and 11.0% for 2017.[237,238] It is possible that SiriusXM's cost reduction in customer acquisition, research and development, general and administrative expenses, and sales and marketing expenses can cover their royalty increases, as suggested by Dr. Rysman. [redacted].

(237) Another reason that Dr. Rysman's SiriusXM analogy is flawed is that he ignores the substantial differences between satellite radio and interactive streaming. The *SDARS I* proceeding happened during the merger process of Sirius Satellite Radio and XM Satellite Radio, the only two satellite radio providers in the United States.[239] The *SDARS II* proceeding happened after the merger, and SiriusXM, anticipated "that its adjusted earnings before depreciation and amortization ('EBITDA') for 2012 will be $860 million on revenues of $3.3 billion, which should allow SiriusXM to return capital to its investors."[240] The merger created a single provider of satellite radio services and thus would be expected to improve the profitability of satellite radio relative to the case of competition between Sirius and XM for subscribers and content prior to the merger.

(238) The current situation in the interactive streaming industry is different from the situation in the satellite radio industry during those two proceedings. Unlike the satellite industry during *SDARS I*, the interactive streaming service has many competitors, and they are not in the process of merging into a single entity. [redacted]

[236] Determination, *SDARS I*, at 18, 67.

[237] *SDARS II* Determination, at 23,054.

[238] Determination, *SDARS I*, at 70.

[239] Prior to 2008, Sirius and XM were the only two satellite radio providers in the United States. They announced their intention to merge in February 2007. The merger was under review during the *SDARS* proceeding and was not consummated until seven months after the CRB handed down the *SDARS* determination. *See* Richard Siklos and Andrew Ross Sorkin, "Merger Would End Satellite Radio's Rivalry," *New York Times*, Feb. 20, 2007, http://www.nytimes.com/2007/02/20/business/media/20radio.html?pagewanted=all. *See also* Determination, *SDARS I*, at 2–7. *See also* Olga Kharif, "The FCC Approves the XM-Sirius Merger," *Bloomberg*, Jul. 26, 2008, https://www.bloomberg.com/news/articles/2008-07-25/the-fcc-approves-the-xm-sirius-mergerbusinessweek-business-news-stock-market-and-financial-advice.

[240] *SDARS II* Determination, at 23,069.

[241] [redacted]

XI. Benefits of the current rate structure

(239) The current Section 115 rate structure, the result of a settlement between representatives of the Copyright Owners and users in 2012, has coincided with a rapid expansion of interactive streaming through a variety of different business models, increased consumer access to music, and increased publisher revenue. The Copyright Owners propose to replace this rate structure with a substantially different one that increases royalties on already unprofitable interactive streaming services, [redacted], and thereby curtails consumer access to music.

(240) The Copyright Owners' economists acknowledge the success of the interactive streaming industry. Dr. Rysman reports that the interactive streaming market is "thriving."[242] Dr. Eisenach finds that "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." Their objections to the current structure are mostly theoretical. Rather than giving concrete examples of how it impedes availability of music, they imply that the growth of streaming has lowered songwriter and publisher royalties. As I explain in Section X.A, they provide only anecdotal support for this notion, while the available quantitative evidence points to the contrary.

(241) Dr. Rysman further asserts that lower musical works compensation *could* reduce overall production of music, but provides no quantification of this effect or evidence that it has actually happened based on past changes in musical works compensation.[243] Nor do the other Copyright Owners' economists.

(242) These theoretical objections to the current rate structure need to be weighed against the concrete benefits it has brought both to the industry and to consumers before a substantial change is made to the current structure.

XI.A. Adaptability to different business models

(243) Subpart B of Section 115 defines five tiers that support different types of interactive streaming services, including ad-supported services; bundled subscription services; and "standalone, portable" subscription services, which is currently the largest category by revenue. While the formulas defined for each of these tiers are headlined by a percentage-of-revenue rate, there are also percentage of sound-recording royalty and per-user prongs that are activated in certain circumstances. This results

[242] Rysman Expert Report, *Phonorecords III*, at ¶ 11.

[243] For instance, *see* Rysman Expert Report, *Phonorecords III*, at ¶¶ 69–70, noting that changes in copyright holder compensation may lead to exit or reduced production, but not showing any evidence of this in response to past changes in copyright holder compensation.

in a variety of different rates, depending on the type of service, the pricing of the service, and payments made for sound recording rights by the service.

(244) This differentiation in applicable rates has supported the growth of a variety of business models that appeal to different consumer types. Amazon Prime, classified as a "bundled subscription service," provides online or offline ad-free listening to a limited music catalog (2 million songs) as a part of a broader package of Amazon services it offers including free shipping, movie streaming, and free book access. Amazon Prime appeals to casual music streamers who do not require a full catalog and who may be unwilling to pay for a broader streaming service.[244] It currently pays mechanical royalties for this service based on a $0.25 per-user prong.

(245) Spotify's paid subscription service, classified as a "standalone, portable" subscription service, offers an ad-free service with a broad catalog of over 30 million tracks accessible online or offline via computers or mobile devices. It charges a $9.99 basic subscription rate but also, like many other services, offers discount plans including a $14.99 family plan and $4.99 student plan. It currently pays mechanical royalties based on the $0.50 per-user prong.[245]

(246) Spotify's ad-supported service provides on-demand service interspersed with advertisements, no ability to listen offline, limited ability to skip, limited ability to listen on mobile devices, and lower quality audio than its paid service.[246] It currently pays mechanical royalties based on a percentage of sound recording royalties.

(247) These three different services vary significantly in terms of catalog size and functionality, and target different consumer groups with distinct WTP. The current system, with a variety of tiers and possible payment calculations, supports these three different approaches to streaming and thereby improves consumer access to music. For instance, the Goldman Sachs Equity Research report notes that the flexibility of the current system helps interactive streaming services capture Gen Z and Millennials, "the ideal audience for streaming," who make up 77% of all Spotify users across its markets.

> Their inherent characteristics of being "digital natives," focused on experience and convenience, make them the ideal targets of music streaming services which can be

[244] Expert Report of Glenn Hubbard, *In the Matter of Phonorecords III*, No. 16-CRB-0003-PR (CRB 2018-2022), Nov. 1 2016, at Section 3.

[245] As I explain in my Written Direct Testimony, my view is that this $0.50 per-user fee should be removed, which would mean that standalone portable subscription services would pay an all-in royalty pool based on 10.5% of revenue, 21% of sound recording payments, or $0.80 per user—PRO payments are deducted from this all-in royalty pool to determine mechanical royalties. Marx Written Direct Testimony, *Phonorecords III*, at ¶¶ 14, 75.

[246] Elyse Betters and Jake Smith, "Spotify Free vs. Spotify Premium: What's the Difference?" Pocket-lint, Dec. 30, 2014, *available at* http://www.pocket-lint.com/news/125771-spotify-free-vs-spotify-premium-what-s-the-difference.

> tailored for any taste, different budgets (ad-supported, student plans, family plans) and most importantly for any device.[247]

(248) In contrast, as I have discussed at length in this statement, the Copyright Owners' proposal would impose a uniform per-stream or per-user fee, regardless of catalog size, functionality of service, or consumer group targeted, [redacted]. This outcome runs counter to the 801(b) factors and reduces the total surplus created by interactive streaming.

XI.B. Efficiency benefits of interactive streaming model

(249) As I discuss in my Written Direct Testimony, the "all-you-can-eat" business model of interactive streaming, with a single monthly subscription price allowing unlimited streams by users, reduces deadweight loss relative to a model such as PDD, in which consumers pay a flat price above cost for ownership of a song. The PDD model discourages consumers from listening to songs of lower or uncertain value, even if they value such listening at greater than the marginal cost of providing the song. That is the definition of deadweight loss.

(250) The all-you-can-eat model has led to increased music listening and increased variety. First, because the marginal price of listening is equal to marginal cost, listeners can efficiently experiment with artists and tracks about which they are unsure. In addition, the data analytics made possible by interactive streaming play a part in this result. As I discuss in my Written Direct Testimony, Spotify features such as Discover Weekly and algorithmic playlists are designed to expand listening variety and expose listeners to new artists. This is possible in part due to the data collected by Spotify on listening patterns, data that are not as available in a PDD/CD model of distribution.[248] The Goldman Sachs Equity Research report notes that:

> 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.[249]

(251) It also finds that these data analytics lead to enhanced consumer benefits:

> 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

[247] Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 47.
[248] Marx Written Direct Testimony, *Phonorecords III*, at ¶ 46.
[249] Lisa Yang et al., "Music in the Air: Stairway to Heaven," Goldman Sachs Equity Research, Oct. 4, 2016, at 65.

> 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 taste.[250]

(252) The Copyright Owners' proposal, by imposing a per-play prong that would significantly raise the per-play cost of streaming, [redacted] and could lead to, for instance, throttling of listening or changing the distribution of songs listened to. More generally, by [redacted] and raising costs for the entire industry, it restricts the consumer benefits of convenience, discoverability, and personalization flowing from interactive streaming and the data analytics interactive streaming services use to promote discovery of new music.

[250] *Id.* at 65.

XII. Conclusion

(253) The Copyright Owners propose a substantial increase in rates and a significant change to the rate structure compared to the status quo. Their proposal would impose a flat per-user or per-stream rate, at a significantly higher level than current royalties, on an industry that has grown rapidly in recent years in part due to the variety of different services and business models it accommodates. The Copyright Owners' proposal would [redacted]

(254) The Copyright Owners' economists are able to support this proposal by misinterpreting the 801(b) factors, presenting a misleading analysis of the impact of the Copyright Owners' proposal that incorrectly asserts that the proposed rates do not represent a significant change over current rates, and by presenting economic models that they claim support the Copyright Owners' proposal but are either inappropriate or incorrectly implemented.

(255) In none of their analyses have the Copyright Owners' economists demonstrated any serious defects in the current system. Although they imply that interactive streaming has lowered copyright holder revenue, they provide only anecdotal support for this notion, and the data show otherwise. The interactive streaming industry has led to increased publisher revenues and significantly enhanced consumer access to music in a way that increases total surplus and reduces deadweight loss of music distribution.

(256) Given the success of the current system in supporting what all concede to be a successful, dynamic interactive streaming industry, a substantial change to the status quo level and structure of rates would require a detailed analysis of the impact of that change on rights holders, the industry, and consumers. The Copyright Owners' economists have not provided that analysis.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	)))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Rebuttal Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 14 day of February 2017 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

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IN THE MATTER OF:)

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DETERMINATION OF RATES) Docket No.

AND TERMS FOR MAKING AND) 16-CRB-0003-PR

DISTRIBUTING PHONORECORDS) (2018-2022)

(PHONORECORDS III),)

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OPEN / CLOSED SESSION

Pages: 1652 through 1987

Place: Washington, D.C.

Date: March 20, 2017

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1 AFTERNOON SESSION

2 (1:24 p.m.)

3 JUDGE BARNETT: Please be seated.

4 MR. ASSMUS: Good afternoon, Your Honor,

5 Richard Assmus on behalf of Spotify U.S.A. Are you

6 ready for the next witness?

7 JUDGE BARNETT: We are, indeed. I

8 understand it is a Spotify witness.

9 MR. ASSMUS: Yes. We call Dr. Leslie

10 Marx.

11 Whereupon--

12 LESLIE MARX,

13 having been first duly sworn, was examined and

14 testified as follows:

15 DIRECT EXAMINATION

16 BY MR. ASSMUS:

17 Q. Good afternoon, Dr. Marx.

18 A. Afternoon.

19 Q. Could you introduce yourself to the

20 panel?

21 A. My name is Leslie Marx. I'm an

22 economist. I'm a professor at Duke University.

23 Q. And what is your exact title at Duke?

24 A. I am the Robert A. Bandeen Professor of

25 Economics at the Fuqua School of Business at Duke

1 University.
2 Q. The Robert A. Bandeen professor, what
3 does that mean?
4 A. It means I hold a distinguished
5 professorship, which is the top of the professorial
6 ladder at Duke University.
7 Q. And could you give the panel a brief
8 overview of your educational background?
9 A. I have an undergraduate degree in
10 mathematics from Duke University and a Masters and
11 Ph.D. in economics from Northwestern University.
12 Q. When did you receive your Ph.D.?
13 A. 1994.
14 Q. Could you walk us through your
15 professional work history since you received your
16 Ph.D. -- Ph.D. in economics; is that right?
17 A. That's right.
18 Q. If you could walk us through your
19 professional work history since you received that
20 Ph.D.
21 A. I was a professor in economics at the
22 University of Rochester. And then in 2002 moved to
23 Duke University. And I have been at Duke since
24 then, except for a year where I worked as a chief
25 economist at the Federal Communications Commission

1 here in D.C.

2 Q. What is it that the chief economist for

3 the FCC does?

4 A. The chief economist is responsible for

5 the economics coming out of the Commission. I was

6 involved in the review of transactions among

7 telecommunications companies that were coming up at

8 that time.

9 And also there were issues related to

10 media ownership rules, which involved media, cable,

11 programming, as well as radio.

12 Q. And what areas of economics do you

13 specialize in?

14 A. Industrial organization and applied game

15 theory.

16 Q. Approximately how many peer-reviewed

17 articles have been published in your name?

18 A. Roughly 40.

19 Q. And have you served as a testifying

20 expert in any other matters?

21 A. Yes, I have.

22 Q. Were any of those matters related to

23 copyrights?

24 A. Yes.

25 Q. Which ones?

1 A. I was involved in the rate determination
2 for Pandora, in its case with ASCAP in front of the
3 rate court.
4 Q. That's in the Southern District of New
5 York?
6 A. That's correct.
7 Q. And were you an expert for Pandora in
8 that matter?
9 A. Yes, for Pandora.
10 Q. Are there any other notable
11 accomplishments in your personal or professional
12 life?
13 A. I represented the United States at the
14 1996 Olympics in the sport of fencing.
15 Q. Thank you.
16 MR. ASSMUS: Your Honor, Spotify would
17 offer Dr. Marx as an expert in economics and
18 industrial organization.
19 MR. SEMEL: No objection.
20 JUDGE BARNETT: Dr. Marx is so qualified.
21 MR. ASSMUS: Thank you.
22 BY MR. ASSMUS:
23 Q. Dr. Marx, there should be a binder before
24 you. And the first tab in that binder should be
25 Spotify Trial Exhibit 1065, if you can take a moment

1 to turn to it.
2 A. Yes.
3 Q. And do you recognize that document?
4 A. This is my written direct testimony.
5 Q. And if you could turn to the page
6 immediately following numbered page 58 in that
7 exhibit.
8 A. Yes.
9 Q. Is that your signature?
10 A. Yes, it is.
11 Q. Spotify would move into evidence her
12 written direct report, which is Spotify Trial
13 Exhibit 1065.
14 MR. SEMEL: No objection.
15 MR. ASSMUS: If I can take a moment on
16 the topic of exhibits, while we're on that topic, I
17 met and conferred with Mr. Semel, counsel for the
18 Copyright Owners prior to this testimony, and I have
19 a list of the unobjected, what I understand is
20 unobjected exhibits that I would like to move into
21 evidence, all of which were attached to her written
22 direct testimony.
23 JUDGE BARNETT: Thank you.
24 MR. ASSMUS: That would be, I will read
25 out the full trial Numbers, Amazon Trial Exhibit 7,

1 Copyright Owners Trial Exhibit 2898, Amazon Trial
2 Exhibit 221, Pandora Trial Exhibit 909, Copyright
3 Owners Trial Exhibit 2699, Apple Trial Exhibit 1566,
4 Pandora Trial Exhibit 903, Copyright Owners Trial
5 Exhibit 2936, Spotify Trial Exhibit 1004, and
6 Spotify Trial Exhibit 1702. Mr. Semel will tell me
7 if I did that correctly.
8 MR. SEMEL: Is it 1002?
9 MR. ASSMUS: I believe it is Spotify
10 Trial Exhibit 1702.
11 MR. SEMEL: Is that the Shapley value?
12 MR. ASSMUS: Yes, correct.
13 MR. SEMEL: Okay.
14 JUDGE BARNETT: So we're in agreement?
15 MR. SEMEL: Yes, yes, we are in
16 agreement, no objections. And I believe actually
17 Amazon Trial Exhibit 7 is already in the record.
18 MR. ASSMUS: Thank you.
19 JUDGE BARNETT: All of those enumerated
20 exhibits, as well as Exhibit 1065 are admitted.
21 (Spotify Exhibit Numbers 1065, 1004, 1702
22 were marked and received into evidence.)
23 (Amazon Exhibit Numbers 7 and 221 were
24 marked and received into evidence.)
25 (Copyright Owners Exhibit Numbers 2699,

1 2898, 2936 were marked received into evidence.)
2 (Pandora Exhibit Numbers 903 and 909 were
3 marked and received into evidence.)
4 (Apple Exhibit Number 1566 was marked and
5 received into evidence.)
6 BY MR. ASSMUS:
7 Q. Thank you. Dr. Marx, can you briefly
8 describe your assignment in this matter?
9 A. I was asked to help determine reasonable
10 mechanical royalty rates for interactive streaming
11 services in light of the 801(b) factors.
12 Q. Could you briefly tell us what those
13 factors, four factors are?
14 A. Yes. There are four factors. The first
15 one speaks to maximizing the availability of
16 creative works to the public. There is a
17 demonstrative slide.
18 Q. Let me ask you, did you prepare some
19 slides in connection with your testimony today?
20 A. Yes, I did.
21 Q. If we could have the first slide.
22 Perfect.
23 Could you walk us through the -- your
24 economic -- strike that.
25 As an economist, did you take an economic

1 interpretation of the 801(b) factors?
2 A. Yes, I did.
3 Q. Could you walk us through how it is that
4 you used economics to interpret these four factors?
5 A. I was thinking about how economics could
6 be useful in helping determine reasonable royalty
7 rates in light of these 801(b) factors, so for each
8 of the 801(b) factors, I provided an economic
9 interpretation of that factor.
10 The first one is to maximize the
11 availability of creative works to the public. An
12 economist might think about availability as relating
13 to production and distribution and pricing, so that
14 it is in the practical sense available to consumers.
15 So my interpretation related to that
16 first factor was that the royalty rate structure
17 should maximize the sum of producer and consumer
18 surplus, should maximize economic efficiency.
19 JUDGE STRICKLER: From an economic point
20 of view, is that the same thing as saying you want
21 to eliminate the dead weight loss as much as
22 possible?
23 THE WITNESS: That's correct.
24 The second and third factors talk about
25 fair return and fair income and that the royalty

1 payments should reflect the relative roles of the
2 copyright owners and copyright user.
3 I gave an interpretation to those two
4 801(b) factors of the Shapley value. The Shapley
5 value is a concept from game theory that gives a way
6 of dividing up value that is created by parties
7 coming together. And it has been given the
8 interpretation in the economics literature as being
9 an embodiment of fairness.
10 It divides up value in proportion to the
11 relative contributions of the parties coming
12 together.
13 The fourth 801(b) factor talks about
14 minimizing disruptive impact. In order to give that
15 an economic interpretation, I interpreted it in
16 terms of looking at benchmarks, in particular
17 benchmarks that seemed likely to reflect the 801(b)
18 factors, and using those benchmarks with the idea
19 that by staying relatively close to those
20 benchmarks, that that would likely minimize any
21 disruptive impact.
22 BY MR. ASSMUS:
23 Q. Thank you. I would like to take a deeper
24 dive into several of these factors. With respect to
25 the first factor and total surplus, could you tell

1 us what you mean by total surplus?
2 A. In economics there is a notion of
3 consumer surplus and producer surplus. And putting
4 them together, you get total surplus. Consumer
5 surplus is the value that consumers get from
6 consumption, minus what they have had to pay in
7 order to consume.
8 And then producers surplus, you can think
9 of it as the profits to the suppliers, profits to
10 the producers. And so putting them together, you
11 get a measure of the total value created through the
12 market exchange.
13 Q. And in this particular matter, who is it
14 that represents the consumers?
15 A. Here when I am thinking about economic
16 efficiency, I am thinking of the consumer as being
17 the listeners.
18 Q. And what about the producers, who are the
19 producers in this matter?
20 A. When I am thinking in that, thinking
21 about economic efficiency, I am thinking about the
22 producers as being together the copyright owners and
23 copyright users who make those works available to
24 the listeners.
25 Q. Now, you mentioned that you used a

1 Shapley value calculation.

2 JUDGE STRICKLER: Before you go there,

3 because you are getting into B and C now.

4 MR. ASSMUS: I am.

5 JUDGE STRICKLER: I want to stick with

6 the witness' testimony about factor A. So you view

7 the consumer in terms of consumer surplus as being

8 the listeners themselves, right?

9 THE WITNESS: Yes, I do.

10 JUDGE STRICKLER: So we're talking about

11 the downstream market?

12 THE WITNESS: That's right.

13 JUDGE STRICKLER: And your analysis says

14 that as a consequence of economic efficiency --

15 well, actually, I guess in this page you haven't

16 expressed your opinion yet about analysis of

17 economic efficiency or percentage of revenue versus

18 per stream or per user rates.

19 So let me just ask the question in light

20 of the fact that you just tabled, if you will, over

21 there.

22 Do you think there is any difference

23 between whether or not there should be a pricing

24 that reflects percentage of revenue at the

25 downstream level versus the upstream level or there

1 is no difference?

2 THE WITNESS: I think that it is pretty

3 clear that the marginal cost of an additional stream

4 to a consumer is zero or very close to it.

5 JUDGE STRICKLER: Right. I didn't want

6 you to get ahead because I know you are going to get

7 into that in detail, but in the analysis that you

8 are suggesting here, do you distinguish between how

9 to price at the upstream level versus at the

10 downstream level?

11 THE WITNESS: I'm looking for -- you can

12 think of it both ways. So I am going to look at

13 what pricing would be economically efficient to

14 consumers and then think about what pricing between

15 copyright owners and copyright users is going to

16 promote efficient pricing to consumers.

17 JUDGE STRICKLER: Is that promotion of

18 efficiency that you are talking about, is that a

19 consequence of the fact that there may be derived

20 demand from the upstream level from what exists at

21 the downstream level?

22 THE WITNESS: I don't think of it as

23 being tightly connected to that.

24 JUDGE STRICKLER: Okay. Thank you.

25 BY MR. ASSMUS:

1 Q. Thank you. Turning to the second two
2 factors that you have taken together, how is it that
3 an economist can identify a notion of fairness?
4 A. Fairness is not a notion that has a
5 unique definition within economics, but the Shapley
6 value is a well-accepted notion in cooperative game
7 theory within economics. And it has been
8 interpreted in the literature as providing a notion
9 of fairness.
10 And, in particular, it is trying to take
11 into account the relative contributions of the
12 various parties. And that's in line with what's the
13 language of the third 801(b) factor.
14 JUDGE STRICKLER: Excuse me. You
15 mentioned the Shapley values, as you are applying
16 them here, are an outcome of cooperative game
17 theory. Can you distinguish for us between
18 cooperative game theory and non-cooperative game
19 theory?
20 THE WITNESS: Sure. Game theory is often
21 divided into these two groups, non-cooperative game
22 theory and cooperative game theory. And
23 non-cooperative game theory is looking at strategies
24 played by individual players within the structure of
25 a particular game.

1 For example, how are you going to bid at
2 an auction? So you give the structure, the
3 structured interaction, and look at the strategies
4 the players are going to use within a structured
5 interaction, within the game.
6 Cooperative game theory is much less
7 structured. So cooperative game theory takes the
8 viewpoint that by coming together, the coming
9 together of various parties will create value. For
10 example, the coming together of copyright owners and
11 copyright distributors can create value.
12 And it doesn't specify the particular
13 procedures by which that value is created, but is
14 focused on appropriate ways to divide it among the
15 players that have come together to create the value.
16 JUDGE STRICKLER: Thank you.
17 THE WITNESS: You are welcome.
18 BY MR. ASSMUS:
19 Q. Did the type of game theory approach that
20 the Shapley value methodology represents, was that
21 in your view a benefit to using it in this manner?
22 A. I thought it was a particularly good fit
23 for the goals that are laid out in the second and
24 third 801(b) factors because it is a way for an
25 economist to operationalize the notion of fairness.

1 And it is fairly tightly tied to this
2 idea of reflecting the relative roles of Copyright
3 Owners and copyright users.
4 Q. And I am in danger of getting a little
5 ahead of myself. Would you expect the result of a
6 Shapley value analysis to approximate market
7 outcomes?
8 A. No. The Shapley value is not a model of
9 a market interaction. It is not trying to mimic
10 what you might expect in a market. It is trying to
11 get at what division would embody this notion of
12 fairness or the reflecting of the relative roles of
13 the parties that come together.
14 JUDGE STRICKLER: So is it fair to say
15 you are not using the Shapley value to set forth a
16 reasonable market rate; you are using the Shapley
17 value to potentially adjust whatever rate you are
18 find in the market?
19 THE WITNESS: That's correct.
20 JUDGE STRICKLER: Thank you.
21 BY MR. ASSMUS:
22 Q. And if we could finally, in terms of this
23 overview, turn to the fourth factor, the minimizing
24 disruption factor. How is it that you interpreted
25 that factor through economics?

1 A. Again, I am going to look at the
2 benchmarks, and so I am going to interpret that
3 factor as saying we should try to stay relatively
4 close to relevant benchmarks.
5 And in terms of relevant benchmarks, I'm
6 going to focus on rates and structures that I think
7 are likely to embody the 801(b) factors.
8 Q. In connection with your testimony, you
9 prepared a summary of your conclusions?
10 A. Yes, I have.
11 Q. If we could have that next slide. And if
12 you could walk the panel through, at a high level,
13 the primary conclusions you reached.
14 A. These primary conclusions are, first,
15 that mechanical royalty rates that reflect the
16 801(b) factors are lower than current levels. Two
17 points beneath that, the Shapley value analysis
18 predicts that fair royalties reflecting relative
19 contributions are lower than current levels. And
20 benchmarks indicate that a decrease in rates is
21 appropriate.
22 The second high-level conclusion,
23 economic efficiency favors a percentage of revenue
24 rate structure over a per-user or a per-stream
25 structure. And, finally, that the 80 cent

1 per-subscriber minimum protects against a
2 substantial increase in rates from current levels
3 and addresses revenue measurement, but the 50 cent
4 per-subscriber floor should be eliminated or
5 adjusted.
6 Q. In connection with your work, have you
7 become familiar with Spotify and its services?
8 A. I have learned a lot, yes.
9 Q. Could you briefly describe Spotify's
10 primary services in the United States?
11 A. Spotify has two primary services. One is
12 subscription streaming service, interactive
13 streaming service and the other is an ad-supported
14 streaming service.
15 Q. And does Spotify offer any discounting
16 plans?
17 A. Yes, my understanding is that Spotify
18 offers a normal plan, an undiscounted plan at $9.99
19 per subscriber per month, but also offers a student
20 plan that is discounted and a family plan for the
21 subscription service.
22 The ad-supported service is free to the
23 user in the sense that there is no out-of-pocket
24 payment, but there are ads. So the consumer, the
25 listener pays a price as an economist might think of

1 it in terms of being subjected to advertisements.
2 Q. And in addition to your becoming familiar
3 with Spotify, have you become familiar to some
4 extent with the revenue structure of the music
5 industry?
6 A. Yes.
7 Q. And have you prepared a slide reflecting
8 that history of revenues?
9 A. Yes, I have.
10 Q. If we could have that slide, please.
11 And this figure was taken from your
12 report?
13 A. This is figure 2 in my written direct
14 testimony.
15 Q. And in connection with your economic
16 conclusions, what is it that you took from this time
17 series?
18 A. So a couple things that I think were
19 important in this graph. You see the dominant trend
20 here, you see the increase in music industry revenue
21 until 1999 and then a decline after that.
22 And that has corresponded with changes in
23 technology that have, in particular, changes in
24 technology that facilitated piracy. So you see a
25 large decline in industry revenue until around 2011,

1 and then a leveling off of industry revenue.
2 As, for example, CD sales, the yellow
3 here continue to decline, but are balanced by an
4 increase in subscription and ad-supported streaming
5 revenue.
6 There are two vertical bars on the graph;
7 one marking the launch of Napster, which people have
8 related to increases in piracy, and the other
9 identifying the entry by Spotify and the beginning
10 of the U.S. development of interactive streaming.
11 Q. It is a little hard to see from this
12 graph, but does this reflect revenue growth in the
13 last several years?
14 A. There has been revenue growth in the last
15 few years. It is subtle in here. The publisher
16 revenue has increased, for example, in the last few
17 years.
18 JUDGE STRICKLER: This chart doesn't
19 break out publisher revenue, though, does it?
20 THE WITNESS: No, it doesn't. This is
21 overall industry revenue. I should probably be a
22 little bit careful. It is retail revenue with the
23 exception of the green SoundExchange distributions.
24 So the way the RIAA provided the data,
25 the revenue associated with non-interactive

1 streaming and satellite radio, instead of reporting
2 retail revenue, they are reporting SoundExchange
3 distributions.
4 So it is -- these numbers are -- the
5 number for the SoundExchange distributions is
6 understating revenue from non-interactive streaming
7 and satellite radio, but the rest should be retail
8 level revenues.
9 BY MR. ASSMUS:
10 Q. And when does the data on this chart end?
11 A. This is ending in 2015.
12 Q. And have you prepared a slide reflecting
13 2016 data?
14 A. Yes, I have.
15 Q. If we could have that slide.
16 A. This figure is figure 1 in my report.
17 And it is using the most recent data that I have
18 available to me, which is for the first half of
19 2016. And it is taking those same categories from
20 the previous graph and just displaying them as a pie
21 chart, so you can see the relative sizes of the
22 different components of the industry.
23 So you see subscription streaming there
24 at 30 percent. And then notice also the two types
25 of downloads, downloaded singles and downloaded

1 albums. They are shown there as 15 percent and
2 16 percent.
3 Adding those together, you get
4 31 percent. So as of the first half of 2016, the
5 size of subscription streaming was comparable to the
6 download market.
7 Q. And was that --
8 JUDGE STRICKLER: Question, just
9 following up on what you had said before about the
10 SoundExchange distribution, this time showing it in
11 your pie chart. You said it understates the actual
12 revenue.
13 Is that because the SoundExchange
14 distributions were only going to the record
15 companies and it doesn't show what the actual
16 services are retaining as revenues?
17 THE WITNESS: Exactly. So I will need to
18 correct for that understatement when I do the
19 Shapley value analysis. So notice in this pie
20 chart, really the size of subscription streaming,
21 all the other slices besides the green should be
22 narrowed slightly to account for the understatement
23 in the revenue from non-interactive streaming
24 satellite radio.
25 JUDGE STRICKLER: For example, satellite,

1 exactly, doesn't -- I can't recall at the moment,
2 but say it is 11 percent of revenue. So the other
3 89 percent of satellite revenue is not accounted for
4 in this pie chart?
5 THE WITNESS: It would be something like
6 that, yes. I would need to do the calculations, but
7 there is an -- the green slice of the pie should be
8 larger.
9 JUDGE STRICKLER: As measured by
10 whatever percent of revenue is retained by Sirius XM
11 or by any of the non-interactive services?
12 THE WITNESS: Exactly. So all the other
13 pie slices should shrink proportionally as it
14 accommodates that adjustment.
15 JUDGE STRICKLER: Do you know how much
16 larger the -- what you have called the SoundExchange
17 distributions, and I will now call in my question
18 the non-interactive and satellite sphere, how much
19 larger that percentage should be based on the data
20 that you have looked at or you can't say?
21 THE WITNESS: I have an estimate of that
22 that I use --
23 JUDGE STRICKLER: Is it already in the
24 record?
25 THE WITNESS: It is in my written direct

1 testimony. And so when I do the Shapley value
2 analysis, I want the real number for that slice.
3 JUDGE STRICKLER: And you found it, or
4 you estimated it?
5 THE WITNESS: I estimated it.
6 JUDGE STRICKLER: And when you estimated
7 it, what does that 12 percent become?
8 THE WITNESS: I'd have to look. I just
9 don't remember sitting here right now. I'm sorry.
10 JUDGE STRICKLER: Okay.
11 THE WITNESS: We could get out a
12 calculator. The numbers are in the appendix talking
13 about the Shapley value calculation.
14 JUDGE STRICKLER: Perhaps it comes up
15 when you discuss the Shapley analysis.
16 THE WITNESS: I could look for it now
17 too, but it would take a second.
18 JUDGE STRICKLER: Let's not do that.
19 BY MR. ASSMUS:
20 Q. The adjustment you have been discussing
21 with Judge Strickler, would that affect the relative
22 size of subscription streaming compared to CDs and
23 downloads?
24 A. No. It wouldn't affect the relative
25 sizes of any of the other slices of the pie. They

1 would all shrink proportionally. So my comment that
2 downloads, singles and albums, is comparable to
3 subscription streaming, that is not affected by the
4 green slice being smaller than it should be.
5 And I use the Pandora and Sirius XM's
6 10-K filing to get the data needed to make the
7 adjustment to that green slice.
8 Q. And was there any particular aspects of
9 this chart that you deemed important in connection
10 with your economic analysis?
11 A. I thought it was important to note
12 because I'm going to use downloads and CDs as a
13 benchmark, so important to me to see that downloads
14 are comparable to subscription streaming and that
15 CDs are still a substantial chunk of industry
16 revenue.
17 Q. In connection with your testimony today,
18 have you prepared a chart of U.S. music publishing
19 revenue?
20 A. Yes, I have.
21 Q. If we could have the next slide.
22 A. This is figure 3 from my written direct
23 testimony. It is publisher revenue from 2006 to
24 2015. And you see the decline in publisher revenue,
25 see it level out, and then it has taken an up-tick

1 in increasing over the last few years.
2 Q. And was that important for your analysis?
3 A. Yes. This was also important to see that
4 the evolution of this, the initial decline due to
5 piracy and other changes in the industry has been
6 stopped and now seemingly reversed, and in large
7 part that has been related to the rise of contracted
8 streaming.
9 Q. I would like to turn now to your
10 benchmarking analysis. Can you explain how you used
11 benchmarks to inform reasonable mechanical royalty
12 rates?
13 A. I looked for benchmarks that I think are
14 likely to reflect the 801(b) factors. And then I
15 give the interpretation to that fourth 801(b) factor
16 that it would be less disruptive if we were to stay
17 closer, relatively closer to relevant benchmarks.
18 So I want to look at what the relevant benchmarks
19 suggest for royalties and compare them to the
20 current levels.
21 Q. And in this matter, which benchmarks did
22 you identify as appropriate?
23 A. I identified the CD mechanical royalty,
24 the digital download mechanical royalty, and the
25 current royalties that are used for interactive

1 streaming.
2 Q. So two benchmarks?
3 A. It is -- it is -- I think of it as three.
4 The CDs, the digital downloads, the personal digital
5 downloads, the PDDs and the current rates.
6 Q. And when did the parties enter those
7 benchmarks?
8 A. The current interactive streaming rates
9 would have been 2012. And the PDD and CD rates
10 would have been 2016.
11 Q. Could you describe taking each of those
12 in turn, the nature of those two benchmarks?
13 A. Not -- I'm sorry, I am not sure what you
14 are asking.
15 Q. Sure. Were they either the result of a
16 market agreement or a --
17 A. No, those were settlements. But both the
18 -- my understanding is both the current interactive
19 streaming rates and the PDD and CD rates are the
20 result of a settlement, separate settlements.
21 Q. There has been testimony in this case or
22 a phrase used in this case in the briefing and the
23 testimony about the so-called shadow of the
24 compulsory license.
25 What does that phrase mean to you?

1 A. When I think about the negotiations among
2 copyright owners and copyright users with respect to
3 these rates, my understanding is that if there were
4 a failure to reach an agreement, that the parties
5 would have access to this Royalty Board to make a
6 determination about rates.
7 So if the rates were -- if the
8 negotiation were going in a direction that moved the
9 rates too far away from what would be determined by
10 this Board, the relatively disadvantaged party would
11 have the incentive to come before the Board.
12 So I think of the 801(b) factors as being
13 reflected in those settlements.
14 Q. Was it a concern to you in using those
15 two benchmarks or three benchmarks that they were
16 set in the so-called shadow of the compulsory
17 license?
18 A. No, it wasn't a concern. I thought of it
19 as an advantage. I was thinking -- I was looking
20 for rates that I thought were likely to reflect the
21 801(b) factors. And because the 801(b) factors
22 would have determined the disagreement payoff of the
23 parties, of both parties in the negotiation, I would
24 expect those factors to be reflected in the ultimate
25 settlement.

1 JUDGE BARNETT: Pardon me, counsellor.
2 You need to leave that passageway to the emergency
3 door clear, please, at all times. Thank you.
4 JUDGE STRICKLER: Just for clarification,
5 when you say the shadow is not a concern because the
6 parties would be pulled towards what the Judges
7 would do, in fact, they would be pulled to what they
8 predict the Judges would do, right?
9 THE WITNESS: That's right. I agree.
10 JUDGE STRICKLER: All right.
11 BY MR. ASSMUS:
12 Q. Now, we saw before that PDDs and CDs are
13 a shrinking form of distribution. My question is
14 was it a concern to you that one of your two
15 benchmarks, one of your three benchmarks, depending
16 on how you count, was applied to potentially a
17 shrinking market?
18 A. I guess it might have been a concern if
19 it had shrunk already to the point of being some de
20 minimis component of the music industry, but looking
21 at the, for example, the pie chart figures 1 and 2
22 in my written direct testimony, I think they are a
23 substantial component of music revenue. And
24 downloads, in particular, are comparable to
25 interactive streaming.

1 So I think given current economic
2 conditions, they represent reasonable benchmarks.
3 MR. ASSMUS: Your Honor, I am moving into
4 some restricted slides and testimony. Dr. Marx has
5 access to confidential information of all the
6 parties and her report does reflect the confidential
7 information of all the parties.
8 However, I have arranged my direct
9 examination so that we will only reveal Spotify
10 data. And so we would ask that the Spotify internal
11 counsel be permitted to stay.
12 MR. SEMEL: No objection here.
13 JUDGE BARNETT: Thank you. Anyone in the
14 courtroom who does not have permission to see
15 confidential or restricted information, please wait
16 outside. And, Mr. Assmus, your representation is
17 this will only be Spotify restricted information?
18 MR. ASSMUS: Correct. I realize I
19 omitted Mr. Will Page, who is also privy to Spotify
20 information. I would like him to stay as well.
21 JUDGE BARNETT: Certainly.
22 MR. ASSMUS: Thank you.
23 (Whereupon, the trial proceeded in
24 confidential session.)
25

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1 O P E N S E S S I O N
2 BY MR. ASSMUS:
3 Q. Dr. Marx, did either the benchmarking
4 analysis that you conducted or your Shapley value
5 analysis inform the royalty rate structure?
6 A. The benchmarking lightly in the sense
7 that you see in current rates a particular
8 structure, and you take the view of the fourth
9 801(b) factor that is staying relatively close to
10 current structure, would be relatively less
11 disruptive, then we have that benchmark, but
12 otherwise I don't think of those analyses as
13 speaking to the structure of the rates.
14 Q. So the Shapley value analysis doesn't
15 counsel one way or another on the rate structure?
16 A. I don't think of the Shapley value
17 analysis of having anything to say about the
18 structure of the rates, just the levels.
19 Q. And did you do any analysis that would
20 inform the panel with respect to an appropriate rate
21 structure?
22 A. Yes, I did.
23 Q. And what was it that you did?
24 A. I looked at what economic theory has to
25 say about the advantages and disadvantages of

1 various rate structures, such as a percentage of
2 revenue, a per-subscriber rate or per-stream rate.
3 Q. And if we could have the next slide, the
4 final slide, in fact.
5 Does this figure illustrate one of the
6 economic efficiency points you would like to make?
7 A. Yes, it does.
8 Q. And how is it that it does that?
9 A. This is a graphic that probably any
10 introductory microeconomics student has probably
11 seen, but it depicts quantity on the horizontal axis
12 and price on the vertical axis and a demand curve.
13 And economics teaches that the demand
14 curve embodies the marginal willingness to pay of
15 the consumers. So the demand curve embodies some
16 consumers are willing to pay a high amount and other
17 consumers are willing to pay a low amount. And
18 economics teaches that the total surplus, overall
19 economic efficiency is maximized when the price is
20 set equal to marginal cost.
21 In this case, we will think of the
22 marginal cost of an additional stream as being
23 roughly zero. And so --
24 JUDGE STRICKLER: If I could just
25 interrupt you for a second. When you say the

1 marginal cost of an additional stream is zero, are
2 you referring to marginal physical cost?
3 THE WITNESS: I am not sure what you mean
4 by "physical." So the cost of sending the signal,
5 the stream to a listener.
6 JUDGE STRICKLER: That's what I meant by
7 physical cost. I don't know if that's a good way to
8 describe it, but I was trying to distinguish it from
9 marginal opportunity cost.
10 You are assuming from that that there is
11 no additional cost, marginal cost of
12 substitutability that when someone listens to one of
13 the services that's depicted here, otherwise would
14 have -- would have listened and subscribed to some
15 other service?
16 THE WITNESS: That's right. And if we
17 had seen, for example, in the benchmarking that the
18 royalties paid on CDs and DVDs were higher than for
19 streaming, then that starts to be more of a concern,
20 but the royalties are higher for streaming than
21 those DVDs and CDs and DVDs.
22 And in my rebuttal report I focus on the
23 substitution effect relative to a number of other
24 outlets. And those other YouTube and other outlets
25 pay lower royalties than interactive streaming.

1 And so if anything, the opportunity cost
2 is negative or small. So it doesn't seem like
3 that's going to be important in this particular
4 case.
5 JUDGE STRICKLER: Thank you.
6 BY MR. ASSMUS:
7 Q. What lessons do you draw from this
8 economic analysis with respect to the appropriate
9 rate structure?
10 A. This is showing that if you had
11 subscribers, listeners, who were charged zero for an
12 incremental stream, they would choose the efficient
13 level of streaming. And we would capture as surplus
14 all of the colored area here, so that the green and
15 the blue and the reddish area there.
16 However, if a consumer is charged a
17 positive price per stream, then they are going to
18 reduce the number of streams they choose to
19 purchase. You can think of them as being less
20 willing to stream songs that have a low or uncertain
21 value to them.
22 And you are going to get the little dead
23 weight loss, the DWL, triangle in the corner. That
24 is surplus that is not captured. Now, the consumer
25 surplus, the green triangle, is an area that a

1 streaming service can capture part of by having a
2 subscription fee. So if you were a consumer who is
3 going to get surplus from streaming through an
4 interactive streaming service, then you may be
5 willing to pay a subscription fee to be part of that
6 service.
7 The higher-willingness-to-pay consumers
8 would be willing to pay more than
9 lower-willingness-to-pay consumers to subscribe.
10 And there may be consumers whose willingness to pay,
11 particularly their willingness to pay out-of-pocket
12 may be sufficiently low but they are not willing to
13 subscribe to a service, not willing to pay
14 out-of-pocket for a service.
15 JUDGE STRICKLER: Don't you make
16 reference in your report to how ad-supported
17 services could bridge that gap with regard to the
18 dead weight loss?
19 THE WITNESS: Absolutely. So having
20 different means of price discrimination is going to
21 allow greater efficiency to be achieved. If we have
22 a way for low willingness to pay consumers to access
23 music, for example, student discounts, family
24 discounts or ad-supported streaming, where
25 low-willingness-to-pay consumers can still access

1 music in a way that still allows some monetization
2 of that provision of that service.
3 JUDGE STRICKLER: Would it be possible,
4 maybe it is not so, a general uncertain question,
5 would it be possible to depict on this simple
6 diagram what the producer surplus would be, if any,
7 if you had ad-supported services where the consumer
8 was paid nothing or does the platform nature of that
9 make this diagram not applicable?
10 THE WITNESS: I don't think it is a good
11 fit for that. I'd have to think about a useful way
12 to depict it. I have to think about that. I am not
13 sure if this is a good fit for that.
14 JUDGE STRICKLER: Thank you.
15 BY MR. ASSMUS:
16 Q. And in your view, how is it that a
17 percentage-of-revenue structure is consistent with
18 this economic principle?
19 A. Percentage-of-revenue royalty is
20 beneficial for supporting this type of structure,
21 for supporting a payment scheme for consumers that
22 has zero price for incremental streams, and that
23 supports services in -- provides them incentive to
24 try to find ways to serve low-willingness-to-pay
25 consumers.

1 In contrast, if you have a per-subscriber
2 fee, that is going to disincentivize Services from
3 trying to serve low-willingness-to-pay subscribers.
4 A per-stream fee introduces a number of
5 distortions. It provides an incentive for
6 introducing per-stream fees to consumers, which is
7 what creates the dead weight loss triangle in the
8 diagram like this.
9 It introduces incentives for capping
10 streaming, which is a reduction in quantity that
11 would be inefficient. It reduces incentives for
12 Services to attract and retain the types of
13 consumers who are going to stream lots of music.
14 And it takes away incentives for the types of
15 innovative activity that many of the Services have
16 engaged in to try to reduce latency, and so there
17 are fewer delays in between songs, creates an
18 incentive for them to skew curative playlists
19 towards longer songs. There are a number of
20 distortions that the per-stream fee puts in place
21 that can raise a number of concerns with that.
22 JUDGE STRICKLER: A question for you with
23 regard to figure 25. Figure 25 is basically a
24 static analysis, economic analysis, not a dynamic
25 analysis?

1 THE WITNESS: That's right.
2 JUDGE STRICKLER: So one of the problems
3 that's endemic to this intellectual property
4 economics in this particular proceeding, of course,
5 is that even if you are able to tease out
6 willingness to pay all the way down the demand
7 curve, it creates still -- leaves unresolved the
8 dynamic question of how do Copyright Owners, future
9 Copyright Owners get paid and have an incentive to
10 be paid sufficiently so that their costs are covered
11 and whatever profits, normal profits or rents they
12 are able to obtain can be achieved?
13 So how does this analysis -- how would
14 you apply this analysis in a context that still made
15 certain from a rate-setting perspective that we
16 solve the dynamic problem of how to make sure there
17 is sufficient payment to the Copyright Owners?
18 THE WITNESS: This analysis suggests that
19 from the perspective of economic efficiency, that a
20 percentage of revenue royalty is the most
21 beneficial, but you need to make sure that you're
22 measuring revenue appropriately and guarding against
23 mis-measurement of revenue.
24 JUDGE STRICKLER: Separate and apart from
25 the mis-measurement problem, when you say

1 percentage-of-revenue pricing, as an economist you
2 might call that Ramsey pricing? You need to say
3 your answer.
4 THE WITNESS: Oh, Yes, sorry.
5 JUDGE STRICKLER: But whether Ramsey
6 pricing covers Copyright Owners' costs, licensor
7 costs, and whatever profits they are entitled to in
8 the marketplace or able to achieve in an unregulated
9 market, that could just be happenstance, right?
10 There is no reason that Ramsey pricing
11 will necessarily cover the costs and the profits
12 that are necessary for the Copyright Owners to
13 realize, right?
14 THE WITNESS: Okay, I have to think that
15 through. The Shapley value analysis included the
16 costs. So that is looking at a royalty -- that is
17 requiring a royalty rate from copyright users to
18 copyright owners that, first of all, covers all of
19 the copyright owners' costs.
20 JUDGE STRICKLER: Because costs are
21 inputted into the analysis?
22 THE WITNESS: Yes. And then, second of
23 all, gives them on top of those costs a level of
24 profit equal to their Shapley value. So that
25 analysis speaks to payments that would not only

1 cover copyright owners' costs but also give them a
2 level of profit on top of that.
3 JUDGE STRICKLER: But the level of profit
4 would be a level of profit derived from the Shapley
5 analysis, not as you pointed out before, the Shapley
6 analysis is not a market-based, so in the market
7 copyright owners hypothetically could receive a
8 higher profit than what the Shapley value provides.
9 So how do you -- how do you compare, if
10 at all, the market profits versus the Shapley
11 profits?
12 THE WITNESS: I think the profits that
13 the copyright owners would have in an unconstrained
14 market are likely higher than the profits they would
15 have that would reflect the 801(b) factors.
16 JUDGE STRICKLER: What makes you conclude
17 that?
18 THE WITNESS: Because I think of the
19 publishers and the record labels as having
20 substantial market power.
21 JUDGE STRICKLER: And the market power
22 you are talking about now, I know we have talked
23 about market power a lot, which market power are you
24 talking about?
25 THE WITNESS: A combination of three

1 things, I guess. First, they're aggregating the
2 rights to multiple works that combined argued as
3 must have. Second of all, they have a large market
4 share. And, third, they have these ownership
5 linkages that they are combined larger than I think
6 their individual shares and publishing and record
7 labels suggest.
8 JUDGE STRICKLER: Would you include the
9 Cournot complementarity of the sound recording right
10 and the musical works in that power?
11 THE WITNESS: Yes, I would.
12 JUDGE STRICKLER: Thank you.
13 BY MR. ASSMUS:
14 Q. You had mentioned in response to one of
15 Judge Strickler's questions the issue of measuring
16 revenue in a percentage-of-revenue model.
17 Is measuring revenue a concern to you?
18 A. It is a concern to me.
19 Q. And what is it -- you are familiar with
20 Spotify's rate proposal?
21 A. Yes, I am.
22 Q. And does anything in Spotify's rate
23 proposal address the concern of revenue measurement?
24 A. The current structure, as well as
25 Spotify's proposal, includes not just a percentage

1 of revenue, but also an 80 cent per subscriber --
2 the rate is defined as the maximum of 10 percent of
3 revenue and the minimum of 80 cents per subscriber
4 or 21 percent of sound recording royalties.
5 So there is what I think of as a
6 back-stop to the 10.5 percent of revenue.
7 Q. And in connection with your analysis, did
8 you consider whether that 80 cent minimum is set at
9 an appropriate level?
10 A. Yes, I did. As you can see in figure 14
11 in my written direct testimony, when you look at
12 Spotify as a pure play service, 10.5 percent of
13 their revenue is approximately equal to 80 cents per
14 subscriber.
15 One way to think about that is that
16 Spotify is able to monetize its subscribers, its
17 paid subscribers at approximately $7.50 per
18 subscriber month. And 10.5 percent of that is 80
19 cents.
20 So if you think of that is under current
21 economic conditions, the extent to which a pure-play
22 interactive streaming service is able to monetize
23 their subscribers.
24 JUDGE STRICKLER: And when you used the
25 $7.50 per month figure, was that talking about

1 revenues minus non-content costs?

2 THE WITNESS: No, that's just revenues.

3 That's Spotify's $9.99 per month for regular

4 consumers. There is some that have discounts. And

5 I think there are some introductory offer, reduced

6 rates in beginning of your subscription.

7 And so on average, they are collecting

8 $7.50 from each -- per subscriber on average. And

9 that's not taking into account any costs. That's

10 just revenue.

11 JUDGE STRICKLER: That's the equivalent

12 of 80 cents per subscriber?

13 THE WITNESS: Plus or minus a penny, it

14 is 80 cents per subscriber. 10.5 percent of $7.50

15 is roughly 80 cents per subscriber.

16 JUDGE STRICKLER: That would be

17 100 percent of the revenue going to content costs,

18 royalties, or no?

19 THE WITNESS: No. If their revenue is

20 $7.50 per --

21 JUDGE STRICKLER: No. It was a bad

22 question. Let's go on. I'm sorry.

23 BY MR. ASSMUS:

24 Q. Moving on from that issue, is bundling an

25 issue in revenue measurement?

1 A. Yes, it is.
2 Q. And do you understand that's an issue for
3 Spotify or not?
4 A. In the data that I was looking at, I
5 don't believe there were any bundled offerings
6 during that period of time. My understanding is
7 that there is currently an offer that is combined
8 with the New York Times.
9 Q. If we can go back into restricted session
10 very briefly, I will be finished.
11 JUDGE BARNETT: Momentarily, if you do
12 not have access to restricted or confidential
13 information, if you will wait outside, we will go
14 directly into our afternoon recess as soon as these
15 questions are done.
16 (Whereupon, the trial proceeded in
17 confidential session.)
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CONFIDENTIAL SESSION
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1 O P E N S E S S I O N

2 JUDGE BARNETT: Please be seated.

3 Cross-examination, Mr. Semel?

4 MR. SEMEL: Thank you. And we are in

5 open session. I will have a small portion, but not

6 for a while. Hopefully we can stay in open session.

7 I will note that we have some clips we

8 may or may not need from depositions. While the

9 deposition is technically restricted, I have spoken

10 with counsel and there is nothing I would be using

11 from it that would be restricted, so I don't think

12 we would need to clear the courtroom. And maybe we

13 don't even need to get to that.

14 JUDGE BARNETT: Okay. Thank you.

15 CROSS-EXAMINATION

16 BY MR. SEMEL:

17 Q. Good afternoon, Dr. Marx.

18 A. Afternoon, Mr. Semel.

19 Q. You may remember we met before at your

20 deposition.

21 A. Yes, sir.

22 Q. Nice to see you again.

23 A. Good to see you.

24 Q. I will start by offering my condolences

25 to you on your basketball team. If it is any

1 consolation, it busted my bracket too.
2 As you testified, you undertook a
3 benchmark analysis in connection with your report,
4 correct?
5 A. That was one part of it, yes.
6 Q. And that benchmark analysis was focused
7 on rates that were directly tied to Section 115
8 proceedings, proceedings under the 801(b) factors,
9 correct?
10 A. I am not sure what you mean by "directly
11 tied," but I was looking for rates that I thought
12 were likely to reflect the 801(b) factors.
13 Q. And by -- and by rates that were governed
14 by the 801(b) factors, you interpreted that to mean
15 rates determined in connection with regulatory
16 proceedings that were governed by the 801(b)
17 factors, correct?
18 A. Yes.
19 Q. And you rejected the use of rates that
20 were not governed by those factors and thus not
21 determined in connection with regulatory proceedings
22 governed by the 801(b) factors, correct?
23 A. I think I focused on those particular
24 benchmarks, and I rejected the other ones as not
25 being as good as the ones that I focused on.

1 Q. And, for example, your reason for
2 excluding sound recording agreements as benchmarks
3 was because you didn't have a reason to believe that
4 they would reflect the 801(b) factors, correct?
5 A. That's correct.
6 Q. And that's because they are not governed
7 under a proceeding that involves the 801(b) factors,
8 correct?
9 A. Yes.
10 Q. And as part of your analysis, you
11 concluded that you wouldn't have a reason to believe
12 market outcomes would likely reflect the 801(b)
13 factors?
14 A. I agree.
15 Q. Which led you to reject in general
16 benchmarks that were negotiated agreements, correct?
17 A. I didn't think those were the best
18 benchmarks.
19 Q. And your benchmark analysis focused, in
20 particular, on the fourth 801(b) factor, correct? I
21 think you refer to it as the D factor in your
22 report, correct?
23 A. Yes.
24 Q. And that is the one that involves
25 industry disruption, correct?

1 A. That's correct.
2 Q. And you felt that benchmarks that
3 reflected generally prevailing industry practices
4 would be those that are consistent with the fourth
5 801(b) factor, correct?
6 A. No, that doesn't sound quite right.
7 Q. I believe in your demonstrative, I think
8 on slide 1, when you talk about your economic
9 interpretation, you mention using current industry
10 practices as a benchmark to minimize disruption.
11 So really you were not merely looking for
12 things under the 801(b) factors but you were looking
13 for current industry practices, correct?
14 A. There is an intersection there. The
15 current -- one of my benchmarks is the current rate,
16 which both reflects the 801(b) factors and define
17 current industry practice.
18 Q. Right. But you were not looking for
19 benchmarks that did not reflect current industry
20 practice, correct?
21 A. Correct.
22 Q. And when you look at benchmarks that are
23 both determined under 801(b) proceedings and reflect
24 current industry practice, that really leaves you
25 with the current rates, correct?

1 A. I view the PDD and CD rates and the
2 current rates for interactive streaming as all three
3 reflecting both 801(b) factors and current industry
4 practice.
5 Q. Right. But I mean that the focus of your
6 or the principles that you utilized in determining
7 your benchmarks really left you no other option
8 except the current rates under Subpart A, B, and C,
9 correct?
10 A. Given my goals and the analysis, I
11 thought that the three benchmarks that I identified
12 were the most appropriate ones.
13 Q. And your benchmark analysis, in doing
14 your benchmark analysis, you do not evaluate
15 whether, if you were trying to find a benchmark to
16 fulfill another 801(b) factor, such as the second or
17 third factor, whether that might lead you to
18 different benchmarks than the ones you identified as
19 consistent with the fourth factor, correct?
20 A. Okay. I used the benchmark analysis
21 primarily to speak to the fourth 801(b) factor. It
22 is also true that in looking for benchmarks that
23 likely reflect the 801(b) factors, they are likely
24 reflecting all of them, but the focus of my
25 benchmark analysis was to speak to the fourth 801(b)

1 factor.

2 Q. Right. And you did not analyze whether

3 or not different benchmarks might potentially be the

4 conclusion, if you were trying to fulfill the second

5 and third policy objectives, rather than the fourth

6 policy objective, correct?

7 A. I used a different economic

8 interpretation of the first, second, and third

9 801(b) factors, and my interpretation of those was

10 not based on a benchmark analysis.

11 Q. Right. And I am just trying to clarify

12 that your benchmark analysis did not -- that your

13 benchmark analysis as guided by the fourth factor,

14 in fact, does not speak to the second or third or

15 first factors, correct?

16 A. Only to the extent that these benchmarks

17 I identified likely reflect the 801(b) factors,

18 likely reflect all of them, and so provide, through

19 that avenue, they provide some benchmarking to all

20 the 801(b) factors, but I viewed my benchmark

21 analysis as primarily targeted at the fourth 801(b)

22 factor.

23 JUDGE STRICKLER: Is it fair to say that

24 your analysis does not involve finding market rates,

25 and then applying the four factors but, rather,

1 approaches the problem from a different direction?
2 THE WITNESS: That's correct.
3 JUDGE STRICKLER: Thank you.
4 BY MR. SEMEL:
5 Q. And I may have been circling around this,
6 so I am just going to try to do it in the way I did
7 it in the deposition. If you were trying to fulfill
8 the second and the third policy objectives using a
9 benchmark, they would point you to potentially
10 different benchmarks, correct?
11 A. The second and third factors are talking
12 about fair income and fair return and reflecting
13 relative contributions. If you are going to try to
14 approach that through a benchmark analysis, you
15 would want benchmarks that you thought reflected
16 those factors.
17 And I guess if you are doing that, you
18 might end up back with those same benchmarks, to the
19 extent that they embodied all of the 801(b) factors,
20 but I didn't think that was the best way for
21 economics to inform this Court about the second and
22 third 801(b) factors.
23 Q. Understood. And when you said just now
24 that they might lead you to the same benchmarks,
25 they also might not, and that's not a question you

1 analyzed, correct?

2 A. That's correct.

3 Q. And I think you mentioned this on your

4 direct, but I just want to clarify, the benchmarks

5 that you have identified in this case don't speak

6 one way or another to an appropriate rate structure

7 that should be used, correct?

8 A. Only to the extent that the current --

9 the rate structure in the current rates that offers

10 a particular rate structure, and if you think that

11 the fourth 801(b) factor of avoiding disruption

12 means that you might like to stay relatively close

13 to current structures, then that benchmark is

14 informative as to rate structures.

15 But my Shapley value analysis, I think of

16 as not being informative one way or the other about

17 structure.

18 Q. Right. And in a sense it might speak to

19 the idea of rolling the status quo forward, but it

20 doesn't speak conceptually to a particular rate

21 structure, correct?

22 A. The only analysis that I did that speaks

23 specifically from fundamental, economic fundamentals

24 about the rate structure was the analysis I did

25 related to the first 801(b) factor.

1 Q. And a benchmark analysis that was
2 assessing fair outcomes, would generally have, from
3 an economic perspective, some component to it of an
4 analysis of fair market outcomes, correct?
5 A. As I mentioned before, economics doesn't
6 have a unique definition of fair, so it is going to
7 depend on what you mean by "fair."
8 JUDGE STRICKLER: A question for you.
9 And this is a question I will confess that always
10 bothers me.
11 If you've got fair market value because
12 counsel asked the question about fair market value,
13 does fair, in your mind, as an economist, is that an
14 adjective that describes "market value" or does fair
15 describe the type of market that creates the value?
16 THE WITNESS: When I hear the word "fair
17 market value," I as an economist, I think of the
18 three words fair market value as all together, the
19 three of them together, fair market value, as having
20 a particular meaning.
21 And that's thinking of, in valuation
22 exercises, thinking about having a willing buyer and
23 a willing seller in a hypothetical market where
24 there is good information and no compulsion to
25 trade. There is a whole structure behind this

1 notion of fair market value.

2 And I am not attributing any particular

3 meaning to the word "fair" there, that all together

4 those three words mean a set of analyses to me.

5 JUDGE STRICKLER: As you just described?

6 THE WITNESS: Yes.

7 JUDGE STRICKLER: Thank you.

8 BY MR. SEMEL:

9 Q. And you have opined in other proceedings

10 that benchmarks for fair market rates, in fact, the

11 benchmarks arising under the influence of regulatory

12 proceedings are, in fact, not the best benchmarks

13 for determining fair market rates, correct?

14 A. It would depend.

15 Q. Do you recall your testimony in, I think

16 you mentioned earlier, the Pandora versus ASCAP rate

17 court case?

18 A. In generalities, yes.

19 Q. And do you recall whether or not you took

20 a position as to what the best types of benchmarks

21 were in that case with respect to whether they were

22 under the influence of regulatory proceedings?

23 A. Yes. I identified the benchmarks in that

24 matter that I thought were best for the purposes I

25 have in mind.

1 Q. And do you agree that in the context of
2 that case, you felt that the best benchmarks, if you
3 could find them, are benchmarks that arise outside
4 of the influence of the rate court?
5 A. In that structure, looking at fair market
6 value, I was guided by that objective and was
7 looking for fair market value rates. So I thought
8 market-determined rates were most appropriate there.
9 Q. Right. And in this context, in
10 determining fair market rates, you also believe that
11 as an economist, you would prefer to use a license
12 that was negotiated competitively, correct?
13 A. If I were looking for fair market rates,
14 yes.
15 Q. And, indeed, for a rate to be a
16 competitive benchmark, it has to reflect fair market
17 value, correct?
18 A. For it to be a competitive rate, it has
19 to reflect fair market value?
20 Q. I will read you back a Q and A from
21 Pandora. You can tell me if you remember it.
22 A. Okay.
23 Q. "Whatever the presumption, for a rate to
24 be a competitive benchmark, it has to reflect fair
25 market value? Correct."

1 A. In order for me to be comfortable using
2 something that I see as a benchmark, I would want it
3 to reflect fair market value, yes.
4 Q. I think you touched on this a little bit.
5 A. I'm sorry, in that context, where that
6 was the goal.
7 Q. Indeed.
8 JUDGE STRICKLER: You say "in that
9 context." You are referring to the rate court
10 context?
11 THE WITNESS: Yes, sir.
12 MR. ASSMUS: I would object to the
13 foundation. I am not sure, we may be talking past
14 each other, we haven't exactly established the
15 parameters of the Pandora rate court matter that Mr.
16 Semel is discussing with the witness.
17 MR. SEMEL: I think probably, since we
18 have been talking about, it is best to put it into
19 the record. It is Hearing Exhibit 2697. And
20 actually I would just enter it into evidence. I
21 think we have been discussing it. And it is a prior
22 opinion of the witness on -- on benchmarking rates.
23 JUDGE STRICKLER: Is this her oral
24 testimony in that proceeding?
25 MR. SEMEL: It is. It is a transcript of

1 her testimony.

2 JUDGE STRICKLER: Trial testimony?

3 MR. SEMEL: Yes.

4 MR. ASSMUS: I'm sorry, what was the

5 number?

6 MR. SEMEL: H-2697.

7 MR. MARKS: This is her deposition

8 transcript?

9 MR. SEMEL: No, no, the trial transcript,

10 I believe. It is the trial transcript, yeah.

11 THE WITNESS: Can I mention that there

12 was a written direct testimony, which I guess

13 wouldn't be incorporated into the trial transcript?

14 MR. SEMEL: Yeah.

15 MR. MARKS: It is not clear to me why the

16 entire transcript from a totally separate proceeding

17 with different facts, so I object to it going on.

18 If he wants to put particular pieces in, either for

19 impeachment or go directly to the testimony here, I

20 wouldn't object to that, but I don't think it is

21 appropriate to put an entire trial transcript from

22 the case in.

23 MR. ASSMUS: I wanted to second that

24 objection and make an additional foundation

25 objection with respect to that exhibit.

1 MR. SEMEL: The only point I would make
2 is we're obviously putting in reams and reams of
3 documents, so I don't think it is the number of
4 pages that makes the issue.
5 And it is testimony of this witness on
6 really the precise or similar issues that she is
7 talking about in this case, talking about
8 benchmarking, talking about the shadow of the
9 regulatory proceedings.
10 And while we can try to parse out each
11 individual Q and A, we're also bulk entering into
12 evidence here thousands of pages of documents. I am
13 not -- we can go through the process, but I also
14 don't know why that's more efficient than putting it
15 into the record.
16 JUDGE BARNETT: Well, with complete
17 disregard for what we have the ability to ingest --
18 MR. MARKS: I make one other note. It
19 appears that this isn't -- the entire written
20 testimony is not available. Some of it deals with
21 restricted matters from another proceeding and is
22 not part of the record. So it is not clear this is
23 even a complete document.
24 JUDGE FEDER: Speak up a little.
25 MR. MARKS: Sorry. Also objecting this

1 isn't even her complete testimony, some of which is
2 restricted by another proceeding.
3 JUDGE STRICKLER: If it is offered for
4 impeachment, which it sounds like it is, to show
5 conflict between her testimony here and her
6 testimony there, you are going to be reading in
7 particular pieces to us to try to establish the
8 impeachment you are going for, so why can't we just
9 go with whatever it is you are reading into the
10 record rather than putting in the whole transcript?
11 MR. SEMEL: That's fine. I was actually
12 trying to save trial time by putting it into the
13 record and leaving it to the briefing but I could
14 also read portions of it into the record.
15 JUDGE BARNETT: If there are portions you
16 want to use to impeach, then you may use those. We
17 don't need to admit into evidence in this case the
18 entire transcript.
19 MR. SEMEL: That's fine.
20 BY MR. SEMEL:
21 Q. I think we probably did part of it just
22 now, so I think I can move on now and more may come
23 up later.
24 In your direct report at page 42,
25 paragraph 108, you discuss a benchmarking approach

1 involving a conversion ratio from downloads to
2 streams. And I think this -- you touched upon this
3 in your direct examination here as well.
4 And, in particular, you discuss a
5 conversion ratio, PDDs to streams of 1-to-150
6 calculated by the RIAA. And there was some
7 testimony again that you had about this.
8 I just want to look at it a little bit
9 further, and first clarify that before reading, if
10 you can bring up just the whole press release -- oh,
11 I'm sorry. I didn't tell you what the press release
12 is.
13 So, yeah, you were in the right place.
14 Let's bring it back up, and I will get this right.
15 You discuss in paragraph 108, it is
16 really the last line we're talking about, that you
17 used the conversion ratio of PDDs to streams of
18 1-to-150, calculated by the RIAA. And you call it
19 "based on comparative consumption patterns of
20 downloads and streams."
21 So I would like to pull up Exhibit 903.
22 A. Can I just ask why my copy is formatted
23 differently than the one here? The page break is
24 happening at a different place. Is there a reason?
25 MR. SEMEL: Is there something that is

1 restricted versus non-restricted? We're showing the
2 public version on the screen, and I believe the
3 public version actually got formatted slightly
4 differently.
5 THE WITNESS: Okay.
6 MR. SEMEL: That's what I am told.
7 BY MR. SEMEL:
8 Q. Yeah, rather than show the restricted
9 version because sometimes other things on the page
10 might be restricted, we're using the public version
11 on the page.
12 A. No worries.
13 MR. ASSMUS: Do you have a public version
14 for the witness to look at?
15 MR. SEMEL: Again, I think it should be
16 identical, but I think somehow your pagination got
17 off.
18 JUDGE BARNETT: The one that's in
19 evidence is the restricted version. That's the one
20 the witness should be referring to.
21 BY MR. SEMEL:
22 Q. Yes. So if we could bring up
23 Exhibit 903. And this, correct, this is the -- I am
24 going to refer to it as a press release that you
25 consulted in order to get to this conversion ratio,

1 correct?
2 A. That looks like it, yes.
3 Q. And beyond reading this press release,
4 you did not inquire into the methodology used by the
5 RIAA to determine the conversion ratio of 150-to-1,
6 correct?
7 A. I didn't have any information in addition
8 to this on the methodology.
9 Q. And you didn't seek out any information
10 in addition to this, correct?
11 A. I asked if there was more available, and
12 I was told that was all that was available.
13 JUDGE STRICKLER: To whom did you ask?
14 THE WITNESS: My team, my support team.
15 BY MR. SEMEL:
16 Q. By that you mean the consultants that you
17 work with or --
18 A. Yeah.
19 Q. Did you reach out to the RIAA?
20 A. No, I didn't.
21 Q. Or did your support team? And --
22 JUDGE STRICKLER: I don't think you got
23 an answer to that question.
24 THE WITNESS: Sorry, I think it got a
25 little jumbled. No, I didn't reach out to the RIAA.

1 BY MR. SEMEL:
2 Q. And, in fact, we don't know who even
3 wrote this press release, correct?
4 A. I just thought of it as coming from the
5 RIAA.
6 Q. Correct. But we don't know if it was an
7 intern, we don't know the name of the author or
8 authors of this press release, correct?
9 JUDGE BARNETT: I think that was asked
10 and answered, Mr. Semel.
11 MR. SEMEL: I'm sorry.
12 BY MR. SEMEL:
13 Q. And I believe you explained in your
14 deposition that your understanding here is you are
15 in effect looking at the number of times a user
16 plays a CD or PDD to compare with a number of
17 streams, correct?
18 A. That's what I am hoping to reflect, the
19 consumption pattern.
20 Q. Right. So --
21 JUDGE STRICKLER: When you say you are
22 trying to reflect the consumption pattern, are you,
23 in fact, trying, as counsel is suggesting in his
24 question, trying to figure out how many times people
25 listen to a sound recording that they purchase, a

1 download versus how many times they stream or are
2 you looking at market displacement overall?
3 THE WITNESS: I think they are a little
4 different, but both types of measures would be
5 relevant. What I was hoping to get at was if you
6 were in a world where there were only downloads, you
7 would purchase some number of downloads, and if you
8 took that person and put them in a world with only
9 streams, they would stream a certain amount of music
10 and to try to get a conversion between the ownership
11 to access models.
12 JUDGE STRICKLER: You have no background,
13 as you testified on direct and as counsel is
14 pointing out now in his cross-examination, you have
15 no underlying data for how the RIAA came up with its
16 150-to-1 ratio and on direct you said you similarly
17 had nothing from Billboard as well.
18 Then you also referred to the Aguiar and
19 Waldfogel study. I don't want to steal your
20 thunder. Are you going to get to that?
21 MR. SEMEL: I will.
22 JUDGE STRICKLER: Be my guest.
23 BY MR. SEMEL:
24 Q. But just to clarify, you I believe at
25 your deposition explained that your understanding of

1 what you were looking to get at was that you are
2 looking at how many times in essence a consumer is
3 playing the CDD or PDD that they bought, on the one
4 hand, and comparing that with how many streams they
5 would have on a streaming service, correct?
6 A. I am not trying to get it on a
7 song-by-song basis, but a way to convert ownership
8 model to access model and what an appropriate
9 conversion is between the two based on consumption.
10 Q. Okay. And, in fact, can we pull up on
11 the second page the paragraph there? Yes.
12 So am I right that this is the paragraph,
13 really, within this press release that you are using
14 to guide you as to how this ratio is reached,
15 correct?
16 A. That's right.
17 JUDGE BARNETT: Are you offering 903?
18 MR. SEMEL: I am -- I believe it is
19 already in.
20 JUDGE BARNETT: Is it already in?
21 MR. SEMEL: Yes, it is already in
22 evidence.
23 JUDGE BARNETT: Thank you.
24 BY MR. SEMEL:
25 Q. And it mentions at the top a variety of

1 factors. And I just want to look at them.
2 When it says streaming and download
3 consumption patterns, is it your understanding --
4 you understand that there are different ways that
5 those terms could be interpreted, correct?
6 A. I suppose so.
7 Q. And did you do an analysis or an
8 evaluation of whether the different ways you might
9 interpret that might have different impacts on your
10 analysis in your report?
11 A. I considered how different conversion
12 factors, 150 versus 137 versus other numbers, I
13 considered how that would affect my results. I
14 don't think I did the comparison that you are asking
15 about.
16 Q. But, again, when it says comparative
17 consumption patterns, you don't know if it is
18 comparing, in fact, how many times people listen to
19 a CD or how many different CDs they listen to,
20 correct?
21 A. I don't have visibility into their
22 methodology, other than what's here.
23 Q. Right. Or, in fact, consumption, right,
24 am I right that in maybe a basic economic term, the
25 consumption of a CD would take place when it is

1 purchased, right? I mean that's when the economic
2 transaction takes place, whether you then listen to
3 it or not, you have consummated your transaction
4 when you purchased?
5 Am I correct that you don't know whether
6 that by consumption there, they are talking about
7 purchases or then utilization of the CD after it is
8 purchased?
9 A. Okay, I disagree with how you are
10 describing how an economist would view consumption.
11 So if I think of a flow of utility from my ownership
12 of a CD, that utility is going to come over time as
13 I access the CD.
14 I don't have visibility into the
15 methodology of what they are thinking of precisely
16 in terms of their download consumption patterns,
17 other than what's here.
18 Q. Okay. And then just to wrap it up, what
19 was your -- I assume you made an assumption as to
20 what they meant by streaming and download
21 consumption patterns, even though you didn't know, I
22 assume you concluded with some sort of an assumption
23 as to what it meant and what was that conclusion?
24 A. I concluded that this was a reasonable
25 conversion ratio to consider for evaluating one of

1 my benchmarks. It appears to be the industry
2 standard used by the RIAA. It is used by Billboard.
3 Apparently it is used by the publishers.
4 So it seemed a reasonable conversion
5 ratio to use. And, of course, I checked it with
6 sensitivity analyses, looking to the economics
7 literature. And it is one of multiple benchmarks,
8 it is consistent with the other benchmarks. So I
9 thought it was informative to use the 150-to-1
10 conversion.
11 JUDGE STRICKLER: It is an RIAA figure
12 and you just testified that you understood that the
13 publishers used it as well. What do you mean by
14 that?
15 THE WITNESS: I saw a document after I
16 completed my written direct testimony --
17 JUDGE STRICKLER: Let's wait on that for
18 a second. Is it anywhere in your supplemental
19 testimony or in your rebuttal testimony?
20 THE WITNESS: No, sir, not by me.
21 JUDGE STRICKLER: Do you know if -- do
22 you happen to know whether it is in the record?
23 THE WITNESS: No, sir.
24 MR. SEMEL: I can say it is actually not
25 in the record.

1 JUDGE STRICKLER: If you don't -- if it
2 is not in your testimony, let's not have you testify
3 to it.
4 BY MR. SEMEL:
5 Q. And in the 150 of the 150-to-1, do you
6 know what that 150 represents?
7 A. Other than what's here, I don't have any
8 additional interpretation.
9 Q. And your interpretation from this is that
10 the 150 represents what?
11 A. It says 150 on-demand streams.
12 Q. I understand. But streams of what?
13 A. Music.
14 Q. Do you understand that it also includes
15 video streams?
16 A. My thinking was that this was about
17 music, since they are using it for gold and platinum
18 albums and Billboard is using it to define the top
19 songs.
20 Q. But if you look a couple lines up you
21 will notice that it says it is, the album award
22 formula is 1500 on-demand audio and/or video song
23 streams.
24 And do you know what percent -- you don't
25 know, I guess, what percentage of the 150 would be

1 video streams as opposed to audio streams, correct?
2 A. Well, they are using 150-to-1 to convert
3 streams of songs to downloads of songs. And that's
4 how Billboard is using it. So it seems to be an
5 appropriate conversion factor for me to consider.
6 Q. And do you know the length of -- you
7 don't know the length of time of the stream that
8 counts for a stream to be part of the 150, correct?
9 It doesn't say it here --
10 A. I don't see any extra information on
11 that.
12 Q. As far as you know a nanosecond stream
13 counts towards the 150 in the 150-to-1, correct?
14 A. I would doubt that. I can't point you to
15 any text that defines it, but RIAA and Billboard are
16 using this conversion, and I think it would be
17 unlikely they would be comfortable with including
18 150 nanosecond streams as an equivalent of the
19 download.
20 Q. But that's entirely speculation on your
21 part, correct?
22 A. It doesn't really feel like speculation
23 to me. It seems like in a sensible assumption,
24 given how this conversion is being used in the
25 industry.

1 Q. Under the current regulations under
2 Section 115, do you know what counts as a stream?
3 A. My understanding is that the Services are
4 reporting streams of 30 seconds or longer to HFA.
5 Q. And do you know whether or not the
6 current regulations count a stream as a stream that
7 is only 30 seconds or more?
8 A. I am not sure what you are asking.
9 Q. I am asking whether you know if under the
10 current regulations of Section 115, whether the
11 definition of a stream includes a nanosecond stream?
12 A. I'm not sure I'm the right person to try
13 to interpret the legal document. My understanding
14 is that the Services when they report numbers of
15 streams to HFA, they are reporting streams of 30
16 seconds or longer.
17 Maybe I shouldn't speak for all the
18 Services. That's my understanding of what Spotify
19 is doing.
20 Q. And if it was the case that the current
21 regulations defined streams to include even
22 nanosecond streams, would that change your opinion
23 as to whether it is reasonable to assume that that
24 might also be included in this ratio by the RIAA?
25 A. I think it is unreasonable to assume that

1 the RIAA and Billboard are using conversion factor
2 that is based on nanosecond streams.
3 Q. And there is another factor here, which
4 is the historical impact on the program. Did you
5 make any assumptions as to what that meant?
6 A. Can you point me to exactly what you are
7 asking me?
8 Q. It is the second line, I'm sorry, I went
9 back. I am all in this paragraph.
10 "After a comprehensive analysis of a
11 variety of factors, including streaming and download
12 consumption patterns and historical impact on the
13 program," do you know or did you make any
14 assumptions for the purposes of your analysis as to
15 what "historical impact on the program" meant?
16 A. I don't think I made any particular
17 assumptions.
18 JUDGE STRICKLER: Do you know, did you
19 make any assumption of what the phrase "the program"
20 meant?
21 THE WITNESS: I assumed it meant their
22 awards program, but I am not sure it is particularly
23 important, given that I -- this appears to be --
24 this 150-to-1 appears to be the industry standard in
25 what is being used to do this conversion, but that's

1 trying to provide some explanation for the type of
2 analysis they did in developing it.
3 BY MR. SEMEL:
4 Q. And after the little break there, it also
5 talks about a consultation with a myriad of industry
6 colleagues. Did you have any -- did you make any
7 assumptions as to what the purpose of that was in
8 terms of analysis or what that meant in terms of
9 your analysis?
10 A. I don't think I made any particular
11 assumptions about it, other than what it says.
12 Q. And did you make any assumptions as to
13 how many they would have meant in a myriad?
14 A. No.
15 Q. Can we look at the bottom paragraph of
16 this page. Keep going. Keep going.
17 There you see the word myriad again,
18 actually, towards the bottom of that paragraph. It
19 says, "The RIAA uses a myriad of social media
20 platforms; Twitter, Facebook, Instagram, Flipagram,
21 and a YouTube page."
22 So from this would you maybe think that a
23 myriad might be five in the minds of the RIAA?
24 A. I didn't reach any conclusions about
25 their use of the language.

1 Q. And it didn't impact your analysis
2 whether or not this rate was potentially based in
3 part on consulting with five people in the industry?
4 A. I believe that in the context that I was
5 using this, that kind of thing is not something that
6 I think puts me in the position of questioning the
7 usefulness of this conversion ratio.
8 Q. And do you know who the members of the
9 RIAA are?
10 A. I don't know how their membership is
11 defined.
12 Q. But you understand them to generally be
13 record labels, correct?
14 A. Representatives of the recording music
15 industry. I presume that record labels are part of
16 that. I don't know if there are others as well.
17 Q. And did you do any evaluation of whether
18 members of the RIAA have an economic interest or
19 stake in what the conclusion rate is?
20 A. I wouldn't think there would be any
21 particular bias. They must have some artists who
22 sell primarily downloads and some artists that sell
23 primarily over streaming platforms, maybe based on
24 different demographics. So I don't see why they
25 would have any particular bias for favoring

1 downloads versus streams.
2 I would think they would have an
3 incentive to get it about right.
4 Q. And you don't know whether or not they
5 have -- did you not -- withdrawn. Sorry.
6 You didn't evaluate whether there are --
7 there is an economic interest on the labels in
8 whether or not artists get gold or platinum
9 certifications?
10 A. Again, I don't think this conversion
11 ratio would affect which -- might affect which
12 artists are identified as gold or platinum, but as
13 you change it, it is going to favor artists that
14 have most of their listening based on downloads
15 versus artists that have most of their listening
16 based on streams.
17 And I don't see a reason why they would
18 particularly want to favor one set of their members
19 over another. So I think their incentive would be
20 to get it about right.
21 Q. And you didn't evaluate whether or not
22 record labels have additional bonus or payment
23 obligations to their artists, depending on whether
24 they get gold or platinum certification?
25 A. I don't have a lot of visibility into the

1 publishers or the record labels' relationships with
2 their artists and music songwriter clients.
3 Q. But in an industry where consumption is
4 moving to streaming, a high conversion ratio would,
5 in fact, reduce the number of people who get gold
6 and platinum certification, correct?
7 A. Well, they increased it recently. So I
8 am not really sure what you are arguing.
9 Q. Indeed, an increase in the ratio raising
10 the number of streams that equal a download would
11 reduce the number of people who are achieving gold
12 and platinum certification, correct?
13 JUDGE STRICKLER: If streaming is
14 increasing relative to downloads?
15 MR. SEMEL: Absolutely. Absolutely.
16 THE WITNESS: And I think that's right.
17 BY MR. SEMEL:
18 Q. And, therefore, if record labels have
19 additional bonuses and payments tied to those
20 certifications, they have an economic interest in
21 the conversion rate being higher, correct?
22 A. I guess the record labels might be able
23 to avoid payments if what you say is right, that the
24 payments tied to this gold and platinum status, and
25 if they are able to manipulate the number of artists

1 that receive that gold and platinum status.
2 Q. And if we look at --
3 A. I don't know that the RIAA has a similar
4 incentive.
5 Q. But to clarify, these weren't things that
6 went into your analysis, correct?
7 A. I'm sorry, what are the things that you
8 are asking?
9 Q. The things we're talking about were not
10 considerations that you looked into in your
11 analysis, correct?
12 A. I was focused on it being an industry
13 standard used by the RIAA, used by Billboard, and
14 consistent with the other benchmarks that I
15 considered and consistent with the economics
16 literature.
17 Q. And --
18 JUDGE STRICKLER: Excuse me, when you say
19 "consistent with the economic literature," I know
20 you have mentioned the Aguiar and Waldfogel article.
21 Is that the economic literature you are talking
22 about?
23 THE WITNESS: That's the only one I know
24 of that speaks to this.
25 JUDGE STRICKLER: Thank you.

1 BY MR. SEMEL:
2 Q. If we look at the very end of that
3 highlighted paragraph at the top, it notes that the
4 analysis and the determination of a formula is based
5 on comparative consumption patterns, not marketplace
6 value, correct?
7 A. That's what it says.
8 Q. And you understood that this is -- this
9 formula has nothing to do with the value of streams,
10 correct?
11 A. I took it to be based on comparative
12 consumption patterns, like they say.
13 Q. But comparative consumption patterns, not
14 marketplace value?
15 A. Right. I read those words. I understand
16 that that's what they meant the formula to reflect.
17 Q. And in the middle of that paragraph, you
18 see a sentence that says "also effective today,
19 RIAA's digital single award ratio will be updated
20 from 100 on-demand streams equals one download to
21 150 on-demand streams equals one download to reflect
22 the enormous growth of streaming consumption in the
23 two plus years since that ratio was set."
24 Do you understand the economic rationale
25 for increasing the ratio as people stream more?

1 A. I thought they were trying to get the
2 conversion right and reflect comparative consumption
3 patterns and that those consumption patterns were
4 evolving over time.
5 JUDGE STRICKLER: Wouldn't the ratio go
6 in the other direction if there is a growth of
7 streaming consumption on the basic economic
8 analysis?
9 THE WITNESS: They seem to be devaluing
10 an individual stream relative to a download.
11 JUDGE STRICKLER: Does that make sense to
12 you from an economic point of view, given they are
13 saying, given what they are claiming to be enormous
14 growth of streaming?
15 THE WITNESS: If they -- yeah, I think it
16 could make sense because they are thinking about
17 streaming is becoming easier and better features,
18 less expensive, better wireless Internet, available
19 on more devices, and so the significance of an
20 individual stream relative to the significance of
21 digital download is, is reduced.
22 JUDGE STRICKLER: Wouldn't that be a
23 reduction in marketplace value per stream rather
24 than a reduction in consumption patterns?
25 THE WITNESS: The marketplace value would

1 also depend on how much the people subscribing to
2 the subscription services were paying for the
3 service.
4 JUDGE STRICKLER: And that's not
5 referenced here?
6 THE WITNESS: I think it could be
7 different, yeah.
8 JUDGE STRICKLER: Counsel?
9 MR. SEMEL: Thank you.
10 BY MR. SEMEL:
11 Q. You have referenced now a couple of times
12 the Aguiar and Waldfogel paper. And if we could
13 bring up Exhibit 909. This is the paper you are
14 talking about, correct? You can look at it in your
15 book. You should have a paper copy if you don't
16 want to rely it on the screen.
17 A. I haven't seen it with that particular
18 cover page.
19 Q. Do you want to take a look at it to --
20 A. Go ahead.
21 Q. And this is a working paper, correct,
22 that was not published in a peer-reviewed journal,
23 correct?
24 A. That's correct.
25 Q. And you, I think you testified in your

1 deposition, you do not have the ability to agree or
2 disagree with the particular numbers in this paper,
3 correct?
4 A. That's right. I didn't have the
5 underlying data.
6 Q. And you are not vouching for the accuracy
7 of the results of the study, correct?
8 A. That's correct.
9 Q. You do not replicate the study, correct?
10 A. That's correct.
11 Q. And you did no empirical investigation,
12 you just read the paper, correct?
13 A. That's right.
14 Q. Although the paper involves a review of
15 Spotify's streaming data in large part, did you
16 discuss with Spotify getting access to their data to
17 replicate the study?
18 A. My understanding is this was publicly
19 available Spotify data, so I am not exactly sure
20 what caused this particular set of data to be
21 publicly available.
22 Q. Well, did you note, do you recall the
23 authors noting that their data fell short of the
24 ideal in part because they didn't have access to
25 more streaming data from Spotify?

1 A. I recall something like that, yes.
2 Q. And did you talk with Spotify about maybe
3 getting the missing data and doing an analysis that
4 was more detailed?
5 A. No, I didn't pursue that analysis.
6 Q. Now, you mentioned in connection with
7 this article a ratio, conversion ratio of 137-to-1.
8 Correct?
9 A. That's correct.
10 Q. But there is, in fact, more than one
11 conversion ratio that they discuss in this paper,
12 correct?
13 A. Yes, that's correct.
14 Q. And, in fact, they found another
15 conversion ratio of 43-to-1, correct?
16 A. I don't remember the number. Perhaps you
17 are talking about the CD conversion? I am not sure
18 which number you are referring to.
19 Q. I think you will find it on page -- I
20 think it is going to be on page 15 or 21. On 21,
21 I'm sorry, on page 21, if you look in the top -- I
22 mean, obviously this is a long academic paper, so
23 we're going to be jumping into the middle of a
24 paragraph.
25 But in the middle of that top paragraph

1 you will see it discusses some coefficients and then
2 a result that it takes 43 Spotify spins to reduce
3 digital track sales by one. And I think if you look
4 on the page before, this is referred to, maybe this
5 refreshes your recollection, it is referred to by
6 them as their matched aggregate sales analysis.
7 Do you recall this?
8 A. I would need to read through this again
9 carefully. The analysis that's depicted in table 37
10 on page 37 is the one with the 137, is the number
11 they point to as the displacement of PDDs for
12 streams, so that was what I focused on.
13 Q. Right. But, in fact, they do two
14 analyses?
15 A. They do a number of analyses. They look
16 at piracy. They look at a number of things.
17 Q. Right. But as they note on page 20 at
18 the beginning of their aggregate results, that they
19 have two aggregative approaches. And one of them is
20 this matched aggregate sales number which leads to
21 43-to-1, and a second approach, this is again on
22 page 20 under the heading 5.2, "a second approach is
23 to link overall sales and piracy, aggregating across
24 all songs, not just those we can match in Spotify,
25 with our index of Spotify streaming, the sum of the

1 streams of the top 50 songs by country week."
2 And isn't it correct that that second
3 approach is the one that leads to 137-to-1?
4 A. I'm sorry, I would have to take a moment
5 and really reread this because it is the 170 --
6 sorry, 137 number that the authors highlight in the
7 abstract and throughout the paper, I think in their
8 conclusion as well. And that was what I focused on.
9 They do a number of analyses. But I
10 don't have the particular one that you are talking
11 about loaded up in my head.
12 Q. Okay. You did notice Table 7, you noted,
13 which is on page 37, as being the table that
14 represents what you were talking about, which led to
15 the 137-to-1, and you will note that that has as the
16 number of observations, 86, which is about part way
17 through the page.
18 Do you see that?
19 A. I see that.
20 Q. And, in fact, again, you may not have it
21 in your mind but Table 5 on the page two pages
22 before also is, again, you will see a similar title,
23 which is the other survey, rather, I should say, the
24 first one they did that led to 43-to-1 and you will
25 notice it has significantly more observations,

1 correct? In fact, 719 observations for a number of
2 its -- I am not going to get into how to describe
3 the different columns in the chart.
4 A. Regression specifications.
5 Q. But, in any event, there were a larger
6 number of observations in the first aggregate number
7 that they used that led to 43-to-1?
8 A. Again, I just don't have that analysis
9 fresh in my mind. I'd have to sit down and reread
10 that part to talk about it. Sorry about that.
11 Q. And do you recall in the 137-to-1 what
12 was being -- how they were comparing the CD and like
13 what date -- I'm sorry, withdrawn.
14 Do you recall for the 137-to-1, what data
15 sets they were using to get their 1 and what data
16 sets they were using to get their 137?
17 A. My recollection, and I guess we can dig
18 into this, is that they had data on streams and PDD
19 sales from 2013 to 2015 for a particular set of
20 songs. My recollection is it was the top 50 songs
21 on Spotify.
22 And they ran the regressions that are
23 specified in Table 7. And they are looking at the
24 coefficient on streams. Digital tracks regressed on
25 streams and looking at that coefficient on streams.

1 Q. Right. And in connecting the top 50
2 songs and the top purchases and the top -- sorry,
3 the top 50 downloads and the top 50 streams, those
4 were not necessarily the same 50, correct? When I
5 say they were not necessarily the same 50, I mean
6 they were not necessarily the same 50 songs,
7 correct?
8 A. I'd have to go back and look at their
9 data. It may have been the same 50 songs. I am not
10 sure.
11 Q. And, in fact, what we referred to earlier
12 as the matched aggregate approach, which is what led
13 to the 43-to-1, by matched there, that's what they
14 meant by actually matching the songs to the right
15 song, comparing the same song for CDs or PDDs and
16 the same song for streams, correct?
17 A. It could be. I'm sorry, I just don't
18 have that other analysis in my head.
19 Q. Do you recall whether you considered this
20 in your analysis in your report?
21 A. Yes. I read this whole paper and the --
22 and thought about it. And Aguiar and Waldfogel come
23 back to the measure they are putting forward as a
24 result of this analysis, a conversion of 137-to-1.
25 And that's what I used for my sensitivity analysis.

1 Q. And when you say "sensitivity analysis,"
2 I am correct you are distinguishing that from the
3 RIAA ratio which was your primary, shall we call it,
4 benchmark, correct?
5 A. Conversion factor that I used for the
6 tables that are in my written direct testimony use
7 that 150-to-1, but I also performed the calculations
8 with the 137-to-1. And they point in the same
9 direction of benchmark royalty rates being lower
10 than current levels.
11 Q. And you understand the Aguiar/Waldfogel
12 paper to be -- withdrawn.
13 The 137-to-1 in the Aguiar/Waldfogel
14 paper, what do you understand that to be a ratio of?
15 A. The authors describe it as 137 Spotify
16 streams appear to reduce track sales by one unit.
17 Q. So you understand it as, in essence, a
18 displacement or a substitution analysis, correct?
19 A. Yes, and consumption-based. They are
20 counting units, not dollars.
21 JUDGE STRICKLER: Were you just reading
22 from it?
23 THE WITNESS: I was reading from the
24 abstract of the paper.
25 BY MR. SEMEL:

1 Q. And I am going to get to where you just
2 read from, so I make sure I'm on the same page. And
3 when it says track sales there, you understand that
4 to mean digital tracks, correct?
5 A. Yes, I do.
6 Q. And you understand that this does not
7 include displacement of digital albums, correct?
8 A. My recollection is that it is just
9 individual tracks, individual songs, not albums, but
10 I'm not completely sure I'm remembering that right,
11 but that's my recollection.
12 Q. Right. So that the 137 streams displaces
13 one digital download, but may also be displacing
14 digital albums and that's not captured in the
15 137-to-1, correct?
16 A. My recollection is that it is just based
17 on individual downloads, but I'm not completely sure
18 of that.
19 Q. And if I could turn your attention to 22,
20 page 22 of the report, this might refresh your
21 recollection. If you look at the very last part of
22 the paragraph before the section 6 begins, it notes
23 that "the coefficients for digital track sales are
24 generally higher than the coefficients for albums,
25 but many of the album coefficients are also negative

1 and significant. Our best estimate indicates that
2 an additional 137 streams displaces one track sale."
3 So you see there, they are making a
4 difference between track sales and albums, but they
5 are only noting their 137 streams is displacing a
6 track sale, correct?
7 A. Okay. This is the sentence I was looking
8 for before. That's their best estimate is the 137
9 streams displacing one track. And then in my
10 analysis I break an album into its multiple tracks,
11 and then apply the 137 per track.
12 My recollection is they run separate
13 regressions, they have a CD regression and a
14 separate digital download regression. So they don't
15 have a single regression that tries to take into
16 account simultaneously these substitute products.
17 Q. Correct, right. So this is measuring a
18 displacement of one track sale, it is not measuring
19 the displacement of all the other products that
20 might be bought, including CDs or albums?
21 A. Is that a question?
22 JUDGE BARNETT: Was that a question?
23 MR. SEMEL: Yes, I'm sorry.
24 BY MR. SEMEL:
25 Q. I said -- yes. I can rephrase it.

1 So I just want -- I am trying to wrap
2 this up to make sure we're on the same page. The
3 137-to-1 is in your understanding a measurement of
4 how many digital track downloads are displaced and
5 does not take into account how many CDs are
6 displaced or how many digital albums are displaced?
7 A. I'm working from the results in this
8 paper. Their best estimate indicates that an
9 additional 137 streams displaces one track sale. So
10 I think that conversion ratio is one worth
11 considering. And I think it is informative.
12 My understanding is that they have done
13 separate regressions, so it is not that it doesn't
14 -- I'm not sure you can conclude from what they have
15 done that that 137 is somehow deficient as a
16 conversion ratio because they have done analyses
17 separate for CDs versus digital downloads of
18 singles.
19 Q. Okay. And that same uncertainty holds
20 for the 43-to-1 ratio that they concluded in their
21 aggregate matched study, correct?
22 A. I'm sorry, I just don't recall what
23 underlies that other analysis. I do recall they
24 come back to the 137 as the estimate they are
25 putting forward as a result of the research overall.

1 I am just not in a good position to answer questions
2 about the other one.
3 Q. If we can move on to page 44 of your
4 direct report, you discuss this also a little bit in
5 your direct examination, that the analysis you did
6 involving utilizing the retail prices of digital and
7 physical singles and comparing them with the Subpart
8 A mechanical royalty, that that's put in your figure
9 23, correct?
10 A. I think I lost track. It was a long
11 sentence.
12 Q. Yes, you are right. It is my fault.
13 A. I think it was correct.
14 Q. Okay. Apologies for the run-on sentence.
15 The Subpart A royalty rate is a fixed
16 fee, correct, penny rate?
17 A. I am not sure what you mean by a penny
18 rate.
19 Q. How about I just go with fixed fee.
20 A. Lovely.
21 Q. And for -- under Subpart A, the label is
22 the licensee of the musical work in those
23 situations, correct?
24 A. My understanding is that the payment, the
25 total payment goes to the record label, and that

1 they pay 9.1 cents for streams under five minutes to
2 the publisher.
3 Q. And with a penny rate, the label pays the
4 same amount in mechanical royalties regardless of
5 what they ultimately sell their sound recording for,
6 correct?
7 A. I think that's right.
8 Q. Some are more successful than others,
9 correct?
10 A. Presumably.
11 Q. And some sell tracks for $1.29, have you
12 heard of that price point?
13 A. I have heard of that.
14 Q. And the 99 cent price point?
15 A. I have heard of that.
16 Q. And the 69 cent price point?
17 A. I don't have any experience with that
18 one.
19 Q. Okay. And are you familiar with
20 eMusic.com?
21 A. No.
22 Q. At price points at 49 cents?
23 A. Don't know about that one.
24 Q. But, in any event, assuming all those
25 price points are, in fact, price points in the

1 marketplace, under the statutory rate of Subpart A,
2 the 9.1 cents is being paid or as you calculated it
3 the 9.5 cents on average is being paid regardless of
4 what the label makes off of the sale of the track,
5 correct?
6 A. That's my understanding. It was 9.6
7 cents, I think, and I think you said 9.5.
8 Q. And you utilize for this comparison, you
9 start with a per -- you start with a retail
10 per-track price, you use $1.10 for digital tracks,
11 but that's not the amount of money that the label
12 itself receives, correct?
13 A. I don't have documents to point you to on
14 the details of that. I think you are asking me
15 about the transaction between the service that is
16 facilitating the download and the payment to the
17 labels. I am not sure I can answer that.
18 Q. Yeah. As part of your analysis, did you
19 look into what the actual amount of money that was
20 received by the licensee under Subpart A is, as
21 opposed to the retail price of the track?
22 A. I used the retail price.
23 JUDGE STRICKLER: Why wouldn't it be
24 better to use the net price that's actually received
25 by the record company, say for argument's sake,

1 there is a download on the Apple iTunes store and
2 the label keeps 70 percent of it as opposed to 100
3 percent. Why wouldn't it be better to use
4 70 percent of $1.29 or whatever the download price
5 is?
6 THE WITNESS: Because I want to use it as
7 a benchmark relative to total revenue. So something
8 that is going to be comparable to the $9.99 that
9 gets paid for a subscription streaming service, so
10 what percentage of the amount that the consumer pays
11 is going to musical works rightsholders.
12 JUDGE STRICKLER: Does it matter that
13 under Subpart B that some costs associated with
14 goods sold are deducted from the revenue base? And
15 if you pardon the expression to make an
16 apples-to-apples comparison, that you would need to
17 look at the amount that Apple would take as, in my
18 example, as a cost of doing business for the record
19 companies?
20 THE WITNESS: I'm trying to look at
21 something that is going to be a good benchmark for
22 -- let me think about what I am going to compare it
23 to.
24 So I am going to compare this to the
25 musical works royalty that Spotify pays as a

1 percentage of the revenue that it gets.

2 JUDGE STRICKLER: And that is a defined

3 regulatory phrase, revenue, the revenue base?

4 THE WITNESS: I assume it is defined in

5 the regulations. I am thinking of it as the -- when

6 I look at their financials, I see the revenue that

7 they have. And so I want to look at the -- and

8 that's revenue coming from the retail sales of their

9 subscription service.

10 So what I am going to compare this to is

11 musical works royalties as a percentage of the

12 retail sales. And I am using for the denominator

13 for CDs and DVDs the retail sales amounts as given

14 to me by the RIAA. That seems to me the right

15 comparison.

16 JUDGE STRICKLER: Thank you.

17 BY MR. SEMEL:

18 Q. But, again, under Subpart A, the licensee

19 is going to pay the same amount to the musical works

20 owner regardless of what amount of revenues they are

21 able to sell their product for, correct?

22 A. That's my understanding.

23 Q. I'd like to turn to a passage in your

24 written direct report on page 40. It is paragraph

25 98. You write that "setting royalties as a

1 percentage of revenue has a potential downside, if
2 interactive streaming revenue is difficult to
3 separate from other forms of revenue. In that case,
4 basing royalties on the number of subscribers or
5 streams might serve the purpose of defining royalty
6 payments more clearly."
7 Do you see that?
8 A. I do see that.
9 Q. And you have noted that there are, in
10 fact, concerns with the transparency of revenue with
11 at least some of the Services currently in the
12 interactive streaming market, correct?
13 A. That's correct.
14 Q. And that would include at least Apple,
15 Google, and Amazon in your mind, correct?
16 A. Yes.
17 Q. And iHeart media as well, correct?
18 A. I suppose so. I haven't spent a lot of
19 time thinking about them in this matter.
20 Q. So now I believe when we did this in your
21 deposition, we went with the term "diversified
22 companies" to represent these types of companies
23 that are what we might call non-pure play. So how
24 about we stick with that term?
25 A. That works for me.

1 Q. So with diversified companies, you can
2 have problems capturing all of the value
3 attributable to music, correct?
4 A. You can have trouble if you rely on a
5 percentage of revenue royalty with no back-stop.
6 Q. Right.
7 A. If you have a back-stop in place, that
8 ameliorates that.
9 JUDGE STRICKLER: Ameliorates but doesn't
10 eliminate it?
11 THE WITNESS: The --
12 JUDGE STRICKLER: I am asking her a
13 question.
14 MR. SEMEL: Oh, sorry.
15 JUDGE STRICKLER: Is that so?
16 THE WITNESS: If your target is to
17 collect for musical rights Copyright Owners
18 10.5 percent of revenue where you want to be
19 capturing the appropriate measure of revenue there,
20 if you think of a pure-play service like Spotify,
21 their only profit center is interactive streaming
22 services, you would expect them to be monetizing
23 that streaming service to the extent possible.
24 They're, under current economic
25 conditions, able to recover approximately $7.50 per

1 subscriber. So if you were -- and if look at figure
2 14 in my written direct testimony, you can see that
3 the 10.5 percent of Spotify's revenue is
4 approximately the same as 80 cents per subscriber.
5 So if another company were to use music
6 as a loss leader to use their standalone
7 subscription service as a loss leader and recover
8 less than Spotify is doing per subscriber, that 80
9 cent per subscriber is going to bind.
10 So there is not going to be a way with
11 this particular back-stop for the diversified
12 Services to profit, to reduce their royalty by using
13 music as a loss leader if they go below the level
14 that we see Spotify able to monetize.
15 JUDGE STRICKLER: So the percentage of
16 revenue rate is economically in the nature of an ad
17 valorem tax, right?
18 THE WITNESS: That's correct.
19 JUDGE STRICKLER: So the way you are
20 describing it is sort of like an alternative minimum
21 tax, isn't it, with base?
22 THE WITNESS: Yes, it is.
23 JUDGE STRICKLER: Thank you.
24 BY MR. SEMEL:
25 Q. And, in fact, you opined about this issue

1 in the Pandora/ASCAP proceeding that we were
2 discussing earlier, correct?
3 A. Yes.
4 Q. And in that case you opined that the
5 royalty revenue base for Apple would need to take
6 into account whether the music used is generating
7 other revenue streams for Apple, correct?
8 A. In that proceeding we were only looking
9 for a percentage-of-revenue rate. There were no
10 back-stops under consideration. And so the revenue
11 mis-measurement loomed large there.
12 And it is a larger issue for
13 non-interactive streaming than interactive
14 streaming, because they are viewed as being more
15 complementarities between non-interactive streaming
16 and the Apple iTunes store.
17 So there those concerns led me to
18 conclude that the royalty that Apple was paying was
19 not a particularly good benchmark for a strictly
20 percentage-of-revenue royalty for Pandora to pay.
21 Q. And in your analysis you contrast these
22 sorts of diversified companies with what you call
23 pure plays, correct?
24 A. That's correct.
25 Q. And by "pure plays," you mean companies

1 where all of the revenue is related to music,
2 correct?
3 A. Roughly, yes.
4 Q. And what makes them different is that you
5 believe that avoids the measurement problem because
6 all of the companies' revenues are included in the
7 revenue base, correct?
8 A. It goes a long way towards avoiding the
9 measurement problem, yes.
10 Q. That's right. And for pure-play
11 services, it is your understanding that the
12 definition of the revenue base for royalties
13 includes the total revenues of that entity, correct?
14 A. Generally speaking, yes.
15 Q. So even if a pure play is selling
16 something that relates to live performances or
17 something like that, to say it is a pure play, that
18 means that all of its revenues are included in the
19 revenue base for calculating royalties, correct?
20 A. Generally speaking, yes. I suppose there
21 might be some peripheral revenue, but that the focus
22 of the profit maximizing activity of the service is
23 to maximize its profit from its subscription and
24 ad-supported streaming services.
25 Q. Right. So as soon as you have a portion

1 of your revenues that are not part of the revenue
2 base, you have the measurement problem, correct?
3 A. When you say a portion, if you have a
4 minuscule portion, it doesn't cause a big problem
5 but that's a matter of degree, yes.
6 Q. As soon as you have a material portion of
7 your revenues that aren't in the revenue base, you
8 have a measurement problem, potentially, correct?
9 A. Potentially, yes. It is going to depend
10 upon the complementarity and substitutability of
11 these other revenue streams with your interactive
12 streaming service, but potentially, yes.
13 Q. Right. And so for anyone other than a
14 pure play, the revenue base, though, should be
15 defined to capture all of the revenue that is
16 attributable to music regardless of where in the
17 books it shows up, correct?
18 A. Well, no. A much better approach is just
19 to have a back-stop, like an 80 cent per subscriber
20 fee.
21 Q. And I think --
22 JUDGE STRICKLER: Excuse me, if it is
23 better to have the back-stop, why not just use the
24 back-stop? Why have a percentage of revenue at all?
25 Why not use the 80 cent per subscriber?

1 THE WITNESS: I want to avoid the
2 economic inefficiency associated with a
3 per-subscriber fee to the extent we can. So to try
4 to have -- avoid putting the Services in a position
5 of not having an incentive to pursue
6 low-willingness-to-pay subscribers.
7 So if we can keep it there as a back-stop
8 where it is hopefully not affecting incentives of
9 the pure-play services, it is there to make sure
10 that firms can't use streaming services as a loss
11 leader and underpay royalty copyright owners.
12 JUDGE STRICKLER: So the rate structure
13 upstream is derived from the need to exploit the
14 willingness to pay of various users downstream? You
15 should have a percentage of revenue because
16 downstream we have varying willingnesses to pay that
17 should be exploited for the mutual benefit of
18 copyright licensees and licensors?
19 THE WITNESS: Yes.
20 JUDGE STRICKLER: So it is in a sense a
21 derived demand, at least by way of structure.
22 THE WITNESS: Yes, when you describe it
23 that way, yes. I think you asked before, and I was
24 trying to think of how, thinking of it that way,
25 would affect what I did. And it didn't -- nothing

1 particular came to mind. But I agree with you.
2 JUDGE STRICKLER: Okay.
3 BY MR. SEMEL:
4 Q. But even with the concept of a back-stop,
5 if there is a revenue share rate, it should be
6 defined to capture all of the revenue that is
7 attributable to music regardless of where in the
8 books it might show up, correct?
9 MR. ASSMUS: Objection, asked and
10 answered, I believe.
11 JUDGE BARNETT: It was asked, but I'm not
12 sure it was answered. Overruled. Go ahead.
13 THE WITNESS: I think my answer before
14 was no, I don't think you should do that. I think a
15 much better approach would be to define a back-stop
16 in terms of something like an 80 cent per subscriber
17 fee.
18 If that didn't answer the question, then
19 you need to ask it again because I wasn't
20 understanding it.
21 BY MR SEMEL:
22 Q. Put aside the back-stop, assume maybe we
23 don't have the option of a back-stop. You are
24 working with a revenue share definition, that
25 definition should be such as to capture all of the

1 revenue that is attributable to music regardless of
2 where in the books it shows up, correct?
3 A. If you are forced to use a
4 percentage-of-revenue fee with no back-stops and you
5 have a revenue measurement issue, you have a
6 problem, and we would have to talk about what the
7 best solutions are for that.
8 Q. Right. And that problem is that,
9 correct, you would need to have different formulas
10 for each business and business model, correct?
11 A. You could use -- you could use a
12 percentage of revenue with a back-stop defined in
13 terms of a per-subscriber fee, for example.
14 Q. No, I'm sorry. I meant if we were just
15 dealing with defining the revenue share model
16 itself. If you just have a revenue share model to
17 work with and you are trying to define the revenue
18 base, I think for a pure-play, you said it would be
19 defined to be all of the revenues of the
20 organization. Correct?
21 A. Roughly speaking, yes.
22 Q. And for a non-pure play, you would still
23 want to define that base to capture all of the
24 revenue that is attributable to music, correct?
25 A. In Apple's, this is my recollection now,

1 going back to the Pandora/ASCAP matter, my
2 recollection is that it was, for Apple's contract
3 with ASCAP, what they did, what it appears that they
4 did was rather than try to figure out a new
5 definition of revenue, they agreed to a slightly
6 higher percentage rate that at the time I
7 interpreted as taking into account the possibility
8 that the revenue that they were going to report was
9 not, strictly speaking, all of the revenue that
10 might have been attributable to their use of the
11 Copyright Owners' music.
12 JUDGE STRICKLER: This is in a direct
13 agreement as you understand it?
14 THE WITNESS: My understanding is it was
15 a direct agreement.
16 JUDGE STRICKLER: For performance rights?
17 THE WITNESS: Yeah, performance rights,
18 between Apple and ASCAP. And I am going -- this was
19 several years ago, but that was my recollection. I
20 don't -- nobody was trying to attribute a percentage
21 of iPhone sales to their non-interactive streaming
22 service.
23 JUDGE STRICKLER: So your recollection is
24 that they used an increase in the royalty rate as
25 sort of a heuristic to cover the uncertainty as to

1 what the royalty base would be?
2 THE WITNESS: Exactly, that's my
3 recollection of what they did. It is my
4 interpretation of seeing that higher royalty rate
5 and that there was concerns about the revenue
6 measurement issue for them.
7 And, again, this was in a world where
8 nobody was talking about back-stops. The focus
9 there for whatever reason seemed to be completely on
10 a percentage-of-revenue rate. And the issue was
11 trying to decide what the appropriate percentage
12 was.
13 And if you are going to take a percentage
14 times revenue, if you are forced into that framework
15 and you are worried about revenue being
16 under-counted, one solution is to increase the
17 percentage.
18 JUDGE STRICKLER: Guess how much they are
19 trying to screw you over on-line about revenue and
20 you make it up on the rate?
21 THE WITNESS: It wasn't a matter of lying
22 so much as this was a non-interactive streaming
23 service, and it was viewed as having a promotional
24 effect. You would -- you didn't control the songs
25 but you would hear a song that you never heard

1 before and you would think oh, I like that. This is
2 non-interactive. I have no way to make it play
3 again, I can't tell it what to play me, but I can go
4 over to the iTunes store and download it.
5 So with non-interactive streaming, those
6 complementarities were viewed as relatively more
7 important than with an interactive streaming
8 service.
9 So with interactive streaming if you hear
10 a song you like, you just play it again. It is not
11 going to push you to go buy the download. So that
12 was the diversion of revenue. So not that Apple was
13 hiding it, it was just what was happening over here
14 (indicating).
15 JUDGE STRICKLER: It was a legitimate
16 measuring problem?
17 THE WITNESS: Yes.
18 MS. MAZZELLO: I think we have been in
19 open session for some of this discussion of Apple's
20 license agreements. So if we're going to continue
21 could we go to restricted? And also we might have
22 to back-mark this as a restricted session, actually.
23 JUDGE BARNETT: I wondered. We were into
24 quite a bit of detail for the last few minutes.
25 MR. SEMEL: I am trying to think at what

1 point. I guess terms came out of --
2 THE WITNESS: As an economist, I don't
3 have a good understanding.
4 MR. SEMEL: No. Was it the terms from
5 the discussion of the Pandora/ASCAP case?
6 MS. MAZZELLO: Yeah, when we went into
7 that. And then I think if we search the transcript
8 for Apple, I think it is the first time you
9 mentioned it.
10 JUDGE BARNETT: That might be a bit too
11 broad. But I will give you the opportunity to
12 review the transcript, and if you can't agree on
13 where the restricted material first appeared, give
14 it to us to decide. Are we going to continue with
15 restricted material?
16 MR. SEMEL: I'm sure we will. I am not
17 thinking of this as restricted material. So I have
18 a question in my mind, and I don't think it is
19 restricted.
20 BY MR. SEMEL:
21 Q. In the Pandora/ASCAP case, you also
22 discussed a concern that there was Apple displacing
23 revenues into hardware sales as well, correct?
24 That's not really a license term, is it?
25 MS. MAZZELLO: I would have to see what

1 the record said for ASCAP. I am worried this may
2 all have been restricted in the ASCAP decision.
3 JUDGE BARNETT: If there is anyone in the
4 courtroom currently -- are you going to change your
5 tack or go ahead?
6 MR. SEMEL: Let -- let me change my tack,
7 I will try and move things along.
8 JUDGE BARNETT: Okay.
9 BY MR. SEMEL:
10 Q. But just to get back to defining the
11 revenue base, you did discuss in -- and this is not
12 restricted -- in the Pandora/ASCAP case the idea
13 there were two ways you can go about something, in
14 the case where you have a measurement issue. And
15 one is by, as you were discussing with Judge
16 Strickler, raising the rate to sort of make up for
17 it, and the other one is defining the revenue base
18 properly to include everything.
19 And I believe you noted the second one,
20 which I think we have been getting at here, that
21 that's just very, very hard to do. Is that an
22 accurate description?
23 A. I think so. I think it wasn't viewed as
24 practical.
25 JUDGE STRICKLER: Which wasn't practical?

1 THE WITNESS: That it wasn't viewed as --
2 it wasn't viewed as being a practical way to
3 redefine revenue to figure out what the appropriate
4 revenue definition was. The approach that seemed to
5 be taken in practice looked like the percentage was
6 adjusted.
7 BY MR. SEMEL:
8 Q. Right. And you may recall we discussed
9 in your deposition the discussion of defining the
10 revenue base properly. And tell me if this sounds
11 like what you remember.
12 You used, you noted that while in theory,
13 you could do it, in practice, doing so would require
14 having formulas that are specific to each business
15 model, to each individual service provider, and
16 those formulas would need to change with every
17 change in the service business model. And so
18 practically speaking, there would be significant
19 challenges to that?
20 MR. ASSMUS: Objection, Your Honor. I
21 can't tell if Mr. Semel is trying to impeach the
22 witness. I prefer that he ask the question and get
23 an answer and impeach her with the transcript if it
24 is different.
25 JUDGE BARNETT: Sustained. I didn't hear

1 any conflict between what you just read from the
2 deposition transcript and what she testified a few
3 minutes ago.
4 MR. SEMEL: In fact, I was trying to
5 clarify because I felt like my questions weren't
6 quite getting to that.
7 JUDGE BARNETT: I think they were clear.
8 You don't need to read the transcript.
9 MR. SEMEL: Okay.
10 BY MR. SEMEL:
11 Q. Okay. So you have opined that in your
12 report that back-stops should be set at a level that
13 mimics an appropriate percentage-of-royalty amount
14 for market conditions; is that correct?
15 A. Yes, and perhaps needs to be added for --
16 for -- I am thinking that you would want to use a
17 pure-play service as one way to assess that you have
18 set the back-stops at the appropriate level.
19 Q. But if a non-pure-play service was
20 bringing in significantly more revenues than a
21 pure-play service would, are you saying you would
22 apply the pure-play back-stop to the diversified
23 service as well?
24 A. The concern here is that the diversified
25 service is going to price its interactive streaming

1 service too low, and so not monetizing that service
2 in the way it would, if that were its own profit
3 center.
4 And that kind of using music, pricing at
5 a lower price to increase the number of subscribers
6 because that generates value for you elsewhere in
7 the business, that kind of thing will be handled
8 well by a per-subscriber fee that is set at the
9 level guided by a pure-play streaming service.
10 JUDGE STRICKLER: But that doesn't --
11 maybe it all circles back because it doesn't seem to
12 get to counsel's question, which is if the
13 diversified company is able to bring in more
14 revenues, you wouldn't want to use the revenue
15 percentage of a pure play as a proxy? And I say it
16 also sort of becomes a circular problem because how
17 do you know if the diversified service is bringing
18 in more revenue? That's the whole reason you went
19 to the back-stop in the first place.
20 So I don't know is there any way to get
21 out of that box?
22 THE WITNESS: Yeah, I mean, I think of,
23 if you have a diversified service that is bringing
24 in significantly more revenue than a pure-play
25 streaming service that is at scale, then it is

1 likely that additional revenue is the relative
2 contribution of that diversified firm.
3 If they are bringing in more revenue
4 because of the complementary products, then those
5 are their complementary products that are generating
6 the incremental revenue. I think the concern for
7 getting proper royalties paid to the copyright
8 owners is that they are not underpricing the
9 subscription streaming service relative to what they
10 would have if they were viewing that as a standalone
11 business.
12 JUDGE STRICKLER: Counsel?
13 BY MR. SEMEL:
14 Q. But, in fact, aren't the revenues of the
15 pure plays influenced by the pricing of the
16 diversified companies as well?
17 A. I think of them as competing with one
18 another, yes. Current economic conditions matter.
19 Q. Right. And so if the diversified
20 services are putting downward pressure on prices,
21 then it is going to be reflected in lower revenues
22 to the pure plays, correct?
23 A. Again, I think the current economic
24 conditions are going to matter for the level of
25 pricing. In this industry, we haven't really seen

1 much deviation from the standard $9.99 per month
2 subscriber fee, so it doesn't seem like that
3 underpricing below 99 is the dominant factor in this
4 industry.
5 Q. And you are not aware of recent changes
6 -- recent downward price competition in the market?
7 A. Most of the Services seem to be still at
8 $9.99 per month.
9 JUDGE STRICKLER: You haven't seen in the
10 marketplace, you haven't observed recent discounting
11 or bundling family plans, student plans or the like
12 to move that number down?
13 THE WITNESS: Oh, sure, yes. I didn't
14 mean to -- there are other pricing packages
15 available that are attractive to
16 lower-willingness-to-pay consumers. There are
17 discounts for students. There are family plans.
18 There is ad-supported. So there are these other
19 options.
20 But the Premium tier --
21 JUDGE STRICKLER: I wasn't asking --
22 maybe it was a bad question. I wasn't asking
23 whether or not there are discounted plans. I was
24 asking whether or not you have seen an increase in
25 the discounting of plans recently that has lowered

1 the average price of the plan?

2 THE WITNESS: I haven't seen that. When

3 you look at -- the Spotify data show that over

4 90 percent of their subscribers are on the $9.99

5 plan. So that the discounting, the student and

6 family plan is not a big piece of it.

7 JUDGE STRICKLER: Did you examine whether

8 there was a discount, increasing discounting of

9 rates for different plans from other Services,

10 diversified services such as Amazon, Apple, and

11 Google?

12 MR. ASSMUS: Judge Strickler, some of

13 your questions may venture into restricted answers.

14 I just wanted to, if we continue down that --

15 JUDGE STRICKLER: Maybe you are right. I

16 don't want to. I was asking about whether there has

17 been an increase in retail discounts, since retail

18 prices are publicly known, do you think -- do you

19 still think that is a problem?

20 MR. ASSMUS: I don't think that very one

21 will be, but I just wanted to sensitize the panel to

22 that.

23 JUDGE STRICKLER: Thank you.

24 THE WITNESS: I don't think I have -- I

25 don't think I have seen anything -- I am not sure

1 that I have looked hard enough for you to make much
2 of that answer, but I haven't seen it. But maybe it
3 is there, and I just haven't seen it.
4 JUDGE STRICKLER: Thank you.
5 BY MR. SEMEL:
6 Q. You know, I think now I would be moving
7 into a restricted area. I was hoping to finish
8 today, but it is not going to happen. I don't know
9 if now would be a good time to break or if you want
10 to try to fit it in.
11 JUDGE BARNETT: How much more do you
12 have?
13 MR. SEMEL: Probably at least a half an
14 hour to an hour.
15 JUDGE BARNETT: Any other day I would say
16 we will just gut it out, but I have an appointment
17 outside the building that I have to make and I'm not
18 going to be able to stay late today.
19 MR. SEMEL: Understood.
20 JUDGE BARNETT: Is the witness available
21 tomorrow?
22 THE WITNESS: I wasn't planning to be
23 available. Would you like me to explain why or --
24 JUDGE BARNETT: I will let you discuss
25 that with counsel and we will work around whatever

1 comes. At this point we will be at recess until
2 9:00 o'clock in the morning.
3 JUDGE STRICKLER: Assuming either this
4 witness is done tomorrow or can't appear tomorrow,
5 who do we have next?
6 MR. ASSMUS: If I can just quickly
7 address the scheduling issue, I will discuss it with
8 Mr. Semel, Dr. Marx is scheduled to come back during
9 the rebuttal phase. That would be one option for
10 her to make her flight tonight.
11 Assuming she is not coming back tomorrow
12 morning, the next witness would be Spotify CFO Barry
13 McCarthy.
14 JUDGE STRICKLER: Mr. Lucchese after
15 that?
16 MR. ASSMUS: Lucchese, correct.
17 MR. ELKIN: We were going to try to fit
18 in Dr. Hubbard, who as the panel knows testified
19 toward his credentials on Friday, he is going to be
20 back from New York to testify tomorrow at some
21 point.
22 JUDGE STRICKLER: Is the thought he would
23 come in before Mr. McCarthy or after Mr. Lucchese?
24 MR. ELKIN: That was a subject for us and
25 counsel for Spotify. We were hoping he would

1 certainly testify certainly right after Mr.
2 McCarthy.
3 JUDGE STRICKLER: But before Mr.
4 Lucchese?
5 MR. ELKIN: Before Mr. Lucchese, yes.
6 MR. ASSMUS: Yes, and that remains the
7 subject of internal discussion among the Services in
8 terms of accommodating the various schedules.
9 JUDGE BARNETT: Let us all bear in mind
10 that we will have two days off in April, that we
11 will complete this hearing on the 13th of April.
12 The time is split 50/50. Make it work. We're at
13 recess then.
14 (Whereupon, the hearing recessed at 5:00 p.m.,
15 to resume on March 21, 2017 at 9:00 a.m.)
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1 C O N T E N T S

2 WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
3 WILL PAGE				
4	1661	1721	1805	
5 LESLIE MARX				
6	1818	1910		

7

8 AFTERNOON SESSION: 1818

9

10 CONFIDENTIAL SESSIONS:

11 1703-1750, 1847-1889, 1904-1909

12

13 E X H I B I T S

14 EXHIBIT NO:	MARKED/RECEIVED
15 PANDORA	
16 903	1824
17 909	1824
18 998	1809
19 APPLE	
20 1514	1809
21 1566	1824
22 AMAZON	
23 7	1823
24 65	1809
25 82	1809

1	AMAZON	MARKED/RECEIVED
2	215	1809
3	218	1809
4	220	1668
5	221	1823
6	COPYRIGHT OWNERS	
7	2658	1810
8	2686	1810
9	2699	1824
10	2742	1810
11	2898	1810/1824
12	2936	1824
13	SPOTIFY	
14	985	1809
15	986	1809
16	987	1809
17	989	1809
18	990	1809
19	992	1809
20	994	1809
21	995	1809
22	995	1809
23	996	1809
24	997	1809
25	1004	1823

SPOTIFY	MARKED/RECEIVED
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1021	1809
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1025	1707
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1067	1663
1702	1823

1 CERTIFICATE

2

3 I certify that the foregoing is a true and

4 accurate transcript, to the best of my skill and

5 ability, from my stenographic notes of this

6 proceeding.

7

8

9 3/21/17

10 Date Signature of the Court Reporter

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IN THE MATTER OF:         )
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DETERMINATION OF RATES    )  Docket No.
AND TERMS FOR MAKING AND  ) 16-CRB-0003-PR
DISTRIBUTING PHONORECORDS ) (2018-2022)
(PHONORECORDS III),       )
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OPEN SESSION

Pages: 1988 through 2286 (with excerpts)

Place: Washington, D.C.

Date: March 21, 2017

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4 IN THE MATTER OF:)
5)
6 DETERMINATION OF RATES) Docket No.
7 AND TERMS FOR MAKING AND) 16-CRB-0003-PR
8 DISTRIBUTING PHONORECORDS) (2018-2022)
9 (PHONORECORDS III),)
10 ----------X
11 BEFORE: THE HONORABLE SUZANNE BARNETT
12 THE HONORABLE JESSE M. FEDER
13 THE HONORABLE DAVID R. STRICKLER
14 Copyright Royalty Judges
15
16 Library of Congress
17 Madison Building
18 101 Independence Avenue, S.E.
19 Washington, D.C.
20
21 March 21, 2017
22 10:00 a.m.
23 VOLUME VIII
24 Reported by:
25 Karen Brynteson, RMR, CRR, FAPR

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P R O C E E D I N G S

(10:00 a.m.)

JUDGE BARNETT: Mr. Semel, are we going to continue this morning?

MR. SEMEL: Yes.

JUDGE BARNETT: With Dr. Marx, okay.

MR. SEMEL: I believe I'm all public, so we don't need to close.

JUDGE BARNETT: Thank you.

Whereupon--

LESLIE MARX,

a witness, called for examination, having previously been duly sworn, was examined and testified further as follows:

CROSS-EXAMINATION -- Resumed

BY MR. SEMEL:

Q. Good morning, Doctor.

A. Good morning, Mr. Semel.

Q. We were discussing yesterday at length the idea of a per-play or a per-user rate in cases where there may be revenue measurement issues. Do you recall?

A. I recall.

Q. And I just want to be clear, your analysis in this case did not address calculating

what the amount of a per-user or a per-play rate ought to be in this situation, correct?

A. Not exactly. For example, my figure 14 shows that a per-subscriber rate of 80 cents per subscriber for a subscription service would mimic approximately a 10 and a half percent, percent of revenue fee for a service like Spotify.

Q. Indeed, but I do just want to be clear that your analysis did not address calculating what the appropriate amount of a per-user or a per-play rate ought to be in this proceeding?

A. My analysis in figure 14 shows that 80 cents per subscriber is an appropriate per-subscriber back-stop.

MR. ASSMUS: Your Honor, as -- as before, with some of the questions, some of the questions may accidentally or be directed to information that's ultimately restricted, just, for example, the calculation that Ms. Marx -- or Dr. Marx is discussing, excuse me, does involve Spotify data. Spotify financial data in particular.

MR. SEMEL: I'm done with it. I actually -- I was going to play a deposition clip, which is not restricted, but I'm -- I'm not going to go back into that.

JUDGE BARNETT: I didn't hear any questions about Spotify data so --

MR. SEMEL: Right.

JUDGE BARNETT: -- I think we're okay.

MR. ASSMUS: Thank you.

BY MR. SEMEL:

Q. Okay. I do just want to bring up a deposition clip just to remind you of some testimony that you gave on this topic. And it's 1674.

You -- you have your binder. I'm also -- actually, we're going to go to the videotape as well, but you can refer to it in your binder if you'd like.

JUDGE BARNETT: And the purpose of reminding her of her deposition testimony is what?

MR. SEMEL: Is -- is that I asked this question and got a different answer at the deposition. So it's an impeachment use.

JUDGE BARNETT: Thank you.

(Whereupon, videotape played and transcribed as follows:)

"Question: I see. So your analysis didn't go into what the amount of the per-subscriber, per-play fee ought to be in this situation?

"Answer: I didn't do that."

MR. SEMEL: I think you can stop there --

MR. ASSMUS: We need to play the rest of that answer.

MR. SEMEL: Oh, I'm -- I'm happy to. I was doing it because I was going to ask those questions first, but I'm happy to play the rest of the clip.

JUDGE BARNETT: Let's have the whole thing in context.

(Whereupon, videotape played and transcribed as follows:)

"Answer: They should be set at a level that mimics the appropriate percentage of revenue amount."

JUDGE STRICKLER: Can we hear it -- can I hear it back from the beginning, with the question, please?

MR. SEMEL: If we can get the volume up, maybe.

(Whereupon, videotape played and transcribed as follows:)

"Question: I see. So your answer didn't go into what the amount of the per-subscriber, per-play fee ought to be in this situation?

"Answer: I didn't do that. Other than offering the guidelines that it would -- they should be set at a level that mimics the appropriate percentage of revenue amount."

MR. SEMEL: No, no, you can keep going.

(Whereupon, videotape played and transcribed as follows:)

"Question: For pure plays?

"Answer: That whatever -- that they should be trying to mimic -- if the determination is that 10 and a half percent of revenue is the appropriate amount, that they would -- the idea is that they would be set, these back-stops would be set, so that if revenue is mis-measured, you are capturing 10 and a half percent of whatever the appropriate revenue would be."

MR. SEMEL: I'm not sure if that's the end of the clip or not. Do you want me to keep going? I'm not sure if that's the end.

MR. ASSMUS: No. Although, Your Honor, I don't believe that's actually impeaching.

MR. SEMEL: I -- I felt it was. If we can agree that that's what it is, I think then we can move on.

JUDGE BARNETT: Let's go ahead.

1 BY MR. SEMEL:
2 Q. And your -- you opine also that
3 pure-plays should not be subject to per-play or
4 per-user back-stop rates, correct?
5 A. My opinion is that a
6 percentage-of-revenue royalty is most beneficial as
7 far as promoting economic efficiency, in particular
8 the incentives for Services to serve low- and
9 no-willingness-to-pay consumers.
10 Q. If we could look at your testimony,
11 paragraph -- page 41 of your report, paragraph 100.
12 You have -- it would be towards the end of this
13 paragraph, you talk about your approaches that
14 corroborate your conclusion that a reasonable rate
15 is lower than the current rate and that 50 cents,
16 the per-subscriber fee component.
17 Can we just be clear, I think there
18 you're talking about the standalone mixed use
19 portable mechanical floor?
20 A. Yes.
21 Q. Of that formula, "should be removed,
22 except in cases where interactive streaming revenue
23 is difficult to separate from other forms of
24 revenue." Correct?
25 A. I really glad you pointed me to this

paragraph. It's -- it's -- it's badly constructed, and I apologize for that. It's meant as an introduction to this section 10 of my report.

And what got left out was before the "except," it should say "and a percentage of revenue royalty is most appropriate, except in cases where interactive streaming revenue is difficult to separate from other forms of revenue."

It's meant to be in this introductory paragraph, the sentence that points you to the section -- the 10.B section of this section. And, I'm sorry it's -- it's written that way. It's not clear. I could point you to paragraph 222 of my rebuttal report or my summary of conclusions at the beginning of my direct testimony or the conclusion for a clearer sentence. I apologize.

Q. That's okay.

But -- but just to be clear, you have -- we have discussed here your opinion that in cases where it is difficult to separate revenues such as with diversified companies, a per-user or per-play -- per-user or per-play fee would be appropriate as a back-stop, correct?

A. Yes. I think something like the 80 cent per-subscriber fee is appropriate. I think a

back-stop is appropriate. I think measurement of revenue is something we should think about.

Q. If we can turn to page 15 of your direct report, paragraph 38.

JUDGE STRICKLER: Which -- which report, I'm sorry?

MR. SEMEL: I'm sorry, her direct report, paragraph -- on page 15, paragraph 38.

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. You discuss here that -- I guess, the head of the section is value created by interactive streaming. And, again, you may remember we discussed this at your deposition.

And just to clarify, the value that you're talking about in the beginning of this, that's an economic value, correct?

A. Yes.

Q. And in your analysis, an increase -- you discuss -- let me back up for a second. You discuss right here, "For consumers interactive streaming" -- this is the second sentence -- "provides immediate access to an extensive catalog of songs beyond what most individual owners could accumulate, allowing free sampling and experimentation with new music."

And in your analysis, an increase in this kind of immediate access will be associated with an increase in economic value to consumers, correct?

A. As an economist, I think of value to consumers as something like consumer surplus, and so that's typically -- an economist would typically think of consumer surplus as occurring when consumption happens.

So having access to very many more songs that I will never play is a little bit different from a consumer surplus measure of -- of consumer value.

Q. Well, then just to be clear, the increase in immediate access from interactive streaming is something, in your mind, that is associated with an increase in consumer surplus, correct?

A. I wouldn't think of consumer surplus as being created just because the access exists. Typically, consumer surplus is associated with the quantity that's consumed, and so if we're -- if we're going to talk specifically about consumer surplus as the measure of consumer value, then I'm not sure it's quite right to think of the potential to consume more things as being incorporated in consumer surplus.

But I -- I do think that having -- if a service has a larger -- has a larger offering than consumers may well be willing to pay more for a subscription fee for access to that.

JUDGE STRICKLER: When we -- I'm sorry, finish your answer.

THE WITNESS: Just as a -- I wouldn't think of a consumer surplus as being generated until they actually consumed.

JUDGE STRICKLER: Aren't we really looking at a limitation on the -- and maybe you're saying this -- the consumer surplus concept. The consumer surplus concept, as I understand it and tell me if this is wrong, is a very -- is a narrower concept that wouldn't involve comparing the access that you get in one product A versus the access you get in product B. That's a -- a better product differentiation, different demand curves for different bundles of consumer utility. And so you wouldn't see them like on your graph where you were showing the downward sloping demand curve. The consumer surplus occurs because if I had a willingness to pay of 20 for an item but the market price turned out to be 12, I enjoy the consumer surplus of the price of 12, and that doesn't inform

me at all about the value of differentiating the product that I would have paid 20 for but get to pay 12 because once you differentiate it, we're not talking about a different demand curve.

So to inject -- and I don't know that the question necessarily posed this, but to try to inject consumer surplus into this access differentiation question seems to be injecting something that just doesn't apply.

THE WITNESS: Yes, I agree. It's creating kind of a disconnect. And I agree with your summary. The -- I -- the question I was hearing is, isn't it creating more consumer surplus to have higher access? And --

JUDGE STRICKLER: There may or may not -- maybe counsel, by "consumer surplus," meant -- and he can phrase his own question -- consumer value as opposed to consumer surplus.

MR. SEMEL: In fact, I think I used "economic value" in my question, and it was translated to consumer surplus. That's beyond my economic means.

JUDGE STRICKLER: Well, you don't have to blame yourself. It may be that the witness mischaracterized -- the answer is not responsive to

your question.

MR. SEMEL: Right.

JUDGE STRICKLER: So maybe the question needs to be repeated as to economic value as opposed to consumer surplus.

MR. SEMEL: Okay. Thank you.

BY MR. SEMEL:

Q. Right. To go back to the original question, in your mind, you have -- again, this section is called value created by interactive streaming, and you list a number of things. And I just wanted to clarify that, in your analysis, an increase in -- you list a few things, so I'm going to take them one by one. An increase in the immediate access to an extensive catalogue of songs beyond what most individual owners could accumulate is associated with an increase in economic value. Correct?

A. Again, I -- I don't have a -- it would help me to have -- apply a particular definition of economic value to that. One way, for example, is that I would expect that consumers might be willing to pay more for access to a higher quality, larger offering.

Q. Okay. And -- and then, I guess,

utilizing the same understanding of economic value that you are in that question, an increase in actual listening, in plays, if you will, will also be associated with an increase in economic value, correct?

A. That, in fact, I think would be associated with an increase in consumer surplus because now we're -- we're in that world as well.

Q. Okay. And the economic value we're talking about?

A. Yes.

Q. And the increase in music experimentation is also likely to increase consumer surplus or economic value?

A. Yes.

Q. You describe in your written direct testimony student and family discount plans as those under which users with a lower WTP, willingness to pay, can participate in the service.

Is that a -- do you agree with that or do you want me to point you to the part of your report?

A. I agree.

Q. Okay. And you cite to -- throughout your report, to a number of studies from a company called MusicWatch. I believe six times you cite to studies

from a country -- from a company called MusicWatch for studies that they have prepared in connection with this topic.

MR. SEMEL: And I'd like to put into the record a document. This will be used for impeachment purposes.

I actually had a half a question that I never finished, so I'll pass the document out and then I'll ask the question.

JUDGE BARNETT: Can we mark this for identification?

MR. SEMEL: It is, in fact, a hearing exhibit.

JUDGE BARNETT: Oh, it is? Okay. Thank you.

MR. SEMEL: Because -- I'm not exactly sure why the number isn't stamped on it, but it is a hearing exhibit.

JUDGE FEDER: What's the number?

MR. SEMEL: 3272.

JUDGE BARNETT: Thank you.

Are you introducing or are you simply using it for impeachment?

MR. SEMEL: I am looking to introduce it.

JUDGE BARNETT: Any objection to 3272?

MR. ASSMUS: Your Honor, this is similar to a document, I believe, that was objected to in the testimony of Will Page. If Mr. Semel is looking to introduce studies of this nature, I don't believe we have an objection, but we'd like him to withdraw his objection to the exhibit that he objected to with respect to Will Page.

MR. SEMEL: Well, I will say I really want -- I only want it in the record and entered for impeachment purposes, but I did want it in the record. I didn't just want to mark it for identification, but I was not putting it in as much for the truth, as for the impeachment purposes.

JUDGE BARNETT: Okay. Thank you. 3272, then, is admitted for the -- for the limited purpose of impeachment.

(Copyright Owners Exhibit Number 3272 was marked and received into evidence.)

MR. SEMEL: Understood, thank you.

BY MR. SEMEL:

Q. You -- you cite to studies from MusicWatch several times but not this study. And did you consider this study in your analysis?

A. Looking at it right now, I don't recognize it.

Q. Okay. And did you -- I'm sorry.

You have not studied yourself the willingness to pay of students versus non-students, correct?

A. No, I don't believe I looked into that.

Q. And if we could bring up -- it's actually -- it was the demonstratives that they used on direct. It's 18. You may recall this chart.

A. Yes, sir.

Q. So I have a few questions about this chart for you. You have on the Y axis of this chart price, correct?

A. Yes.

Q. And along the X axis quantity, correct?

A. Yes.

Q. And you've chosen streams or plays of music as the quantity along the X axis, correct?

A. Yes.

Q. Although it's not listed there, that's meant to show plays?

A. Yes.

Q. And it's -- plays along the X axis because you're modeling a demand curve; and plays, you're evaluating a proposal where play is the price, correct? The price is for plays, correct?

A. Yes.

Q. But the effects that you are modeling here in this chart involve a per-play user price, not a per-play royalty rate, correct?

A. That's right.

Q. And you realize that paying a per-play royalty rate does not require charging a per-play user fee, correct?

A. Correct.

Q. And, in fact, the entire non-interactive streaming space has a statutory per-play rate and not a single non-interactive streaming service actually charges a per-play user fee, correct?

A. You're asking about the universe of all non-interactive streaming services. I'm probably not in a position to answer it.

Q. I'll phrase it another way. You are aware that in the non-interactive streaming space it is a statutory per-play rate, correct?

A. For sound recording, yes.

Q. Yes, right, exactly. And you're not aware of any non-interactive streaming services that actually charge user prices on a per-play basis, correct?

A. My economist view of ad -- presenting ads

to listeners, you -- you can quibble about whether that -- how are you going to view that as a price that you're charging them because they are subject to ads, but I'm not aware of any per-plan payments, cash payments required from interactive streaming service listeners.

Q. You anticipated my next question. An ad-supported service is in economic theory exacting a price from the user, correct?

A. Yes.

Q. And you can think of it as a time or an aggravation cost, correct?

A. Yes.

Q. And Spotify has an ad-supported service that plays ads at regular intervals, correct?

A. I don't know whether it's at regular intervals, but they certainly play ads.

Q. Right. And the more you listen, the more ads you get?

A. Not that it's accelerating, but there will --

Q. Right.

A. -- there will be ads continuing to be presented to you and the more you -- the more you listen, the more ads you will eventually be

presented with.

Q. Right. And then understanding that ads are a price, the more you play, the more you are paying, correct?

A. Yes.

Q. So this is, in effect, a user-facing per-play price, correct?

A. In a sense, yes.

Q. And so really Spotify's ad-supported service looks exactly like your figure 25, correct?

A. You could view it that way, but the -- the price is the ad aggravation and time cost of the ads, and if you are more sensitive to the aggravation associated with those ads, then you would be less willing to consume an ad-supported service. And if you have a higher tolerance for those ads, then you'd have a higher willingness to participate in an ad-supported service.

JUDGE STRICKLER: I have a question for you about the ad-supported service and about the advertising in general. In particular because we've heard some testimony already about targeted advertising geared towards specific listeners' habits and tastes. Is it reasonable to model, from an economic point of view, advertising simply as a

shadow cost if it's providing information to listeners that, especially if it's targeted advertising, they may actually want to use?

THE WITNESS: I think the usual way that -- for example, in radio, way economists have tended to model advertising as more of a cost, a burden on the listener, but my understanding is that there is some idea that with streaming services, where you have more information about the listener, the particular listener that's receiving your stream, you may be able to do a better job of targeting ads in a way where they are relatively more appreciated by the listener than viewed as a cost.

And that would make -- that would turn this a little bit on its head because now you're getting a benefit from the advertisement instead of paying a cost.

JUDGE STRICKLER: If -- if the advertising was a pure burden and a pure cost to the listener, presumably it would not create any benefit to the advertiser and we wouldn't see the market for advertising on -- on radio or services even exist, because there would be no payoff. So there may must be some benefit from an economic point of view or it

wouldn't exist.

THE WITNESS: I agree.

JUDGE STRICKLER: And isn't the ad-supported service, from an economic industrial organization point of view, in the nature of a -- of a three-party platform? You've got music, you've got advertisers, and you've got listeners.

So they're all meeting on the platform because there's -- there is mutual benefits or synergies, not because it's pure cost when the advertiser gets in. Isn't that the point of a three-party platform?

THE WITNESS: Yes, definitely, that's the -- the two-sided market literature talking about that. I think for -- when the literature, literature on radio, for example, advertising on radio, I think the thought is overall, as a listener to radio, I will be subjected to many ads. And some of them might have value to me, but as a whole, it's maybe a cost to me because there are lots of ads I didn't care about and I would rather have not spent my time listening to.

But some of them, I got valuable information, and then I was -- I was connected through the platform to that particular advertiser.

JUDGE STRICKLER: So is it fair to say, from an economic point of view, then the targeted advertising as opposed to Wunderbust advertising is -- is less of a cost and more of a benefit relative to old-fashioned advertising?

THE WITNESS: Absolutely. It has a much greater potential to -- to be more of a benefit and less of a cost, to the extent these services can do a good job of matching particular advertisers with particular -- particular listeners.

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. Although, in addition, though, we do know, as something of a revealed preference from people who pay for no ads, that there's a significant number of people for whom ads are a cost, correct?

A. Yes. I think there is a range of willingness to tolerate advertisement, and for a consumer who has a relatively high willingness to pay out-of-pocket and a relatively high hassle or intolerance for advertisements, certainly that consumer might be willing to pay a subscription to avoid those ads.

Q. And, therefore, the figure 25 captures

the ad-supported service that Spotify offers from an efficiency perspective, including the deadweight loss triangle, correct?

A. I didn't design it to capture that, but as we've been talking about it, I think if you are careful about interpretation, you can bring that type of thinking into the world of ad-supported.

JUDGE STRICKLER: Didn't you say in your report -- I'm not going to look back at it, but you said -- I thought you said that the ad-supported service allowed movement down the demand curve from P prime down, all the way down towards -- towards the X axis.

THE WITNESS: Yes, you think of those low-willingness-to-pay subscribers down there at the bottom, then especially if you have low or no willingness to pay out-of-pocket, the ad-supported service allows some opportunity to monetize those users and also potentially to eventually upsell to a subscription service.

JUDGE STRICKLER: Thank you.

THE WITNESS: I think the ad-supported service not only monetizes low-willingness-to-pay consumers but also is viewed as an on-ramp to subscription services.

JUDGE STRICKLER: And if I understood your answer to counsel's question before, your answered before it would not necessarily take you all the way down and increase you to Q star because of the hassle factor of advertising being a shadow cost; is that right?

THE WITNESS: That's right.

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. Right. Indeed, almost a funnel aspect, the fact that there are people paying for Premium to get out of the ads is the indication that there is a deadweight loss in there, that there are people who are unwilling to deal with the ads, correct?

A. There are definitely people who are willing to pay to avoid ads.

Q. Right. And I think we talked earlier about how since you're evaluating a user-facing per-play price, your modeling, I should say, a per-play price, you've got plays along the X axis as the quantity, correct?

A. Yes.

Q. But for the Premium service that Spotify has, the unit that is, in fact, being charged for it by Spotify is subscribers, correct?

A. If you're asking me if they pay a subscription fee, yes.

Q. Yes. And so if you were plotting a demand curve for a Spotify Premium service, you would have along the X axis, under quantity, subscribers, correct?

A. I think I would usually continue to think of it in a graph like this, that I as a subscriber, I know if I subscribe to the service, then I would choose to play music using that service, and that would generate the green, the consumer surplus.

And how much am I willing to pay as that fixed subscription fee? Well, up to the area of that green triangle. My consumer surplus defines how much I would be willing to pay to access the service.

So I think when economists talk about two-part tariffs, so a fixed fee upfront and then an incremental fee, which would here be zero for access to additional units, we would typically stay with this graph and the consumer surplus triangle would identify my maximum willingness to pay for the subscription, for the fixed fee.

Q. Okay.

JUDGE FEDER: So how would you identify

the X axis?

THE WITNESS: There would still be streams, so my -- the value is being created stream by stream. And then the consumer surplus triangle, that is my total willingness to pay for the access.

So when you think about a two-part tariff, you're going to choose -- you would typically think of the supplier as choosing the per-unit fee being equal to marginal cost to get the efficient level of streaming, to get the efficient quantity choice. That maximizes the total surplus to the consumer.

And then they're going to try to extract that consumer surplus with the fixed fee. That's the value in a two-part tariff, is that you can set the per unit price efficiently, maximize the pie, and then extract that value through the fixed fee.

JUDGE FEDER: Thank you.

JUDGE STRICKLER: And this is all necessary -- tell me if this is so. Is this necessary because the marginal cost of an additional stream is zero, and that's why you're in this whole second best world of two-part tariffs and trying to extract consumer surplus rather than let it happen organically as it would when marginal cost is

possible?

THE WITNESS: Exactly. If the -- if the efficient price was positive and high enough to allow the copyright owner or -- to allow the Services to -- to obtain a reasonable rate of return on their investments, then we wouldn't have to worry about this, and the two-part tariff wouldn't be -- have this additional value.

Here, the marginal cost of a stream, an additional stream to a listener is approximately zero. And that means we're in the world where a two-part tariff has a particular value, a subscription fee plus a zero price for an incremental stream, allows you both to induce the efficient level of streaming and to allow the Services to make money.

JUDGE STRICKLER: It's a form of -- is it a form of price discrimination?

THE WITNESS: It is.

JUDGE STRICKLER: Thank you.

BY MR. SEMEL:

Q. And then just to be clear, I guess regardless of how you mark -- how you do the axes on this graph, and I think you maybe mentioned this in your direct report, under a subscription model, such

as Spotify's Premium model, you're still going to have deadweight loss because you're still pricing above -- you still have consumers who would be -- well, let me bring that back. You still have deadweight loss?

A. That's right. And I talk about that in my report where with a positive subscription fee there are still consumers out there who would have gotten value from the service, who -- but not enough value for them to be willing to subscribe.

And so having additional price discrimination such as student discounts, family discounts, ad-supported streaming, that allows you to try to chip away at that deadweight loss and to bring those consumers who still have positive value into music consumption.

Q. Right. But, again, the price discrimination requires you to have a proper identification of your demand curve, correct? I mean, if you're going to do price discrimination properly?

A. If you're going to be completely optimized, you would need perfect information. But certainly we see the Services using price discrimination. They offer different pricing plans

that are targeted toward different consumer groups. And so they are using price discrimination. Maybe they could do better if they had more precise information.

MR. SEMEL: I have no further questions at this time.

JUDGE FEDER: Actually, I do. I'd just like to clarify something that was a question Mr. Semel asked you a little earlier about the back-stop.

He -- he said that it would -- he was asking you if it would be appropriate to have either a per-subscriber or per-play back-stop. And you answered it would be appropriate to have a per-subscriber back-stop. You didn't comment on the per-play. I would like your view on that.

THE WITNESS: Yeah, you're -- sorry, you're right, I didn't respond to that particular piece.

I think the per-play fee provides a -- a kind of bundle of really bad incentives. Perhaps -- perhaps it would be useful for me to describe them. So the per-play -- a per-play fee goes in the direction of encouraging the Services to charge per play. And that creates deadweight loss, and that's

the kind of thing we've just been talking about.

In addition, it provides incentives for them to cap usage. And that's reducing quantity. That's also creating additional deadweight loss. It provides incentives for them to manipulate things, for example, by streaming longer songs, by inserting delays between songs, by reducing investment in cuing up songs efficiently in order to get more streams per hour to a listener. It provides incentives for them to be more aggressive about making sure there's actually a listener -- that you are actively listening, so more hassle cost of reassuring the system that you're still there.

So there's this set of incentives that I -- I think are unfortunate and would be better to be avoided. And the per-subscriber fee is what is in there now. It seems the structures are in place for reporting subscribers to HFA. It seems to do the job. And it's already set at a level that we can see that for a pure-play service like Spotify is set at a level that mimics the 10.5 percent of revenue.

Let me say one thing about the per-subscriber. Do you want me to clarify that point? The per-subscriber -- imposing a per-subscriber back-stop on ad supported is

practically a harder thing to do. Right now in the ad-supported category, the back-stop is defined in terms of 22 percent of sound recording royalties.

But what is an ad-supported subscriber is more of a loose concept because you have registered users that might not --

MR. SEMEL: Hi, I'm sorry, I don't want to interrupt --

THE WITNESS: -- be a active registered --

MR. SEMEL: -- Your Honor's question but this is a rebuttal --

THE REPORTER: One at a time.

MR. SEMEL: I'm sorry, I don't want to interrupt Your Honor's question. Obviously, you want the answer. But I will note that this is rebuttal area, this topic. So, I mean, this will be discussed, but obviously if you want it now --

JUDGE FEDER: Fair. And this witness will be testifying on rebuttal --

THE WITNESS: Yes, sir.

JUDGE FEDER: -- so we can certainly hold it until then.

THE WITNESS: Great.

MR. SEMEL: Might I follow up on that

just very briefly?

MR. LANE: You just said it was rebuttal.

MR. SEMEL: No, no, not on that. Sorry. I'm -- on the same --

JUDGE STRICKLER: Terrible food, such small portions, right?

(Laughter.)

MR. SEMEL: That's right. No, no, the questions before that.

BY MR. SEMEL:

Q. You -- you were discussing incentives that you -- you noted in connection with a per-play fee, but you have no evidence, correct, that -- that those theoretical incentives actually have a material effect on the pricing decisions of streaming services, correct?

A. I don't think I have a natural experiment where I can point to those things, so I think that's correct.

Q. Well, you also know, for example, that there are per-play rates in the non-interactive space and we do not see these things that you are talking about as being potentially terrible incentives, correct? Or at least you can't point to any of them, correct?

A. I don't have something, a particular example to point you to.

Q. Okay.

MR. SEMEL: I have no further questions.

MR. ASSMUS: Yes, thank you. A brief amount of redirect.

REDIRECT EXAMINATION

BY MR. ASSMUS:

Q. Good morning, Dr. Marx.

A. Good morning, Mr. Assmus.

Q. You recall Mr. Semel asked you about sound recording benchmarks, potential benchmarks that were sound recording agreements?

A. Yes.

Q. And he suggested that you rejected those agreements because they were not negotiated under the shadow of the 801(b) rates. Do you recall that?

A. Yes.

Q. Were there other reasons to reject the sound recording agreements as benchmarks?

A. Yes, there were.

Q. And what were they?

A. The sound recording -- the record labels had been recognized as having market power. And so one might expect -- let me go back.

1 There are three large record labels.
2 They reflect approximately 60 percent of the revenue
3 to record labels. They have large catalogues that
4 are viewed individually as must-have by streaming --
5 interactive streaming services.
6 And so there are other reasons to have
7 concern that the rates that you see being negotiated
8 between record labels and Services would reflect the
9 market power of the record labels. And my
10 interpretation of the 801(b) factors, particular --
11 particularly the first focus on maximizing
12 availability to the public, the second and third
13 focused on fair returns and fair income, lead me to
14 believe that those factors are pointing me away from
15 rates that would be potentially affected by market
16 power.
17 Q. There was quite a bit of discussion
18 between you and Mr. Semel about your testimony in
19 the Pandora versus ASCAP rate court matter.
20 A. Yes.
21 Q. And I'm not sure we -- we got it clear on
22 the record, was the standard that that rate court
23 was applying the same as what the -- this panel is
24 called on to apply under Section 115 of the
25 Copyright Act?

A. No. It was a different standard.

Q. And what was that standard?

A. It was a willing buyer/willing seller. And I interpreted it as an economist as comparable to the fair market value standard.

Q. You also testified a little bit about your testimony in the Pandora case and, in particular, your analysis of an Apple benchmark, correct?

A. That's right.

Q. And you indicated that, in evaluating that benchmark, you believe that there were revenue measurement problems, correct?

MR. SEMEL: Are you going to get into --

MR. ASSMUS: Judge Barnett, yesterday you raised the issue of whether or not some of her testimony from the ASCAP case was restricted. We had a chance to discuss this before the hearing, both with counsel for Apple and, in fact, with Pandora's prior counsel in that matter. And my understanding -- and I'm happy to close the courtroom if -- if any of those parties would wish -- is that this was really all public record from the decision.

JUDGE BARNETT: Okay. Thank you.

MS. MAZZELLO: Yeah, as long as it was in the decision, agreed.

THE WITNESS: I didn't reach a conclusion that there was a mis-measurement issue, but I had a concern about there being a mis-measurement issue. And that led me to view Apple's agreement as not the best benchmark for setting a rate for Pandora to pay ASCAP.

BY MR. ASSMUS:

Q. And could you describe the nature of the potential revenue measurement issues with that Apple agreement?

A. This was for non-interactive streaming. And there was a view that non-interactive streaming was useful in promoting listeners, discovering music, and then going and buying the digital download.

And so there was a view that Apple might have an incentive to price its non-interactive streaming service lower than it otherwise would in order to attract additional consumers and -- and in order to move -- drive them to make purchases from the iTunes store.

Q. Did any of that revenue recognition or revenue measurement issue have to do with iPhone

sales?

A. I also mentioned the possibility that there was hardware involved as well. I don't have a particularly clean path to that. It was more clear to the iTunes store. But the -- Apple sells hardware as well, and so there -- that may have figured into their rate negotiations as well.

I -- I don't know. But that was a concern and led me to move away from that Apple agreement as an appropriate benchmark for Pandora's rate.

Q. You also discussed --

A. Maybe I -- can I just say one more thing?

Q. Sure.

A. I -- I had a number of other benchmarks that I thought were very good. And I suppose in the absence of other benchmarks that I -- if I didn't have a bunch of good benchmarks, I might have worked harder to make an appropriate adjustment to the Apple rate.

But I had a number of what I viewed as reliable benchmarks, so I -- I worked with those and -- and not with benchmarks that seemed more problematic to me.

Q. You also had a discussion with Mr. Semel

about the appropriate royalty base for what we've called a per-play music service.

MR. SEMEL: Pure play.

MR. ASSMUS: Did I not say "pure play"?

MR. SEMEL: The court reporter wrote "per-play."

BY MR ASSMUS

Q. I'm sorry, pure, pure-play music service, such as a Pandora or a Spotify. Was it your testimony that every type of revenue that a pure-play service might make should be part of the royalty base?

A. No, I'm not reaching a determination that every -- okay. When I say a pure play, what I mean is that they are operating their music interactive streaming service in a way to maximize the profits of the interactive streaming service, not as a way to drive revenues in a different part of the business as you might have relatively more concerns about with a service or a company such as Apple.

Q. And then a final topic for you, there were a number of discussions about the 150 to 1 conversion ratio that you used for, if I'm right, one of the ways you established the PDD/CD benchmark as the rate, correct?

A. One of them, yes.

Q. If it were shown in this proceeding that the publishers themselves used the 150-to-1 ratio in their internal analyses, would that bear on your decision to use the 150-to-1 ratio?

A. It would give me additional assurance that it was -- that it represented industry practice and that it was reliable, but I -- I don't feel that type of evidence is necessary for me to use that conversion ratio. I -- I thought it was useful, given the background that I know about it or knew about it at the time I wrote my written direct testimony.

Q. And you recall subsequent questions from Mr. Semel regarding how the RIAA counted streams in connection with establishing its benchmarks?

A. Yes.

Q. If it were established in this proceeding that the RIAA counts streams in the same way that they're reported to labels, would that bear on your comfort with using the 150-to-1 ratio?

A. That would increase my comfort with that ratio, yes.

MR. ASSMUS: No further questions on redirect.

MR. SEMEL: I have no further questions.

JUDGE STRICKLER: I have a question related to the streaming, the streaming question that you -- questions that you just got on redirect. As an economist, when you look at third parties' approaches to a particular economic issue, in this case the conversion of streams to downloads or to CDs, if you haven't done the work independently to make -- do the factoring, do you find it reasonable to rely on -- as an economist, on industry standard rather than do the -- the underlying work yourself?

THE WITNESS: I think in that situation, I want to look for sensitivity analyses and other robustness checks. And so here I had the 150 that is used by the RIAA and Billboard. So I think that's informative.

I had the economics literature.

JUDGE STRICKLER: And, again, that means the one --

THE WITNESS: I had the one article.

JUDGE STRICKLER: -- the non-peer reviewed article by Waldfogel and Aguiar?

THE WITNESS: That's right. So I had that number. And I was using it as one of several benchmarking approaches. It delivered a conclusion

that was consistent with the others.

And it was an opportunity -- I think it is natural to do -- to try to do that type of conversion, and if I were to use a number other than 150 to 1, I would be going against the prevailing industry practice. So it seemed a reasonable approach in light of where I'm using it in my analyses.

JUDGE STRICKLER: Correct me if I'm wrong, but it sounds, then, that your -- your ratio then is itself a benchmark analysis, that you're looking into the -- into a -- if not a market, you're looking into the industry and finding data that you find sufficiently comparable in use to -- to the use that you want to put it to and say that these mark for me what the conversion factors should be, separate and apart from any economic analysis?

THE WITNESS: I agree with that. And remember how I'm using these benchmarks. They are there primarily to inform the fourth 801(b) factor, and so I am thinking about disruption relative to prevailing industry practice. So it seems informative for me, given that that's my purpose for these benchmarks, to look at prevailing industry practice.

JUDGE STRICKLER: Thank you.

MR. ASSMUS: Thank you.

JUDGE BARNETT: Mr. Mancini?

MR. MANCINI: Yes. If we're done with this witness, I believe we're ready to turn to our next witness.

JUDGE BARNETT: Okay. Thank you. Thank you, Dr. Marx. You may be excused.

MR. ASSMUS: You'll see Dr. Marx again in rebuttal.

THE WITNESS: See you again. Should I just leave all of this?

JUDGE BARNETT: Yes. Mr. Mancini, is this Mr. McCarthy?

MR. MANCINI: Mr. McCarthy, yes.

JUDGE BARNETT: Before you are seated, sir, please raise your right hand.

Whereupon--

BARRY McCARTHY,

having been first duly sworn, was examined and testified as follows:

JUDGE BARNETT: Please be seated.

MR. MANCINI: Your Honors, before we begin, just two housekeeping matters, if I may.

Mr. McCarthy, who is the CFO from

LIBRARY OF CONGRESS

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

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IN THE MATTER OF:)

)

DETERMINATION OF RATES) Docket No.

AND TERMS FOR MAKING AND) 16-CRB-0003-PR

DISTRIBUTING PHONORECORDS) (2018-2022)

(PHONORECORDS III),)

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OPEN / CLOSED SESSIONS

Pages: 5473 through 5670

Place: Washington, D.C.

Date: April 7, 2017

HERITAGE REPORTING CORPORATION
Official Reporters
1220 L Street, N.W., Suite 206
Washington, D.C. 20005
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1 P R O C E E D I N G S

2 (9:08 a.m.)

3 JUDGE BARNETT: Housekeeping? We have

4 studied our calendar and all of the pieces of the

5 puzzle, and could hear closing arguments in this

6 case on the 8th of June. If that turns out to be

7 the subject of irreconcilable calendar problems, we

8 have the 6th or the 7th. And if none of those days

9 work, let us know. Thank you.

10 MR. ASSMUS: Your Honors, Spotify recalls

11 Dr. Leslie Marx.

12 JUDGE BARNETT: Thank you. Good morning.

13 You remain under oath, Dr. Marx.

14 THE WITNESS: Thank you.

15 Whereupon--

16 LESLIE MARX

17 a witness, called for examination, having previously

18 been duly sworn, was examined and testified further

19 as follows:

20 DIRECT EXAMINATION

21 BY MR. ASSMUS:

22 Q. Good morning, Dr. Marx.

23 A. Good morning.

24 Q. Could you reintroduce yourself to the

25 Panel?

1 A. I'm Leslie Marx. I'm a professor at Duke
2 University, and I spoke to you about my written
3 direct testimony earlier.
4 MR. ASSMUS: And I'd remind the Panel
5 that Dr. Marx was previously qualified as an expert
6 in economics and industrial organization.
7 JUDGE BARNETT: Yes, thank you.
8 BY MR. ASSMUS:
9 Q. You should have in front of you, and the
10 Panel will have shortly, a binder. And the first
11 tab of that binder is Spotify Trial Exhibit 1069.
12 Could you turn to it?
13 A. I see that.
14 Q. And could you tell the Court what that
15 is?
16 A. This is my written rebuttal testimony.
17 JUDGE STRICKLER: We have those binders.
18 MR. ASSMUS: You do?
19 JUDGE STRICKLER: Yes.
20 MS. ASSMUS: Okay, perfect.
21 BY MR. ASSMUS:
22 Q. Could you turn to the page immediately
23 following numbered page 91?
24 A. Yes.
25 Q. And is that your signature?

1 A. Yes, it is.
2 MR. ASSMUS: Your Honor, we'd move for
3 the admission into evidence of Trial Exhibit 1069,
4 her written rebuttal testimony.
5 JUDGE BARNETT: 1069 is admitted.
6 (Pandora Exhibit Number 1069 was marked
7 and received into evidence.)
8 BY MR. ASSMUS:
9 Q. Dr. Marx, could you briefly describe your
10 role in the rebuttal phase of this proceeding?
11 A. I was asked to respond to the Copyright
12 Owners' experts' written direct testimony, and I
13 focused on the testimony of the economists, os
14 Drs. Gans, Eisenach, and Rysman.
15 Q. And you've watched some of the testimony
16 in this proceeding as well?
17 A. Yes, sir.
18 Q. Have you seen any evidence during the
19 course of this proceeding, including the testimony
20 of the Copyright Owners' economic experts, that
21 causes you to change any of the conclusions you
22 reached in either your written direct or your
23 written rebuttal testimony?
24 A. No, I have not.
25 Q. Now, did you use some Spotify data in

1 connection with your rebuttal testimony?
2 A. I did. I was able to update some of the
3 calculations to go from -- instead of just 2015,
4 from the last -- the full year from the last half of
5 2015 to the first half of 2016.
6 Q. And are the sources of Spotify data that
7 you relied upon cited in your report?
8 A. Yes, they are.
9 Q. And have you prepared some slides in
10 connection with your testimony today?
11 A. Yes, I have.
12 Q. And if you could turn to Demonstrative 2,
13 before we get into the details of your work and your
14 findings, I'm hoping you could provide the Panel
15 with an overview of your rebuttal conclusions.
16 A. Yes. The Copyright Owners' proposal
17 changes the structure and rates -- the structure of
18 rates and substantially increases their level. The
19 flat per-stream per-user structure particularly
20 penalizes services targeting low-willingness-to-pay
21 consumers, and mechanical royalties more than double
22 for other services as well. And despite these
23 changes, the Copyright Owners' experts opine that
24 the Copyright Owners' proposal is reasonable and
25 meets the 801(b) factors.

1 And as I explain in my written rebuttal
2 testimony, the Copyright Owners' economists ignore
3 or misinterpret the 801(b) factors. The Copyright
4 Owners' economists provide misleading analyses.
5 They haven't shown any ill effects of the current
6 system. Publisher royalties are increasing with the
7 rise of interactive streaming. A wide variety of
8 interactive streaming services compete today, with
9 associated customer benefits, and there's no
10 evidence of depressed musical works production.
11 Q. On that last point, no evidence of
12 depressed musical works production, if there were
13 such a depression, what would you expect to see in
14 the market?
15 A. I would expect to see a reduction in the
16 number of songwriters and songs being produced, for
17 example.
18 Q. And you haven't seen evidence of that?
19 A. I have not seen evidence of that.
20 Q. You also mentioned that publisher
21 royalties are increasing with the rise of
22 interactive streaming. How is that important to
23 your economic analysis?
24 A. That tells me that the benefits of the
25 increased move towards interactive streaming are --

1 are falling through to the publishers now in the
2 form of increased publisher royalties.
3 Q. And I'd ask you to briefly describe your
4 understanding of the Copyright Owners' proposal.
5 A. Yes. I prepared a slide on this. The
6 Copyright Owners' proposal has all Services paying
7 the same amount for every stream, regardless of
8 length, and every user, regardless of the service
9 characteristics. And the proposal is that the
10 mechanical royalty would be the greater of .0015
11 dollars per play and $1.06 per end user.
12 And just to provide a little bit more
13 texture, I have in the green boxes the definitions
14 of play and end user from the Copyright Owners'
15 proposal.
16 A play is defined as the digital
17 transmission of any portion of a sound recording of
18 a musical work in the form of an interactive stream
19 or limited download. And an end user is each unique
20 individual or entity that has access to the offering
21 whether by virtue of the purchase of a subscription
22 to access the offering or otherwise.
23 Q. Now, you understand Spotify offers an
24 ad-supported service?
25 A. Yes.

1 Q. When you interpret the definition of "end
2 user," how do you apply that to Spotify's
3 ad-supported service?
4 A. With Spotify's ad-supported service, any
5 registered user would have access to the offering.
6 Q. Even though they weren't paying a
7 subscription price?
8 A. Even though they're not paying a
9 subscription price and even if they don't access the
10 service in a particular month, they would be a user
11 that has access to it.
12 Q. Now, did you analyze the Copyright
13 Owners' proposal using that definition of an end
14 user?
15 A. I did it a couple ways. I analyzed the
16 Copyright Owners' proposal using this definition,
17 and also using a more restrictive definition,
18 assuming that it applies only to a measure of active
19 users.
20 Q. And what definition of active users did
21 you use for that alternative analysis?
22 A. I used monthly active users, which would
23 be any -- would count any user that accessed any
24 portion of a stream at some point during a month.
25 MR. ASSMUS: Your Honor, I need to move

1 into some restricted testimony.

2 JUDGE BARNETT: Good morning. We will

3 have to briefly close the hearing room to anyone who

4 is not privy to restricted or confidential

5 information in this proceeding.

6 (Whereupon, the trial proceeded in

7 confidential session.)

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1 C O N F I D E N T I A L S E S S I O N
2 BY MR. ASSMUS:
3 Q. Dr. Marx, have you analyzed how the rate
4 proposal would impact Spotify's business?
5 A. I have. And I've prepared a number of
6 slides that illustrate the impact on Spotify and
7 other Services in a number of different ways. We
8 have a number of different ways to look at it.
9 Q. And does this slide illustrate that
10 impact?
11 A. Yes, this is the first one.
12 Q. And could you walk us through the -- the
13 six bars on your chart?
14 A. Sure. This slide is looking just at
15 Spotify and just at mechanical royalty payments.
16 And it's looking at the increase in mechanical
17 royalties as a result of the Copyright Owners'
18 proposal based on data from the last half of 2015 to
19 the first half of 2016.
20 On the vertical axis, we have millions of
21 dollars. So these are monthly mechanical royalties
22 in millions of dollars. And then there are six bars
23 that are -- that correspond to six different parts
24 of the Spotify service, either individually or
25 combined.

1 So the first vertical bar is mechanical
2 royalty associated with Spotify's ad-supported
3 service if you count all registered users. So the
4 all -- all end users calculation. And you can see
5 that, in that, that service would pay roughly 135
6 million dollars in mechanical royalties per month,
7 which is a 15,564 percent increase over the current
8 level. So 156- or 157-fold increase in the
9 mechanical royalties associated with the
10 ad-supported service.
11 One might think that faced with that type
12 of royalty obligation, Spotify might take more
13 aggressive steps to deregister users that are not
14 actively using the ad-supported service. There
15 would be costs and potentially disruption associated
16 with doing that, but if we do that calculation, and
17 suppose that they get the number of registered users
18 down to just monthly active users, then the next bar
19 would be the mechanical royalty associated with the
20 ad-supported service. It's somewhere above 20
21 million dollars per month and is a mere
22 2,470 percent increase over current levels.
23 Now, the subscription service is the next
24 bar. And I know it looks like a small bar on this
25 graph, because the other bars are so gigantic, but

1 this is a more than doubling. It's a 112 percent
2 increase in Spotify's mechanical royalties
3 associated with their subscription service. So
4 that's 112 percent increase.
5 Q. Can I just interrupt you for one second?
6 What prong of the Copyright Owners' proposal binds
7 with respect to those first three bars?
8 A. For these first three bars, it is the
9 per-user prong that's going to bind. Remember that
10 the Copyright Owners' proposal has a per-play prong
11 and a per-user prong.
12 And the proposal is that it would be the
13 greater of the two. And for Spotify, the per-user
14 prong would bind. And, actually, for -- for most of
15 the Services, it's going to be the per-user prong
16 that binds.
17 Now, if you -- this -- this proposal is
18 going to make it difficult, if not impossible, for
19 Spotify to continue to offer an ad-supported
20 service. So suppose that Spotify were to end the
21 ad-supported service, not offer that anymore. If
22 Spotify did that and only offered the subscription
23 service, then the per-stream prong of the Copyright
24 Owners' proposal would apply to Spotify.
25 And without the ad-supported service, now

1 the per-stream prong applies to the subscription
2 service, and that's why we have the fourth bar there
3 that shows the subscription-based mechanical royalty
4 in the absence of having an ad-supported service.
5 And that's why that's higher, at a 283 percent
6 increase, because a different prong would apply in
7 that case.
8 Q. And the 283 percent increase, that's
9 nearly a four-fold increase in mechanical royalties?
10 A. That's right, nearly a four-fold
11 increase.
12 Q. And what is the effect when you -- you
13 put these together on Spotify's business as a whole?
14 A. When we put them together, now you're
15 going to have payments of mechanical royalties for
16 both the ad-supported and the subscription service,
17 and those are the final two bars, depending on
18 whether you're going to measure end users as all end
19 users or monthly active users. And so you see very
20 large increases in the mechanical royalties
21 associated with the Copyright Owners' proposal.
22 Q. So just to be clear, if you interpret the
23 Copyright Owners' proposal as only applying to
24 Spotify's monthly active users for its ad-supported
25 service, it -- it is a 484 percent increase in

1 mechanical royalties?
2 A. That's right, 484 percent increase.
3 That's the final bar on this slide.
4 Q. And what effect would the -- given these
5 levels, what effect would the Copyright Owners' --
6 JUDGE STRICKLER: Gentlemen.
7 BY MR. ASSMUS:
8 Q. Given the level of these increases, have
9 you analyzed what effect the Copyright Owners'
10 proposal would have on consumer access to music?
11 A. Yes. It seems to me that this kind of
12 increase is going to make it difficult, if not
13 impossible, for Spotify to continue to offer the
14 ad-supported service. And the ad-supported service
15 is a key way in which users access streaming
16 services.
17 Q. And have you looked at the share of the
18 market that's represented by each type of service?
19 A. Yes, I have.
20 JUDGE STRICKLER: Before you -- before
21 you go on with that, good morning, Dr. Marx.
22 THE WITNESS: Good morning.
23 JUDGE STRICKLER: A question for you. If
24 this analysis is correct, do you think it would not
25 only cause a loss to Spotify but would also cause a

1 loss in revenue to the Copyright Owners?
2 THE WITNESS: Well, I think the loss of
3 the ad-supported service is something that is going
4 to mean both Copyright Owners and users are going to
5 lose what revenue is being derived from
6 low-willingness-to-pay consumers.
7 JUDGE STRICKLER: And on balance, do you
8 think their proposal, given that loss and given
9 whatever other benefits may exist from the -- from
10 the higher rates they're proposing, on balance,
11 would they benefit or would they lose?
12 THE WITNESS: I'm not sure. The payments
13 they're going to get -- I mean, when you tell me
14 they're going to put in place a proposal that's
15 going to result in Spotify having to pay over
16 100 percent of their revenue in royalties, it's hard
17 to go forward and view that as s sustainable
18 outcome. So, you know, it's a little hard to say
19 what's going to happen in that world.
20 The -- the royalties they're getting will
21 be larger if the Services continue to operate as
22 they have been. It's going to be hard to predict
23 the -- the impact, though.
24 JUDGE STRICKLER: If there was a
25 separate -- just keeping it simply ad-supported

1 versus non-ad-supported for the moment, if there was
2 a separate rate for ad-supported that was
3 percentage-of-revenue, rather than their proposal,
4 would that make -- would that be, shall we say, a
5 win/win for both the Copyright Owners and Spotify in
6 that there would be more revenue coming in for
7 Spotify and more revenue coming in for the Copyright
8 Owners than if they adopted this proposal?
9 THE WITNESS: Well, it would help with
10 allowing the -- providing that incentive for
11 Services to continue to try to monetize
12 low-willingness-to-pay consumers with an
13 ad-supported service.
14 JUDGE STRICKLER: And monetizing these
15 low-willingness-to-pay consumers with an
16 ad-supported service based on the existing rate
17 structure compared to what the Copyright Owners are
18 requesting --
19 THE WITNESS: That's right.
20 JUDGE STRICKLER: -- that would be a
21 win/win in the sense that it would earn more revenue
22 for the Copyright Owners and for Spotify than their
23 existing proposal, as applied to just the
24 ad-supported service?
25 THE WITNESS: Okay, I think you're asking

1 me to take the but-for as the Copyright Owners'
2 proposal, and would we be better off if we modified
3 it?
4 JUDGE STRICKLER: Well, better off -- I'm
5 comparing the Copyright Owners' proposal.
6 THE WITNESS: Yes.
7 JUDGE STRICKLER: -- to the status quo,
8 but only in the context of ad-supported. Would
9 leaving the status quo be better for the Copyright
10 Owners in the ad-supported context only in terms of
11 revenue than the proposal they're making here?
12 THE WITNESS: The status quo is better
13 than the Copyright Owners' proposal, if you're
14 talking about just ad-supported.
15 JUDGE STRICKLER: That's my question.
16 THE WITNESS: Yeah. I have concerns
17 about the Copyright Owners' proposal as applied just
18 to subscription streaming.
19 JUDGE STRICKLER: That's not my question.
20 I understand that. My question was more limited.
21 That being the case, and I think you're
22 saying, then, that it would be a win/win in the
23 ad-supported context to keep the status quo relative
24 to what the Copyright Owners are proposing, that
25 being the case, if we adopted the Copyright Owners'

1 proposal, wouldn't it be irrational for the
2 Copyright Owners to not try to bargain around that
3 rate as it related to the ad-supported service after
4 we establish a statutory rate so as to increase
5 their own revenues?
6 THE WITNESS: You know, this issue of
7 what would happen if -- is a proposal is put in
8 place that didn't reflect the 801(b) factors,
9 couldn't they renegotiate around it, none of the
10 experts have tried to model what would happen in
11 that bargaining setting.
12 It would be a negotiation that involved
13 the different publishers who have not necessarily
14 aligned interests. Even though their interests
15 might be aligned as an industry, it would have to be
16 individual negotiations. The negotiation cost,
17 there are hurdles when you have complementary
18 parties coming together for a negotiation like that.
19 So I think it's a little hard to -- to predict the
20 way that would play out.
21 JUDGE STRICKLER: But will you predict as
22 an economist that the Copyright Owners would leave
23 all that ad-supported low-willingness-to-pay money
24 on the table and not renegotiate at all? Just forgo
25 that revenue.

1 THE WITNESS: They might try to
2 renegotiate. It might be -- they might recognize
3 that, as a whole, they would be better off if a
4 bunch of deals could be put in place. You'd be in a
5 position where each publisher would like to grab the
6 best deal -- there's a -- there's a coordination
7 problem. As a whole, there's a bargain that would
8 potentially make everyone better off, but now are
9 you going to be able to put in place the whole set
10 of pair-wise negotiations between services and
11 publishers that make that happen? It's not clear to
12 me.
13 JUDGE STRICKLER: So is it fair to say
14 that you understand that the Copyright Owners would
15 try to bargain around the rate that they've
16 proposed, if that was adopted, for the ad-supported,
17 but given the problems in negotiation, you can't say
18 what form that -- those negotiations would
19 ultimately take in the form of contracts?
20 THE WITNESS: I think I agree with that.
21 I -- I think they might try to negotiate. I think
22 it's -- it's hard to predict what would happen. And
23 I sure wouldn't want to count on that turning out
24 well.
25 And I was focused in my written rebuttal

1 testimony on the Copyright Owners' experts' opinions
2 that they think that the proposal as is meets the
3 801(b) factors. And I don't think that's right.
4 JUDGE STRICKLER: Thank you.
5 JUDGE FEDER: Professor, in your
6 discussion with Judge Strickler, you opined that the
7 status quo would benefit the Copyright Owners
8 because, essentially, the Spotify ad-supported
9 service would not have to shut down, more or less.
10 What assumptions are behind that
11 concerning where those customers would go if the
12 ad-supported service shut down?
13 THE WITNESS: I have a slide, a couple
14 slides from now, where I look at what the revenues
15 from Spotify's ad-supported service are, relative to
16 revenues from other free-to-the-user services. And
17 Spotify's ad-supported service is monetizing those
18 users better than alternatives like Pandora's
19 non-interactive service, YouTube, terrestrial radio,
20 and piracy, of course.
21 So it is a -- it is a -- loss to --
22 JUDGE FEDER: But you're assuming that
23 they would only go to another ad-supported service.
24 Did you review Mr. Klein's testimony from yesterday?
25 The survey testimony.

1 THE WITNESS: I didn't have a chance to
2 look at what happened yesterday, sorry.
3 JUDGE FEDER: Have you seen any of his
4 survey results?
5 THE WITNESS: No, I haven't seen the
6 survey results.
7 JUDGE FEDER: Okay. Well, I'll represent
8 to you that the results showed that large numbers of
9 users of an ad-supported service would not be
10 willing to pay for a service, but some would.
11 So at some point, I -- you have to assume
12 that there's -- there's a break-even point where the
13 -- the increase in revenue from those who would go
14 to a paid service would equal or exceed the loss of
15 revenue from leaving or shutting down the
16 ad-supported service.
17 Have you seen any data that would tell
18 you where that break-even point lies?
19 THE WITNESS: I've seen some Spotify
20 internal -- internal analyses that look at where
21 ad-supported service users would go, if you took
22 that away. And most of them go to services that pay
23 -- that are not monetized as well as Spotify's
24 ad-supported service. Some of them would go to a
25 subscription service, in their estimation.

1 I think -- I mean, we're missing a little
2 bit of the bigger picture in that you might -- in
3 killing off an ad-supported service, you might get a
4 one-time gain that some of those people say, oh, you
5 know, that was my preferred service, so I'm worse
6 off now but I will prefer -- rather than going to
7 getting videos from YouTube or listening to
8 terrestrial radio, I might subscribe to the paid
9 service. But that's a one-time effect.
10 And that -- Spotify views the
11 ad-supported service as a valuable funnel to
12 bringing users into their paid service. Services
13 like Apple might have other funnels to bring users
14 into their paid service. So it might not be so
15 important to a service like that. But for Spotify,
16 that's a key way that users are brought into their
17 -- developed for their -- their paid service.
18 So I -- I worry that we -- we're not
19 recognizing the loss that would be -- the full loss
20 that would be associated with losing ad-supported
21 service. And I've got also some numbers I'd like to
22 share with you on the impact of the Copyright
23 Owners' proposal on just the subscription service.
24 And even the impact on the subscription service, I
25 think, is at a level that's concerning.

1 JUDGE FEDER: All right. Let's proceed
2 towards that. Thanks.
3 THE WITNESS: Thanks.
4 BY MR. ASSMUS:
5 Q. There has been a lot of focus in this
6 proceeding on the concept of willingness to pay and,
7 in particular, on low willingness to pay. Have you
8 observed that there are also high-willingness-to-pay
9 consumers in the marketplace?
10 A. Yes. And we've talked about the value of
11 price discrimination as far as reducing deadweight
12 loss, that it would be valuable in an economic
13 efficiency sense to be able to provide access to
14 low-willingness-to-pay consumers, to provide a way
15 to monetize low-willingness-to-pay consumers and to
16 bring them into music streaming.
17 There are also high-willingness-to-pay
18 consumers. And there are also price discrimination
19 possibilities that might apply to them where you
20 might be able to offer a higher priced service with
21 greater sound fidelity or some -- that had some
22 additional feature that would be valuable to
23 high-willingness-to-pay consumers.
24 In -- in a Shapley value context, for
25 example, if the revenues were able to be increased

1 by offering -- by additional price discrimination
2 that allowed you to capture incremental revenue from
3 high-willingness-to-pay consumers, the Shapley value
4 interpretation of fairness would require that some
5 of that incremental revenue be shared with Copyright
6 Owners.
7 And that's something that would be
8 achieved with a percentage-of-revenue --
9 percentage-of-revenue royalty rate structure, but
10 not met if you have a fixed per-stream or per-play
11 structure.
12 Q. So just to be clear on that, do the
13 Copyright Owners win under their rate proposal if
14 Services can find a way to monetize
15 high-willingness-to-pay consumers?
16 A. If you get incremental ability to
17 monetize high-willingness-to-pay consumers, where
18 you offer them a more valuable service like higher
19 sound quality, but you have the same set of
20 consumers and they're streaming the same number of
21 streams, then there would be no benefit to the
22 Copyright Owners in that setting under their
23 proposal.
24 Q. I'd like to turn back to what we just
25 started right before the Judges' series of

1 questions. How important is the ad-supported
2 business to the market as a whole? And I think you
3 have a slide on this.
4 A. This slide shows a couple pie charts that
5 are dividing up the interactive streaming industry
6 in a couple different ways. The first is by their
7 of subscriber months, 2015 data. And the second is
8 by the share of plays.
9 The green slice here is Spotify's
10 ad-supported service. And these are monthly active
11 users. These are the users reported to HFA.
12 And you can see that Spotify's
13 ad-supported service is more than half of the
14 subscriber months in the interactive streaming
15 industry and about a third of the streams. If you
16 put Spotify's ad-supported together with Spotify's
17 subscription service, they're about three-quarters
18 of the -- the users in interactive streaming and
19 also about three-quarters of total streams.
20 This slide is also highlighting Amazon
21 Prime Music. Amazon Prime Music also -- like
22 Spotify's ad-supported service, Amazon Prime Music
23 also has a large number of inactive users. And so
24 if you apply the "all users with access to the
25 service" definition in the Copyright Owners'

1 proposal, Amazon Prime Music would also be hit hard
2 by the increase in mechanical royalties.
3 And this slide is also pointing out that
4 they are a substantial share of subscriber months
5 and of plays in this industry.
6 Q. So to be clear, the -- the Copyright
7 Owners, to your understanding, are suggesting that
8 there need -- might need to be a renegotiation with
9 respect to 62 percent of the subscriber months in
10 the market?
11 A. That's right. 62 percent would be the
12 combined subscriber month share of Amazon Prime
13 Music and Spotify ad-supported.
14 Q. Now, have you analyzed the effects the
15 Copyright Owners' rate proposal would have on
16 Spotify on a percentage-of-revenue basis?
17 A. I have.
18 Q. And I believe you have a slide on this as
19 well. Actually, before I go there, this -- this
20 discussion was presaged by a question Judge Feder
21 had.
22 You mentioned that you looked at the way
23 Spotify's ad-supported service monetizes compared to
24 other free-to-the-user services.
25 A. That's right.

1 Q. Can you explain those calculations?
2 A. Yes. So this next slide has, on the
3 virtue axis, musical works royalties per hour of
4 listening. And it offers four bars and an empty bar
5 for piracy. But it's showing that musical works
6 royalty per-user hour for a collection of
7 free-to-the-user services.
8 And I was thinking about this issue of
9 opportunity cost and to what extent does having a
10 low-willingness-to-pay user be monetized through
11 Spotify's ad-supported service detract from what you
12 might be able -- what the music industry might be
13 able to get from those listens through another
14 service.
15 And you can see that Spotify's
16 ad-supported service is monetizing these
17 low-willingness-to-pay listeners better than
18 Pandora's non-interactive ad-supported service,
19 YouTube, terrestrial radio, and, of course, piracy.
20 Q. So now turning to the impact of the
21 Copyright Owners' rate proposal on Spotify on a
22 percentage-of-revenue basis, have you analyzed that?
23 A. Yes, I have.
24 Q. And if you could walk us through that
25 impact on this slide.

1 A. This slide has a number of things going
2 on. Let me point out the key difference here. The
3 -- the vertical axis here is the percent of revenue.
4 So we're still looking just at Spotify and just at
5 mechanical royalties.
6 Before, we had dollars on the vertical
7 axis. This is percent of revenue, so it's going to
8 help benchmark how much are we really asking them to
9 pay relative to the revenue that they have from
10 which to pay it?
11 And, again, I've broken it out into
12 ad-supported based on two different definitions,
13 either all end users or monthly active users,
14 subscription, and then combined. As you can see,
15 the first -- oh, and the -- there's a -- there's a
16 horizontal red line at 100 percent.
17 So when you see green bars that are above
18 the red line, above the 100 percent of revenue line,
19 that's telling you that the Copyright Owners'
20 proposal would be asking Spotify to pay more than
21 100 percent of its revenue in the mechanical royalty
22 alone. You see ad-supported with all end users.
23 They would be asked to pay on the order of ten times
24 more than their current revenue from ad-supported
25 services in mechanical royalties alone.

1 Even going to monthly active users,
2 they'd be asked to pay 156 percent of their revenue
3 in mechanical royalties alone. For
4 subscription-based service, the bar has 14 percent.
5 The current mechanical royalties that Spotify is
6 paying are possibly 6 percent of revenue. So this
7 is the more than doubling of the mechanical
8 royalties.
9 And for subscription-based, again, if we
10 imagine a world where we've killed the ad-supported
11 service, a different prong in Copyright Owners'
12 proposal will apply, the per-stream prong then
13 applies.
14 JUDGE STRICKLER: So it's sort of
15 implicit and the word "if" should have been there
16 before the word "no" in the parentheses?
17 THE WITNESS: Yes, I agree. It's taking
18 the hypothetical that there is no ad-supported
19 service at all, that's right.
20 JUDGE STRICKLER: The next bar -- I know
21 you're about to get to the next bar, but can you --
22 in your explanation, can you distinguish what that
23 bar means compared to the first bar, because the
24 language is very similar?
25 THE WITNESS: I'm sorry, which two bars

1 were you asking about?

2 JUDGE STRICKLER: The bar that has the

3 948 percent increase. I think you were about to

4 get, I think, into the bar that has the 169 percent

5 increase.

6 THE WITNESS: Yes.

7 JUDGE STRICKLER: What is -- what is the

8 difference there?

9 THE WITNESS: Good. The ad-supported,

10 the first bar, the 948 percent bar, is the increase

11 in ad-supported mechanical royalties relative to --

12 as a -- as a fraction of ad-supported revenue. And

13 then the overall bar is the mechanical royalty from

14 ad-supported service plus mechanical royalty for the

15 subscription service relative to total revenue.

16 JUDGE STRICKLER: So plus subscription

17 service?

18 THE WITNESS: In the overall bar, yes.

19 Is that not what you were looking at?

20 JUDGE STRICKLER: No, it is. But -- but

21 I'm confused because the parenthetical just says

22 ad-supported -- end users for ad-supported.

23 THE WITNESS: Right. It's just

24 clarifying. There are two overall bars, the -- the

25 last two bars there. The overall bar, the first

1 overall bar that has the 169 percent is using the
2 assumption that all registered users count toward
3 paying the per-subscriber fee in the Copyright
4 Owners' proposal. And then the final bar is asking
5 what if Spotify were able to whittle down its set of
6 registered users down to only monthly active users?
7 JUDGE STRICKLER: So those last two bars
8 are based on -- if the per-user prong applied?
9 THE WITNESS: The per-user prong would
10 apply when you have both the -- for Spotify, the
11 per-user prong would apply when you have both
12 ad-supported and subscription in the market. I -- I
13 guess I didn't give you an overall bar that had just
14 subscription-based, no ad-supported, but it would be
15 the same as the -- the 25 percent bar there because
16 then there would be nothing to add to it.
17 JUDGE STRICKLER: Thank you.
18 BY MR. ASSMUS:
19 Q. So to be clear, the final two bars are
20 the impact of the Copyright Owners' rate proposal if
21 the ad-supported business stays in existence?
22 A. That's right. The final two bars are
23 taking subscription -- the impact on subscription
24 service and the impact on the ad-supported service
25 and adding them together under two different

1 assumptions on who counts as a user for the
2 ad-supported service.
3 Q. Now, have you also analyzed how these
4 increases in mechanical royalty would affect
5 Spotify's overall content costs?
6 A. Yes. These are just mechanical
7 royalties. And you can see even in some cases just
8 a mechanical royalty alone brings you over
9 100 percent of revenue. But I -- it's important to
10 consider the overall impact of the Copyright Owners'
11 proposal.
12 And this graph, again, has percent of
13 revenue on --
14 Q. That's Demonstrative 8; is that right?
15 A. Yes.
16 Q. Yes.
17 A. This graph also has percent of revenue on
18 the vertical axis, and it contrasts three
19 possibilities. Let me set the stage a little bit.
20 Also, this graph has the two vertical bars. A blue
21 bar at the level of Spotify's current musical works
22 royalty. This is for the second half of 2015, first
23 half of 2016. And their musical works royalties
24 were 12.5 percent of revenue.
25 There's a black bar that shows Spotify's

1 current total revenues, which are 71.5 percent of
2 revenue.
3 JUDGE STRICKLER: You mean total
4 royalties?
5 THE WITNESS: Sorry, thank you. Total
6 royalties.
7 JUDGE STRICKLER: When you say total
8 royalties, that includes musical works, that is to
9 say, mechanical and performance and sound recording?
10 THE WITNESS: That's right. There are
11 three scenarios presented. The first scenario shows
12 current rates, so the different structures apply to
13 ad-supported and subscription streaming, but with
14 the change that the 50 cent per-user mechanical
15 floor in the formula for portable subscription
16 services mixed use is removed.
17 In that case, Spotify's musical works
18 royalties would be 11 percent of revenue, so falling
19 slightly below that blue line that's there. Sound
20 recording royalties are 59 percent of revenue.
21 The 59 percent isn't going to be
22 affected. It's going to be the same in these three
23 bars. We're considering different scenarios that
24 affect musical works royalties.
25 So in the -- the green vertical bar, you

1 would get, in that scenario, Spotify paying
2 70 percent of their revenues in total royalties;
3 musical works, performance, and mechanical and sound
4 recording.
5 Under the Copyright Owners' proposal, if
6 we take the assumption that only monthly active
7 users would be counted towards the users for the
8 per-user prong, then Spotify would be paying the
9 37 percent from the previous slide in mechanical
10 royalties, plus the 6 percent that they pay in
11 performance royalties, so that's 43 percent in
12 musical works royalties, plus 59 percent in sound
13 recording royalties. So in that case, their total
14 royalties under the Copyright Owners' proposal are
15 102 percent of revenue.
16 JUDGE STRICKLER: That's including both
17 subscription and ad-supported?
18 THE WITNESS: That's right, but assuming
19 that we're only going to count monthly active users
20 as counting towards what they have to pay for the
21 per-user prong in the Copyright Owners' proposal.
22 And I just feel the need to emphasize
23 that it's absurd to have a royalty rate and
24 structure -- structure in place where the largest
25 streaming service is asked to pay more than it

1 brings in, in royalties.

2 JUDGE STRICKLER: Let me ask you about

3 the assumption that the 59 percent will stay

4 constant throughout because I think that's either

5 explicit or implicit in the Copyright Owners' own

6 analysis, which is that there's just so much surplus

7 that can be bargained for as between the two

8 providers of the Cournot complements, that is to

9 say, musical works as a whole and sound recordings

10 as a whole.

11 So if the -- if the Copyright Owners get

12 an increase in musical works, by necessity, since

13 102 percent is not sustainable in the next -- what

14 you're going to get to, 234 percent is clearly less

15 sustainable, if that makes sense.

16 THE WITNESS: Yes.

17 JUDGE STRICKLER: That will -- it will

18 force a renegotiation of the 59 percent that goes to

19 the -- to the sound recording labels, unless the

20 providers of the inputs prefer to see the streaming

21 industry just disappear.

22 THE WITNESS: I agree. I -- I don't

23 think of this Board's job being to set a ridiculous

24 rate structure that has to immediately be

25 renegotiated in order to save the industry. So I

1 think that it is a problem that this Copyright
2 Owners' proposal leads to these kinds of results.
3 I think it's hard to predict where this
4 type of renegotiation would take us, and none of the
5 experts have done any analysis that speaks to that.
6 JUDGE STRICKLER: But in a sense, and
7 I've been thinking about it after the Copyright
8 Owners's case-in-chief, in some sense implicitly
9 aren't we setting an upper limit on what the -- what
10 the labels can actually get? Because if there's
11 just so much surplus to go around, if we set the
12 Copyright Owners' rate too low, the labels grab more
13 of the surplus.
14 If we set it too high, economic analysis
15 suggests -- and correct me if this is wrong; I think
16 this is the Copyright Owners' point -- that the
17 sound recording royalty will go down and you will
18 see -- and that's in part an explanation of why they
19 come to their 3. something to 1 ratio because they
20 think that's what exists in the marketplace.
21 So while it's certainly not our job to
22 set that rate, to the extent which -- the argument
23 is that the Services are trying to get some sort of
24 a cap on the hardship of a higher rate, aren't we
25 just -- just transferring the benefit -- if we do

1 that, aren't we just transferring the benefit to the
2 labels away from the songwriters and leaving the --
3 the Services in the same position they were in
4 otherwise because that label rate is being set in an
5 unregulated market?
6 THE WITNESS: I think the Copyright
7 Owners' argument is that the adjustment would not be
8 complete. So that if this Board increases musical
9 works royalties, there would be some adjustments
10 downward in sound recording royalties, but it
11 wouldn't completely offset the increase in musical
12 works royalties.
13 And where that lands -- it's not clear to
14 me that that offset gets you back into a range where
15 these Services can offer a profitably --
16 JUDGE STRICKLER: Well, the choice that I
17 posited in a previous question was either the --
18 either the sound recording -- the labels renegotiate
19 lower so that the rate is -- the combined royalty is
20 less than 100 percent of revenues or they just blow
21 up the world and they say: No more streaming, we
22 don't want it, we have better opportunity costs
23 elsewhere, opportunity benefits elsewhere, and let
24 it -- let it all fail. We can't control that
25 because we don't control the sound recording.

1 THE WITNESS: That doesn't sound like the
2 first 801(b) factor came out very well in that
3 scenario. It doesn't seem to me that -- well, maybe
4 I'm not understanding what your question is.
5 JUDGE STRICKLER: My question is how --
6 are we really capping what the -- what the Services
7 pay by keeping this rate lower if -- if it is, in
8 fact, so that by doing so, all we're doing is giving
9 greater revenue to the -- to the labels?
10 THE WITNESS: I think, guided by the
11 801(b) factors, the -- for example, the benchmarks
12 that I looked at and the Shapley value analysis that
13 I looked at suggests that in a hypothetical fair
14 market, all of these royalties would be lower than
15 current levels and, in particular, musical works
16 royalties would be slightly lower than current
17 levels.
18 And that -- that's something that I think
19 is in the control of this Board.
20 JUDGE STRICKLER: That might be a lower
21 -- a lower level under your Shapley analysis might
22 be fair, and I might even agree with that, but
23 there's nothing that prevents the labels from taking
24 the surplus anyway, because that's in the
25 marketplace. If they are a must-have, they have

1 that kind of Cournot complement power or any other
2 market power that they may have, whatever savings
3 this Board can afford relative to the Copyright
4 Owners' rate, it's all going elsewhere anyway
5 because they can take it. And not in -- I'm not
6 saying they will destroy the market; I'm saying that
7 they will make sure that they extract the most that
8 they possibly can.
9 How are we -- at the end of the day, I
10 suppose, I'm saying how are we -- how are we
11 actually helping the Services?
12 THE WITNESS: The Copyright Owners'
13 experts are arguing that they wouldn't get all of
14 it, that there would be some adjustment. And so if
15 there's some reduction in musical works royalties as
16 a result of this hearing, that they would expect
17 total royalties to go down. Maybe some adjustment
18 on the sound recording side, but -- but not
19 recapturing all of it.
20 And, similarly, if this Board were to
21 increase musical works royalties, they're arguing
22 that that would, in total, lead to an increase in
23 overall royalties because although there would be
24 some adjustment -- I don't know what the length of
25 time on these contracts are -- so years from now, as

1 negotiations pay out, there might be some adjustment
2 on the sound recording side, but that it wouldn't be
3 a complete offset.
4 And when you think about these
5 renegotiations, you've got a number of big record
6 labels. They're all going to be looking to the
7 other -- to someone else to go first in saving the
8 industry. Even if it's in the interest of them as a
9 whole to rescue the industry, they'd rather do it on
10 someone else's back.
11 So how those negotiations play out, I
12 think it's complicated and hard to guess.
13 JUDGE STRICKLER: Thank you very much.
14 BY MR. ASSMUS:
15 Q. You mentioned factor A in response to one
16 of Judge Strickler's questions. If the Copyright
17 Owners are correct that overall royalties would
18 increase, what would be the impact on consumers?
19 A. If overall royalties increase in an
20 industry that's already losing money, now losing
21 more money, I think you would have to predict, at
22 least in the longer run, a diminishment in entry,
23 variety, the set of services that are available to
24 consumers.
25 Q. What about prices?

1 A. You would expect at some point that to
2 filter through to higher prices.
3 Q. And to bring this back to sort of actual
4 profitability, have you analyzed how Spotify's
5 earnings compare to those of the Copyright Owners?
6 A. I did look at that.
7 Q. And that's slide -- excuse me, slide 9, I
8 believe.
9 A. Yes.
10 Q. Demonstrative 9.
11 A. Yes. This slide has percentages, it's
12 margins, 2015 margins. I want to warn you that the
13 margins that are depicted in the four bars are not,
14 strictly speaking, comparable because some are
15 global and some are U.S., but they're -- they're
16 labeled here, but I think it's representative of the
17 level of profitability of these firms.
18 The first bar is global publisher
19 margins, 26 percent. The second bar is record label
20 margins, 15 percent. So profitable businesses,
21 positive margins. The last two bars are global --
22 Pandora's global profit margin, and global is almost
23 all of Pandora, so this is largely reflecting U.S.
24 And Spotify is U.S. EBIT margin.
25 So we have -- the overall picture of the

1 industry is profitable labels, profitable
2 publishers, and a number of unprofitable streaming
3 services.
4 Q. Now, these are representations of
5 accounting profits, correct?
6 A. Yes, these are accounting profits.
7 Q. Is it, in your view, important to
8 consider accounting profits here instead of economic
9 profits? And does that question even make sense?
10 A. I think accounting profits are -- are
11 informative here, but they're losing money. The
12 publishers and record labels are making money. The
13 streaming services -- services are losing money.
14 Economists sometimes talk about economic
15 profit, and we would typically think of economic
16 profit as being lower than accounting profit because
17 it would include potentially extra costs, include
18 also some measures of opportunity cost. So if
19 they're losing money in accounting profits, we would
20 think they've got negative economic profits as well.
21 JUDGE STRICKLER: In economics, they
22 also -- there's also the term "normal profits." Are
23 you equating normal profits with economic profits?
24 THE WITNESS: Sometimes you would see the
25 phrase used as zero economic profits being a normal

1 profit in that you're making a normal rate of return
2 on your assets. So it depends probably on how
3 you're using the word, but that would be one way
4 that it would be used.
5 JUDGE STRICKLER: But you're using
6 economic profit as distinguished from, necessarily,
7 normal profit? They may be the same, but you're not
8 using them as equivalent?
9 THE WITNESS: That's right. There are
10 sometimes cases where you might see economic profits
11 -- if there were costs that were in some sense
12 fraudulent, that they were trying to artificially
13 inflate costs somehow, then when you were
14 calculating economic profits, you wouldn't want to
15 count those as actual costs. So there are also
16 cases where economic profits might not include some
17 of the costs and so it might be higher than
18 accounting profits.
19 But I think of these numbers as relevant.
20 These are -- these are what they're making. These
21 are the -- the cash flows and are relevant for
22 economic decision-making.
23 JUDGE STRICKLER: Well, the Services -- I
24 mean, excuse me, the Copyright Owners make the
25 argument that when you look at market valuation in

1 terms of capitalization values of the companies,
2 that they're indicative of the fact that there are
3 long-run economic profits for streaming services as
4 -- as the market now exists.
5 Wouldn't the -- the market for the stock,
6 the capital market, already attempt to incorporate
7 both the costs that you just referred to and the
8 future -- and future costs and future revenues, and
9 discount them so if there's a positive market cap,
10 doesn't that suggest that the analysis that you just
11 went through is done in the marketplace and the
12 future revenues, discounted to present value, exceed
13 the future costs discounted to present value; hence,
14 there's a positive economic profit?
15 THE WITNESS: Okay. I disagree with the
16 last piece of what you said. The -- the stock
17 market, they don't care about economic profit, that
18 you can't put economic profit in your -- in your
19 pocket. So the -- I think of the -- the stock
20 price, the market capitalization, as reflecting the
21 expected discounted value of future cash flows, the
22 money --
23 JUDGE STRICKLER: Which is net of costs,
24 right?
25 THE WITNESS: Oh, yes, revenues minus

1 costs. And so I think the market capitalization as
2 reflecting the present and future discounted
3 accounting profits, that I'm not going to buy a
4 stock to make money because they're going to make
5 economic profits. I want to know how much cash
6 there is.
7 So I -- there has been, in some of the
8 testimony, this idea that, oh, they must have
9 economic profits because there's positive market
10 capitalization. I think it's confusing and not
11 quite right the way that has been used.
12 JUDGE STRICKLER: Thank you.
13 BY MR. ASSMUS:
14 Q. Before turning to some other -- the
15 impact on other Services, could you take a look at
16 Spotify Trial Exhibit 1041, Trial Exhibit 1041,
17 which is the last one in your binder.
18 A. Yes, I'm there.
19 Q. Is -- is this some of the data you relied
20 on?
21 A. Yes, it is.
22 Q. And could you turn to -- I believe it-s
23 the seventh page of -- of that document, not Bates
24 numbered. This is a printout of an Excel
25 spreadsheet. Could you just briefly explain what

1 the stream data is?
2 A. Yes. This is data that I used, for
3 example, in Figure 1 in my written rebuttal
4 testimony. It's the streams, products, regs to MB
5 from data database file that was provided to me from
6 Spotify. And it's giving for --
7 MR. SEMEL: I'm sorry, I object. Is this
8 witness testifying from personal knowledge as to
9 what this data is?
10 MR. ASSMUS: Your Honor, she's -- I'm
11 having her explain some of the data she relied on in
12 connection with her expert opinion.
13 MR. SEMEL: I understand, but she seems
14 to be explaining what it is, and I'm asking if she
15 has personal knowledge of what it is.
16 JUDGE BARNETT: She's testifying as to
17 how she interpreted it, and so we will take that as
18 an assumption on her part.
19 THE WITNESS: This data has a column for
20 year and month and then a column for streams and a
21 column for streams 30s, which I interpreted as
22 streams of 30 seconds or longer in length, and then
23 a column for tier and CRB tier.
24 BY MR. ASSMUS:
25 Q. Go ahead.

1 A. And this is the data that I used to
2 identify the number of streams, both 30-second-plus
3 streams, which are what Spotify reports to HFA, and
4 all streams.
5 Q. And what is your understanding of why
6 there are multiple, for example, family paid tiers
7 for a given year and month?
8 A. My understanding is that this was pulled
9 from a larger database that had more granular
10 breakouts of the various family plans. So they had
11 separate family plan for two people --
12 MR. SEMEL: I'm sorry, I object. This is
13 speculative -- it's hearsay. It's not in her report
14 anywhere. And I mean she's -- I don't -- I didn't
15 see any foundation for her actually knowing any of
16 these things. She just seems to be repeating things
17 that someone told her that are not in her report.
18 JUDGE BARNETT: They were her
19 assumptions. We -- we're not accepting this for the
20 truth of the matter.
21 MR. ASSMUS: And to add to that, Your
22 Honor, we're not offering this particular exhibit
23 for the truth. We're offering it as a reliance
24 exhibit. Thank you.
25 THE WITNESS: My understanding is that

1 the larger database had a more granular breakout of
2 the different family plans. They had offered plans
3 that were specific to two people, specific to three
4 people, more recently a plan for -- allowed any, up
5 to six, I think, family members to be put on the
6 plan at a single fee.
7 And so there are -- imagine there being
8 another column that had that additional detail that
9 is now no longer here. So these were distinct
10 family plans in their financial accounting.
11 BY MR. ASSMUS:
12 Q. Thank you.
13 JUDGE STRICKLER: Counsel, just -- I want
14 to make certain I understand something. You said
15 you're not offering this for the truth of the matter
16 but as a document relied upon by this witness.
17 MR. ASSMUS: Yes.
18 JUDGE STRICKLER: In another context, you
19 are offering it for the truth of the matter, and
20 that's the subject of a pending motion; is that --
21 MR. ASSMUS: Well, I don't know if it's
22 pending yet, Your Honor. It has been promised.
23 JUDGE STRICKLER: It's impending.
24 MR. ASSMUS: Yeah. I -- I understand
25 that the -- this particular document was the subject

1 of -- I was not here today -- yesterday, sadly --
2 Mr. Vogel's testimony.
3 JUDGE STRICKLER: Really sadly?
4 MR. ASSMUS: Well, I'm excited about
5 Shapley value so take what you will from that. But,
6 yes, you are correct. The -- the provenance and
7 veracity of this document may be the subject of a
8 motion.
9 THE WITNESS: The 30-second streams do
10 tie out to what Spotify reports to HFA as their
11 number of streams.
12 MR. SEMEL: Again, just being clear, this
13 is not based on the witness' personal knowledge
14 because it was not phrased as -- as anything other
15 than that.
16 JUDGE BARNETT: She might have knowledge
17 of what the HFA figures are. I don't know. There's
18 no foundation for that.
19 MR. SEMEL: I will explore it on cross.
20 THE WITNESS: It's my personal knowledge
21 that the 30-second streams tie out to HFA data.
22 BY MR. ASSMUS:
23 Q. And, Dr. Marx, in connection with your
24 expert work, did you review the provenance of the
25 data used from Spotify?

1 A. I talked to Spotify's data analytics team
2 about this data and talked to them about what's in
3 it.
4 Q. Now, I would like to turn to the impact
5 of the Copyright Owners' rate proposal on other
6 Services besides Spotify. Did you make an analysis
7 of that impact?
8 A. Yes, I did.
9 Q. And what did you find?
10 A. This slide has -- we're back to dollars
11 on the vertical axis, so it's millions of dollars.
12 And it has a comparison of the effect of the
13 Copyright Owners' proposal on Spotify, Google, Apple
14 Music, and other.
15 And it has blue bars for the Services'
16 current mechanical royalties for their paid
17 subscription services. All of these are just the
18 paid subscription services.
19 And so you see the 112 percent increase
20 that we talked about before for Spotify's mechanical
21 royalties and their paid subscription service.
22 Google shows in this graph a 29
23 plus percent increase. There are some challenges to
24 estimating the effect on Google, given the data that
25 I have, because they report all of their mechanical

1 works royalties, performance -- sorry, all of their
2 musical works royalties, including performance and
3 mechanical, to HFA and they're all labeled
4 mechanical. So there are some challenges in sorting
5 that out. So it must be substantially more than
6 that 29 percent, but it's hard for me to estimate
7 where.
8 Apple Music experiences a 479 percent
9 increase; and other services, 103 percent increase.
10 JUDGE FEDER: Excuse me.
11 MR. ASSMUS: Go ahead.
12 JUDGE FEDER: Do those other services
13 include Amazon? Or did you not have Amazon data?
14 THE WITNESS: I think Amazon is in there,
15 but if it's important I should probably look at the
16 notes in my figure in my written rebuttal testimony.
17 Would you like me to check?
18 JUDGE FEDER: Perhaps at the next break.
19 THE WITNESS: Thank you. Sorry.
20 JUDGE FEDER: That's okay.
21 BY MR. ASSMUS:
22 Q. So we have seen that the Copyright
23 Owners' proposal would have a substantial impact on
24 Spotify and the other Services. In your view, is
25 that proposal consistent with the 801(b) factors?

1 A. In my opinion, that proposal is not
2 consistent with the 801(b) factors.
3 Q. And could you describe for the Panel, and
4 I think we have a slide on this, the manner -- the
5 ways in which you believe the Copyright Owners'
6 proposal is inconsistent with the 801(b) factors?
7 A. Yes. This slide reproduces for you the
8 801(b) factors and makes some points about the
9 Copyright Owners' proposal with respect to those
10 factors. The first factor talks about maximizing
11 the availability of creative works for the public.
12 But the Copyright Owners' proposal would lead to a
13 reduction in the variety of services available, in
14 particular effects on ad-supported services, would
15 discourage Services from offering discounts to
16 low-willingness-to-pay consumers, and would
17 discourage efficient all-you-can-eat -- the
18 efficient all-you-can-eat listening model.
19 With respect to the second and third
20 801(b) factors, which talk about fairness and
21 reflecting relative roles, the Copyright Owners'
22 proposal would increase transfers from entities
23 currently earning negative profits to those earning
24 significant positive profits, which is not what I
25 would expect to represent a fair division of the

1 surplus, both on a commonsense measure and also it
2 contradicts my Shapley value interpretation of those
3 two 801(b) factors.
4 And the fourth one, to minimize any
5 disruptive impact, the Copyright Owners' proposal
6 represents a substantial increase in the level of
7 rates and a departure in the structure of rates and
8 eliminates a rate structure that has benefitted
9 copyright holders, users, and consumers.
10 JUDGE FEDER: Professor, under the first
11 801(b) factor, your second column only discusses how
12 the proposal would affect Services, correct?
13 Is it your view that the 801(b) factor is
14 only look at the effect on Services or the effect on
15 Services and Copyright Owners?
16 THE WITNESS: I think of it as -- as a
17 whole, maximizing the availability of creative works
18 to the public. And as an economist, that
19 availability encompasses for me production and
20 distribution and pricing. So that consumers are
21 actually willing and able to access it.
22 So it's all of that together, in my
23 opinion. And I modeled that as a desiderata that
24 you would want to maximize overall efficiency.
25 JUDGE FEDER: But I only see in the

1 second column here things that affect the
2 distribution side, not the production side. Is it
3 your view that the Copyright Owners' proposal would
4 have no effect one way or the other on the
5 production side? Or did you just not include that
6 in this slide?
7 THE WITNESS: I did not include that in
8 the slide. And the Copyright Owners' proposal --
9 it's a little hard for me to give an opinion about
10 how it's going to affect the Copyright Owners as a
11 whole because I view it as substantially disruptive
12 to the streaming industry.
13 So what that world looks like is a little
14 hard to predict. Since they are proposing it, I
15 assume that they view it as good or at least neutral
16 for their clients.
17 JUDGE FEDER: Thank you.
18 BY MR. ASSMUS:
19 Q. So I'd like to run through the factors
20 and have you explain where it is you think the
21 Copyright Owners' experts went wrong in their
22 analysis of -- of the four factors that would lead
23 to a result that you believe is inconsistent with
24 the 801(b) factors.
25 I'd like to start with -- with factor A.

1 A. Yes. So in my opinion, the Copyright
2 Owners' proposal is inconsistent with the 801(b)
3 factors. Their economists all opine that it is
4 reasonable and meets the 801(b) factors, so what I
5 want to do, and what I do in my written rebuttal
6 testimony, is try to explore how these economists
7 could have looked at these same factors and looked
8 at the Copyright Owners' proposal and come to the
9 conclusion that it was reasonable.
10 And I'm going to walk through the four
11 factors and talk about the interpretations that the
12 Copyright Owners' economists applied and then the
13 analysis that they did.
14 The first factor is to maximize the
15 availability of creative works to the public.
16 Dr. Gans doesn't offer any clear interpretation of
17 that factor and doesn't have an analysis associated
18 with it.
19 Dr. Rysman has the opinion that even if
20 the Copyright Owners' proposal induces some exit
21 among streaming services, as long as some Services
22 are still there to supply, to offer distribution to
23 consumers, that the availability would be maximized.
24 And he expressed in his testimony the opinion that
25 even if these Services ended up being priced at

1 10,000 dollars a month, then the availability would
2 still be maximized.
3 JUDGE STRICKLER: Doesn't Dr. Rysman's
4 first point go to Judge Feder's question about
5 production and -- and availability?
6 THE WITNESS: Yes, it does. So the
7 Copyright Owners' proposal, to the extent that it
8 results in higher royalties to songwriters,
9 Dr. Rysman is arguing that would increase output.
10 And so I think they would think that would be good
11 for availability on the production side.
12 It's a little hard for me to have -- to
13 share that opinion because I think the Copyright
14 Owners' proposal would be so disruptive to the
15 distribution side, it's hard for me to know exactly
16 how much would actually end up flowing upstream.
17 JUDGE STRICKLER: So you can build it but
18 they will not stream, is what you're saying?
19 THE WITNESS: Exactly.
20 BY MR. ASSMUS:
21 Q. By the way, have you seen any evidence
22 that, under the current rates, there's a dearth of
23 songwriters or songs?
24 A. I haven't seen any evidence of that.
25 Q. And what about Dr. Eisenach and his

1 interpretation of factor A?
2 A. Dr. Eisenach interprets this factor as
3 well as the fairness factors as meaning that we
4 should have rates that reflect fair market value.
5 But then in identifying the benchmark for fair
6 market value, he relies on the current sound
7 recording royalties.
8 And I view those royalties as -- although
9 they are determined in a market, they reflect market
10 power of the record labels. There are a small
11 number, three large record labels, with content that
12 is viewed as must-have for the interactive streaming
13 services. There's a complementarity problem, a
14 Cournot complements problem that we talked about,
15 and the possibility that those sound recording rates
16 are inflated by the statutory musical works
17 royalties.
18 So I -- I view that benchmark as
19 inappropriate for identifying rates that would
20 maximize the availability of works to the public.
21 Q. And what about factors B and C?
22 A. B and C are affording fair return, fair
23 income, and reflecting the relative roles of
24 Copyright Owners and users. Dr. Gans'
25 interpretation in his written direct testimony is

1 that the rates would be fair, if they are based on
2 an unconstrained market benchmark. Dr. Eisenach has
3 a similar opinion, that the rates reflect -- would
4 be fair, if it reflected the fair market value.
5 And both of them use a benchmark based on
6 current sound recording royalties, which I view as
7 potentially affected by market power and not
8 reflective of what fair rates would likely be.
9 Dr. Rysman argues that per-play and
10 per-user rates are fair. He doesn't provide any
11 analysis of that. It's -- it's not grounded in
12 economics. Nothing about economics says that
13 per-play and per-user rates would be more or less
14 fair than percentage-of-royalty rates, just on their
15 face, but that seems to be his opinion.
16 And he also argues that rates should
17 reflect distinct roles of owners and users and
18 recognize the subsidiary role of copyright users as
19 established by CRB precedent.
20 Related to this, he provides a
21 benchmarking to Netflix and to Netflix's content
22 costs, which is completely inappropriate, in my
23 opinion. And I provide a discussion of that in my
24 written rebuttal testimony. It's in section 6-C-3
25 of my written rebuttal testimony.

1 JUDGE STRICKLER: Was that primarily
2 because you say that Netflix has original
3 productions that may -- and so they're not merely
4 just a distribution agent?
5 THE WITNESS: Yes, he's -- what he's
6 looking at is dramatically increasing content costs
7 for Netflix and -- and suggesting that that means as
8 they mature, they're paying more for content costs,
9 but the reason their content costs are increasing is
10 that they're developing their own content. They're
11 -- they're producing their own shows.
12 JUDGE STRICKLER: So they're not just a
13 pipe any longer; they're the -- they're putting
14 things into the pipeline?
15 THE WITNESS: Yes. It seems a bad
16 benchmark to me. And I have a discussion of that in
17 the -- in my written rebuttal testimony.
18 BY MR. ASSMUS:
19 Q. By the way, you call Dr. Gans's analysis
20 a "Shapley-inspired analysis." What do you mean by
21 that?
22 A. Yes, Dr. Gans in his deposition testimony
23 referred to it not -- not really as a Shapley value
24 analysis but, rather, just a Shapley-inspired
25 benchmark. What he's doing is -- is not a Shapley

1 analysis. He has got two players, publishers and
2 record labels. And that's it.
3 And those two players by themselves don't
4 create any value. So their Shapley value is zero.
5 So they would be dividing up zero. So it doesn't
6 make sense as a Shapley analysis.
7 What he's doing is saying that he thinks
8 the publishers' profits should be equal to the
9 record labels' profits and asking the question how
10 much would musical works royalties have to increase
11 to make the publishers' profits be equal to the
12 record labels' current profits?
13 And that's not getting at what I view as
14 factors B and C, the fair income, fair return and
15 payments that reflect the relative roles of the
16 copyright owner and user.
17 JUDGE STRICKLER: Well -- never mind.
18 BY MR. ASSMUS:
19 Q. And what about the final factor, the
20 disruption factor, factor D?
21 A. In the disruption factor, Dr. Gans is
22 arguing that as long as the proposed rates are below
23 his sound recording base benchmark, his cap, so he
24 views his benchmark as quite high, and it would be a
25 red flag to see something above that. So as long as

1 we're below that level, things should be okay.
2 His -- his sound recording benchmark is
3 equivalent to Spotify paying 130 percent of its
4 revenue in royalties. So he has got an upper bound
5 that says we're okay as long as you don't have to
6 pay more than 130 percent of your revenue.
7 Dr. Rysman says that, well, the rate
8 proposal will not be disruptive and, in fact, will
9 hardly be noticed. In contrast, current mechanical
10 royalty structure may have been disruptive to the
11 publishing and songwriting industry. And he
12 provides a number of kind of loose analyses. He has
13 got a discussion of what the Services might do to do
14 better, what they might be able to do to reduce
15 their costs.
16 He talks about Spotify's potential IPO
17 value. And he has an analysis that's not precisely
18 tied to any of the 801(b) factors, but I view it as
19 related to this one, where he looks at the implied
20 per-play rates for a number of Services and notes
21 that in his depiction of them, many of them are
22 higher than the Copyright Owners' proposal.
23 I should mention here they're focusing on
24 just the per-play rate. Remember, the Copyright
25 Owners' proposal has two prongs? The experts are

1 focused on the per-play rate. And if you remember,
2 it's the per-user rate that binds for Spotify and
3 for most of the Services.
4 Dr. Eisenach says the appropriateness of
5 this disruption factor is somewhat controversial and
6 that CRB 2009 supports a constrained interpretation
7 relating only to the substantial, immediate, and
8 irreversible short-run impact.
9 He provides an analysis of current
10 industry rates, again focusing on sound
11 recording-based benchmarks and, on that analysis,
12 finds the proposed rates fit with market practices
13 and reasonable expectations. But as we've just
14 seen, they're a far cry from current market
15 practices.
16 Q. I'd like to take a more detailed view of
17 some of the data, data issues -- and if we can go to
18 the next slide -- ask you to focus on the -- the
19 final blue bubble.
20 And if you could tell the Panel how it is
21 you see the Copyright Owners' experts as reaching
22 these erroneous conclusions?
23 A. Yes. So as I've said, the Copyright
24 Owners are concluding that -- sorry, the Copyright
25 Owners' economists are concluding that the Copyright

1 Owners' proposal represents little change from
2 current rates.
3 They have a number of analyses that get
4 them to that point. And if you look at the bullets
5 along the bottom, these conclusions follow from a
6 number of distortions. One is the selective
7 presentation of data. Another is completely
8 ignoring ad-supported services.
9 None of the Copyright Owners' economists
10 say anything about the ad-supported services, which,
11 again, is over half of the users, a third of the
12 plays. They ignore the play and end user
13 definitions in the Copyright Owners' proposal, which
14 is all plays and all users with access.
15 And they ignore the greater of aspect of
16 the rate proposal. There's a per-play prong and a
17 per-user prong. But the Copyright Owners' proposal
18 is to take the greater of the two. And that
19 matters. And I have a little example to just
20 emphasize the fact that that matters.
21 Q. Great. Let's take, first, the exclusion
22 or decision to ignore Spotify's ad-supported
23 service. What's your understanding of the rationale
24 the Copyright Owners' experts gave for excluding
25 Spotify's ad-supported service?

1 A. Dr. Gans and Dr. Rysman don't provide any
2 explanation in their written direct testimony for
3 ignoring Spotify's ad-supported service.
4 Dr. Eisenach argues that -- makes a point
5 that the record labels have an equity share in
6 Spotify and that ad-supported services are part of
7 Spotify's funnel for developing consumers and moving
8 them into their subscription service.
9 I don't view either of those as reasons
10 why you should ignore the ad-supported service.
11 Q. And did your analysis take into account
12 or depend in any way on, for example, Sony Music
13 owning roughly 6 percent of Spotify?
14 A. The analyses I performed were geared
15 toward trying to be helpful in providing an economic
16 interpretation of the four 801 -- 801(b) factors.
17 None of the analyses that I did relied on Spotify's
18 sound recording payments.
19 So I looked at what economic theory says
20 about the -- promoting economic efficiency. I
21 looked at Shapley value analysis. I looked at some
22 benchmarks. None of those are using Spotify's sound
23 recording royalty payments.
24 So I -- I don't see how any of the
25 analyses that I did are affected by the record label

1 equity share in Spotify.
2 Q. Thank you. And was the omission of
3 Spotify's ad-supported service in their analysis, in
4 the analysis of the Copyright Owners' expert, was
5 that significant?
6 A. I think the omission of the ad-supported
7 service is certainly significant. It's most of the
8 industry, by a number of measures. It's most of the
9 users and a third of the streams. So that seems
10 inappropriate to not be attentive to changes that
11 might affect in a significant way the service
12 accessed by more users than any others.
13 Q. Now, were you here for the opening
14 statements?
15 A. I was -- no, I'm sorry. I have seen the
16 slides, but I wasn't actually in the room.
17 Q. And you understand that during --
18 Copyright Owners' experts, they discussed one of
19 Dr. Rysman's graphs, correct?
20 A. Yes.
21 MR. ASSMUS: And if we could have the
22 next slide.
23 MR. SEMEL: Just briefly, I'm going to
24 object to this. I'll address it on cross, but I
25 object to the mischaracterization of my opening

1 statement in the slide. I'll deal with it on cross,
2 but the title of this seems to say that I did
3 something in opening which I did not do, which is to
4 attribute this slide to Dr. Marx.
5 I'll address that on cross, but since
6 this is being put before Your Honors eyes at this
7 point in time, I just wanted to raise this
8 mischaracterization of my statement.
9 JUDGE BARNETT: Well --
10 MR. SEMEL: This is apparently a slide
11 from my opening and they're saying I inappropriately
12 attributed something. I'll deal with it on cross --
13 JUDGE BARNETT: Okay.
14 MR. SEMEL: -- but I wanted to raise the
15 issue for Your Honors.
16 JUDGE BARNETT: Thank you.
17 THE WITNESS: This is a slide that, it's
18 my understanding, was used in the Copyright Owners'
19 opening.
20 BY MR. ASSMUS:
21 Q. And let me just read the heading and make
22 sure I read this correctly. "Spotify's expert
23 Dr. Leslie Marx shows decoupling of usage and
24 royalties." Did I read that correctly?
25 A. Yes, you did.

1 Q. And is that -- is that slide under there,
2 is that your slide?
3 A. This slide is drawn from my written
4 rebuttal testimony, but the graphic is a slide that
5 was produced by Dr. Rysman. And I reproduced it in
6 my written rebuttal testimony in order to explain
7 why it was so misleading.
8 Q. Let's go through how you view it as
9 misleading. And this is Demonstrative 18.
10 A. This is the slide again, but of a
11 resolution that's somewhat easier to see. I -- I
12 would be embarrassed if you viewed me as having
13 produced this graph. I reproduced it in my written
14 rebuttal testimony to try to be helpful and explain
15 how misleading it is.
16 This graph shows, on the vertical axis,
17 mechanical royalties per play for a variety of
18 subscription services. So this is taking mechanical
19 royalties that these services paid and dividing by
20 the number of plays to get an implied per-play
21 amount.
22 And it shows the numbers for 2012, 2013,
23 2014, 2015. The red dashed line is at 15 cents per
24 100, so at the Copyright Owners' proposed level.
25 Dr. Rysman looks at this figure and

1 concludes -- and this is written in the green box on
2 the left -- Figure 7 shows that there are numerous
3 services that have paid effective per-play rates
4 well above what the Copyright Owners propose.
5 So I think what he's doing is looking at
6 this graph and saying: Oh, there seems to be some
7 stuff going on above the red line, and that means
8 that the red line must be reasonable because there
9 seem to be some Services that show up above the red
10 line.
11 Q. Let's talk about some particular ones
12 that are above the red line.
13 A. Yeah, let's look at some of these lines
14 here. There are lots of these gray lines. There
15 are some dots, like there's the dot in the upper
16 left-hand corner, is Kazaa, which I guess was only
17 in the data for 2012. There are a number of
18 services, these lines that go just from 2012 to 2013
19 and then end. These are Services that were present
20 and that exited.
21 These are portable subscription services,
22 bundled services, non-portable mixed use,
23 non-portable streaming only. Some of these are
24 business-to-business services. There's a -- there's
25 a gray line that kind of starts low and kind of goes

1 diagonally through the whole graph. That's
2 7Digital, which appears to be a business-to-business
3 service. They -- they, on their web site, show
4 McDonalds as their -- one of their clients. I think
5 they're providing playlists for businesses.
6 I've highlighted for you three of the
7 lines that extend all the way to the -- all the way
8 to 2015. Rara is the top one highlighted there for
9 you with a revenue share of .0009 percent. Sony
10 Music Unlimited with a revenue share of .3 percent,
11 and Slacker Premium on-demand, a bundled service, S4
12 service, with revenue share of 1.8 percent.
13 Many of these Services that are feeding
14 into the characterization that there are numerous
15 Services that have paid effective per-play rates --
16 per-play rates well above the Copyright Owners'
17 proposal are of de minimis size.
18 JUDGE STRICKLER: Let me ask you, with
19 regard to Figure 7 and understanding that you
20 re-created Dr. Rysman's graph, but you're talking
21 about those -- those ones that -- those Services
22 that are above the proposal, what does this chart
23 depict with regard to Google Play's rate vis-α-vis
24 the NMPA proposal or the Copyright Owners' proposal?
25 THE WITNESS: Google Play is only in

1 there at that one yellow square. Do you see it?
2 JUDGE STRICKLER: At 2014?
3 THE WITNESS: In 2014.
4 JUDGE STRICKLER: Right. So it's --
5 THE WITNESS: It's just there as a dot.
6 JUDGE STRICKLER: And it's -- it's above
7 their proposal?
8 THE WITNESS: It is.
9 JUDGE STRICKLER: Okay. And how about
10 Amazon Prime Music? That's green, correct?
11 THE WITNESS: It's green. And it goes
12 down. It's at 15 cents per 100, and it's -- the
13 green square for 2015 is -- is hidden under Apple
14 Music's purple square.
15 JUDGE STRICKLER: So it's just at about
16 the purple?
17 THE WITNESS: It's right -- it's right at
18 the 15.
19 JUDGE STRICKLER: Okay. And Apple's is
20 also likewise right about at -- at the Copyright
21 Owners' proposal?
22 THE WITNESS: That's right.
23 JUDGE STRICKLER: Did we leave any of the
24 others --
25 THE WITNESS: Rhapsody is colored. It's

1 -- it's coming down -- there's another Rhapsody line
2 in there too for -- Rhapsody has a non-portable
3 mixed-use service in there. It's one of the gray
4 ones, is Rhapsody, but the -- the orange is also a
5 Rhapsody line that's coming down below 15 cents per
6 100 for 2014 and 2015. And Spotify is the blue one
7 across the bottom.
8 JUDGE STRICKLER: So -- so Amazon, Apple,
9 and -- and Google Play make up approximately what
10 share of the -- of total revenue in the interactive
11 streaming market? I know you say Spotify is
12 72.2 percent. Those three constitute how much in
13 the aggregate, if you know?
14 THE WITNESS: I think Spotify is
15 two-thirds of the revenue.
16 JUDGE STRICKLER: That I know, yeah. I'm
17 asking about the others.
18 THE WITNESS: Yeah.
19 JUDGE STRICKLER: Did I misspeak? I'm
20 sorry.
21 JUDGE FEDER: No, I was going to say it
22 appears to me that for 2015, TIDAL is also above the
23 red line.
24 THE WITNESS: That's right, yes, TIDAL is
25 -- is below for 2014 and goes above for 2015.

1 JUDGE STRICKLER: Okay. So throwing
2 TIDAL into the mix, how much -- what percentage of
3 the total revenue do those represent?
4 THE WITNESS: I can go back -- in my
5 head, I don't know exactly, but I can go back to the
6 pie charts that I showed you earlier, which are not
7 revenue; they are subscribers and share of plays.
8 And Apple Music has a visible wedge there. Google
9 has a wedge. TIDAL is very small.
10 JUDGE STRICKLER: How about Deezer as
11 Judge Feder just mentioned that one at the bench
12 here?
13 THE WITNESS: Deezer is -- I was just
14 going to say Deezer is not in there. Let me think
15 whether that's actually right.
16 JUDGE FEDER: There's a square on 2015
17 just above TIDAL.
18 THE WITNESS: Yes, good.
19 JUDGE STRICKLER: Go ahead, I'm sorry.
20 Well, no, hang on.
21 Based on your understanding of market
22 shares in terms of revenue in the industry, would it
23 be accurate to say that the other Services that we
24 just identified by name constitute the bulk of the
25 remaining 27 -- well, I don't want to say that

1 because you have the Slacker, Sony, so you have --
2 now I'm going to do what we say we don't do, which
3 is public math, 74, 74.3, roughly 74.3, 74.4 percent
4 listed here as revenue shares.
5 Would you say the bulk of the other
6 25 percent or so is comprised of those other
7 Services we've seen that are at or about the
8 Copyright Owners' proposal?
9 THE WITNESS: Rdio is in here too. Two
10 of the lines, two of the gray lines that are down
11 towards the bottom --
12 JUDGE STRICKLER: Right.
13 THE WITNESS: -- are Rdio, and they went
14 bankrupt, but they had revenues too. And they were
15 acquired by Pandora.
16 JUDGE STRICKLER: Well, the assets -- the
17 assets were.
18 THE WITNESS: The assets were, right. So
19 that may -- that may also have been -- those may
20 have been significant in this time period as well.
21 JUDGE STRICKLER: So does that mean you
22 don't know --
23 THE WITNESS: So I want to be cautious,
24 but, yes, I suspect the -- the colored companies
25 here are much of the revenue. Rdio might have been

1 a sizeable number over this period of time too, but
2 we know they are constrained to add up to just the
3 remainder after you take Spotify out.
4 JUDGE STRICKLER: Thank you.
5 BY MR. ASSMUS:
6 Q. And would you expect a more recent
7 entrant to the interactive streaming market to have
8 a higher effective per-play rate?
9 A. Yeah. What you see in this graphic is
10 the more mature Services tend to have more --
11 consumers have more plays. So I'm not sure if you
12 want to think about it as developing your playlist
13 or your comfort with the service but the more mature
14 Services tend to be lower and the -- the newer
15 Services tend to be up higher with fewer plays per
16 subscriber.
17 Q. And it's a little hard to tell from this
18 graph, but is Spotify's effective per-play rate --
19 is that increasing or decreasing?
20 A. It's increasing a little bit towards the
21 end, and if we extend this out toward 2016,
22 Spotify's per -- implied per-play rate is a little
23 bit higher than it was in 2015.
24 So one of the things that I think is --
25 is notable about this graph is if you look at

1 Spotify's per-play rate, it's essentially constant,
2 increasing slightly over time. So their -- as their
3 subscribers are growing and plays are increasing,
4 they are continuing to share that mechanical royalty
5 on a more or less constant per-play rate with the
6 Copyright Owners.
7 And you see a number of roughly
8 horizontal lines through this graph. So the
9 depiction that we have some kind of disconnect
10 between streams and the per-stream rates is not
11 coming through in this graphic.
12 Q. Now, have you weighted the data in this
13 table in several other ways?
14 A. Yes.
15 Q. And if we could turn to the next
16 demonstrative, 19. How have you weighted it here?
17 A. One way to try to make sense of the
18 graphic is to weight the Services by some measure.
19 And here I offer a weighting by subscribers and a
20 weighting by revenue.
21 And, again, this is not my graphic. I
22 didn't try to pull out business-to-business services
23 or change the set of data. I'm just working with
24 the data that Dr. Rysman provided.
25 JUDGE STRICKLER: So it's your graphic,

1 but based on his data?

2 THE WITNESS: That's right. It's -- it's

3 not a graphic that I might have de novo produced,

4 but given his data, just to understand the extent to

5 which many of those lines were de minimis services,

6 you can weight them by revenue or subscribers.

7 And you see in that case, for 2015, the

8 Copyright Owners' proposal is substantially above

9 the industry average for 2015. If you look back for

10 -- in the earlier years, if you look back 2012,

11 2013, that's a period of time when there were lower

12 numbers of subscribers and -- sorry, the subscribers

13 had lower numbers of plays, and so you had higher

14 dollars per lay, but that's period of time when you

15 would expect the per-subscriber prong to bind for

16 these Services anyway.

17 So it's not clear it's even relevant to

18 compare per-play amounts for the earlier years.

19 Something that jumps out at you from this

20 graphic is that it's a downward sloping line, the --

21 the weighted average is. I just want to be clear

22 what's happening here.

23 It's a composition effect. Remember

24 Spotify's line was essentially flat in the previous

25 graphic. Over time, Spotify 's number of

1 subscribers and number of streams, its revenue is
2 increasing. They're becoming a more and more
3 dominant part of the industry.
4 And so, that, when you average in
5 Spotify, given Spotify's growth, you're pulling that
6 line towards Spotify. It's just becoming more like
7 Spotify's line. Even though Spotify's line is flat,
8 it's becoming a more significant portion of the
9 industry.
10 And many of the smaller Services have
11 exited. So you're seeing a change in the number --
12 the set of firms that are being incorporated into
13 the average and the change in the size of Spotify
14 relative to the other firms.
15 BY MR. ASSMUS:
16 Q. And what measure of streams were you
17 using in this demonstrative?
18 A. This is using HFA streams, so the same
19 streams that Dr. Rysman was using.
20 Q. Have you also done this calculation for
21 all streams?
22 A. I have. And I have, for Spotify, the
23 streams they reported to HFA and also all streams,
24 so including streams less than 30 seconds. And if
25 one interprets the Copyright Owners' proposal as

1 applying to all streams, which in its language it
2 seems to, then that implies a more dramatic
3 difference between the Copyright Owners' proposal
4 and current per total stream mechanical rates.
5 I only have total streams for Spotify.
6 So to be clear, what I've done in this graphic is
7 look at the ratio of Spotify's total streams to the
8 streams they report to HFA, and assume that the
9 other Services have a similar ratio of total streams
10 to streams that they're reporting to HFA.
11 This gives you a sense of the extent to
12 which the Copyright Owners' proposal, not their
13 total proposal, just the per-stream prong, which,
14 again, is not going to apply to Spotify or most of
15 the streaming services, is significantly above
16 current industry averages.
17 MR. ASSMUS: Your Honor, I'm at a natural
18 breaking point and also one where I'd be able open
19 the courtroom for just a brief period. And given
20 the time, I thought you might want to take a morning
21 break.
22 JUDGE BARNETT: You were reading my mind,
23 weren't you? We will be at recess for 15 minutes.
24 (A recess was taken at 10:44 a.m., after which
25 the hearing resumed at 11:05 a.m.)

1 JUDGE BARNETT: Please be seated. Before
2 you continue, Mr. Assmus, we did receive the letter
3 from -- which Service --
4 JUDGE FEDER: Amazon.
5 JUDGE BARNETT: From Amazon regarding
6 restricting portions of yesterday's transcript. And
7 have you shared that with the reporter?
8 MR. LANE: I believe we have, Your Honor.
9 JUDGE BARNETT: Okay. Thank you.
10 MR. LANE: Thank you.
11 JUDGE BARNETT: And with regard -- I
12 think it was Mr. Miller, there was some question
13 about him appearing in cyberspace. Where did we --
14 where did we end on that?
15 MR. ZAKARIN: I spoke with counsel last
16 night. We have -- given the timing, given his
17 schedule, given that we think it's cumulative at
18 this point, we've determined that we will withdraw
19 Mr. Miller, save some time. I think he deeply
20 regrets not being able to do it, but, anyway, the
21 choice is made and we are where we are.
22 So I don't think we -- I don't -- we
23 didn't submit his statement other than in the
24 ordinary course, but it hasn't been put into
25 evidence, I don't believe. So, therefore, it's not

1 going to be put into evidence.

2 JUDGE BARNETT: Okay. So he won't be --

3 we won't read his testimony as part of the record.

4 MR. ZAKARIN: Correct. Correct. We'll

5 send him down for SDARS, if you would like.

6 JUDGE BARNETT: We -- we are looking to

7 extend that hearing in any way possible.

8 JUDGE FEDER: Do we know who -- who else

9 we're going to be hearing from today?

10 MR. ASSMUS: No one else today, Your

11 Honor.

12 JUDGE STRICKLER: And tomorrow, do we

13 know?

14 MR. ASSMUS: Saturday?

15 JUDGE STRICKLER: I want to know what I'm

16 doing tomorrow.

17 (Laughter).

18 MR. ASSMUS: You know, I do not have the

19 witness order on the top of my head. Maybe another

20 counsel can remind me.

21 MR. SEMEL: I believe, correct me if I'm

22 wrong, we have Dr. Ghose, Dr. Zmijewski, and

23 Dr. Hubbard are the only three witnesses left.

24 MR. LANE: That's correct.

25 MR. SEMEL: In that order.

1 JUDGE BARNETT: In that order?
2 MR. SEMEL: Yes.
3 JUDGE BARNETT: Okay, thank you.
4 And, Mr. Assmus, I think you said we were
5 getting ready to open the hearing room?
6 MR. ASSMUS: Yes. Yes, we can stay in
7 open session.
8 (Whereupon, the trial resumed in open
9 session.)
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1 O P E N S E S S I O N
2 MR. ASSMUS: Just some cleanup on the
3 prior slides, I'm going to ask them not to put up so
4 we can stay in open session for a period, and then
5 I'll go back to restricted section -- session
6 towards the end.
7 JUDGE BARNETT: Okay, thank you.
8 BY MR. ASSMUS:
9 Q. Okay. First, Dr. Marx, Judge Feder asked
10 you a question about Demonstrative 10. And I think
11 he asked you in particular whether Amazon, I think
12 Amazon Prime Music, was included in the "other"
13 category in Demonstrative 10.
14 And he asked you if you might take a look
15 at that. Have you had a chance to take a look at
16 that?
17 A. Yes, I did. Remember that was
18 Demonstrative 10. It says across the -- the top of
19 the -- the title on the top of the figure, estimated
20 impact of the Copyright Owners' proposal on paid
21 subscription streaming services and, in parentheses,
22 (S3).
23 JUDGE FEDER: Yes.
24 THE WITNESS: This graph is only showing
25 paid subscription services, portable -- portable

1 subscription services mixed use, just the S3
2 services.
3 JUDGE FEDER: And bundled?
4 THE WITNESS: And that's bundled. But
5 this is based on Figure 5 on page 10 of my written
6 rebuttal testimony. And in that figure in the
7 written testimony, it has Amazon and it has
8 Spotify's ad-supported service. So that -- that's
9 there. It's a 200 plus percent increase for Amazon
10 Prime Music.
11 BY MR. ASSMUS:
12 Q. And I'd also like to direct your
13 attention, without displaying it back, to
14 Demonstrative 18, the slide of the effective
15 per-play rates.
16 A. Yes.
17 Q. And if -- if it was shown that
18 Dr. Rysman's calculations of the effective per-play
19 rates with respect to, for example, Google and Apple
20 were inaccurate and overstated, how would that
21 affect the positioning of those data points on
22 Dr. Rysman's graph?
23 A. If they were overstated, then the lines
24 should come down closer to -- they should come down.
25 Q. And would that also affect your -- your

1 analysis of the effective per-play on a
2 revenue-weighted basis?
3 A. It would affect the averages. They would
4 come down as well.
5 Q. And, finally, in terms of cleanup, you
6 mentioned that your demonstrative slide, I believe
7 it was 19, was based on HFA data. And what --
8 A. The Services report streams to HFA. And
9 so this, this slide is based on Dr. Rysman's data,
10 which I understand to be the streams that were
11 reported to HFA.
12 Q. And what -- what type of streams are
13 reported to HFA?
14 A. Spotify reports 30-second and longer
15 streams to HFA.
16 Q. Okay. If we could have demonstrative
17 slide 21. You indicated that the Copyright Owners'
18 economic experts made some errors in analysis of the
19 greater-of proposal. And I believe you have an
20 example of that in mind.
21 A. It's not so much that they make errors in
22 the analysis of it; it's just that they ignore it.
23 So they look at the comparisons of -- that relate to
24 the per-stream prong and -- well, focusing on the
25 per-stream prong and then some mention of per-user

1 prong, but the proposal involves this greater-of
2 structure.
3 And I just wanted to offer a simple
4 stylized example to point out that it makes a
5 difference. And so what this example has is a
6 low-use service, a hypothetical low-use service that
7 has 100 subscribers and each subscriber is going to
8 stream 200 streams per month. And that's a service
9 that's paying a royalty of 62 dollars per month.
10 Q. And what's the basis for that royalty?
11 A. I'm not assuming any underlying formula.
12 Just -- just assume, in this example, that's the
13 royalty they pay.
14 JUDGE BARNETT: What's the rate they're
15 paying on?
16 THE WITNESS: It doesn't matter.
17 JUDGE BARNETT: Oh, it doesn't matter,
18 okay.
19 THE WITNESS: Yeah. So whatever formula
20 was in place, they had to pay 62 dollars.
21 JUDGE BARNETT: Understood.
22 THE WITNESS: And there's a high-use
23 service with 100 subs, but their subscribers are
24 streaming 1,200 streams per month. And whatever the
25 formula is, they're paying 150 dollars per month.

1 In that world, this industry is paying a
2 total royalty of 212 dollars per month, and if you
3 divide by the total streams, they're paying .0015
4 dollars per stream, and they're paying $1.06 per
5 subscriber per user.
6 So this industry matches the --
7 individually, the per-play stream for the Copyright
8 Owners' proposal and the per-user stream. So you
9 might think, looking at this, oh, if you impose --
10 if you make this industry pay the Copyright Owners'
11 proposal, it shouldn't really have much of an
12 effect.
13 But that's not right because of the
14 greater-of aspect. And so if you look at the next
15 slide, if you apply the Copyright Owners' proposal
16 to my hypothetical industry, then the low-use
17 service ends up paying 106 dollars per month,
18 because they will pay on the per-subscriber prong,
19 and the high-use service will pay 180 dollars per
20 month, because they will pay on the per-stream
21 prong.
22 Combined, then, total royalties go up by
23 35 percent and the industry as a whole is now paying
24 .0020, 20 cents, per 100 instead of 15 cents per 100
25 streams, and paying $1.43 per user.

1 So I just wanted to illustrate that it's
2 insufficient to look at the industry and say: Oh,
3 the Copyright Owners' proposal matches the
4 per-stream prong on average and matches the per-user
5 prong on average and so it's okay; it doesn't imply
6 much of a change to the industry. That's not right.
7 BY MR. ASSMUS:
8 Q. And if we could go next, if we could skip
9 to Demonstrative 24. We talked earlier about
10 Dr. Gans' Shapley-inspired benchmark. Can you
11 explain your criticisms of that Shapley-inspired
12 analysis?
13 A. Yes. So this is Dr. Gans written direct
14 testimony. What he does in that analysis is that he
15 assumes that the record labels' Shapley value, their
16 fair return, is equal to their current profits,
17 which, as I have noted, are inflated by market power
18 and other issues.
19 He doesn't model the copyright users at
20 all, and so he doesn't calculate a Shapley value for
21 interactive streaming and so doesn't have anything
22 to say based on this analysis about the appropriate
23 division of surplus between Copyright Owners and the
24 interactive streaming services.
25 Q. Okay. And I do need to go back to

1 restricted session, unfortunately.

2 JUDGE BARNETT: We will be closing the

3 hearing room to those who are not privy to

4 restricted information.

5 (Whereupon, the trial proceeded in

6 confidential session.)

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1 O P E N S E S S I O N
2 BY MR. ASSMUS:
3 Q. And if we could have slide 27. So,
4 Dr. Marx, turning back to a more holistic view of
5 this, could you describe for the Panel your view of
6 the benefits of the current rate structure?
7 A. I discuss in my written rebuttal
8 testimony a number of benefits of the current rate
9 structure. One is its adaptability to different
10 business models, and it allows for differentiated
11 products serving different customer segments with a
12 variety of preferences and a variety of willingness
13 to pay for streaming services.
14 It has efficiency benefits in that it
15 promotes an all-you-can-eat model of interactive
16 streaming, which would be efficient in a world with
17 zero or close to zero cost for an incremental stream
18 to a subscriber.
19 And streaming has increased the variety
20 of music listening and introduced a new way for
21 artists to be discovered. And, finally, the
22 publishers' and labels' royalty revenues have
23 increased as interactive streaming has grown.
24 Q. With respect to publishers' revenue
25 increases, do the higher revenues to publishers

1 themselves have an effect on songwriters or does it
2 depend on whether or not that revenue is passed
3 through to songwriters themselves?
4 A. It would depend on whether it's passed
5 through to the songwriters. And I didn't have a lot
6 of visibility into the relationship between the
7 publishers and their songwriters.
8 Q. And then, finally, what do you view as
9 the problems with the Copyright Owners' proposal,
10 sort of on a more global basis?
11 A. This is a summary slide. It's my last
12 slide. And it just lays out the high level, some of
13 the problems I see with the Copyright Owners' rate
14 proposal. It represents a large rate increase that
15 I view as unjustified. It's so high as to make
16 ad-supported services difficult or impossible to
17 sustain. And rates for paid subscription services
18 would more than double.
19 And, in particular, Judge Strickler, you
20 asked a question about what if there were a
21 different structure for ad-supported, maybe keeping
22 percentage-of-revenue there, and the Copyright
23 Owners' proposal just for subscription. In that
24 case, the impact would be even larger than this
25 because once you take out ad-supported, it's the

1 per-stream prong that applies for subscription
2 services. So I think it brings Spotify's royalties
3 up to something like 90 percent of their revenue in
4 that case.
5 It discourages efficiencies in the sense
6 that it disincentivizes the provision of services
7 that are targeted to consumers with low willingness
8 to pay. And it runs counter to an efficient
9 all-you-can-eat streaming model. And it represents
10 a substantial change from current practice with
11 associated disruption to the industry.
12 MR. ASSMUS: Thank you. I'll reserve any
13 time for redirect.
14 JUDGE BARNETT: Thank you. Mr. Semel?
15 MR. SEMEL: Thank you.
16 JUDGE BARNETT: Is anyone else hearing
17 the beep or have I just lost my mind?
18 (Discussion off the record.)
19 CROSS-EXAMINATION
20 BY MR. SEMEL:
21 Q. Good morning, Dr. Marx.
22 A. Good morning, Mr. Semel.
23 Q. Soon I'm going to apply for partial
24 credit for one of your courses.
25 A. Excellent.

1 MR. LANE: Do you want a grade?
2 BY MR. SEMEL:
3 Q. I'd like to start by turning to page 88
4 of your written rebuttal testimony. It's footnote
5 245. And you write here, "as I explained in my
6 written direct testimony, my view is that this 50
7 cent per-user fee should be removed, which would
8 mean that standalone portable subscription services
9 would pay an all-in royalty pool, based on 10 and a
10 half percent of revenue, 21 percent of sound
11 recording payments, or 80 cents per user. PRO
12 payments are deducted from the all-in royalty pool
13 to determine mechanical royalties."
14 And is that the rate structure that you
15 believe is the best rate structure available for
16 this service?
17 A. It's a rate structure that I think would
18 be consistent with my economic interpretation of the
19 801(b) factors, which suggests rates that are
20 somewhat lower than current levels, and if you look
21 at Services, what they're paying today, Spotify is
22 the bulk of the industry and currently paying on the
23 50 cent per-user mechanical floor.
24 So if you were to make an adjustment to
25 the current structure in a direction of reducing

1 royalties, an obvious choice would be to either
2 adjust or remove that 50 cent mechanical floor.
3 Q. Thank you. I guess my question was a
4 little simpler. Is this the best rate structure
5 that you came up with in analyzing the possible rate
6 structures in this proceeding?
7 A. I wasn't asked to come up with a rate
8 structure. I was asked to help the Board to
9 determine reasonable rates under the 801(b) factors.
10 And so I provided my economic interpretation of
11 those factors and the implications of those.
12 I didn't try to do a search for the very
13 best possible rate structure.
14 Q. So what -- so you don't know if there are
15 better royalty rate structures available for this
16 service?
17 A. I think this one would meet the 801(b)
18 factors. It stays close to current structures and
19 satisfies other economic interpretations of 801(b)
20 factors, but I don't know if this is the very best.
21 Q. I guess what I'm trying to get at is what
22 was the scope that you included? You seem to say --
23 you say it should be removed, which means you're
24 comparing it with some other alternative. What was
25 the pool of alternatives that you looked at in

1 coming up with your opinion that this is what should
2 happen?
3 A. I was offering the observation that one
4 adjustment you could make to the current structure
5 that would stay close to the current structure but
6 yet move in the direction that is indicated by my
7 analysis, my economic analysis of the 801(b)
8 factors, would be to adjust or eliminate that 50
9 cent per-subscriber floor.
10 Q. And did you consider any other
11 alternative rate structures besides the current
12 structure or a structure in which you removed the 50
13 cent floor?
14 A. I considered the Copyright Owners'
15 proposal in my written rebuttal testimony.
16 Q. Okay. So we've got those three. So the
17 current rate structure, removing the 50 cent floor,
18 and the Copyright Owners' rate proposal. Did you
19 consider any other potential rate structures in
20 offering the opinion that what should happen is that
21 the mechanical floor should be removed?
22 A. In my written direct testimony, I
23 considered a much broader set of possibilities. For
24 example, in looking at the first 801(b) factor, I
25 looked at which rate structures would be most

1 favorable for economic efficiency, and that suggests
2 that a percentage-of-revenue royalty structure would
3 be most favorable. That puts you in the position of
4 thinking about whether there are revenue
5 mis-measurement issues and perhaps the
6 appropriateness of back-stops.
7 In this, in the footnote that you're
8 pointing to, I am referring back to my written
9 direct testimony where I'm pointing out that one way
10 to both stay close to current structures, which is
11 something -- which was my view of the fourth 801(b)
12 factors, that you might want to try to stay close to
13 current benchmarks. One way to do that, while
14 achieving the direction of change that's pointed to
15 by the other 801(b) factors, is to adjust or
16 eliminate that 50 cent per-subscriber floor.
17 Q. So I guess, just trying to come back, is
18 this the best rate structure that you are aware of
19 for this service?
20 A. Taking into account my economic
21 interpretation of the 801(b) factors, this, I think,
22 would be reasonable, and I -- I don't have something
23 to offer you that I think would dominate it, would
24 also stay equally close to current structures and
25 still move in the direction of -- that's pointed to

1 by my analysis of the first, second, and third
2 801(b) factors.
3 Q. So I just want to be clear. This is the
4 best rate structure that you are aware of for this
5 service?
6 MR. ASSMUS: Objection, Your Honor, that
7 is asked and answered.
8 JUDGE BARNETT: Sustained. She already
9 said no.
10 MR. SEMEL: She already said no?
11 JUDGE BARNETT: Well, she said she didn't
12 analyze or try to create another structure.
13 MR. SEMEL: Understood.
14 BY MR. SEMEL:
15 Q. I guess I was trying to get at "aware
16 of." So I just meant, within the pool that she has
17 analyzed, this is the best rate structure that you
18 are aware of? You may not -- there may be another
19 one you're not aware of, but this is the best rate
20 structure that you are aware of in your opinion?
21 MR. ASSMUS: I have the same objection,
22 Your Honor.
23 JUDGE BARNETT: No, that's a refinement.
24 She can answer that.
25 THE WITNESS: I don't have anything

1 better to offer you right now that would stay
2 equally close to current structures, yet still be
3 moving in the direction that's pointed to by my
4 economic analysis of the first, second, and third
5 801(b) factors.
6 BY MR. SEMEL:
7 Q. And within these structures, the rates
8 that you advocated for here, these are the best
9 rates that you're aware of for this service?
10 A. Again, I'm not sure what you mean by
11 "best rates." What I mean are rates that are
12 consistent with the 801(b) factors. The fourth
13 801(b) factor, I'm interpreting as pushing you to
14 stay close to relevant benchmarks. And -- and so if
15 you want to try to stay close to the current
16 structure, but move it in the direction indicated by
17 my economic -- economic analysis of the first three
18 801(b) factors, this is in my view a good choice.
19 Q. Did you analyze whether any improvements
20 could be made to this rate structure or rate?
21 A. Again, I wasn't tasked with finding the
22 very best rate structure. I was just trying to be
23 helpful in providing an economic interpretation of
24 the 801(b) factors.
25 Q. I'm sorry if I meant to cast aspersions.

1 I just was asking.

2 JUDGE STRICKLER: Well, if I may, you did

3 actually make one analytical adjustment, right? You

4 recommend removing the -- the mechanical-only floor,

5 correct?

6 THE WITNESS: That's right.

7 JUDGE STRICKLER: You did pick that one

8 as -- as -- in looking -- in looking at the existing

9 structure and say the existing structure that you

10 find best among the ones you've seen provided you

11 make this one change?

12 THE WITNESS: That's right.

13 JUDGE STRICKLER: So you did look at the

14 rates and decide to make a change?

15 THE WITNESS: Yes. The -- my analysis of

16 the first -- of all of the 801(b) factors, the

17 benchmarks, the Shapley value analysis, point in the

18 direction of moving slightly lower relative to

19 current rates. If you want to move slightly lower

20 relative to current rates, the only way to change --

21 the only way to stay close to current structure and

22 change the rate that Spotify is -- is paying is to

23 adjust or remove that 50 cent per-subscriber floor

24 because that's what they're paying on.

25 JUDGE STRICKLER: Right. So counsel's

1 question, which is what led me to my question, was
2 did you look at the rates themselves within the
3 structure and make a determination as to whether
4 they could be improved. And I think the answer is
5 with regard to the -- the floor, mechanical-only
6 floor, the answer is yes, you did.
7 THE WITNESS: Yes.
8 JUDGE STRICKLER: But did you go through
9 the same process for each element of the -- of the
10 existing rates or Spotify's proposal and say, yes,
11 this rate makes sense or, no, this rate does not
12 make sense? Did you do the same type of -- same
13 degree of analysis on each element of the structure?
14 THE WITNESS: I did look at the 80 cent
15 per-subscriber minimum that's in the formula for
16 portable standalone subscription services, and note
17 that if you view that as a benchmark -- sorry, as a
18 back-stop for 10 and a half percent of revenue, then
19 it is at approximately the correct level.
20 If you view 10 and a half percent of
21 revenue for a pure-play service like Spotify as
22 being your target, then 80 cents per subscriber is
23 about right as a back-stop there. So I -- I noted
24 that. So the structure, then, that you're left
25 with, keeping the current -- current structure but

1 making that adjustment to the portable standalone
2 services mixed-use formula, that stays close to
3 current structures and moves in the direction
4 indicated by my economic analysis of the 801(b)
5 factors. And so I -- I offer that as a possibility
6 that I think is reasonable and meets the 801(b)
7 factors.
8 JUDGE FEDER: Sorry, are you finished?
9 JUDGE STRICKLER: Yes.
10 JUDGE FEDER: At a 10 dollar per month
11 prescription rate, 10 and a half is about a buck 5,
12 correct?
13 THE WITNESS: There -- the average
14 per-user revenue for a service like Spotify is $7.50
15 a month. Even though that --
16 JUDGE FEDER: Taking into account
17 discounts and such?
18 THE WITNESS: Yes. So that's -- that's
19 what's the gap is there. And 80 cents is 10 and a
20 half percent of $7.50. So that's why that number
21 comes out about the same.
22 JUDGE BARNETT: Dr. Marx, did I hear you
23 say that you were looking at the current structure
24 and determining if there was some way you could
25 modify the current rates to make them better, i.e.,

1 to lower the rates?

2 THE WITNESS: My economic analysis of the

3 801(b) factors, the second, third, and fourth 801(b)

4 factors led me to look at a Shapley value approach,

5 which suggests that current royalties are high

6 relative to a fair division and that, in particular,

7 musical works royalties are high relative to a fair

8 division.

9 And when I looked at the benchmarks,

10 looked at personal digital downloads and CDs, and

11 looked at the percentage-of-revenue that's being

12 paid there, streaming royalties are high relative to

13 those benchmarks.

14 So if you thought that pushes you in the

15 direction that you might want to lower royalties

16 somewhat, currently Spotify is paying over

17 12 percent in musical works royalties. So they're

18 not paying the 10 and a half percent; they're paying

19 over 12 percent, because they're paying on that 50

20 cent mechanical floor.

21 If you remove the 50 cent mechanical

22 floor, they're still paying something like

23 11 percent of revenue, but it brings it down closer

24 to those other benchmarks. They would still pay on

25 the 80 cent, in 2015, pay on the 80 cent

1 per-subscriber minima.

2 MR. MANCINI: Your Honors, if I may, I

3 did not want to interrupt the colloquy, but some of

4 the information is subject to Spotify restricted

5 information. I don't think we need to close the

6 courtroom. Perhaps we'll send a letter to correct

7 the transcript after the fact.

8 JUDGE BARNETT: Okay, thank you. I'm

9 done with my question. I'm not -- I have nothing

10 more on that topic. Mr. Semel?

11 MR. SEMEL: Thank you.

12 BY MR. SEMEL:

13 Q. You mentioned just now an 80 cent

14 per-user rate. And that's -- you're talking about

15 the one in the portable mixed-use category?

16 A. That's right.

17 Q. And in your written direct testimony,

18 correct, you describe that as something that

19 provides protection to the Services, correct?

20 A. There is a place where I talk about it

21 providing protection to the Services relative to the

22 percentage of sound recording royalties that it's

23 paired with in the formula. So without that there,

24 if you, for example, only had the percentage of

25 sound recording royalties, then you'd be in a

1 position where the publishers and the sound
2 recording and the -- and the record labels are the
3 same firms and they could, by increasing sound
4 recording royalties, mechanically also increase
5 their musical works royalties.
6 So it provides protection to the Services
7 in that sense, that they are less vulnerable to a
8 manipulation of the sound recording royalties. But
9 it also provides protection against revenue
10 mis-measurement for the Copyright Owners.
11 Q. Well, it is in a lesser-than prong,
12 correct?
13 A. It is. It's in a lessen-than prong
14 embedded in a greater-than prong, yes.
15 Q. Right. But after -- for someone who
16 benefits -- for someone who is a copyright owner and
17 you have a lesser-than prong, right, they'd be happy
18 to get rid of as many of the parts of the
19 lesser-than prong as they can, correct? No one
20 benefits from having an additional prong in the
21 lesser-than prong, correct?
22 A. The Services would benefit.
23 Q. Correct. The Services would benefit. So
24 this is not a back-stop for the Copyright Owners';
25 it's for the Services, correct?

1 A. No. It's a -- it's a back-stop relative
2 to the 10 and a half percent of revenue. It's in
3 the greater-than prong. So the -- with the 80 cent
4 per revenue in there, the -- if 10 and a
5 half percent of revenue were to go below 80 cent
6 per-subscriber, then the 80 cent per-subscriber
7 would kick in, and so --
8 Q. Only if the -- sorry.
9 A. -- it protects the Copyright Owners
10 against the possibility of revenue mis-measurement.
11 Q. Just from an economic perspective, do you
12 agree that from the Copyright Owners' perspective,
13 it's better off to not have the 80 cents in the
14 lesser-than prong than to have the 80 cents in the
15 lesser-than prong?
16 A. The Copyright Owners would be much worse
17 off without the 80 cent prong, if there were revenue
18 mis-measurement because then they would get only 10
19 and a half percent of mis-measured revenue. The 80
20 cents is there to provide protection for the
21 Services -- okay, let me not opine about why it's
22 there.
23 It plays the role that it provides
24 protection for the Services in case there is revenue
25 mis-measurement because it is the greater of 10 and

1 a half percent of revenue and another prong.
2 JUDGE STRICKLER: You mean it provides
3 protection for the Copyright Owners? You said for
4 the Services.
5 THE WITNESS: Did I say it wrong? I'm
6 sorry.
7 JUDGE STRICKLER: You said for the
8 Services.
9 THE WITNESS: Sorry. Thank you.
10 It -- it's playing two roles. It's
11 embedded in a greater-than structure where it
12 provides protection to the Copyright Owners against
13 revenue mis-measurement. It's embedded in a -- in a
14 lesser-than piece where it provides protection for
15 the Services against manipulation of the sound
16 recording royalties.
17 So to characterize it as only being there
18 for the protection of the Services, I think that's
19 wrong because it is there to provide a back-stop on
20 the 10 and a half percent of revenue.
21 BY MR. SEMEL:
22 Q. Well, let me put it another way. If you
23 removed the 80 cent prong from the lesser-than
24 formula and left the TCC prong, there is no scenario
25 in which rates go down as a result of that?

1 A. I think that's right. Let me just think
2 through. Now, are you leaving the mechanical floor
3 in there?
4 Q. All I'm doing is removing -- it's a
5 lesser-than prong. So if you remove something from
6 it, it just means there's one thing that can't drag
7 down the prong. So I'm just saying if you remove
8 the 80 cent prong, there's no way you wind up with
9 lower rates.
10 A. You get a larger all-in royalty pool, and
11 now when you subtract the PRO payments, the 50 cent
12 mechanical floor might no longer bind. And so I
13 guess mechanical royalties could go down. But I
14 think we need to be a little bit careful.
15 Q. But you don't disagree that, in your
16 written direct testimony, you describe the 80 cent
17 per-subscriber minimum as something that provides
18 protection to the Services, correct?
19 A. I mention that, I recall, but it also
20 provides protection against revenue mis-measurement,
21 and I definitely say that in my written direct
22 testimony as well.
23 Q. And it operates as a cap on the amount of
24 -- a cap on the TCC prong, correct?
25 A. The TCC meaning the percentage of sound

1 recording royalties?
2 Q. Right. The 80 cents operates as a cap
3 because it is in a lesser-than prong?
4 A. If I'm understanding you correctly, yes.
5 Q. Just going back to the rate structure
6 that we were talking about that you wrote about in
7 footnote 245, does your opinion advocate for the
8 status quo or for a change in the status quo?
9 A. I don't think of myself as advocating one
10 way or another, but I provide an economic
11 interpretation of the 801(b) factors. That
12 interpretation suggests that reasonable royalties
13 under the 801(b) factors would be somewhat lower
14 than current levels. It points to the -- that it's
15 favorable for economic efficiency to use a
16 percentage-of-revenue structure, and I'm noting that
17 one way to stay close to current structures but move
18 in the direction of somewhat lower mechanical
19 royalties would be to adjust or eliminate the 50
20 cent mechanical floor.
21 Q. But you know you reference the term
22 "status quo" over a dozen times in your rebuttal
23 report; do you know that?
24 A. I didn't count.
25 Q. Does it surprise you?

1 A. Not particularly.
2 Q. But you don't know whether you were
3 advocating for the status quo or not?
4 A. I'm just offering to the Board the
5 statement that one way, in my opinion, to meet the
6 801(b) factors is to avoid disruption by staying
7 close to current levels and make an adjustment.
8 There is an adjustment that can be made, the removal
9 or adjustment of the 50 cent mechanical floor, that
10 doesn't make much of a change to the current
11 structure, stays close to the current structures,
12 but moves you in the direction of somewhat lower
13 mechanical royalties.
14 In particular, for Spotify, it would move
15 them from paying over 12 percent of mechanical
16 royalties down to paying something like 11 percent.
17 JUDGE STRICKLER: But if we're concerned,
18 Dr. Marx, about not being disruptive and, say, we're
19 just looking at the -- at the fourth factor, 801(b)
20 factor, keeping the mechanical floor would be less
21 disruptive because Spotify pays on that at that
22 level pursuant to that part of the structure, right?
23 THE WITNESS: Yeah, if you were focused
24 on not making -- if the -- if the best as far as no
25 disruption is not to make any change, then that's

1 right. I was trying to stay close to current
2 relevant benchmarks, while still trying to address
3 what the other 801(b) factors are pointing towards.
4 JUDGE STRICKLER: How do the other 801(b)
5 factors apply specifically to support an elimination
6 of the mechanical-only floor?
7 THE WITNESS: They don't point to, oh, it
8 is a mechanical-only floor that needs to be removed.
9 My benchmark analysis and the Shapley value analysis
10 points to fair and benchmark rates being somewhat
11 lower than current levels.
12 If you want to make an adjustment that's
13 going to produce somewhat lower royalties, in an
14 industry where Spotify is the dominant player and
15 their subscription streaming service is the dominant
16 source of revenue, the adjustment that you're going
17 to have to make is going to have to be one that
18 affects what Spotify is paying and they pay on that
19 50 cent per-user prong.
20 So other adjustments that you could make
21 to different parts of that formula are not going to
22 change what Spotify is paying. So if you want to
23 stay close and yet make a difference in what Spotify
24 is paying for its subscription streaming service,
25 your only choice is to make an adjustment to that 50

1 cent mechanical floor.

2 JUDGE STRICKLER: So you're saying all of

3 the four factors taken together in 801(b), in your

4 opinion, require or justify a lower rate and the

5 only way you can accomplish that, given where

6 Spotify pays, which is on the mechanical-only floor,

7 requires that part of the -- of the structure to be

8 removed?

9 THE WITNESS: Or adjusted downward,

10 that's right.

11 JUDGE STRICKLER: Okay. Well, you didn't

12 propose adjusting downward?

13 THE WITNESS: I did. It's in my written

14 direct testimony. I agree Mr. Semel has a footnote

15 here where I say only eliminate, but in my written

16 direct testimony, I say it would point to it being

17 adjusted or removed.

18 JUDGE STRICKLER: I know this is your

19 rebuttal testimony, but do you recall what you said

20 on direct as to what -- what the mechanical-only

21 floor should be adjusted downward to?

22 THE WITNESS: I didn't give a number. I

23 said that if you wanted to push rates down, you need

24 to push that 50 cent down. And if you moved it all

25 the way, then you get Spotify down to something like

1 11 percent. But that's -- that's the lever, if you
2 want to stay close to current structures and still
3 reduce somewhat the amounts that they're paying.
4 JUDGE STRICKLER: And you would reduce
5 it, again, not because reducing in its own right is
6 appropriate but because the Shapley analysis
7 suggests to you that -- that it should be reduced to
8 that level?
9 THE WITNESS: That's right, the Shapley
10 and the benchmarks, the benchmarking against the
11 percentage-of-revenue and, but PDDs and CDs are
12 paying.
13 JUDGE STRICKLER: Subpart A analysis?
14 THE WITNESS: That's right.
15 JUDGE STRICKLER: Thank you.
16 JUDGE BARNETT: Dr. Marx, with regard to
17 disruption, the standard, I believe, is to minimize
18 the disruptive impact on the structure of the
19 industry. It's not just disruption to the current
20 formula.
21 THE WITNESS: I think it's current
22 industry and I think generally prevailing industry
23 practices was mentioned there.
24 JUDGE BARNETT: Yes, that's -- that's
25 right. So is it your opinion that the kinds of

1 changes that are recommended by the Copyright
2 Owners, proposed by the Copyright Owners, would be
3 disruptive to the -- clearly, they're -- they're
4 different from generally prevailing industry
5 practices, at least in this license arena.
6 Did you look at whether those would be
7 disruptive to the entire industry?
8 THE WITNESS: Well, I thought about
9 whether it's disruptive to the structure of the
10 industry. And as an economist, I would think of
11 structure as including the cost structure and things
12 like barriers to entry. And so, clearly, it changes
13 the cost structure and greatly increases the cost to
14 these Services.
15 It also puts in place a barrier to entry
16 in the sense that if you are a new Service, you
17 might expect to have a period of time where you're
18 bringing in subscribers, you're starting to get them
19 to use your service but maybe don't have significant
20 revenues. You might have a bunch of people starting
21 with a free trial. In that kind of ramp-up period
22 under the Copyright Owners' proposal, you're going
23 to be paying for every stream, for every subscriber,
24 even through a period of time where you might not
25 have much or -- or any revenue.

1 So in that sense, it's -- I think it
2 increases the challenges for an entrant to come up
3 against that rate structure.
4 JUDGE BARNETT: If you open a restaurant
5 and start serving food, you have to buy the food
6 before you can serve the people, right?
7 THE WITNESS: I agree.
8 JUDGE BARNETT: Okay.
9 JUDGE STRICKLER: Building on Judge
10 Barnett's question -- she took you through the
11 statute and you added on some parts that were in the
12 statute as well.
13 But Dr. Eisenach, as you noted in
14 Demonstrative 14, cites to the -- the CRB's 2009
15 decision as to what constitutes disruption. And I'm
16 going to flip through and find his testimony, but he
17 does -- at least you put it in quotes, I think
18 you're accurate, he -- he points out that disruption
19 occurs if you have a substantial -- this is not in
20 quotation marks, but I think it's correct --
21 substantial, immediate, and irreversible short-run
22 impact.
23 So I suppose maybe we can, for the
24 moment, take you through that because you're now
25 rebutting the Copyright Owners' proposal. Do you

1 believe the Copyright Owners' proposal would have a
2 substantial impact?
3 THE WITNESS: Absolutely.
4 JUDGE BARNETT: Why?
5 THE WITNESS: Because it increases
6 mechanical royalties by many multiples, pushes
7 existing services to the point where they would be
8 required to pay more than 100 percent of their
9 revenues in royalties and likely makes ad-supported
10 services, which are a substantial portion of the
11 interactive streaming market, difficult or
12 impossible to sustain.
13 JUDGE STRICKLER: And do you find that to
14 be -- to take the next factor that the 2009 decision
15 relates to -- an immediate impact?
16 THE WITNESS: Seems immediate to me. I
17 mean, my understanding is that at the moment this
18 proposal goes in place, we're in a world where the
19 Services have to figure out a way to come up with
20 the money to pay royalties greater than their
21 revenues.
22 JUDGE STRICKLER: We're going to be
23 setting rates over a five-year term. If that -- if
24 an increase in rates in the direction of what the
25 Copyright Owners is proposing would be phased in

1 over time, would you understand that to be less than
2 an immediate problem to the Services?
3 THE WITNESS: It would be immediately
4 whatever the first phase is, I guess, but it would
5 be -- I think the way you're posing it, it would be
6 immediately a less substantial impact and then
7 increasing over time.
8 JUDGE STRICKLER: Do you understand that
9 the Copyright Owners' proposal would be -- would
10 lead to an irreversible impact?
11 THE WITNESS: I'm not sure. So suppose
12 the Copyright Owners' proposal goes in place and
13 Spotify, for example, ends its ad-supported service.
14 Now suppose in five years, you return to current
15 structures. Could Spotify reintroduce an
16 ad-supported service? I suppose they would have
17 lost the years of investment in developing the --
18 the stream of advertisers. I mean, it wouldn't be
19 trivial or costless to do, but I'm not sure I can
20 characterize it as being completely irreversible.
21 JUDGE STRICKLER: And the last factor is
22 short-run, but as I look at it, I take short-run to
23 be essentially synonymous for these purposes as
24 immediate. So I'm not going to take you through
25 that factor as well. Thank you.

1 BY MR. SEMEL:
2 Q. Do you believe that the current rate
3 structure violates the 801(b) factors?
4 A. No.
5 Q. So you believe --
6 JUDGE STRICKLER: Excuse me. So even
7 having the mechanical-only floor is still consistent
8 with the 801(b) factors?
9 THE WITNESS: I view it as a benchmark
10 for 801(b) factors. The -- if I look at 801(b)
11 factors today, in my analysis, it suggests they
12 should be adjusted downward somewhat, but I view the
13 801(b) factors as a benchmark for -- sorry.
14 I view the current rates as a benchmark
15 for 801(b) factor rates.
16 JUDGE STRICKLER: Counsel's question was
17 do you think the current rate structure is
18 consistent with the 801(b) factors, and your answer
19 was yes. And the current rate structure has the
20 mechanical-only floor in it. That logically seems
21 to make it --
22 THE WITNESS: Sorry. Yeah.
23 JUDGE STRICKLER: When you say you're
24 sorry, do you want to change your testimony or --
25 THE WITNESS: Yes. Let me be more

1 careful. Consistent with the 801(b) factors, so I
2 think there's a -- it encompasses a range of things
3 that might be viewed as consistent with the 801(b)
4 factors. I think the current rates provide a
5 benchmark for what's consistent with the 801(b)
6 factors.
7 When I do my analysis, it suggests that
8 we can do better at meeting the 801(b) factors by
9 moving in the direction of pushing downward on that
10 current benchmark, reducing rates somewhat, but I --
11 I don't view the current rate structure as being
12 something that has caused obvious disruption to the
13 industry or -- or being a problem.
14 JUDGE STRICKLER: So if I understand your
15 testimony correctly, you're saying that the current
16 rate structures satisfies the 801(b) factors but if
17 you remove the mechanical-only floor, it's a better
18 fit of the 801(b) factors; is that what you're
19 saying?
20 THE WITNESS: That's what I'm saying.
21 JUDGE STRICKLER: Thank you.
22 BY MR. SEMEL:
23 Q. So you believe that there is a range of
24 possible rates that satisfy the 801(b) factors,
25 correct?

1 A. Rates and structures, yes.
2 Q. And have you analyzed how broad that
3 range is?
4 A. I used the interpretation of the fourth
5 801(b) factor as one would want to stay close to
6 relevant benchmarks, and I think you can stay close
7 to relevant benchmarks while simultaneously moving
8 in the direction that's suggested by my analyses of
9 the 801(b) factors as a whole.
10 Q. I guess my question was a little simpler.
11 Did you analyze how broad the range of rates are
12 that might satisfy the 801(b) factors?
13 A. I'm not sure I have a way to quantify
14 that for you. Certainly, rates that suggest that
15 Spotify should pay more than 100 percent of its
16 revenue in royalties would be outside of that range.
17 Q. But you haven't determined the parameters
18 of the range more precisely?
19 A. I don't have a precise quantification for
20 you of that.
21 Q. You mentioned in your direct testimony
22 that none of the analysis that you did relied on
23 Spotify's sound recording payments. Do you recall
24 that?
25 A. I recall.

1 Q. But your -- the rate structure that you
2 advocate for as the best fit, in fact, the sound
3 recording payments are the primary back-stop in that
4 rate structure, correct?
5 A. In the ad-supported service, it's true
6 that the sound recording royalties provide the
7 back-stop there.
8 Q. Right. So, in fact, your analysis does
9 rely on Spotify's sound recording payments in
10 determining what's appropriate?
11 A. In the analyses that I did related to the
12 801(b) factors, in those analyses, I'm not using
13 Spotify's sound recording payments, but you're right
14 that when I look at the current structure, Spotify's
15 sound recording payments are in there as a back-stop
16 for what they're paying for their ad-supported
17 service.
18 Q. And you felt that was appropriate?
19 A. I'm not sure what you're asking me. What
20 is appropriate?
21 Q. You felt that it satisfies the 801(b)
22 factors?
23 A. It's the current structure, yes.
24 Q. So did you do any analysis besides saying
25 because it's the current structure, it -- it

1 satisfies the 801(b) factors or did you look at the
2 factors themselves and analyze whether they
3 satisfied the 801(b) factors?
4 A. I looked at the factors, and that -- and
5 did the analyses in my written direct testimony.
6 The ad-supported category, the formula there is 10
7 and a half percent of revenue. So it's a revenue --
8 percent-of-revenue structure.
9 The back-stop there is based on the sound
10 recording royalty payments. And I view that as
11 reasonable because there are practical
12 considerations here. In particular, for an
13 ad-supported service, the definition of a user,
14 there are some challenges associated with that
15 because you can have, as we saw in the calculations
16 that I did, registered users; you might register and
17 then disappear from the service for a long period of
18 time.
19 With a subscription, a paying user,
20 they're there paying, you can count them each month.
21 And how to appropriately count users for an
22 ad-supported service is more challenging. And so
23 taking into account practical considerations, I
24 think it's reasonable the way that category is set
25 up with a back-stop based on a percentage of sound

1 recording royalties.

2 Q. All right. So you believe that sound

3 recording -- a percentage of sound recording

4 royalties is a fair way of calculating royalties

5 under the 801(b) factors, correct?

6 A. I think in the particular case of

7 ad-supported services, it offers a reasonable way to

8 derive a back-stop for the percentage-of-revenue

9 calculation, given the practical consideration that

10 it is challenging to count users for an ad-supported

11 service.

12 Q. Okay. Just to be clear, because I used

13 the word "fair" and you used the word "reasonable."

14 Is there a difference in your mind between fair and

15 reasonable?

16 A. I'm an economist. And so fair is a -- is

17 a tough one for me because it doesn't have a unique

18 definition in economics. So I was intentionally not

19 using your word "fair."

20 I -- I gave fair a particular economic

21 interpretation in my written direct testimony of the

22 Shapley value. So I was trying to be clear there

23 about how I was using the word.

24 Q. But under the 801(b) factors they also

25 use the word "fair," correct?

1 A. Oh, yes, they do. That's why I felt the
2 need to give the 801(b) factors a specific economic
3 interpretation before I had something to offer to
4 the Panel about how to interpret them.
5 Q. And -- and you determined that a
6 percentage of sound recording payments was fair
7 using whatever interpretation you used of the 801(b)
8 factors?
9 A. No. The -- the Shapley value approach
10 that I used as the interpretation for fair tells you
11 something about the level of payments. It's not
12 specific about a rate structure. It just tells you
13 about how the revenues should be divided up among
14 the various parties.
15 Now, it's true that in -- in the Shapley
16 value setting, if revenues increased, it would
17 require that royalties also -- royalty payments, the
18 dollar amounts paid upstream, would also increase.
19 And so a percentage-of-revenue rate structure is
20 consistent with the Shapley value view of fairness.
21 And a per-subscriber or per-play payment is not
22 consistent with the fairness requirements of a
23 Shapley value.
24 For example, if Services were able to
25 price-discriminate among high-willingness-to-pay

1 users more effectively, if TIDAL is willing to get
2 subscribers paying 20 dollars per month for a
3 high-fidelity service, that would be additional
4 revenue. Might not be any more users, might not be
5 any more streams, but it would be additional
6 revenue.
7 The fairness criteria as interpreted
8 through the Shapley value says they should pay more
9 royalties. They've got this additional revenue for
10 the use of music, and they should share some of that
11 upstream. That doesn't happen with a per-stream or
12 per-user structure like the Copyright Owners'
13 structure.
14 So with the Shapley value interpretation
15 of fairness, a percentage-of-royalty rate structure
16 is fair for that criteria, and the Copyright Owners'
17 proposal is not.
18 Q. Okay. I'll try and go about this a
19 different way.
20 Do you believe that Spotify's rate
21 proposal is fair under the 801(b) factors?
22 A. I didn't analyze Spotify's -- all the
23 details of Spotify's rate proposal.
24 Q. So you don't know whether Spotify's rate
25 proposal is fair under the 801(b) factors?

1 A. Spotify's rate proposal is consistent
2 with the 801(b) factors in the sense that it
3 proposes to eliminate the 50 cent per-subscriber
4 mechanical floor, but Spotify's rate proposal also
5 involves some adjustments to the definition of
6 revenue and to the definition of subscribers that I
7 didn't analyze.
8 I wasn't asked to analyze Spotify's
9 proposal as a whole, and that's not what I did.
10 Q. Right. So just to be clear, your
11 opinions do not include the opinion that Spotify's
12 rates and terms are fair?
13 A. My opinion is that the adjustment that
14 Spotify has in its proposal, that is, to remove the
15 50 cent mechanical floor, that fits with my view of
16 the 801(b) factors and so fair within my
17 interpretation of fairness, within the 801(b)
18 factors.
19 There are other things in Spotify's
20 proposal that I didn't explore.
21 Q. So just to try to make my question a
22 little clearer, your opinions do not include the
23 opinion that, as a whole, Spotify's proposed rates
24 and terms are fair?
25 MR. ASSMUS: Objection, that's asked and

1 answered.

2 JUDGE BARNETT: Overruled.

3 THE WITNESS: I'm not sure I can answer

4 that. I haven't delved into some aspects of

5 Spotify's proposal. I have looked at the aspect of

6 it that is to remove the 50 cent mechanical floor.

7 And that is consistent with my view of the 801(b)

8 factors.

9 But I haven't -- I wasn't asked to look

10 at their proposal, and I didn't look at certain

11 aspects of it. So I'm not in a good position to

12 have an opinion about that.

13 BY MR. SEMEL:

14 Q. I actually wasn't asking you to make up

15 an opinion on the spot. I was just trying to

16 clarify that your opinions that you've offered in

17 this case do not include the opinion that, as a

18 whole, Spotify's proposed rates and terms are fair?

19 And I believe you -- your answer seems to be yes,

20 but I'm just trying to clarify that.

21 A. When you say "as a whole," you mean

22 considering all aspects of their proposal?

23 Q. Yes, the proposal as a whole, like is

24 this proposal as a whole fair?

25 A. There are parts of it that I didn't

1 analyze, so I did not reach an opinion about that.
2 Q. Okay, thank you.
3 MR. SEMEL: I'm probably going to do a
4 restricted session now, so I don't know if you want
5 to break.
6 JUDGE BARNETT: Yes. Let's be at recess
7 until 1:00 o'clock or five after.
8 (Whereupon, at 12:06 p.m., a lunch recess
9 was taken.)
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1 AFTERNOON SESSION

2 (1:14 p.m.)

3 JUDGE BARNETT: Please be seated.

4 Mr. Semel, did you want to start with

5 restricted information?

6 MR. SEMEL: I think that's right.

7 JUDGE BARNETT: Those of you in the

8 courtroom who are not permitted to hear confidential

9 business information in this proceeding, please wait

10 outside.

11 (Whereupon, the trial proceeded in

12 confidential session.)

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CONFIDENTIAL SESSION
PAGES 5607 - 5652

1 O P E N S E S S I O N

2 JUDGE BARNETT: What were you saying?

3 MR. ASSMUS: Very brief redirect, Your

4 Honor, and then I would like to address some

5 exhibits I neglected to address during my direct on

6 her rebuttal. We need to come up for a new word for

7 direct on rebuttal.

8 REDIRECT EXAMINATION

9 BY MR. ASSMUS:

10 Q. Dr. Marx, you recall just now you and Mr.

11 Semel discussed this concept of rates for long play

12 songs?

13 A. Yes.

14 Q. Did you in connection with your analysis

15 of the PDD benchmark do an adjustment for long

16 plays?

17 A. Yes, I did.

18 Q. And do you recall the level of that

19 adjustment in terms of a percentage?

20 A. I had an estimate of the percentage of

21 songs that were above five minutes and used an

22 estimate of how much above five minutes those songs

23 were on average and applied the incremental payment

24 per minute for songs above five minutes.

25 Q. And did that end up being a very big

1 adjustment?

2 A. It wasn't a big adjustment. It was -- it

3 went from 9.1 cents per stream to, I think, 9.6

4 cents.

5 Q. And based on that could an adjustment for

6 long plays in the HFA data have anywhere near the

7 effect of the difference you saw between 30 second

8 streams and all streams?

9 A. No.

10 Q. One final question. We have talked a lot

11 about Spotify's ad-supported service and its impact

12 on Spotify were it to close.

13 Would it be good for consumers if Spotify

14 was to shut down its ad-supported service?

15 A. It would be bad for the roughly half of

16 the consumers that are streaming consumers who are

17 using the ad-supported service. If that's their

18 choice, it wouldn't be there any more.

19 MR. ASSMUS: Nothing further on redirect,

20 Your Honor.

21 And I just wanted to address some of the

22 exhibits.

23 JUDGE BARNETT: Okay.

24 MR. ASSMUS: There are just a handful of

25 exhibits that we are admitting for the truth of the

1 matter asserted. I have given that list to Mr.
2 Semel. The ones that are not yet admitted that were
3 in our binders are Trial Exhibits 731, 1013, 2597
4 and 2598. Those are all in agreement.
5 MR. SEMEL: We have objection.
6 JUDGE BARNETT: Those are admitted.
7 (Google Exhibit Number 731 was marked and
8 received into evidence.)
9 (Pandora Exhibit Number 1013 was marked
10 and received into evidence.)
11 (Copyright Owners Exhibit Numbers 2597
12 and 2598 were marked and received into evidence.)
13 MR. ASSMUS: And then we took a page out
14 of the Copyright Owners' playbook, which I think
15 took a page out of ours in terms of an index, but we
16 have in the binder a list of the reliance exhibits
17 starting on the second page of the binder.
18 I am happy to read those into the record
19 or hand them to the clerk afterwards for recording
20 them as admitted. I don't know if Mr. Semel has any
21 objection to entry of any of those on a reliance
22 basis only.
23 MR. SEMEL: No, in this category we have
24 of not for the truth, no.
25 JUDGE BARNETT: Okay.

1 THE CLERK: I have a preference if you
2 could read them.
3 MR. ASSMUS: Absolutely. It helps us
4 later in the record when we want to do a search, so
5 I will read them as quickly as I can without too
6 quickly. They are Exhibits 55, 62, 246, 846, 867,
7 887, 973, 1000, 1001, 1003, 1005, 1007, 1009, 1010,
8 1012, 1015, 1017, 1018, 1019, 1028, 1029, 1030, and
9 then 1034 through 1038 inclusive, and 1041, 1042,
10 1043, 1598, and I think I am at a big range here,
11 1741 through 1752 inclusive, 2805, 2817, 2896, 3118,
12 3121 and 3359.
13 JUDGE FEDER: Mr. Assmus, could you check
14 your list? Did you mean to say 1005 to 1007 or 1005
15 and 1007?
16 MR. ASSMUS: I meant to and hope I did
17 say 1005 and 1007.
18 JUDGE FEDER: Okay. Thanks. Thank you.
19 JUDGE BARNETT: Thank you. Anything
20 further then? Those are received.
21 (Amazon Exhibit Numbers 55, 62, 246 were
22 marked and received into evidence.)
23 (Google Exhibit Number 846 and 867 were
24 marked and received into evidence.)
25 (Pandora Exhibit Numbers 887, 973, 1000,

1 1001, 1003, 1005, 1007, 1009, 1010, 1012, 1015,
2 1017, 1018, 1019, 1028, 1029, 1030, 1034 through
3 1038, 1041, 1042, 1043 were marked and received into
4 evidence.)
5 (Apple Exhibit Number 1598 was marked and
6 received into evidence.)
7 (Copyright Owners Exhibit Numbers 1741
8 through 1752, 2805, 2817, 2896, 3118, 3121, 3359
9 were marked and received into evidence.)
10 JUDGE BARNETT: Dr. Marx, you may be
11 excused.
12 THE WITNESS: Thank you.
13 JUDGE BARNETT: Thank you.
14 MR. ZAKARIN: Housekeeping?
15 JUDGE BARNETT: Oh, I love housekeeping.
16 Mr. Zakarin.
17 MR. ZAKARIN: I'm going back to it for a
18 day.
19 Last week, and it was pursuant to Your
20 Honor's order, we had -- we designated portions of
21 the record from 2008 relating to Mr. Quirk and Mr.
22 Sheeran and provided that to the Services. And they
23 were instructed to make their counterdesignations by
24 today, which they have done.
25 And we will, I think coordinate as to

Electronically Filed
Docket: 16-CRB-0003-PR (2018-2022) (Remand)
Filing Date: 11/15/2021 09:00:30 PM EST

PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

WRITTEN SUPPLEMENTAL REMAND TESTIMONY OF LESLIE M. MARX, PHD
(On behalf of Spotify USA Inc.)

NOVEMBER 15, 2021

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I. Scope of charge

(1) I have been retained by Spotify USA Inc. ("Spotify") during this remand proceeding to review the final rates and rate structure resulting from the Phonorecords III ("Phono III") proceeding and to examine, from an economic perspective, the validity of the Majority's approach to rate-setting and the consistency of the resulting rates with the statutory objectives known as the 801(b)(1) factors. I filed my Written Direct Remand Testimony in this proceeding on April 1, 2021.[1]

(2) After the Copyright Royalty Judges published their Order on the Services' Motion to Strike,[2] I was asked to review and respond to portions of the remand rebuttal testimonies of Dr. Jeffery Eisenach, Professor Daniel Spulber, and Professor Richard Watt.[3] I was asked to limit my response to arguments they make that are general in nature, that apply to all services, or that apply to Spotify specifically, and not to respond to arguments that apply only to a service other than Spotify. This Written Supplemental Remand Testimony constitutes my response to their testimonies within these parameters.[4]

(3) In forming my opinion, I reviewed portions of the three remand written rebuttal testimonies listed above and material cited therein, Spotify royalty data including data submitted to the Mechanical Licensing Collective (MLC), the written direct testimony submitted by certain fact witnesses in this remand proceeding, and publicly available documents and data. All documents cited in this report are listed in Appendix A below. I reserve the right to incorporate into my analysis any new information or data that may become available subsequent to this testimony.

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[1] I described my qualifications in Section I and included my CV in Appendix A of the Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021 [hereinafter, "Marx WDRT"]. I do not restate them in this testimony.

[2] Order Denying in Part and Granting in Part Services' Motion to Strike Copyright Owners' Expert Testimony and Granting Services' Request to File Supplemental Testimony and Briefing, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018-2022) (Remand), October 1, 2021 [hereinafter, "Supplemental Order"].

[3] I was instructed to review and respond to ¶¶8–89 and Appendix C of the Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, PhD, July 2, 2021 [hereinafter, "Eisenach RWRT"]; ¶¶ 10–27 of the Remand Written Rebuttal Testimony of Daniel Spulber, PhD, July 2, 2021 [hereinafter, "Spulber RWRT"]; and ¶¶ 7–18, 42–46, and footnote 51 of the Remand Written Rebuttal Testimony of Richard Watt (PhD), July 2, 2021 [hereinafter, "Watt RWRT"].

[4] If I do not dispute a particular point made in the remand rebuttal testimonies of Dr. Eisenach, Professor Spulber, or Professor Watt here, that should not be taken as implicit agreement with their argument.

II. Summary of opinions

(4) The likelihood and magnitude of an inverse relationship, or "see-saw," between statutory mechanical royalty rates and negotiated sound recording royalty rates paid by interactive streaming services is a fundamental issue in this remand proceeding. In this supplemental remand testimony, I address certain arguments made in the rebuttal remand testimonies of Professors Watt and Spulber and Dr. Eisenach related to that issue. I also address other contentions made by Dr. Eisenach related to the utility of an uncapped total content cost (TCC) rate prong. In particular, I conclude that:

1. **Professor Watt's and Professor Spulber's discussions of bargaining theory do not illuminate the fundamental issue of the likelihood and magnitude of a "see-saw" between musical works and sound recording rates**. Professor Watt's and Professor Spulber's assertions about bargaining theory are misleading and sometimes incorrect, and in any case do not speak to the likelihood, timing, or magnitude of any see-saw in real-world negotiations between labels and interactive streaming services. The relevant question for this proceeding is not the theoretical possibility of some level of see-saw, but whether the posited theoretical relationship between sound recording and musical works royalty rates can be the basis for a reliable prediction that sound recording royalties will fall on a nearly one-for-one basis in response to any rise in musical works royalties. Professor Watt's and Professor Spulber's theoretical discussions do not illuminate this question.

2. **Dr. Eisenach's comparison of Spotify's royalty rates across the Phono II and Phono III rate periods does not speak to the see-saw question** [redacted]. A more correct analysis of the timing and magnitude of royalty rate changes in Dr. Eisenach's own data [redacted].

3. **Dr. Eisenach's contention that he has presented evidence that demonstrates the efficacy of an uncapped TCC rate prong is incorrect with respect to Spotify**. The "evidence" that Dr. Eisenach presents on this point with regard to Spotify has nothing to do with "revenue diminution strategies" or "anomalous reporting practices" that Dr. Eisenach points to as justifying an uncapped TCC prong. Separately, Dr. Eisenach presents misleading measures of Spotify's profitability.

In the rest of this testimony, I describe my opinions and my basis for them in more detail.

III. Professor Watt's and Professor Spulber's assertions about bargaining theory do not support a nearly one-to-one see-saw

(5) The portions of the testimonies of Professors Watt and Spulber that are within the scope of this supplemental remand testimony relate to their theoretical discussion and empirical conclusions regarding the see-saw hypothesis.[5] This hypothesis, as articulated in the Phono III Final Determination, posits that the unregulated sound recording rates paid by interactive streaming services will decline on a nearly one-for-one basis in response to increases in the services' statutory musical works royalty rate:[6]

> [T]he Judges rely on Professor Watt's insight (demonstrated by his bargaining model) that sound recording royalty rates in the unregulated market will decline in response to an increase in the compulsory license rate for musical works. . . Professor Watt's bargaining model predicts that the total of musical works and sound recordings royalties would stay "almost the same" in response to an increase in the statutory royalty.[7]

(6) In their rebuttal testimony in this remand proceeding, Professors Watt and Spulber both make assertions about how bargaining theory generally supports some see-saw effect, and they maintain that such a theoretical relationship, of whatever magnitude, provides justification for the Majority opinion in Phonorecords III.[8] The relevant question for this proceeding, however, is not the theoretical possibility of some level of see-saw, but whether the posited theoretical relationship between sound recording and musical works rates can be the basis for a reliable prediction that sound recording royalties will fall on a nearly one-for-one basis in response to any rise in musical works royalties.[9] If that condition does not hold, the total royalty burden for the services after the rate increases under Phono III deviates even further from what the Majority determined to be a reasonable

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[5] As noted in the Supplemental Order, the majority did not actually use the term "see-saw" in the Phonorecords III Final Determination. The Supplemental Order refers to the concept as the "Copyright Owners' proffered 'inverse relationship' between changes in mechanical and sound recording royalties." Supplemental Order, at fn. 12. Because the "see-saw" term has been used frequently in the direct and rebuttal testimony in the remand proceeding, I will continue to use it here to refer to this inverse relationship.

[6] Regardless of the degree of any see-saw, the fundamental problem that I identified in my direct remand testimony—that is, the services paying too much of their revenue in royalties according to the Majority's own approach—is not solved by the Phono III increase in royalty rate. As I wrote in my direct remand testimony, "[T]he Majority's own approach also showed that the Services were paying too much in royalties. That approach concluded that the Services should be paying [redacted] of their revenue in royalties—an amount that is substantially less than what the Services actually pay." Marx WDRT, ¶ 25.

[7] Final Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (CRB November 5, 2018) [hereinafter, "Phono III Final Determination"], at 73–74.

[8] *See, e.g.*, Watt RWRT, ¶ 13 and Spulber RWRT, ¶¶ 18, 26.

[9] *See* Marx WDRT, ¶ 14.

level of total royalties for interactive streaming services.[10] I discuss in the following sections the irrelevance of Professor Watt's and Professor Spulber's testimonies for informing that particular question.

III.A. See-saw: The details matter

(7) Professor Watt asserts that the Majority's conclusions in Phono III do not rest on a particular Nash bargaining model but are instead broadly supported by bargaining theory. He describes two "important economic principles surrounding a bargaining situation such as that between the services and the labels":[11]

i. All of the available net surplus will be shared.

ii. Neither of the bargainers will demand a share such that more than the total net surplus is shared.[12]

(8) Neither of these "core principles," as Professor Watt labels them, are actually core principles of bargaining theory. The bargaining situation between a service and a record label involves two-sided private information: the label does not know the exact maximum that a service would be willing to pay, and the service does not know the exact minimum that the label would be willing to accept. Economists have used bargaining theory to model settings like this in a variety of ways,[13] many of which have the potential for delay and/or bargaining breakdown.

(9) In cases in which the models predict that bargaining breaks down, point (i) is violated because bargainers fail to reach an agreement and, as a result, all of the available surplus is not shared.[14] To

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[10] "The Judges have determined a rate that is computed based on the highest value of overall royalties predicted by Professor Marx's model [[redacted]%] and the ratio of sound recording to musical work royalties determined by Professor Gans's analysis [[redacted]]." Phono III Final Determination, at 87. [redacted]" Phono III Final Determination, at 71. *See also* Marx WDRT, ¶ 25: "the Majority's own approach also showed that the Services were paying too much in royalties. That approach concluded that the Services should be paying [redacted]% of their revenue in royalties—an amount that is substantially less than what the Services actually pay."

[11] Watt RWRT, ¶ 15.

[12] Watt RWRT, ¶ 15.

[13] As noted by John Kennan and Nobel Prize winner Robert Wilson in their survey article, "The practice of bargaining is strongly affected by procedural features. … Exact specification of procedures is essential to obtain detailed predictions of the outcomes of bargaining. Specifications of the parties' preferences and information suffice to derive general limitations on the outcomes that are incentive compatible; however, the range of possible incentive-compatible outcomes is usually large. A substantial part of this indeterminacy is due to the wide variety of procedures that could be used." John Kennan and Robert Wilson, "Bargaining with Private Information," *Journal of Economic Literature* 31, no. 1 (1993): 50. For recent work on bargaining with two-sided private information, *see* Simon Loertscher and Leslie M. Marx, "Incomplete Information Bargaining with Applications to Mergers, Investment, and Vertical Integration," *American Economic Review* (forthcoming).

[14] *See, e.g.*, Anat R. Admati and Motty Perry, "Strategic Delay in Bargaining," *Review of Economic Studies* 54, no. 3 (1987): 345–64 (providing a model with "equilibria involving a delay to agreement that is due to the use of strategic

give a specific example, one way that economists have modeled bargaining in a setting such as this is with a *k*-double auction, where a buyer and a seller each have a private valuation for a good and simultaneously submit sealed bids of preferred trading prices: p_B for the buyer and p_S for the seller.[15] If the buyer's bid is greater than or equal to the seller's bid, then the two parties trade at a price of $kp_B + (1-k)p_S$. In this model, the parameter k represents the relative strength of the bargaining position of the buyer. If $k = 1$, then the buyer essentially makes a take-it-or-leave-it offer of p_B. If $k = 0$, then the seller essentially makes a take-it-or-leave-it offer of p_S. Of relevance here is that in equilibrium, even if the buyer's true value is greater than the seller's true cost, the buyer may submit a bid that is less than the seller's bid. In that case, there is no trade, so point (i) is violated because there is available surplus that is not shared.[16] In short, Professor Watt is mistaken when he claims that point (i) is a "core principle" of bargaining theory.

(10) Turning to point (ii), obviously agents cannot share more than what is available to share, but to see that point (ii) is not a "core principle," note that in a setting with private information, bargainers may well *demand* a share that exceeds the total that is available. For example, the optimal take-it-or-leave-it offer may turn out to exceed the available surplus, thereby resulting in bargaining breakdown.[17] Turning back to the *k*-double auction setting, when there are uniformly distributed types,[18] if $k = 1$, a buyer with value 1 optimally makes a take-it-or-leave-it offer of 1/2, essentially demanding a surplus of 1/2 for itself. However, if the seller's cost is greater than 1/2, then the total available surplus, i.e., the buyer's value minus the seller's cost, is less than 1/2, so the buyer has demanded a share that exceeds the total available surplus, and bargaining breaks down. As this example shows, Professor Watt is also mistaken when he claims that point (ii) is a "core principle" of bargaining theory.

(11) Even if we restrict attention to just the theoretical model of Nash bargaining, point (ii) still is not a core principle because in Nash bargaining no player makes a demand at all—Nash bargaining is just an algorithm for dividing a fixed, commonly known surplus. Point (i) is satisfied under Nash

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time delay by bargainers to signal their relative strength" (345)); Peter C. Cramton, "Strategic Delay in Bargaining with Two-Sided Uncertainty," *Review of Economic Studies* 59, no. 1 (1992): 205–25 (providing a model "in which the bargainers signal the strength of their bargaining positions by delaying prior to making an offer. … Trade occurs whenever gains from trade exist, but due to the private information, only after costly delay" (205)); *See also* Roger B. Myerson and Mark A. Satterthwaite, "Efficient Mechanisms for Bilateral Trading," *Journal of Economic Theory* 29, no. 2 (1983): 265–81.

[15] *See, e.g.*, Kalyan Chatterjee and William Samuelson, "Bargaining under Incomplete Information," *Operations Research* 31, no. 5 (1983):835–51; Steven R. Williams, "Efficient Performance in Two Agent Bargaining," *Journal of Economic Theory* 41 (1987): 154–72; Mark A. Satterthwaite and Steven R. Williams, "Bilateral Trade with the Sealed Bid k-Double Auction: Existence and Efficiency," *Journal of Economic Theory* 48 (1989): 107–33.

[16] See the cites in the prior footnote. For a setting in which gains from trade are possible but, due to informational asymmetries, the buyer and seller fail to reach an agreement, *see, e.g.*, George Akerlof, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* 84, no. 3 (August 1970): 488–500.

[17] This is well known in the auction context, where an optimal reserve price may result in no trade with positive probability. *See* Vijay Krishna, *Auction Theory*, 2nd ed. (Burlington, MA: Academic Press/Elsevier, 2010).

[18] That is, the seller views the buyer's value as a random variable that is uniformly distributed on [0,1], and the buyer views the seller's cost as uniformly distributed on [0,1].

bargaining because that model does not allow for the possibility of uncertainty, private information, delay, or inefficiency. Of course, uncertainty, private information, delay, and inefficiency are all issues that impact bargaining in the real world between a record label and a service.

(12) Finally, even if these two "core principles" did apply to the bargaining situation between a service and a record label, they have little to say about the relevant question here: whether, in the real world, an increase in musical works rates would be met with a nearly equal and opposite response in sound recording rates in a direct, timely, and predictable manner.[19] In the real world, the negotiated royalty outcomes do not involve just two parties, but rather a sequence of overlapping, interrelated, bilateral bargains involving multiple competing services and multiple record labels with complementary oligopoly power, and those negotiations are affected by uncertainty and private information and offer no guarantee of achieving theoretically efficient outcomes. In short, Professor Watt's discussion of bargaining theory does not support any particular real-world see-saw outcome.

(13) Professor Spulber's discussion of bargaining theory is similarly irrelevant to any assessment of possible real-world see-saw outcomes. He points out that the Nash bargaining solution, as applied to a one-shot negotiation between two parties with no uncertainty, implies Pareto optimality. He asserts that this theoretical result in turn implies that an increase in musical works rates would lead to *some* decrease in sound recording rates, all else equal. This discussion, however, does not inform the degree or likelihood of the see-saw in practice, with all the complexities affecting real-world negotiations.[20]

(14) It is important to remember that Nash bargaining theory can support any see-saw between zero and one. To make the prediction that musical works rates and sound recording rates will move in opposite directions on a nearly one-for-one basis, Professor Watt calibrated a specific Nash bargaining model using a mixture of data and forecasts.[21]

(15) As I discussed in my direct remand testimony, Professor Watt's calibration exercise, which yields the [redacted] prediction relied on by the Majority in the Phono III Final Determination, is flawed, and "making modest and reasonable adjustments to either the assumptions or the inputs has dramatic effects on the outcome."[22] In particular, Professor Watt's misplaced assumption of complete symmetry of labels and services with respect to disagreement payoffs in the event of a collapse in negotiations drives his finding of a [redacted] see-saw.[23] A lower see-saw would be more consistent with the higher disagreement payoffs available to labels relative to streaming services and would also

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[19] *See* Marx WDRT, ¶ 14.

[20] *See* Spulber RWRT, ¶¶ 24, 26.

[21] Written Rebuttal Testimony of Richard Watt (PhD), February 13, 2017 [hereinafter, "Watt WRT"] at fn. 21, Appendix 3 (CO EX. R-110), at 9–12.

[22] Marx WDRT, ¶ 33.

[23] Marx WDRT, ¶ 38.

be consistent with basic Nash bargaining principles.[24] As I discussed in my earlier testimony, Professor Watt's model also does not take into account important real-world phenomena such as the presence of multiple "must have" major labels exerting externalities on one another, staggered negotiations, and long-term contracts that can affect the timing and impact of any renegotiation.[25] All of these make the specific prediction of Professor Watt's model unreliable as a basis for setting musical works rates at the time that the Majority issued its decision, or now.[26]

III.B. Professor Watt incorrectly implies that Dr. Eisenach has proven the see-saw

(16) Professor Watt himself develops no empirical evidence related to whether any hypothesized see-saw effect actually occurred.[27] He instead cites Dr. Eisenach's comparison of the royalty rates paid by interactive streaming services over the Phonorecords II ("Phono II") period to the royalty rates they paid over the Phono III period as evidence that he asserts is relevant to evaluating the see-saw hypothesis.[28] Although Professor Watt does not clearly state how Dr. Eisenach's comparisons relate to the see-saw hypothesis, he claims that these results support the existence of a see-saw effect, and in particular that they refute my [redacted].[29]

(17) Dr. Eisenach himself does not seem to be attempting to empirically address the see-saw theory in his analysis, and instead appears to be attempting to address a different question: whether the royalty structure imposed by Phonorecords III had a "disruptive" impact on the services or the marketplace.[30] Nowhere does Professor Watt explain how a comparison of royalty rates paid over the Phono II period to those paid over the Phono III period can be interpreted to support or refute the see-saw

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[24] As I discussed in my direct remand testimony (*see* Marx WDRT, § V.A.2), if a streaming service does not have an agreement with a major record label, then the service can expect to lose many, if not most or all, of its subscribers. So the service's disagreement payoff is essentially zero. In contrast, if a record label does not have an agreement with a particular streaming service, it can still expect to obtain revenue from the subscribers to that streaming service because it can expect many, if not most or all, of those subscribers to switch to other streaming services, thereby generating revenue for the record label. Thus, we expect a record label's disagreement payoff to be substantially larger than that of a service.

[25] Marx WDRT, § V.A.3.

[26] By contrast, I used my original Shapley model as a directional check of my benchmark analysis rather than to derive precise rates. Written Direct Testimony of Leslie M. Marx, PhD, November 1, 2016 [hereinafter "Marx WDT"], ¶ 139.

[27] Professor Spulber also does not develop any empirical evidence related to the see-saw.

[28] Watt RWRT, ¶ 44.

[29] Watt RWRT, ¶¶ 44–46. *See also* fn. 51 ("[A]s we see from Dr. Eisenach's analysis, the actual evidence is completely consistent with the Nash bargaining model and the Board's reasoning on that issue.").

[30] *See, e.g.*, Eisenach RWRT, ¶ 8 ("The Services submit testimony from a number of witnesses claiming or implying that the Phonorecords III rates will harm the Services, the music streaming marketplace, or both. In this section, I explain why these claims are factually incorrect.").

hypothesis. Nor does he provide his own analysis or interpretation of Dr. Eisenach's data to show how they can be interpreted to support or refute the see-saw hypothesis.

(18) The theoretical prediction of the see-saw hypothesis, as discussed by the Majority in the Phono III Final Determination and more recently articulated by the Judges in the Order on the Services' Motion to Strike, is "whether the now-vacated mechanical rates and rate structure adopted by the Judges in Phonorecords III will cause sound recording rates to fall."[31] The associated empirical question concerns "the economic interpretation of actual events, *viz*., the movements, *vel non*., of mechanical rates, sound recording rates, and the combination of the two, during the period from January 2018 through September 2020, when the Phono III rates and rate structure were in effect."[32]

(19) Professor Watt attempts to address the theoretical question with his Nash bargaining model that underlies the Phono III Final Determination. As Professor Watt explains it, that model predicted that, after a regulatory increase in the musical works rate, a record label would find itself having to return nearly all of that increase to services in subsequent negotiations.[33] Two important components of this prediction relate to:

1. Timing: The change in sound recording rates would occur after the change in musical works rates. Thus, the proper baseline for evaluating any change is sound recording rates at the time the Phonorecords III rate change was announced, not an average of years prior.
2. Label-by-label nature: The model predicts that lost surplus would be returned to the services through a set of individual bargaining processes between a label and a service. Thus, the see-saw hypothesis as articulated by Professor Watt's model predicts that on a label-by-label basis, sound recording rates would decrease in response to an increase in musical works rates. Note that label-by-label changes are not equivalent to changes in overall effective rates that a service pays. Overall effective rates for any given service are based on a weighted average of rates across labels and are affected by the mix of plays across labels. For instance, if small indie labels receive lower rates than major labels, then an increase in indie label plays over time will lead to a decrease in overall effective rates for a service, even if each major label charges the same or even higher rates.[34] Thus, label-by-label rate movements are more informative about any potential see-saw effect than changes in overall effective rates.

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[31] Supplemental Order, at 11.

[32] Supplemental Order, at 11. The "causation" element means that finding a change in sound recording rates for unrelated reasons does not speak to the see-saw hypothesis. Dr. Eisenach's analysis does not address the causes for any of the changes in rates that he discusses.

[33] Watt WRT, Appendix 3 (CO EX. R-110), at 12. "[F]or each percentage point that the statutory rate undercuts a fair rate, the negotiated label rate increases by [redacted] percentage points." *See also* Watt RWRT, at ¶ 8.

[34] To give a simple hypothetical example, suppose that indie labels charge $1 and major labels charge $2 and that the mix of plays is 50-50. Then the effective rate will be $1.50. Even if the prices charged by indies and labels do not change, if the mix of plays changes to 75% indie and 25% major, then the effective rate decreases to $1.25, showing that effective

(20) Professor Watt ignores these components of the prediction, and, with no additional analysis, asserts that Dr. Eisenach's comparison of effective rates under Phono II to those under Phono III proves the see-saw hypothesis, a conclusion that Dr. Eisenach himself does not appear to draw.[35] Professor Watt [redacted][36] I discuss in the next section Dr. Eisenach's data analysis and its implications for the see-saw prediction.

rates can move with shifts in the play mix even when no individual rate changes.

[35] Professor Watt refers to Dr. Eisenach's analysis in support of his bargaining model, which produces his see-saw prediction. *See* Watt RWRT, ¶¶ 45–46 ("Dr. Eisenach's analysis reveals that [redacted]"). However, Dr. Eisenach's analysis is focused on movements in sound recording and musical work royalty rates as they relate to the "disruptive" impact on services, not on the strength of Professor Watt's bargaining model. *See* Eisenach RWRT, § II.A.4.

[36] Written Direct Testimony of Christopher Bonavia, March 31, 2021 [hereinafter, "Bonavia WDT"], ¶ 16.

IV. Dr. Eisenach's royalty analysis does not inform the see-saw hypothesis

(21) The concept of the see-saw is only offhandedly mentioned in Dr. Eisenach's report.[37] His analysis of trends in Spotify's and other services' royalty rates appears primarily to be an effort to assess the "disruptive impact" of the Phono III decision on Spotify and other streaming services.[38] But because Professor Watt imports Dr. Eisenach's analysis with no modification or analysis and implies that it supports the see-saw hypothesis, in this section I review in detail Dr. Eisenach's analysis of Spotify's royalty rates and its implications for the see-saw hypothesis.[39]

(22) To be relevant for the see-saw, as the Judges note, the evaluation of how royalty rates change over time must be limited to what happened "during the period from January 2018 through September 2020 when the Phono III rates and rate structure were in effect."[40] This is the time period that begins after the announcement of the Phonorecords III rates on January 27, 2018.[41] Because the see-saw hypothesis has to do with the reaction of sound recording rates to regulatory changes in musical works rates, the analysis must start at the point of the announcement of the musical works rate change.

(23) On the day that the Phono III initial determination was released, the National Music Publishers' Association ("NMPA") issued a press release entitled "CRB Dramatically Increases Rates for Songwriters" that quotes NMPA President & CEO David Israelite declaring, "[W]e are thrilled the [Copyright Royalty Board] raised rates for songwriters by 43.8%—the biggest rate increase granted in CRB history."[42] From this point, in reaction to "the biggest rate increase granted in CRB history," the see-saw hypothesis would predict that subsequent streaming service negotiations with individual record labels would yield lower royalty rates. This decrease in label rates would nearly fully offset the increase in mechanical rates, according to the calibration of the particular Nash bargaining model

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37 *See* Eisenach RWRT, ¶¶ 19, 40, fn. 47.

38 *See, e.g.*, Eisenach RWRT, ¶ 8 ("The Services submit testimony from a number of witnesses claiming or implying that the Phonorecords III rates will harm the Services, the music streaming marketplace, or both. In this section, I explain why these claims are factually incorrect.").

39 These analyses are contained in Eisenach RWRT, ¶¶ 31–43, within the scope of supplemental response as defined by the Supplemental Order.

40 Supplemental Order, at 11.

41 Initial Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB, January 26, 2018), at 1.

42 National Music Publishers' Association, "CRB Dramatically Increases Rates for Songwriters," January 27, 2018, https://www.nmpa.org/crb-dramatically-increases-rates-for-songwriters/.

used by Professor Watt that was cited by the Majority in the Phono III determination.[43] This is the hypothesis that I examined in my written direct remand testimony.[44]

(24) [redacted][45] [redacted][46] [redacted][47]

(25) Dr. Eisenach asserts that the evidence that he presents based on Spotify data shows [redacted].[48] [redacted]"[49] [redacted]."[50]

[43] Phono III Final Determination, at 73–74 ("[T]he Judges rely on Professor Watt's insight (demonstrated by his bargaining model) that sound recording royalty rates in the unregulated market will decline in response to an increase in the compulsory license rate for musical works. . . . Professor Watt's bargaining model predicts that the total of musical works and sound recordings royalties would stay 'almost the same' in response to an increase in the statutory royalty.").

[44] Marx WDRT, ¶ 27.

[45] Bonavia WDT, ¶ 16.

[46] Bonavia WDT, ¶ 9.

[47] Marx WDRT, Figure 6.

[48] Eisenach RWRT, ¶ 24.

[49] Eisenach RWRT, ¶ 33, Figure 7.

[50] Eisenach RWRT, ¶ 32 (emphasis in original).

[redacted]

(26) As I discussed earlier, a comparison of average rates during the Phono II period to average rates during the Phono III period is not the relevant comparison for evaluating the see-saw hypothesis, nor is it the comparison that I was making in my testimony. It is difficult to see given the way Dr. Eisenach presents the information, but according to his own figure, [redacted].[51]

[51] TCC ("total content cost") is defined as "the amount paid by a service to a record company for the section 114 right to perform digitally a sound recording." Phono III Final Determination, at fn. 38. The TCC rate prong defines the all-in musical works royalty as a percentage of the TCC.

(27) In Figure 2 below, I reproduce Dr. Eisenach's Figure 7, based on the data provided by Spotify to the MLC, to examine movement in sound recording rates and musical works rates over the relevant period.[52] I adjust the scale so that one can more easily see the movement in rates.

(28) Figure 2 [redacted].[53]

[52] Dr. Eisenach also relied on data provided by Spotify to the MLC as part of Spotify's initial submission of its Cumulative Statement of Account for Making and Distributing Phonorecords in February 2021. [redacted].

[53] [redacted] I discuss this issue in more detail in Section V.B below. [redacted] The particular musical works rate increase experienced by each service over the course of the Phono III period is a function of their service plan types, their customer types, their revenue, and their sound recording contracts. It is not obvious exactly how each of these variables will change and thus exactly how much each service's musical works rates will increase over the course of the Phono III rates and terms. Nor are the terms and conditions of each of the services' major label contracts public. This fact highlights, as I discussed in my direct remand testimony, the difficulty in predicting a nearly one-for-one see-saw effect in an environment of asymmetric information where major labels bargain with each service sequentially, not knowing the content or the timing of other major label deals, or even necessarily what effective musical works rate each service is paying.

[redacted]

(29) I reproduce Dr. Eisenach's data presentation because Professor Watt uses it to assess the see-saw hypothesis, but as I discussed in Section III above, movements in aggregate effective rates paid by a service over time do not represent direct proof or disproof of the see-saw hypothesis. [redacted][54]

[54] Dr. Eisenach criticizes my sound recording royalty rate analysis for including data for Q4 2020 because, as he puts it, [redacted] (call with Spotify licensing finance personnel, 11/12/2021).

(30) Dr. Eisenach uses his Figure 8 to [redacted][55] Figure 3 provides the same information in a form that makes it easier to see [redacted] Again, I present these data to provide more clarity on what Dr. Eisenach is actually showing, although aggregate effective rates across all labels do not speak directly to the see-saw hypothesis for the reasons discussed above.

[redacted]

(31) For these reasons, Dr. Eisenach's empirical analyses of changes in royalty rates over time do not support a significant see-saw effect. If anything, they support the opposite conclusion.

[55] Eisenach RWRT, ¶ 36.

V. Dr. Eisenach's analysis of service profitability and the TCC prong as related to Spotify is misleading and ultimately irrelevant

(32) In addition to his analysis of royalty rate movements, Dr. Eisenach makes two other primary contentions in his rebuttal testimony in the sections that that I understand I am allowed to address in this supplemental testimony.[56] First, he claims that data on revenue and profitability show that the interactive streaming services have not been adversely affected by the Phonorecords III rates.[57] Second, he claims that "[t]he evidence also demonstrates that uniform application of the True TCC rate prong has served its intended purpose by protecting Copyright Owners against revenue diminution and anomalous reporting practices."[58]

(33) In the course of making these arguments, Dr. Eisenach makes a number of irrelevant or misleading assertions. Below, I discuss these arguments as they relate to Spotify in particular.[59]

V.A. Analysis of profitability

(34) To support his contention that the services have not been "adversely affected" by the Phonorecords III rates, Dr. Eisenach presents information on Spotify's financial performance in recent years.[60] He first shows in his Figure 11 that Spotify's worldwide annual revenues have grown from $1.085 billion Euros in 2014 to $7.8 billion Euros in 2020. Of course, as streaming has risen in popularity with consumers over the last decade, the revenues of all of the major streaming services have increased.[61] Dr. Eisenach's own calculations show that between [redacted] of those revenues, depending on the service and the year, have been passed upstream to sound recording and musical works rightsholders in the form of music royalties.[62]

(35) Dr. Eisenach, in his Figure 12, also reports Spotify's "gross profit margins" from Q1 2016 to Q3 2020 to support his contention that "Spotify's profitability has also increased under the Phonorecords III rates."[63] Gross profits measure revenue minus direct costs of sales but do not include many of the

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[56] Dr. Eisenach also makes various claims about Dr. Katz's remand testimony, which I do not address here because they lie outside the bounds of the testimony identified by the Board as addressable in this supplemental testimony.

[57] Eisenach RWRT, ¶¶ 44–45.

[58] Eisenach RWRT, ¶ 63.

[59] As discussed in Section I above, I was asked to limit my supplemental testimony to arguments that apply to all services or that apply to Spotify specifically, and not to respond to arguments that apply only to a service other than Spotify.

[60] Eisenach RWRT, ¶ 45.

[61] *See, e.g.*, "U.S. Recorded Music Revenues by Format," U.S. Sales Database, Recording Industry Association of America, accessed November 8, 2021, https://www.riaa.com/u-s-sales-database; Eisenach RWRT, Figures 15, 16.

[62] Eisenach RWRT, Figures 2, 5, 6, 8.

[63] Eisenach RWRT, Figure 12, ¶ 47.

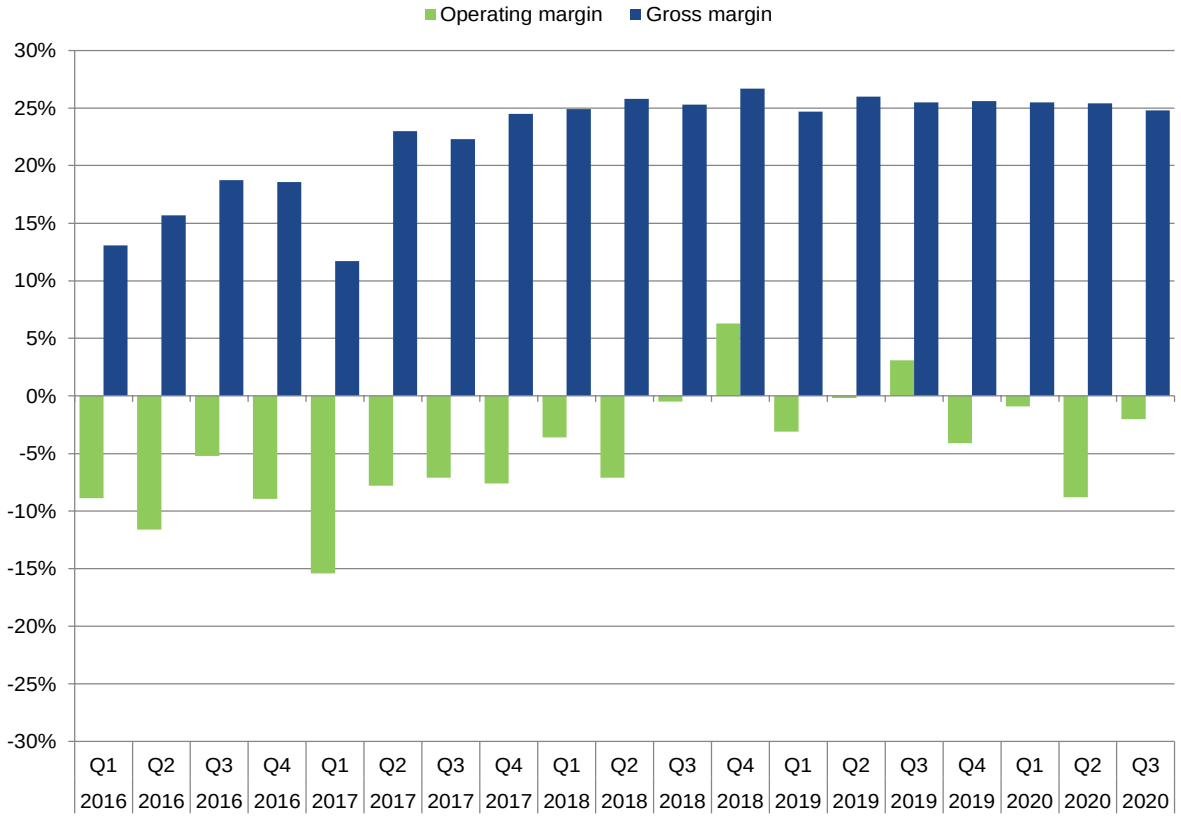
costs of actually running a company.[64] While a positive gross margin thus loosely means that a company does not lose money with each additional unit that it sells, it does not mean that a company is "profitable" as a business.[65] A better measure of overall profitability is a company's "operating margin," which includes Selling, General, and Administrative expenses and Research and Development (R&D) expenses.[66] The source from which Dr. Eisenach draws his Figure 12 also includes Spotify's operating margin—not reported by Dr. Eisenach. In Figure 4 below, I include Spotify's operating margins along with the gross margins reported by Dr. Eisenach, drawn from the same sources. They show that [redacted]

[64] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 148 ("Common terminology…often refers to the difference between sales and cost of sales as gross margin, gross profit, or gross income."). The marketing and R&D expenditures excluded by Dr. Eisenach help grow revenue for the industry to the benefit of both the copyright owners and Spotify.

[65] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 145 ("Users of financial statements analyze *net income* because it is a summary financial measure of how well a firm transforms efforts (expenses) into salable output (revenues), with larger net income indicating better performance.") (emphasis added).

[66] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 149 ("Many firms present a subtotal called operating income or operating profit, the difference between revenues and expenses associated with core operating activities… In addition to cost of sales, two common types of operating expenses are selling, general, and administrative expenses (SG&A) and research and development expenses (R&D).").

Figure 4. Spotify gross profit and operating margins (Q1 2016–Q3 2020)



Source: Eisenach RWRT, CO Rem. Ex. J and W.

V.B. Assertions regarding the need for an uncapped TCC prong

(36) Dr. Eisenach reports that "the evidence demonstrates that the True TCC rate prong has served its intended purpose by protecting Copyright Owners against the Services' revenue diminution strategies and as well as from apparently anomalous reporting practices."[67] The "evidence" that he presents on this point with regard to Spotify has nothing to do with revenue diminution strategies or anomalous reporting practices and thus says nothing in particular about the value of an uncapped TCC prong.[68]

(37) Dr. Eisenach first asserts that Spotify "has prioritized gaining market share and engages in substantial discounting, which leads to low revenue per subscriber."[69] The only cite that he gives for this claim is an earnings call statement that does not say anything about prioritizing gaining market share or engaging in substantial discounting, but instead speaks to Spotify's focus on attracting artists to its

[67] Eisenach RWRT, ¶ 68.

[68] And, in any case, a capped TCC prong provides copyright owners with protection from these concerns as well.

[69] Eisenach RWRT, ¶ 82.

platform, and how its long-term success depends on "growing the number of creators on our platform . . . using our promotion, marketing, and career management tools."[70] While Spotify engages in discounting in the form of student and family plans, as well as by offering a free, ad-supported service directed at low willingness-to-pay customers, these are forms of price discrimination that benefit the industry as a whole, including copyright owners, as I discussed at length in my written direct testimony in this proceeding.[71] Indeed, facilitating price discrimination was, as I understand it, one of the main objectives of the Phono III rate structure as articulated in the Majority opinion:

> The Judges find that the objective of maximizing the availability of musical works *downstream* to the public is furthered by an *upstream* rate structure that enhances the ability of the interactive streaming services to engage in *downstream* price discrimination ("down the demand curve," increasing revenue for both Copyright Owners and the interactive streaming services).[72]

(38) The change in how student and family plans were treated under Phono III—allowing a family plan to count as 1.5 subscribers and a student plan as 0.5 subscribers—was explicitly motivated by this price discrimination rationale.[73] It meant that student and family plans, for [redacted].[74] Figure 5 shows the effective mechanical royalty rates implied by the mechanical floors under Phono II and Phono III rates. The effective percentage of revenue implied by the mechanical floor was [redacted]

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70 Eisenach RWRT, at fn. 101; CO Rem. Ex. I, at 4.

71 *See, e.g.*, Marx WDT, ¶ 116–133.

72 Phono III Final Determination, at 85.

73 Phono III Final Determination, at 90 ("But the Judges also recognize that marketing reduced rate subscriptions to families and students is aimed at monetizing a segment of the market with a low WTP (or ability to pay) that might not otherwise subscribe at all. The Services, as they work toward profitability, are likely to continue to market aggressively to users with the WTP full subscription prices and to monetize other users in hopes of getting them into the "funnel" for full-price subscriptions.").

74 [redacted] *See, e.g.*, "Go Premium. Be Happy," Spotify, updated January 1, 2018, https://web.archive.org/web/20180101234333/https://www.spotify.com/us/premium/; "Premium for Family," Spotify, updated March 16, 2018, https://web.archive.org/web/20180316075600/https://www.spotify.com/us/family/; "Spotify Premium for Students, Now with Hulu.," Spotify, updated January 12, 2018, https://web.archive.org/web/20180112050723/https://www.spotify.com/us/student/.

[redacted]

(39) Dr. Eisenach's discussion of this point (and his discussion of Spotify's reporting of subscriber counts) simply notes the difference in the treatment of mechanical floors for student and family plans across the two regimes, and shows that it meant a [redacted][75] Again, that was an intended feature of the Phonorecords III rate structure to facilitate certain types of price discrimination. It has nothing to do with the value of an uncapped (or capped) TCC prong, nor does it provide any evidence of "revenue diminution" strategies or "anomalous reporting practices" on the part of Spotify. As Dr. Eisenach's own data show, [redacted].[76]

[75] Eisenach RWRT, ¶¶ 82–84.

[76] *See, e.g.*, Eisenach RWRT, Figures 7 and 8.

(40) Dr. Eisenach also notes the [redacted].[77] Under the Phono II regulations, bundled service revenue was defined as the difference between "the revenue recognized from end users for the bundle less the standalone published price for end users for each of the other component(s) of the bundle."[78] Under the now-vacated Phono III regulations, bundled service revenue was redefined as "the lesser of the revenue recognized from End Users for the bundle and the aggregate standalone prices for End Users for each of the component(s) of the bundle that are licensed activities."[79] [redacted]

(41) In sum, Spotify's actions under the new Phono III treatment of family and student plans and bundled revenue do not support Dr. Eisenach's claims regarding "the Services' revenue diminution strategies" or "apparently anomalous reporting practices."[80] Nor do they provide evidence that "[t]he True TCC Rate Prong Has Served Its Intended Purpose by Protecting Against Revenue Diminution and Possibly Anomalous Reporting Practices," as Dr. Eisenach's heading for a section of his report claims.[81] Instead, they show Spotify complying with changing regulations, with predictable impacts on its reporting of subscribers and bundled revenue.

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[77] Eisenach RWRT, ¶¶ 85–88.

[78] Title 37 - Patents, Trademarks, and Copyrights, 17 U.S.C. § 114 and 115 (2009) ("Where the licensed activity is provided to end users as part of the same transaction with one or more other products or services that are not a music service engaged in licensed activity, then the revenue deemed to be recognized from end users for the service for the purpose of the definition in paragraph (1) of the definition of ''Service revenue'' shall be the revenue recognized from end users for the bundle less the standalone published price for end users for each of the other component(s) of the bundle; provided that, if there is no such standalone published price for a component of the bundle, then the average standalone published price for end users for the most closely comparable product or service in the U.S. shall be used or, if more than on such comparable exists, the average of such standalone prices for such comparables shall be used.").

[79] Phono III Final Determination, Attachment A, at 8. If there is no standalone published price for a component of the bundle, "then the Service shall use the average standalone published price for End Users for the most closely comparable product or service in the U.S. or, if more than one comparable exists, the average of the standalone prices for comparables."

[80] Eisenach RWRT, ¶ 82.

[81] Eisenach RWRT, ¶ 45.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Supplemental Remand Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15th day of November 2021 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

Appendix A. Materials relied upon

A.1. Academic

- Admati, Anat R., and Motty Perry. "Strategic Delay in Bargaining." *Review of Economic Studies* 54, no. 3 (1987): 345–64.
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- Williams, Steven R. "Efficient Performance in Two Agent Bargaining." *Journal of Economic Theory* 41 (1987): 154–72.

A.2. Discovery

- Remand Written Rebuttal Testimony of Daniel F. Spulber, Ph.D., July 2, 2021.
- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2,2021.

- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. I.
- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. J.
- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. W.
- Remand Written Rebuttal Testimony of Richard Watt (PhD), July 2, 2021.
- Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021.
- Written Direct Testimony of Christopher Bonavia, March 31, 2021.
- Written Direct Testimony of Leslie Marx, PhD, November 1, 2016.
- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017.
- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017, Appendix 3 (CO EX. R-110).

A.3. Legal

- Final Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB November 5, 2018).
- Initial Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB, January 26, 2018).
- Order Denying in Part and Granting in Part Services' Motion to Strike Copyright Owners' Expert Testimony and Granting Services' Request to File Supplemental Testimony and Briefing, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB October 1, 2021).

A.4. Public

- "Go Premium. Be Happy." Spotify. Updated January 1, 2018. https://web.archive.org/web/20180101234333/https://www.spotify.com/us/premium/.
- National Music Publishers' Association. "CRB Dramatically Increases Rates for Songwriters." January 27, 2018. https://www.nmpa.org/crb-dramatically-increases-rates-for-songwriters/.
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- Title 37 - Patents, Trademarks, and Copyrights, 17 U.S.C. § 114 and 115 (2009).

Proof of Delivery

I hereby certify that on Monday, November 15, 2021, I provided a true and correct copy of the Written Supplemental Remand Testimony of Leslie M. Marx, PHD to the following:

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Amazon.com Services LLC, represented by Scott Angstreich, served via ESERVICE at sangstreich@kellogghansen.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Signed: /s/ Richard M Assmus

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

WRITTEN DIRECT REMAND TESTIMONY OF LESLIE M. MARX, PHD
(On behalf of Spotify USA Inc.)

APRIL 1, 2021

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I. Qualifications

(1) My name is Leslie Marx. I am the Robert A. Bandeen Professor of Economics at the Fuqua School of Business at Duke University. In addition, I am a Partner at Bates White, LLC, a professional services firm that performs economic and statistical analysis in a variety of industries and forums. I specialize in microeconomics, particularly the fields of industrial organization and applied game theory. I received my PhD in Economics from Northwestern University and my BS in Mathematics from Duke University, where I graduated summa cum laude and was the valedictorian.

(2) Prior to joining the faculty at Duke, I was an Associate Professor of Economics and Management at the W.E. Simon Graduate School of Business Administration at the University of Rochester. I have taught PhD-level courses in game theory and industrial organization and MBA courses on managerial decision analysis, managerial economics, managerial game theory, and environmental economics.

(3) From 2005 to 2006, I was the Chief Economist for the Federal Communications Commission. Among other things, a focus of my work was competition issues in media markets and markets for multichannel video programming distribution.

(4) I have already been qualified as an expert in economics and industrial organization in the Phonorecords III proceeding.[1] In earlier phases of this proceeding, I submitted written direct and rebuttal testimony and provided live testimony in front of the Copyright Royalty Board (CRB).[2]

(5) I have also been qualified as an expert in a number of other proceedings involving the music industry. In *In re Petition of Pandora Media, Inc*., I served as a testifying expert on behalf of Pandora in its litigation with the American Society of Composers, Authors and Publishers (ASCAP). I provided an opinion regarding reasonable royalty terms for Pandora's blanket license for the ASCAP repertory based on an analysis of the extent to which relevant benchmarks reflected competitive fair market value. The court ultimately adopted key aspects of my analysis and set a rate within the range of rates that I proposed. I have also testified before the Copyright Board of Canada in a music royalty proceeding.

(6) Throughout my career, I have pursued a research program focusing on auctions, procurement, cartels, and collusive behavior. My research incorporates my training in economic theory and econometrics. I have authored papers in many areas relevant to antitrust analysis, including papers examining the

[1] Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, March 20, 2017).

[2] Written Direct Testimony of Leslie Marx, PhD, November 1, 2016 [hereinafter, "Marx direct testimony"]; Written Rebuttal Testimony of Leslie Marx, PhD, February 15, 2017 [hereinafter, "Marx rebuttal testimony"].

conduct of the vitamins cartel, papers related to collusion at auctions, and papers on coordinated effects related to merger analysis. These and other of my professional papers have been published in peer-reviewed publications, as shown in my attached curriculum vitae. I am the coauthor of a book published by MIT Press titled *The Economics of Collusion: Cartels and Bidding Rings*.[3]

(7) In addition to my teaching responsibilities at Duke University, I have taught economics to federal judges. I have twice been paired with another economist to teach the sessions on "Cartels" and "Agreement and Facilitation Practices" at the Antitrust Law & Economics Institute for Judges, cosponsored by the American Bar Association Section of Antitrust Law and the Law & Economics Center at George Mason University School of Law. I have also taught sessions on the economics of cartels and the economics of mergers to participants in the ABA's Antitrust Master's Program.

(8) Additional information about my previous testifying experience and my professional experience as an economist, including publications and affiliations, is included in my curriculum vitae, attached as Appendix A.

[3] Robert C. Marshall and Leslie M. Marx, *The Economics of Collusion: Cartels and Bidding Rings* (Cambridge, MA: MIT Press, 2012).

II. Scope of charge

(9) I have been retained by Spotify USA Inc. ("Spotify") to review the final rates and rate structure resulting from the Phonorecords III proceeding.[4] I was asked to examine, from an economic perspective, the validity of the Majority's approach to rate-setting and the consistency of the resulting rates with the statutory objectives known as the 801(b)(1) factors.[5]

(10) In forming my opinion, I reviewed the Phonorecords III Final Determination, documents and data that were part of the Phonorecords III record, the written direct testimony submitted by several fact witnesses in this remand proceeding, and publicly available documents and data. All documents cited in this report are listed in Appendix C below. I reserve the right to incorporate into my analysis any new information or data that may become available subsequent to this testimony.

[4] The Phonorecords III proceeding set interactive streaming mechanical royalty rates under Section 115 of the Copyright Act for the 2018–2022 rate period. Section 115 grants a compulsory license that allows for the making and distributing of physical and digital phonorecords of a songwriter's work, once a phonorecord of that work has been distributed to the public with the permission of that artist. Musical works rightsholders (composed of songwriters and music publishers) are due "mechanical royalties" under this license. In this report, I sometimes refer to the holders of musical works rights collectively as "Publishers" or "Copyright Owners." Mechanical royalties are a component, along with performance royalties, of the royalties currently paid by interactive streaming services to holders of musical works rights.

[5] The four 801(b)(1) factors are: "(A) To maximize the availability of creative works to the public. (B) To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions. (C) To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication. (D) To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices." 17 U.S.C. § 801(b)(1) (2004).

III. Summary of opinions

(11) As I understand it, the Majority decision strives for a simple, administrable royalty structure that maximizes the availability of creative works to the public and fairly balances royalty payments between upstream and downstream parties (i.e., copyright holders and Services) as well as across upstream copyright holders (i.e., sound recording and musical works rightsholders).[6,7] The Majority tried to balance these concerns by adopting a new rate structure that resembles the prior structure in some ways, but not others, and by deriving rate levels from components of different economic models put forward by economic experts for the Services and the Publishers.

(12) The balancing of these concerns is an inherently difficult task. While the Majority's approach of selecting inputs and outputs from various economic models and selecting components of rate structures from various parties' proposals has the upside of giving the Board more component parts with which to work, it has the significant downside of resulting in the Majority's selection of a structure and rate levels that were not the focus of scrutiny at the hearing and thus could not be fully vetted at the hearing. Despite the best efforts of the Majority given the information available at the time of the hearing, the final outcome is not economically reasonable and does not, from an economic perspective, satisfy the Section 801(b)(1) factors.

(13) In this report, I examine the final structure and rate levels arrived at by the Majority and discuss some of the assumptions and evidence upon which the Majority relied, in order to provide further guidance to the Board in light of the decision of the D.C. Circuit to vacate and remand the rate structure and rate levels for further proceedings.

(14) I focus on two elements of the decision:

1. **The Majority relied on an unjustified assumption that any increase in mechanical royalty rates would result in a nearly one-for-one decrease in sound recording royalty rates (the so-called "see-saw" effect), leading the Majority to adopt higher rates than those consistent with the Section 801(b)(1) factors.** Although the Majority as well as experts from both sides agreed that the overall royalties (sound recording plus musical works) paid by the Services were already too high,[8] the Majority did not address that problem. Instead, the Majority increased

[6] "Those who pay and receive royalties, those who calculate the royalties, and those (like the Judges) who are sometimes called upon to interpret the regulations implementing the royalties, are best served by a rate structure that is understandable and administrable. Absent compelling reasons to adopt a more complex rate structure (which are not present in the record), simpler is better." Final Determination, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, November 5, 2018) [hereinafter, "Final Determination"], at 36.

[7] In this report, I sometimes refer to the holders of sound recording rights as "record labels."

[8] They were "too high" in light of the 801(b)(1) factors, as I discussed in my written direct testimony and written rebuttal testimony. Professor Watt's Shapley analysis produced a total royalty rate lower than the [redacted]% rate Spotify had been paying. Final Determination, at 71. "I find that a conservative estimate of the fair and reasonable total royalty payment

mechanical rates substantially in an attempt to lower the sound recording to musical works ("SR/MW") ratio, relying on the idea that a see-saw effect would prevent an increase in mechanical royalties from making the Services materially worse off. According to the Majority's see-saw theory, any increase in mechanical rates would be nearly fully offset by a corresponding decrease in sound recording rates. The only evidence for this effect in the record was a theoretical model introduced in rebuttal by one of the Copyright Owners' experts, Professor Watt.[9] Because it was introduced in rebuttal, I did not have a chance in my written testimony to address this model. In this report, I describe the problems with Professor Watt's model that make it an unsuitable basis for setting royalty rates in this proceeding. In addition, I discuss the fact that the theory proposed by Professor Watt has not been borne out: sound recording royalties did not decline in response to the increase in mechanical rates brought about by the Majority decision, let alone on a nearly one-for-one basis.

2. **The Majority relied on the economic concept of a Shapley value for guidance regarding a rate that fairly compensates the Services and Publishers and also appropriately rewards the Services and the Publishers for their relative contributions, but the Majority's approach depended on the one-for-one see-saw, leading the Majority to adopt higher rates than were justified.** As I discussed in my testimony, Shapley models can be informative directionally, but it is difficult to rely on them for precise rate calculations because it is hard to capture real-world complexity in a theoretical model and to obtain exact real-world numbers that correspond to the conceptual quantities that make up the Shapley value.[10] In considering the multiplicity of Shapley and Shapley-like models that were presented by the parties' experts, the Majority combined the various approaches and underlying assumptions in a way that was not fully vetted at the hearing and that ultimately led the Majority to adopt rates that are too high. That said, in case the Judges are inclined to work with the approach used by the Majority in the Final Determination, I have provided a set of calculations that start with the Majority's approach but remove the one-for-one see-saw assumption. In doing so, I calculate a set of all-in musical works royalty rates that resolve the imbalance problem in the Majority's approach.[11] These rates are below the rates proposed by the Majority and are in line with the rates paid under the Phonorecords II benchmark.

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from downstream interactive streaming firms to upstream copyright holders is around [redacted]% of downstream revenue." Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017 [hereinafter, "Watt rebuttal testimony"], ¶ 6 (emphasis in original). *See* Marx direct testimony; Marx rebuttal testimony.

9 Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017, Appendix 3 (CO EX. R-110) [hereinafter, "CO EX. R-110"], at 9–12.

10 *See* Marx direct testimony, ¶ 139.

11 I define the imbalance problem in Section VI below.

IV. Overview of the Phonorecords III determination

IV.A. Phonorecords III determination

(15) In its determination of mechanical royalty rates and structure, the Majority strove for a straightforward, administrable rule characterized by "transparency and administrative rationality."[12] This led it to a search for a rule that was flexible enough to allow for a variety of business models but that did not require different rules for every type of service offering (except with respect to the "mechanical-only" floor, which did differ by service offering).

(16) My understanding from the decision is that the Majority embraced a number of principles in reaching its final rate levels and rate structure, four of which I paraphrase as follows:

1. There is perfect complementarity between the performance and mechanical licenses, so the retention of an "all-in" rate is appropriate.[13]
2. It is reasonable to be concerned about the possibility of a certain amount of revenue deferral by the Services.[14]
3. Mechanical royalties are important to making songwriting a viable profession, so the retention of the per-subscriber mechanical floor is appropriate.[15]
4. Shapley analyses can be informative for finding rates that are reasonable, "fair," and appropriately reward the Copyright Owners and the Services for their "relative contributions."[16]

(17) In addition, to calculate specific rate levels, the Majority sought to identify an appropriate level of combined (sound recording plus musical works) royalties and to divide those total royalties between

[12] Final Determination, at 36.

[13] "Specifically, the Judges find that the deduction of performance royalties accounts appropriately for the perfect complementarity of the performance and mechanical licenses." Final Determination, at 35.

[14] "[A]n uncapped TCC prong effectively imports into the rate structure the protections that record companies have negotiated with services to avoid the undue diminution of revenue through the practice of revenue deferral. The Judges find that the present record indicates that the Services do seek to engage to some extent in revenue deferral in order to promote their long-term growth strategy." Final Determination, at 36.

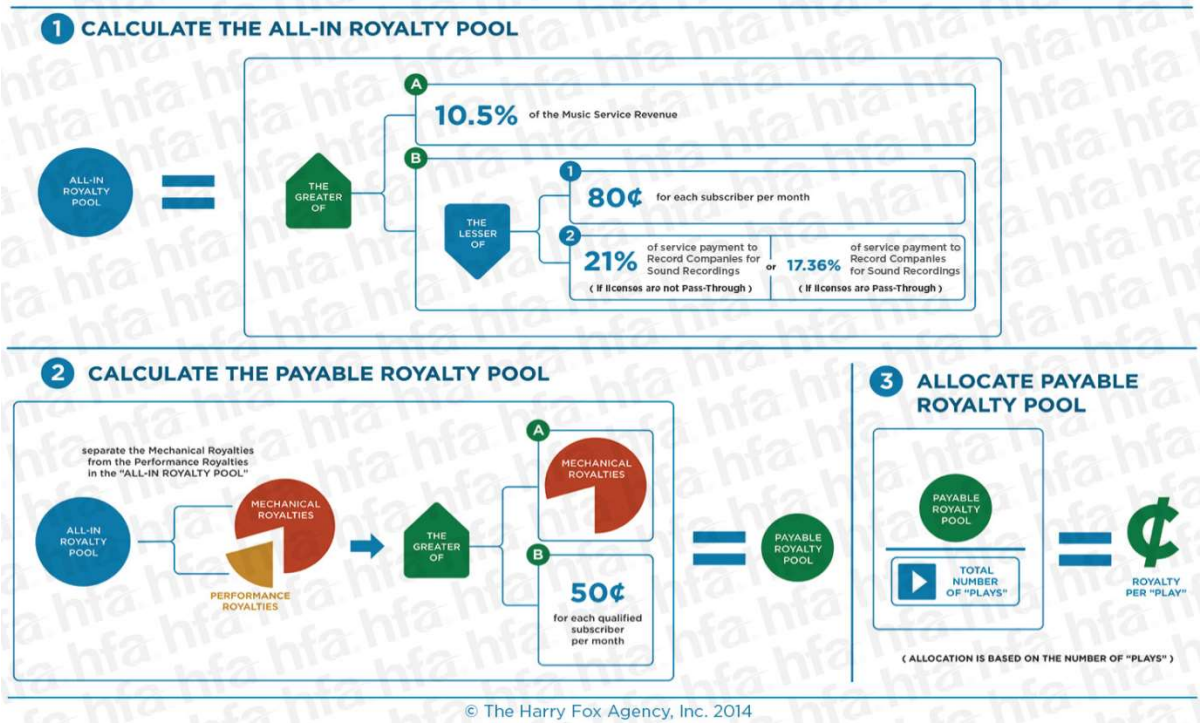
[15] "The Mechanical Floor appropriately balances the Service's need for the predictability of an All-In rate with publishers' and songwriters' need for a failsafe to ensure that mechanical royalties will not vanish either through the actions of the Services or the PROs and the Rate Court. Testimony of publishers and songwriters has established the critical role that mechanical royalties play in making songwriting a viable profession." Final Determination, at 37.

[16] "In the present proceeding, the parties' economic experts agreed on the propriety of joint consideration of Factors B and C either through a Shapley value analysis or an analysis 'inspired' by the Shapley valuation approach. . . . The Judges concur with this joint analysis." Final Determination, at 86.

sound recording and musical works rightsholders by using an appropriate ratio of sound recording to musical works royalties.[17]

(18) The Phonorecords III Final Determination hews generally to the structure of the Phonorecords II "Standalone Portable Subscriptions, Mixed Use" categorization.[18] For that category, the Phonorecords II structure and rates were as illustrated in Figure 1 below.

Figure 1. Phonorecords II mechanical royalty formula for standalone portable subscriptions, mixed use



Source: "Archived Rate Charts," Harry Fox Agency, updated 2014, https://www.harryfox.com/content/archived_rates.pdf.

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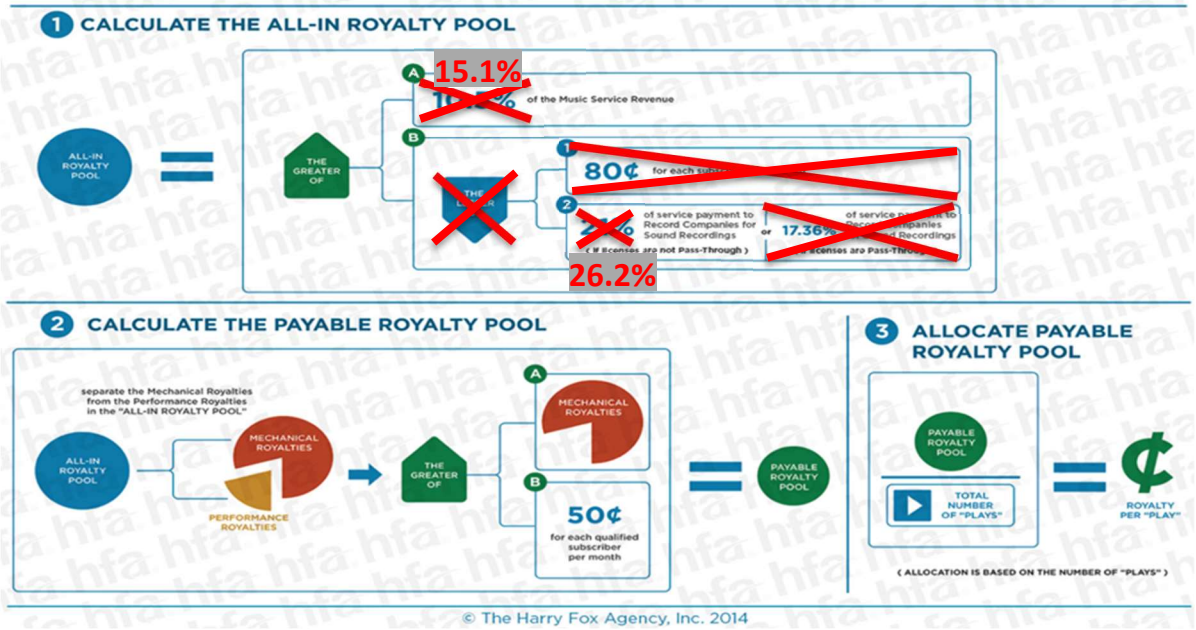
17 "The Judges used Shapley analyses to derive royalty rates in this Determination, and discussed the experts' respective Shapley (or Shapley-inspired) models in that context. To summarize briefly, Professors Marx, Gans, and Watt's analyses all produced a lower ratio of sound record [sic] to musical work royalties than exists under current conditions, implying that a fair allocation of surplus between those two groups would be more even than under the current market structure. Professors Marx's and Watt's Shapley analyses also pointed to a lower overall percentage of service revenue being directed to copyright royalties than exists under the current rate structure." Final Determination, at 86–87 (internal citations omitted).

18 This was one subcategory from among the ten service categorizations defined in Phonorecords II. The Majority's decision in Phonorecords III contained the same rate structure for all service categorizations apart from physical phonorecord deliveries, permanent digital downloads, ringtones, and music bundles, except that the "mechanical-only" floor is present for some and not others and is set at a different level, depending on the service type. *See* Final rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Case No. 2006-3 CRB DPRA (Copyright Royalty Board, January 26, 2009); Final rule, Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords, Case No. 2011-3 CRB Phonorecords II (Copyright Royalty Board, November 13, 2013); Final Determination, Attachment A.

(19) The Phonorecords III determination removed the 80 cent per subscriber cap on the Total Content Cost (TCC) rate prong and the pass-through version of that rate, and it significantly increased both the headline percentage-of-revenue rate and the TCC rate prong, with the increase in rate levels phased in over five years.[19] The changes made to the prior structure and rates in the Phonorecords III determination are illustrated in Figure 2.

Figure 2. Phonorecords III adjustments to Phonorecords II mechanical royalty formula



Source: Final Determination, Attachment A.

(20) The Majority eliminated the "cap" on the TCC prong of $0.80 per subscriber and adjusted upward the percentage-of-revenue rate and the percentage-of-TCC rate, although not in the same proportion. Under the prior structure and rates, the 10.5% headline rate was 50% of the percentage-of-TCC rate. Mathematically, this means that if a service paid 50% of its revenue to record labels, then (ignoring the cap on the TCC prong) the all-in royalty pool would be the same regardless of whether the calculation was done by taking 10.5% of revenue or 21% of payments for sound recordings. In the revised version, the headline rate is greater than 50% of the percentage-of-TCC rate. So if a service paid 50% of its revenue to record labels, the "greater of" requirement will mean that the 15.1%

[19] Total Content Cost (TCC) is defined as "the amount paid by a service to a record company for the section 114 right to perform digitally a sound recording." Final Determination, at fn 38. The TCC rate prong defines the all-in musical works royalty as a percentage of the TCC.

percentage-of-revenue prong will apply. In the new version, the two prongs yield the same result when a service pays 57.6% of its revenue to record labels.[20]

(21) In addition to these adjustments to the rates, the Judges modified how "service revenue" would be defined for bundled services.[21] The Majority also made a number of other changes to the regulatory terms.[22]

(22) Relying on the results of certain Shapley models and the SR/MW ratio derived from a "Shapley-inspired" model, the Majority concluded that the total royalties being paid by the Services are too high and that the ratio of sound recordings to musical works royalties is too high.[23]

(23) As I discuss in more detail in the balance of this written testimony, it is not an achievable goal to precisely fix both of these ratios simultaneously using only the instrument of mechanical rates. I describe some of the reasons for this and provide a more reasonable way to interpret the Majority's approach, which implies a downward adjustment to the rates that it determined.

IV.B. Appeal and remand

(24) The Services and Copyright Owners both appealed the Board's Final Determination to the US Court of Appeals for the D.C. Circuit. The Appellate Court decided the case on August 7, 2020.[24] The Appellate Court vacated and remanded "the Board's adopted rate structure and percentages for further proceedings consistent with [its] opinion."[25] One theme that runs throughout the D.C. Circuit opinion is that the parties were not given an opportunity to address the economic consequences of much of what the Majority ultimately decided to do.[26] I understand that the record has now been reopened on certain issues in an effort to rectify this shortcoming, among others.

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[20] The Majority also adopted the Services' proposal to count family plans as having 1.5 subscribers and student plans as having 0.5 subscribers for purposes of calculating the mechanical floor rate. Final Determination, at 93.

[21] Final Determination, Attachment A, at 7–8.

[22] For example, the Majority removed royalty payments for "fraudulent streams" and for purposes of dividing mechanical revenue among Copyright Owners defined a play as a greater than a 30-second stream. Final Determination, at 91.

[23] "To summarize briefly, Professors Marx, Gans, and Watt's analyses all produced a lower ratio of sound record [sic] to musical work royalties than exists under current conditions, implying that a fair allocation of surplus between those two groups would be more even than under the current market structure. Professors Marx's and Watt's Shapley analyses also pointed to a lower overall percentage of service revenue being directed to copyright royalties than exists under the current rate structure. . . . The Judges have determined a rate that is computed based on the highest value of overall royalties predicted by Professor Marx's model and the ratio of sound recording to musical work royalties determined by Professor Gans's analysis. The Judges find that these rates are consistent with the experts' analyses and constitute a fair allocation of revenue between copyright owners and services." Final Determination, at 86–87.

[24] Opinion, Johnson v. Copyright Royalty Board et al., No. 19-1028 (D.C. Cir. August 7, 2020) [hereinafter, "Appellate decision"].

[25] Appellate decision, at 33.

[26] "[W]e agree with the Streaming Services that the Board failed to provide adequate notice of the final rate structure,

V. The Board cannot reliably adjust the sound recording royalty rate via the mechanical royalty rate

(25) It is my understanding that in setting the mechanical royalty rate, the Board tried to balance two ratios: (1) the upstream/downstream division of royalties (i.e., the total royalties paid by the Services) and (2) the upstream/upstream division of royalties (i.e., the division of royalties between sound recording and musical works rightsholders).[27] Models from the economic experts of both the Copyright Owners and the Services showed that the Services were paying too much in total royalties; they also found that the ratio between sound recording and musical works royalties was too high.[28] The Majority's own approach also showed that the Services were paying too much in royalties. That approach concluded that the Services should be paying [redacted]% of their revenue in royalties—an amount that is substantially less than what the Services actually pay.[29] To divide that total royalty between sound recording and musical works rightsholders, the Majority also concluded that it should use the [redacted] SR/MW ratio Professor Gans used in his "Shapley-inspired" model—a ratio that is much lower than ratios observed at the time.[30]

(26) The only way to simultaneously lower the total royalty obligations of the Services and lower the SR/MW royalty ratio is to lower sound recording royalties. However, the Board has no ability to do so because sound recording royalties are unregulated and the Board has no jurisdiction over them. Instead, in an effort to lower the SR/MW ratio, the Board raised the mechanical royalty rate, the one rate that it could control directly. While doing so could lower the SR/MW ratio, it cannot lower the total royalties that the Services pay. Instead, raising the mechanical royalty rate raises the total royalty obligation of the Services even further. As a result, by raising mechanical rates, the Majority was able

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failed to reasonably explain its rejection of the Phonorecords II settlement as a benchmark, and failed to identify under what authority it substantively redefined a term after publishing its Initial Determination." Appellate decision, at 23. "While the Streaming Services knew, at the 50,000-foot level, that the Board would be deciding the royalty rates and terms to govern the mechanical license, they had no fair notice that the Copyright Royalty Board would take the dramatic step of uncapping the total content cost prong for every category of service offering, let alone pair that with significant increases in the total content cost and revenue prongs." Appellate decision, at 33–34.

27 "[T]he use of an uncapped TCC metric is the most direct means of implementing a key finding of the Shapley analyses conducted by experts for participants on both sides in this proceeding: the ratio of sound recording royalties to musical works royalties should be lower than it is under the current rate structure." Final Determination, at 35. "The Judges find that [the final rates] are consistent with the experts' analyses and constitute a fair allocation of revenue between copyright owners and services." Final Determination, at 87.

28 "[U]nder their respective Shapley Models, Professors Marx, Gans, and Watt appear to be in general agreement that the ratio of sound recording to musical works royalties should decline. Both Professor Marx's and Professor Watt's models show lower combined royalties being paid by services than are currently in the marketplace." Final Determination, at 71.

29 "The Judges have determined a rate that is computed based on the highest value of overall royalties predicted by Professor Marx's model [[redacted]%] and the ratio of sound recording to musical work royalties determined by Professor Gans's analysis [[redacted]]." Final Determination, at 87. [redacted]% ". . . is less than [redacted]." Final Determination, at 71.

30 Final Determination, at 87; "All of the experts' ratios are well below the current ratio of approximately [redacted]:1 for Spotify, and approximately 5.71:1 comparing the 10.5% headline rate to an average sound recording rate of approximately 60% of revenue." Final Determination, at 71.

to lower the SR/MW ratio but also undermined the goal of reducing the Services' total royalty obligations.

(27) It is only possible to use mechanical royalties to lower the SR/MW ratio and keep the total royalties paid by the Services *constant* (not lower) if one assumes that sound recording and musical works royalties move in lockstep in opposite directions—that is, any increase in musical works royalties would be fully offset by an equivalent dollar-for-dollar decrease in sound recording royalties. It is my understanding that the Majority made such an assumption—its see-saw theory based on Professor Watt's bargaining model—as part of its justification for adopting its preferred rate levels and rate structure.[31] But there was no empirical evidence or fact witness testimony supporting such an assumption and little theoretical justification introduced at the hearing to support a one-to-one (or nearly one-to-one) relationship between movements in musical works and sound recording royalties.

(28) The only theoretical model of the impact of changes in regulated musical works royalty rates on privately negotiated sound recording royalty rates that was considered in the proceeding was introduced by Professor Watt in his written rebuttal testimony.[32] Professor Watt used a "Nash bargaining" model, calibrated with questionable numerical inputs, which purported to show that any increase in mechanical royalties mandated by the Board would lead to a nearly equivalent decrease in sound recording royalties.[33] Professor Watt's model found that for every $1.00 increase in mechanical royalties, sound recording royalties would decline by [redacted].[34] Notably, even according to Professor Watt's model, if the mechanical rate were increased, the Services would be made slightly worse off. In other words, even if Professor Watt were correct that there would be a nearly complete offset, an increase in mechanical rates would still not address the problem identified by the Majority that the Services already paid too much in total royalties.

(29) Because Professor Watt introduced this model and the associated inputs for his calibration in rebuttal, I did not have the opportunity to address them in either of my two written statements. I understand

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[31] "[T]he Judges rely on Professor Watt's insight (demonstrated by his bargaining model) that sound recording royalty rates in the unregulated market will decline in response to an increase in the compulsory license rate for musical works. . . . Professor Watt's bargaining model predicts that the total of musical works and sound recordings royalties would stay 'almost the same' in response to an increase in the statutory royalty." Final Determination, at 73–74. Note that if such a relationship between sound recording and musical rates existed (and it went in both directions), the Services would be indifferent to the outcome of the Phonorecords III hearing—they would be paying the same in total royalties no matter the outcome, the only difference being the particular division of those royalties between musical works and sound recording rightsholders.

[32] *See* Watt rebuttal testimony.

[33] "We then use the Nash bargaining model to find out what [the label's payoff] will be." CO EX. R-110, at 10 (internal citation omitted). The Nash bargaining model is an approach sometimes used by economists to model the distribution of "gains from trade" between two parties "in a manner that reflects 'fairly' the bargaining strength of the different agents." Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995), 838.

[34] CO EX. R-110, at 12.

that the Judges have now asked for new evidence regarding this issue.[35] Because it underlies much of the logic of the final decision, I have analyzed this model and the assumptions underlying it.

V.A. Professor Watt's prediction of a nearly one-to-one relationship between sound recording and musical works royalties is not reliable

(30) Professor Watt's model is not an appropriate basis for concluding that there is a nearly one-for-one see-saw between musical works royalty rates and sound recording royalty rates. In this section, I discuss the erroneous assumptions underlying Professor Watt's conclusions, the inherent limitations of his model, and the sensitivity of his model to its numerical inputs, all of which make his model unreliable for predicting real-world sound recording royalty movements.

V.A.1. Professor Watt uses a highly stylized static model that cannot accurately predict the outcome of a complex, dynamic process

(31) Professor Watt's model attempts to derive how a negotiated sound recording rate would respond to changes in a regulated musical works royalty rate. He assumes that the musical works royalty rate is fixed and that a single record label bargains with a single interactive streaming service over the sound recording royalty rate. The record label and interactive streaming service bargain under a Nash bargaining framework, in which they divide the surplus created by interactive streaming. How exactly the surplus is divided depends on the assumed structure of the market, numerical inputs, and a hypothetical parameter representing the relative bargaining strengths of the service and the record label.[36]

(32) Professor Watt calibrates his model and determines the relative bargaining strengths of the two sides using data on interactive streaming costs and record label costs and on estimates of musical works royalties and sound recording royalties. Based on his calibration, he concludes that his single record label holds almost complete bargaining power over his single service. As a result, when more money is made available through a reduction in the musical works royalty rate, [redacted]% of that amount is captured by the record label, with only [redacted]% of that additional "surplus" going to the service.

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[35] "In the meantime, the Judges find it appropriate to accept submissions from both parties stating the affirmative cases for their respective positions and providing evidence therefor, followed by rebuttal submissions from the parties." Order Regarding Proceedings on Remand, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, December 15, 2020), at 2.

[36] Nash bargaining outcomes depend on agents' disagreement payoffs, which one can view as a reflection of market structure, and on the agents' bargaining parameters. Thus, the values of agents' bargaining parameters are distinct from notions of market power based on market structure. "Modellers often use the asymmetric Nash solution in an attempt to capture some imprecisely defined differences in 'bargaining power,' where a large [parameter value for one party] is interpreted as representing a relatively high bargaining power of [that party]." Ken Binmore, Ariel Rubinstein, and Asher Wolinsky, "The Nash Bargaining Solution in Economic Modelling," *RAND Journal of Economics* 17, no. 2 (Summer 1986): 186.

Conversely, when the musical works royalty rate *increases*, the sound recording rate declines, with the record label effectively covering [redacted]% of the musical works royalty increase. Because in Professor Watt's calibration the record label controls virtually all the incremental surplus that is divided between itself and the interactive streaming service, when that surplus is reduced through a higher musical works royalty, the record label gives back almost all the lost surplus. This see-saw result is what Professor Watt relies on when he opines that any increase in musical works royalties would lead to a nearly one-for-one decrease in sound recording royalties.[37]

(33) Professor Watt's model purports to make a precise prediction of what will happen to sound recording royalty rates if the Board increases mechanical royalty rates, but the results of Professor Watt's model depend critically on the assumptions that he makes and the numerical inputs that he uses.[38] The nearly one-for-one see-saw effect follows from Professor Watt's particular modeling choices and numerical inputs. Making modest and reasonable adjustments to either the assumptions or the inputs has dramatic effects on the outcome, either significantly reducing the see-saw effect suggested by his model or resulting in outcomes that are illogical, in that the model predicts that the record label will actually capture more than 100% of the available surplus.[39]

V.A.2. Professor Watt's model incorrectly assumes that there is no substitutability between interactive streaming and other forms of distribution, which biases his results

(34) Professor Watt assumes that if his single record label and single interactive streaming service do not reach a deal, then there is no value created by the use of the record label's music. In other words, each party has a "disagreement payoff" of zero (each party ends up with nothing in the absence of a deal).[40] In reality, if interactive streaming went away, a share of the music listening that had occurred through interactive streaming services would migrate to other forms of music distribution, generating revenues for the label (meaning that the disagreement payoff would be positive for the label).[41] When a non-zero disagreement payoff for the record label is incorporated into Professor Watt's model, the

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[37] "[F]or each percentage point that the statutory rate undercuts a fair rate, the negotiated label rate increases by [redacted] percentage points." CO EX. R-110, at 12. In the corrected version of Professor Watt's model, the magnitude of the see-saw is exactly equal to the record label's bargaining parameter. See Appendix B for details.

[38] Watt rebuttal testimony, ¶ 7.

[39] Professor Watt himself notes that the label cannot capture more than 100% of the available surplus because the "bargaining parameter" must be between 0 and 1, with 0 leaving the label capturing none of the surplus and 1 leaving the label capturing 100% of the surplus. "Assume in that bargaining problem that the relative bargaining power of the labels is μ (and that of the streaming industry is $1 - \mu$), where $0 \leq \mu \leq 1$." CO EX. R-110, at 10. *See also* Abhinay Muthoo, *Bargaining Theory with Applications* (Cambridge, UK: Cambridge University Press, 1999), 35–36.

[40] CO EX. R-110, at 10.

[41] That migration has clearly happened in reverse—as users of other music distribution channels have migrated to streaming over time. *See* "U.S. Recorded Music Revenues by Format," U.S. Sales Database, Recording Industry Association of America, accessed March 16, 2021, https://www.riaa.com/u-s-sales-database.

data that he used to calibrate his model are then rationalized with a lower bargaining parameter for the record label than the one that he derived, implying a smaller see-saw effect.[42]

(35) Although Professor Watt ignores the record label's disagreement payoff, it must be considered in any accounting of what would happen if record labels and interactive streaming services failed to reach an agreement in the real world.[43] Taking this substitution effect into account reduces the see-saw effect that Professor Watt estimates, potentially dramatically. In Appendix B, I modify his model to allow the record label to capture revenue from other distribution channels if the record label and the streaming service fail to reach an agreement.[44] The greater is the substitution between streaming and other forms of distribution, the greater is the revenue that the record label can capture in the event of disagreement and the lower is the estimated see-saw effect.

(36) Figure 3 below illustrates the effect of greater substitutability between interactive streaming and other forms of distribution on the predicted see-saw effect. As shown, as the substitution between interactive streaming and other forms of distribution increases, the predicted see-saw between musical works and sound recording royalties decreases. For example, if one assumes that [redacted]% of interactive streaming revenue would migrate to other forms of distribution if interactive streaming did not exist, then Professor Watt's predicted see-saw effect would be cut in half. The see-saw effect would reach zero (i.e., there would be no movement at all in sound recording rates in response to changes in musical works rates) if one assumed that approximately [redacted]% of interactive streaming revenue migrated to other forms of distribution if interactive streaming disappeared. In other words, by just making a single adjustment to Professor Watt's model to recognize that there are revenue sources for record labels that compete with interactive streaming, the impact of the see-saw effect is reduced and can disappear entirely.

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[42] In this case, Professor Watt's model calibration would find that more of the record label's bargaining outcome is attributable to the structure of the market and less to the bargaining parameter μ. The decline in the estimated μ would mean a decline in the see-saw effect.

[43] It is implausible to assume that no interactive service subscriber or user would turn to other forms of music consumption if interactive streaming went away. In fact, Professor Watt himself acknowledges this substitution when he says, "The existing interactive streaming companies do not hold an essential input, as first they compete with the non-interactive services . . ." CO EX. R-110, at 11. In my Shapley model, I considered a range of possible real-world substitution effects as captured by the parameter ρ_I—from [redacted]% to [redacted]% of interactive streaming profits migrating to other forms of distribution if interactive streaming did not exist. Marx direct testimony, ¶¶ 157, 198. I did not consider zero because that is not a realistic possibility.

[44] See Appendix B for details.

[redacted]

(37) One would expect the same decrease in the estimated see-saw effect by including a second, competing interactive streaming service in the market instead of just the one that Professor Watt uses. In that case, if no deal is reached, users would migrate to an even closer substitute—a competing interactive streaming service—resulting in an even higher degree of profit migration and thus an even lower estimated see-saw effect.

(38) The reason that the see-saw effect drops when one adds substitutes for interactive streaming to the model (either other forms of music listening or another interactive streaming service) has to do with the structure of Professor Watt's model. Essentially, Professor Watt's model, when confronted with data indicating that record labels capture the vast majority of the surplus when they bargain with interactive streaming services, must attribute this fact to either the structure of the market or the bargaining power parameter used in the model. Because Professor Watt chooses a market structure that is completely symmetric between record labels and services— not reflective of the real world— his model calibration attributes all the asymmetric surplus division to the bargaining power parameter and none of it to the market structure. This gives him a bargaining power parameter of [redacted], and, by

the logic that I explained in Section V.A.1 above, it produces a see-saw effect of [redacted]. Making more realistic assumptions about the market structure and possible substitutes would yield a substantially lower bargaining power parameter and thus a substantially lower see-saw effect.

V.A.3. Professor Watt's model ignores important real-world features of the market, which limits its applicability

(39) Professor Watt's model assumes that there is one monopolist record label. But in the real world, there are three major record labels, each with substantial complementary oligopoly power.[45] This fact complicates any notion that an increase in mechanical royalties would lead record labels to lower rates to preserve the viability of the interactive streaming industry because each record label does not fully internalize the impact of its rates on the viability of the industry.

(40) At best, a model such as Professor Watt's can calculate a notion of "equilibrium" in a simplified setting, abstracting away from the details of any particular market. Such a calculation may be useful for some purposes, but among other failings, it does not account for real-world features of a market that may affect how prices are set. It also does not explain how or over what time frame the market would move to a new equilibrium.

(41) These are critical problems if the goal is a precise prediction of how sound recording rates would react to a regulatory change in musical works royalties over the subsequent five years. Predicting such movement depends substantially on features of the market that lie outside Professor Watt's model. For example, if there are multiple negotiations between multiple record labels and multiple services, rather than just one negotiation between one record label and one service (as in Professor Watt's model), rates may be affected by the order of negotiations, the information available to each party at the time of negotiation, and asymmetries among record labels and among services. Similarly, if sound recording rates are fixed via long-term contracts, then there may be little incentive or practical ability for both sides to move to a new rate before the contract expires. These are difficult features to capture in a tractable equilibrium model, but they can have dramatic effects on actual royalty rates.

(42) In fact, agreements with record labels [redacted], reducing the possibility of rapid decreases in sound recording rates in response to regulatory increases in mechanical rates.[46] If decreases in record labels' rates do not occur until late in

[45] "The judges explained at length in *Web IV* how the complementary oligopoly nature of the sound recording market compromises the value of the rates set therein as useful benchmarks for an 'effectively competitive' market." Final Determination, at 47.

[46] Written Direct Remand Testimony of Christopher Bonavia, March 31, 2021 [hereinafter, "Bonavia remand testimony"], ¶¶ 7–8. In the Phonorecords III hearing, Professor Watt acknowledged that his model does not account for multi-year contracts: "JUDGE STRICKLER: I understand your testimony in that regard. What of the situation . . . that the . . . time period for the existing agreements between the—the labels and the interactive streamers is such that they've already

the rate period, do not occur until after the rate period expires, or do not occur at all, then setting a mechanical royalty rate on the assumption that there will be an immediate, nearly one-for-one offset in sound recording rates yields the wrong mechanical rate.

V.A.4. Professor Watt's data choices bias his results

(43) Another source of unreliability in Professor Watt's analysis is that he calibrates his model using [redacted] global rather than US costs, uses projections rather than actual costs, and then draws unsupported conclusions from those projections.[47] Without any statistical analysis, Professor Watt infers trends in [redacted] projected costs to propose a range of interactive streaming costs, using only three data points for each bound. Only one of these six points is derived from actual data rather than projections.[48] To illustrate the sensitivity of Professor Watt's model to the numbers that he uses, if, instead of using his preferred cost data, we use the upper-bound of his cost data, we obtain a see-saw effect of greater than 100%—with record labels giving up *more* than any increase in musical works royalties. In other words, when only a modest adjustment is made to the cost data used by Professor Watt (and still working within his range of costs), his model predicts that the record labels would voluntarily agree to immediately give up more money than is needed to offset an increase in mechanical rates.[49] This result highlights the fragility and unreliability of Professor Watt's result. Figure 4 below shows the predicted see-saw effect using Professor Watt's model over the

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locked in a particular rate and then we set a rate that's higher for the mechanical to reflect the fact that the sound recording royalty should drop, but it's locked in for a period of time? Are we running the risk, then, of disrupting the market by having a total royalty that's greater than what is indicated by your Shapley testimony, simply because of the disparity of times in which the rates are—are implemented? THE WITNESS: That's a very fair point. And I didn't even think of that until you've mentioned it . . . the model I have done is . . . assuming that . . . the bargained thing happens at the same time as the—or in the same general period of time as a change in the statutory rate. You're absolutely correct." Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, March 27, 2017), at 3091:24–3092:22.

[47] *See* footnote 21 of Professor Watt's Written Rebuttal Statement for details on his approach. Watt rebuttal testimony, ¶ 33.

[48] *See* footnote 21 of Professor Watt's Written Rebuttal Statement for details on his approach. Watt rebuttal testimony, ¶ 33. To summarize, [redacted]

[49] Using a non-content cost to revenue ratio of [redacted]% for interactive streaming yields a bargaining parameter value of [redacted] (see Appendix B for details).

range of costs that Professor Watt himself endorses; as can be seen, there is a range of values for which the see-saw exceeds 1.

[redacted]

(44) More generally, the model was calibrated using one year of [redacted] actual cost data to represent all of interactive streaming. Using a smaller interactive streaming service as representative, with fewer economies of scale and thus higher costs, would also lead to a predicted see-saw effect of greater than 100%—a nonsensical result. Similarly, using a different year of data could move the estimation of the see-saw effect either lower or higher.

(45) I highlight these data issues not to suggest that there is a "right" set of data that Professor Watt should have used, but to note that the model is highly sensitive to the particular data used and to the

adjustments that are made to that data. These data issues make the predictions of the model unreliable.[50]

V.A.5. The interaction between Professor Watt's modeling and data choices makes his results a poor basis for setting mechanical royalty rates

(46) As discussed above, fixing mistakes and changing assumptions about market structure and data inputs within Professor Watt's model can yield vastly different predictions about the degree of a see-saw (if any). Moving outside the model, real-world features of the market such as locked-in royalty rates, incomplete information, and asymmetries among multiple players make it unlikely that the model can reliably predict the level of sound recording royalty rates set in the real world in reaction to a change in musical works royalty rates, let alone the exact timing of any changes, which the model does not even purport to address. These issues make it inappropriate to rely on Professor Watt's model as the basis for an increase in the mechanical royalty rate.

(47) Indeed, we can compare Professor Watt's predictions to what has actually happened in the market since the Phonorecords III decision, which increased mechanical rates significantly, to see if his predictions have been borne out. As I discuss in the next section, [redacted].

V.B. The predictions of Professor Watt's model have not materialized since the Phonorecords III decision

(48) The Board's initial decision in Phonorecords III, released on January 26, 2018, mandated an increase in the headline musical works rate of 4.6 percentage points, or 44%, over five years.[51] Because the Board adopted a greater-of structure with an uncapped TCC prong, it is possible for actual increases in rates to be more than 44%, depending on which prong binds. If there were a nearly one-to-one relationship between increases in musical works rates and decreases in sound recording rates, then one would expect to have seen an offsetting decrease in sound recording rates, perhaps over the course of several years. In fact, sound recording royalty rates have not decreased in response to the increase in mechanical rates for [redacted]. The prediction of Professor Watt's model—that higher mechanical rates lead to lower sound recording rates on a nearly

[50] I noted the same issues with the Shapley model in my original report, and for that reason I advocated relying on the Shapley model only as a directional check on other, more precise methods of calculating a mechanical royalty rate that satisfies the 801(b)(1) factors. Marx direct testimony, ¶ 139.

[51] Initial Determination, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, January 26, 2018), at 1.

one-for-one basis—has thus not been borne out by events since the Phonorecords III decision was first issued.

(49) [redacted].[52] Figure 5 below details [redacted]

[redacted]

(50) Figure 6 shows [redacted].

[52] Bonavia remand testimony, ¶¶ 16, 21.

[53] [redacted]

(51) Executives from [redacted][54] Similarly, [redacted][55]

[54] [redacted]

[55] Supplemental Testimony of Rishi Mirchandani, March 31, 2021 [hereinafter, "Mirchandani remand testimony"], ¶ 13. "[redacted], Amazon negotiated agreements with the three major record labels . . . for sound recording rights for its music streaming services. During those negotiations, the Majors never suggested that they might agree to

VI. When correctly interpreted, the Majority's approach does not support an increase in musical works royalty rates

(52) For purposes of the Phonorecords III proceeding, the "right" mechanical royalty rate is one that is "reasonable" and achieves the four objectives laid out in Section 801(b)(1). In assessing these four factors, the Majority concurred with several of the economic experts that a Shapley analysis is informative regarding factors (B) and (C) of the 801(b)(1) factors, which relate to providing "fair" returns to Publishers and copyright users that reflect their relative contributions to the final product.[56] The Majority, finding different aspects of different models to be informative, combined aspects of the various Shapley and Shapley-inspired models presented by the experts (my own as well as those of Professors Watt and Gans) to inform the final rate structure and to derive rates.[57]

(53) As I noted in my testimony, a Shapley value model can be useful as a check for whether a proposed rate change is directionally "fair," but data limitations and the difficulty of capturing real-world complexity in a theoretical model make it a poor choice to use to make precise rate predictions, even within a single, internally consistent model.[58] The Majority's approach determined a zone of reasonableness and final rates by relying on multiple distinct models with different (sometimes contradictory) assumptions and different data inputs, making the task of deriving precise rates from the Majority's approach that much more tenuous.[59]

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decrease sound recording royalty rates in response to increasing mechanical royalties or the outcome of *Phonorecords III*. Amazon's experience negotiating agreements with the Majors shows that the Majors were willing to [redacted]" Mirchandani remand testimony, ¶¶ 14–15.

[56] "In the present proceeding, the parties' economic experts agreed on the propriety of joint consideration of Factors B and C either through a Shapley value analysis or an analysis 'inspired' by the Shapley valuation approach. . . . The judges concur with this joint analysis." Final Determination, at 86. "An economic interpretation of factors B and C points to a commonly used economic approach, the Shapley value, which provides an algorithm for dividing the profits generated by an agreement among the relevant parties based on their relative contributions. This operationalizes the concept of fair return based on relative contributions." Marx direct testimony, ¶ 12. "Bargaining among interactive streaming services and multiple music rightsholders is exactly the type of bargaining problem that Shapley's solution is best suited to address." Written Direct Testimony of Joshua Gans, October 31, 2016, ¶ 65. "I agree with Dr. Marx's assertion that the Shapley model is a very appropriate methodology for finding a rate that satisfies factors B and C of 801(b)(1)." Watt rebuttal testimony, ¶ 22.

[57] Final Determination, at 71–75.

[58] "Due to the abstractions and simplifications I use to achieve workable approximations, the royalty rates calculated in this section should not be viewed as perfect estimates. However, the Shapley value does provide insights about the directional change for fair royalty rates relative to current values." Marx direct testimony, ¶ 139. Similarly, Judge Strickler, in his dissent, uses the Shapley value as a check on whether the current rate should be adjusted based on factors B and C of 801(b)(1). He finds that the Shapley model does not support a movement from the current rate but that its broader applicability is limited in part by the fact "that is important to note '[t]hat the main problem with the Shapley approach . . . a particularly pressing problem [is] that of data availability.'" Dissenting Opinion of Judge David R. Strickler, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Case No. 16-CRB-0003-PR (Copyright Royalty Board, November 5, 2018), at 142.

[59] Combining the models in the way that the Majority did to determine the zone of reasonableness and final rates

(54) To derive rates, the Majority combined the highest total royalty rate derived from one of the variations of one of my Shapley models—the particular variation and model that resulted in the highest total royalty—and then split that royalty revenue between sound recording and musical works rightsholders using the SR/MW revenue ratio derived from the "Shapley-inspired" model put forward by Professor Gans.[60] As a result of that combination, the majority found that in a fair allocation: (1) the Services should retain [redacted]% of their revenue (what is left over after a total royalty of [redacted]% is paid out); (2) the Publishers should receive 15.1% of the revenue of the Services (divvying up the [redacted]% total revenue using the [redacted] ratio from Professor Gans' model); and (3) the record labels should get the remaining [redacted]% of revenue from the Services. However, because the record labels have not and presumably would not agree to lower their rates to [redacted]%, these results cannot all be satisfied in the real world.

(55) This creates a fundamental "imbalance problem"—by setting the musical works royalty rate at 15.1%, the Majority's Final Determination allows the Services to keep only a fraction of the revenue that they "should" get under the Majority's approach, while the Publishers get 100% of the revenue they should get, and record labels get much more than they should get. The Majority relied on a nearly one-for-one see-saw effect to help reduce the imbalance problem, but as I have discussed throughout this report, there is little reason to expect such a see-saw, and even if it did exist, it cannot be relied on to solve the imbalance problem.

(56) Therefore, if the Majority's approach is to be used to represent a "fair" allocation, and if it is to satisfy the 801(b)(1) factors, the musical works royalty rate set by the Majority must be adjusted to resolve this imbalance problem. Otherwise, the Services will fall far short of retaining the percentage of their revenue that the Majority's analysis indicates would be their fair share of revenues. Below I first quantify the imbalance problem and then explore ways of adjusting the Majority's analysis to eliminate the imbalance problem.

VI.A. The Majority's approach suffers from an imbalance problem

(57) Relying in part on the theory that sound recording royalty rates will decrease substantially in response to an increase in musical works royalty rates, the Majority chose a musical works royalty rate that, according to its approach, gives Publishers their full "fair" allocation of Service revenue, while giving the Services less than [redacted]% of their fair allocation of revenue, given the actual sound recording royalty rates in the marketplace. This allocation of revenue between Publishers and Services does not align

introduces a number of inconsistencies and erroneous implications, which I do not address in this report.

[60] The Majority's approach as used in the Final Determination is not itself a Shapley value model because its results were not derived from a consistent set of assumptions and data within a Shapley value model context.

with the division of revenue the Majority determined to be fair, and thus does not satisfy the second and third 801(b)(1) factors within the context of the Majority's analysis.

(58) Figure 7 shows the revenue allocation between the Services and Publishers as a percentage of the revenue that they are due under the Majority's approach, given its all-in musical works rate of 15.1% and a range of reasonable sound recording rates, based on actual rates.[61] The figure shows that the Majority's rate gives the Services [redacted]% of the revenue that they are due under the Majority's approach, while the Publishers get [redacted]% of the revenue they are due. This imbalance is inconsistent with the second and third 801(b)(1) factors within the context of the Majority's approach.

[redacted]

VI.B. The imbalance problem in the Majority's approach can be resolved by adjusting musical works royalty rates downward

(59) The imbalance problem found in the Majority's approach can be resolved by taking sound recording rates as given and allocating the remaining Service revenue to the Services and Publishers in such a way that each gets an equal share of the revenue that they are due under the Majority's fair allocation. It is reasonable to take record label rates as a given because, as noted above, these rates have not come down in response to increases in mechanical rates. Figure 8 takes that approach, calculating the

[61] The Majority's approach calls for a combined royalty rate of [redacted]%. Thus, the Services should retain [redacted]% of their revenue (100% − [redacted]% = [redacted]%).

all-in musical works rate that would equalize the shares of the Majority's revenue allocation retained by the Services and Publishers under different assumptions about the sound recording royalty rate.[62]

(60) For instance, in the second row, with a sound recording royalty rate of %——an all-in musical works royalty rate of % would ensure that the Services and Publishers each receive % of what the Majority's revenue allocation dictates they should get. In that case, Services would retain % of their revenues after paying royalties, while Publishers would capture % of Service revenue.

(61) This rate is in line with the rates paid under the Phonorecords II agreement. While the Phonorecords II headline rate was slightly below this at 10.5%, the effective rate paid by once all of the prongs were accounted for, including the mechanical floors, was %.[63] In addition, % is well above the effective percentage royalty rates suggested by the Subpart A benchmark accepted by the Majority as informative regarding the reasonable royalty range, which was calculated to be equivalent to an all-in musical works rate of %, %, or %, depending on the exact calculation used.[64]

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[62] Let x be the all-in musical works rate. To equalize the Services' and Publishers' shares of Shapley-predicted revenue, we must have $\frac{100\% - SR\ rate -}{\%} = \frac{x}{\%}$. Rearranging, this works out to $x = \frac{}{\%} \times (100\% - SR\ rate)$.

[63] Marx direct testimony, ¶¶ 69, 71, 75.

[64] "Professor Marx . . . [calculates] an All-In musical works royalty percent of %. . . . In similar fashion, . . . [Professor Marx] finds that the All-In musical works rate equals %. . . . [Dr. Leonard] calculated an 'effective' percentage royalty rate of %. . . . The Judges find that the subpart A benchmark determined by this second approach [utilized by both Professor Marx and Dr. Leonard] is useful . . . ." Final Determination, at 61. In further calculations, Dr. Leonard offers an adjusted headline rate to account for Google's proposed reductions in the base amount on which royalties

(62) At the low end of the range in Figure 8, using a sound recording rate of %—reflecting —an all-in musical works rate of approximately % ensures that the Services and Publishers both get % of what the Majority's analysis dictates would be a fair allocation of revenues. In that case, the Services would retain % of their revenues after paying royalties, and Publishers would retain % of Service revenue. This rate is still below the effective rate paid by Spotify under Phonorecords II and is considerably above the rates suggested by the Subpart A benchmark accepted by the Majority.

(63) Under all of these scenarios, a fair allocation of revenue between the Services and Publishers according to the Majority's own approach would yield a substantially lower all-in musical works royalty rate than the 15.1% in the Final Determination. Indeed, the rates in column D of Figure 8 range from % to %.

VII. I conclude that the Majority's Final Determination does not satisfy the 801(b)(1) factors

(64) The Majority attempted to balance a number of competing concerns in determining a rate structure and level to cover all interactive streaming services. In doing so, it used components of a number of proposals and analyses advanced by parties on both sides of the debate in a way that was not fully vetted during the proceeding. As a part of the Majority's analysis, it searched for the "right" ratio of sound recording to musical works royalties and the "right" level of combined (sound recording plus musical works) royalties to apply to all interactive streaming services.

(65) Using only the instrument of mechanical royalty rates, the Majority thus tried to allocate payments among three separate parties, including one—record labels—that was not party to the hearing and over whose royalty rates the Board has no control. As I have discussed in this testimony, this is an impossible task to perform. With no real evidence available in the record on the relationship between musical works and sound recording royalties, the Majority relied on implications of a calibrated theoretical model that was not fully vetted at the hearing and that produces an unreliable prediction of a nearly one-for-one decrease in sound recording royalty rates in response to any increase in musical works royalty rates. Importantly, the predictions of this model have not materialized, which has left the Services paying significantly more of their revenue in royalties than would be considered a fair allocation according to the Majority's own approach.[65]

(66) The Majority's rates give Publishers 100% of their fair allocation of revenues according to the Majority's approach, while leaving the Services with less than % of theirs. To repair this imbalance

would be calculated, giving % in 2015 and % in 2016. Final Determination, at 61.

[65] Final Determination, at 87.

problem and thus achieve greater alignment with the 801(b)(1) factors according to the fair revenue allocation from the Majority's approach, in this report I calculate musical works rates that would give the Services and the Publishers an equal percentage of the fair revenue allocations determined by the Majority's approach. Under a range of assumptions about sound recording royalty rates, this yields an all-in musical works rate in the range of [redacted]–[redacted]%. The rates in this range are significantly below the 15.1% headline rate in the Majority's Final Determination.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Remand Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 1st day of April 2021 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

Appendix A. Curriculum vitae for Leslie M. Marx

A.1. Summary of experience

Leslie M. Marx is the Robert A. Bandeen Professor of Economics at the Fuqua School of Business at Duke University. She served as Chief Economist of the Federal Communications Commission from August 2005 through August 2006. She is an expert in auctions, vertical contracting, antitrust liability, and cartels.

Dr. Marx has published extensively in peer-reviewed journals and elsewhere on topics related to industrial organization, applied game theory, auctions, procurements, and collusion. Her published work includes papers on collusive mechanisms, incentives in procurement contracting, slotting allowances, and exclusive dealing.

A.2. Areas of expertise

- Antitrust damages
- Antitrust liability
- Auctions
- Collusion
- Game theory
- Industrial organization
- Procurements

A.3. Testimony

Sworn testimony over the last five years:

- *In re Rail Freight Fuel Surcharge Antitrust Litigation*, No. 1:07-mc-00489 (D.D.C. filed 2007). Expert reports, deposition testimony: 2020–2021.
- *In re Capacitors Antitrust Litigation*, No. 3:14-cv-03264 (N.D. Cal. filed 2014). Expert reports, deposition testimony: 2018–2020.
- *Thomas Morgan Robertson et al. v. Spotify USA Inc.*, Case No. 3:17-cv-01616 (M.D. Tenn., filed 2017) and *Robert Gaudio et al. v. Spotify USA Inc.*, Case No. 3:17-cv-01052 (M.D. Tenn., filed 2017). Expert reports, deposition testimony. 2018–2019

- *Dell Inc. and Dell Products L.P. v. Hitachi-LG Data Storage Korea, Inc.*, et al., No. 3:13-cv-03550-RS (W.D. Texas). Expert report and deposition: 2017.
- United States Copyright Royalty Judges, *Determination of Rates and Terms for Making and Distributing Phonorecords* (Phonorecords III), Docket No. 16-CRB-0003-PR (2018–2022). Expert report, deposition, and testimony: 2016–2017.
- *SOCAN-Re:Sound Pay Audio services Tariffs*, 2007–2016 (Copyright Board of Canada proceeding). Expert report and trial testimony: 2016–2017.
- *In Re Cathode Ray Tube (CRT) Antitrust Litigation*, Master File No. C-07-5944 JST, MDL No. 1917. Expert report: 2016.
- Expert report and testimony in arbitration involving two large telecommunications companies: 2016.
- *In re Urethane Antitrust Litigation,* No. 08-cv-05169 (D.N.J.). Expert report, deposition, and trial testimony: 2013–2016.
- *In re Petition of Pandora Media, Inc.*, No. 12-cv-8035 (S.D.N.Y. filed 2013). Expert reports and declaration and deposition and trial testimony: 2013–2014.

A.4. Education

- PhD, Economics, Northwestern University
- MA, Economics, Northwestern University
- BS, Mathematics, Duke University

A.5. Editorial boards

- *American Economic Journal*: Microeconomics, Co-Editor, 2019 to present
- *American Economic Journal: Microeconomics*, Editorial Board, 2007–2019
- *International Journal of Industrial Organization,* Scientific Advisory Board, 2018–present
- *International Journal of Game Theory*, Editorial Board, 2009 to present
- *Journal of Economic Literature*, Editorial Board, 2010–2012
- *Games and Economic Behavior*, Advisory Editor, 2010–2012
- *International Economic Review*, Associate Editor, 2002–2005

A.6. Publications

A.6.a. Research papers in academic journals

- "Digital Monopolies: Privacy Protection or Price Regulation?" With Simon Loertscher. *International Journal of Industrial Organization* 71 (2020): 1–13.
- "Asymptotically Optimal Prior-Free Clock Auctions." With Simon Loertscher. *Journal of Economic Theory* 187 (2020).
- "A Dominant-Strategy Asset Market Mechanism." With Simon Loertscher. *Games and Economic Behavior* 120 (2020): 1–15.
- "Merger Review with Intermediate Buyer Power." With Simon Loertscher. *International Journal of Industrial Organization* 67 (2019): 1–16.
- "Mix-and-Match Divestitures and Merger Harm." With Simon Loertscher. *Japanese Economic Review* 70(3) (2019): 346–366.
- "Merger Review for Markets with Buyer Power." With Simon Loertscher. *Journal of Political Economy* 127(9) (2019): 2967–3017.
- "Two-Sided Allocation Problems, Decomposability, and the Impossibility of Efficient Trade." With David Delacrétaz, Simon Loertscher, and Tom Wilkening. *Journal of Economic Theory* 179 (2019): 416–54.
- "Auctions with Bid Credits and Resale." With Simon Loertscher. *International Journal of Industrial Organization* 55 (November 2017): 58–90.
- "Defending Against Potential Collusion by Your Suppliers—26th Colin Clark Memorial Lecture." *Economic Analysis and Policy* 53 (2017): 123–28.
- "Club Good Intermediaries." With Simon Loertscher. *International Journal of Industrial Organization* 50 (2017): 430–59.
- "A Long Way Coming: Designing Centralized Markets with Privately Informed Buyers and Sellers." With Simon Loertscher and Tom Wilkening. *Journal of Economic Literature* 53, no. 4 (2015): 857–97.
- "Antitrust Leniency with Multi-Market Colluders." With Claudio Mezzetti and Robert C. Marshall. *American Economic Journal: Microeconomics* 7, no. 3 (2015): 205–40.
- "Buyer Resistance for Cartel versus Merger." With Vikram Kumar, Robert C. Marshall, and Lily Samkharadze. *International Journal of Industrial Organization* 39 (2015): 71–80.
- "Effects of Antitrust Leniency on Concealment Effort by Colluding Firms." With Claudio Mezzetti. *Journal of Antitrust Enforcement* 2, no. 2, (2014): 305–32.

- Winner of Best Economics Article—2015 Antitrust Writing Awards.

- "An Oligopoly Model for Analyzing and Evaluating (Re)-Assignments of Spectrum Licenses." With Simon Loertscher. *Review of Industrial Organization* 45, no. 3 (2014): 245–73.
- "Plus Factors and Agreement in Antitrust Law." With William E. Kovacic, Robert C. Marshall, and Halbert L. White. *Michigan Law Review* 110, no. 3 (2011): 393–436.
  - Winner of the 10th Annual Jerry S. Cohen Memorial Fund Writing Award for the best antitrust piece during the prior year.
- "Bidder Collusion at First-Price Auctions." With Giuseppe Lopomo and Peng Sun. *Review of Economic Design* 15, no. 3 (2011): 177–211.
- "Carbon Allowance Auction Design: An Assessment of Options for the U.S." With Giuseppe Lopomo, David McAdams, and Brian Murray. *Review of Environmental Economics and Policy* 5, no. 1 (2011): 25–43.
- "Coordinated Effects in the 2010 *Horizontal Merger Guidelines*." With Wayne-Roy Gayle, Robert C. Marshall, and Jean-Francois Richard. *Review of Industrial Organization* 39, no. 1 (2011): 39–56.
- "The Economics of Contingent Re-Auctions." With Sandro Brusco and Giuseppe Lopomo. *American Economic Journal: Microeconomics* 3, no. 2 (2011): 165–93.
- "Break-Up Fees and Bargaining Power in Sequential Contracting." With Greg Shaffer. *International Journal of Industrial Organization* 28, no. 5 (2010): 451–63.
- "Slotting Allowances and Scarce Shelf Space." With Greg Shaffer. *Journal of Economics & Management Strategy* 19, no. 3 (2010): 575–603.
- "Cartels as Two-Stage Mechanisms: Implications for the Analysis of Dominant-Firm Conduct." With Randall D. Heeb, William E. Kovacic, and Robert C. Marshall. *Chicago Journal of International Law* 10, no. 1 (2009): 213–31.
- "Individual Accountability in Teams." With Francesco Squintani. *Journal of Economic Behavior & Organization* 72, no. 1 (2009): 260–73.
- "Quantitative Analysis of Coordinated Effects." With William E. Kovacic, Robert C. Marshall, and Steven P. Schulenberg. *Antitrust Law Journal* 76, no. 2 (2009): 397–430.
- "The 'Google Effect' in the FCC's 700 MHz Auction." With Sandro Brusco and Giuseppe Lopomo. *Information Economics and Policy* 21, no. 2 (2009): 101–14.
- "The Vulnerability of Auctions to Bidder Collusion." With Robert C. Marshall. *Quarterly Journal of Economics* 124, no. 2 (2009): 883–910.
- "Cartel Price Announcements: The Vitamins Industry." With Robert C. Marshall and Matthew E.

Raiff. *International Journal of Industrial Organization* 26, no. 3 (2008): 762–802.

- Awarded the 2009 Paul Geroski Best Article Prize for one of the best two articles published in the *International Journal of Industrial Organization* in 2008.

- "Bidder Collusion." With Robert C. Marshall. *Journal of Economic Theory* 133, no. 1 (2007): 374–402.
- "Exploring Relations Between Decision Analysis and Game Theory." With Jules van Binsbergen. *Decision Analysis* 4, no. 1 (2007): 32–40.
- "Rent Shifting and the Order of Negotiations." With Greg Shaffer. *International Journal of Industrial Organization* 25, no. 5 (2007): 1109–25.
- "Upfront Payments and Exclusion in Downstream Markets." With Greg Shaffer. *RAND Journal of Economics* 38, no. 3 (2007): 823–43.
- "Economics at the Federal Communications Commission." *Review of Industrial Organization* 29, no. 4 (2006): 349–68.
- "Inefficiency of Collusion at English Auctions." With Giuseppe Lopomo and Robert C. Marshall. *B.E. Journal of Theoretical Economics* 5, no. 1 (2005).
- "Opportunism and Menus of Two-Part Tariffs." With Greg Shaffer. *International Journal of Industrial Organization* 22, no. 10 (2004): 1399–414.
- "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity: Comment." With Greg Shaffer. *American Economic Review* 94, no. 3 (2004): 796–801.
- "The Joint Determination of Leverage and Maturity." With Michael J. Barclay and Clifford W. Smith, Jr. *Journal of Corporate Finance* 9, no. 2 (2003): 149–67.
  - Winner, Outstanding Paper in Corporate Finance, 1997 Southern Finance Association Meetings.
- "Adverse Specialization." With Glenn M. MacDonald. *Journal of Political Economy* 109, no. 4 (2001): 864–99.
- "Insurer Ownership Structure and Executive Compensation as Complements." With David Mayers and Clifford W. Smith, Jr. *Journal of Risk and Insurance* 68, no. 3 (2001): 449–63.
  - Winner, Outstanding Paper in Financial services, 1998 Southern Finance Association Meetings.
- "Dynamic Voluntary Contribution to a Public Project." With Steven A. Matthews. *Review of Economic Studies* 67, no. 2 (2000): 327–58.
- "Adaptive Learning and Iterated Weak Dominance." *Games and Economic Behavior* 26, no. 2

(1999): 253–78.

- "Odd-Eighth Avoidance as a Defense Against SOES Bandits." With Eugene Kandel. *Journal of Financial Economics* 51, no. 1 (1999): 85–102.
- "Payments for Order Flow on NASDAQ." With Eugene Kandel. *Journal of Finance* 54, no. 1 (1999): 35–66.
- "Predatory Accommodation: Below-Cost Pricing Without Exclusion in Intermediate Goods Markets." With Greg Shaffer. *RAND Journal of Economics* 30, no. 1 (1999): 22–43.
- "Process Variation as a Determinant of Bank Performance: Evidence from the Retail Banking Study." With Frances Frei, Ravi Kalakota, and Andrew Leone. *Management Science* 45, no. 9 (1999): 1210–20.
- "Efficient Venture Capital Financing Combining Debt and Equity." *Review of Economic Design* 3, no. 4 (1998): 371–87.
  - Winner, Koç University Prize for the Best Paper of the Year in *Review of Economic Design*.
- "The Effects of Transaction Costs on Stock Prices and Trading Volume." With Michael J. Barclay and Eugene Kandel. *Journal of Financial Intermediation* 7, no. 2 (1998): 130–50.
- "Cost Effective Use of Muscle Relaxants: A Decision Analysis." With Jeffrey S. Rubenstein, Wendy Colin, Darryl Jackson, Craig Lockwood, and Janice Molloy. *Pediatrics* 100, no. 3 (1997): 451–52.
- "NASDAQ Market Structure and Spread Patterns." With Eugene Kandel. *Journal of Financial Economics* 45, no. 1 (1997): 35–60.
- "Order Independence for Iterated Weak Dominance." With Jeroen M. Swinkels. *Games and Economic Behavior* 18, no. 2 (1997): 219–45.

A.6.b. Research papers published in books and conference volumes

- "A Tussle over Royalties: *Pandora v. ASCAP, Pandora v. BMI*, and the DOJ's Consent Decree Review." With Keith Waehrer. In *The Antitrust Revolution*, 7th ed., eds. John Kwoka and Lawrence White. New York: Oxford University Press, 2018.
- "Leniency, Profiling and Reverse Profiling: Strategic Challenges for Competition Authorities." With Claudio Mezzetti. In *Anti-Cartel Enforcement in a Contemporary Age: The Leniency Religion*, edited by C. Beaton-Wells and C. Tran, McLean, VA: Hart Publishing, 2015.
- "Tacit Collusion in Oligopoly." With Edward Green and Robert C. Marshall. In *Oxford Handbook on International Antitrust Economics*, vol. 2, edited by Roger D. Blair and D. Daniel Sokol, 464–97. Oxford, UK: Oxford University Press, 2015.

- "Section 1 Compliance from an Economic Perspective." With Robert C. Marshall. *William E. Kovacic: An Antitrust Tribute Liber Amicorum*, vol. 2, edited by Nicolas Charbit and Elisa Ramundo, 293–302. New York: Institute of Competition Law, 2014.
- "What Next? Cartel Strategy After Getting Caught." With Robert C. Marshall and Claudio Mezzetti), forthcoming in *Competition Law and Economics: Beyond Monopoly Regulation*, East-West Center and Korea Development Institute Monograph Series, Edward Elgar.
- "Economics and the Efficient Allocation of Spectrum Licenses." With Simon Loertscher. In *Mechanisms and Games for Dynamic Spectrum Access*, edited by Tansu Alpcan, Holger Boche, Michael L. Honig, and H. Vincent Poor. Cambridge, UK: Cambridge University Press, 2014.
- "Tacit Collusion in Oligopoly." With Edward Green and Robert C. Marshall. In *Oxford Handbook of International Antitrust Economics*, edited by Roger D. Blair and D. Daniel Sokol. Oxford, UK: Oxford University Press, forthcoming.
- "The Economics of Auctions and Bidder Collusion." With Robert C. Marshall and Michael J. Meurer. In *Game Theory and Business Applications*, 2nd ed., edited by Kalyan Chatterjee and William F. Samuelson, 339–70. New York: Kluwer Academic Publishers, 2014.
- "Coordinated Effects in Merger Review: Quantifying the Payoffs from Collusion." With William E. Kovacic, Robert C. Marshall, and Steven P. Schulenberg. In *Annual Proceedings of the Fordham Competition Law Institute: International Antitrust Law & Policy*, edited by Barry E. Hawk, 271–85. Huntington, NY: Juris Publishing, Inc., 2007.
- "Lessons for Competition Policy from the Vitamins Cartel." With William E. Kovacic, Robert C. Marshall, and Matthew E. Raiff. In *The Political Economy of Antitrust*, vol. 282, edited by Vivek Ghosal and Johan Stennek, 149–76. New York: Elsevier, 2007.
- "Bidding Rings and the Design of Anti-Collusion Measures for Auctions and Procurements." With William E. Kovacic, Robert C. Marshall, and Matthew E. Raiff. In *Handbook of Procurement*, edited by Nicola Dimitri, Gustavo Piga, and Giancarlo Spagnolo, 381–411. Cambridge, UK: Cambridge University Press, 2006.

A.6.c. Books

- *The Economics of Collusion: Cartels and Bidding Rings*. With Robert C. Marshall. Cambridge, MA: MIT Press, 2012.

A.7. Honors and awards

- Outstanding paper awards as listed above
- Excellence in Teaching Award, Global Executive MBA Class of 2019

- Fellow of the Game Theory Society, 2019
- International Who's Who of Competition Economists, 2017
- Outstanding Antitrust Litigation Achievement in Economics Finalist, American Antitrust Institute, October 2016
- Outstanding Antitrust Litigation Achievement in Economics Finalist, American Antitrust Institute, October 2014
- Game Theory Society, Council Member, 2013 to present
- FCC Woman Leader, Minority Media and Telecommunications Council, April 2013
- Top 100 Women in Antitrust, *Global Competition Review*, March 2013
- Business School Professor of the Week, *Financial Times*, July 2012
- Alfred P. Sloan Doctoral Dissertation Fellowship, 1993–1994
- Teaching Honor Roll, Simon School of Business, University of Rochester, 1999, 2001
- National Science Foundation Graduate Fellowship, 1989–1992
- Mary Love Collins Memorial Scholarship, 1989–1990
- Julia Dale Memorial Award in Mathematics, 1989
- Marie James Postgraduate Scholarship, 1989
- Phi Eta Sigma Graduate Scholarship, 1989
- Valedictorian, Duke University, 1989
- Alice M. Baldwin Scholarship, 1988–1989
- Faculty Scholar Award, Duke University, 1988–1989
- Phi Chi Theta Foundation Scholarship, 1988–1989
- Phi Eta Sigma Senior Award, 1988–1989
- Golden Key National Honor Society Scholarship, 1987–1988
- National Merit Scholarship, 1985
- Phi Beta Kappa Scholarship, 1985

Appendix B. Corrections to Professor Watt's see-saw model

B.1. Correcting Professor Watt's model

(67) In this section, I restate Professor Watt's model with simpler notation and correct a mistake that he makes in his derivation.

(68) Suppose one interactive streaming service and one record label engage in Nash bargaining over the sound recording royalty rate δ. The musical works royalty rate θ is set by statute. The streaming service's non-content cost is a fraction r_d of its revenue R. Similarly, the record label's non-content cost is a fraction r_L of its revenue δR.

(69) The Nash bargaining problem is

$$\max_{\delta} \left(R(1 - r_d - \theta - \delta)\right)^{1-\mu}\left(\delta R(1 - r_L)\right)^{\mu},$$

where μ is the record label's bargaining weight. The sum of the bargaining weights is normalized to 1, so the streaming service's weight is $1 - \mu$.

(70) Taking the first-order condition and solving for δ, we get $\delta = \mu(1 - r_d - \theta)$.[66]

(71) The see-saw effect is simply the derivative of δ with respect to θ. Based on the equation above, this derivative is equal to $-\mu$; that is, when the musical works royalty rate goes up by one percentage point, the sound recording royalty rate goes down by μ percentage points.

(72) Rearranging the above to solve for μ, we get

$$\mu = \frac{\delta}{1 - r_d - \theta}.$$

(73) Professor Watt plugs in the values $\delta =$ [redacted], $\theta =$ [redacted], and $r_d =$ [redacted].[67] When we do so here, we get $\mu =$ [redacted], and thus the nearly one-for-one see-saw effect, whereby a one percentage point increase in θ leads to a [redacted] percentage point decrease in δ.

[66] Professor Watt rewrites royalties and non-content costs as shares of streaming revenue R only after he takes the derivative. This is a mistake; substituting these shares into the initial bargaining problem changes the derivative.

[67] CO EX. R-110, at 11.

(74) Professor Watt considers a range of [redacted] for r_d, the ratio of non-content cost to revenue for interactive streaming.[68] Plugging the upper end of this range ($r_d =$ [redacted]) into the equation for μ above, while keeping all other parameter values the same yields value for μ of [redacted].

B.2. Adding substitution to other forms of music distribution

(75) Professor Watt's model assumes that the record label would get zero payoff if it did not come to an agreement with the streaming service. Suppose instead that the label receives ϕR of royalty revenue from streaming customers who switch to other forms of distribution.[69]

(76) The Nash bargaining problem is

$$\max_{\delta} \left(R(1 - r_d - \theta - \delta)\right)^{1-\mu}(\delta R(1 - r_L) - \phi R)^{\mu}.$$

Here, ϕ should be interpreted as the fraction of streaming revenue the label could get from other distribution channels in the event of a disagreement. For an agreement to make sense, it must be the case that $\delta R(1 - r_L) > \phi R$.[70]

(77) Solving the first-order condition for δ, we get

$$\delta = \mu(1 - r_d - \theta) + \frac{(1-\mu)\phi}{1-r_L}.$$

(78) Rearranging and solving for μ, we get

$$\mu = \frac{\delta(1-r_L)-\phi}{(1-r_d-\theta)(1-r_L)-\phi}.$$

(79) We can derive the see-saw effect in the same way as in the previous section. As before, it is equal to $-\mu$; that is, when the musical works royalty rate goes up by one percentage point, the sound recording royalty rate goes down by μ percentage points.

(80) To understand the impact of greater substitutability between types of distribution (i.e., greater ϕ) on the see-saw, we can take the first derivative of μ with respect to ϕ:

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68 Watt rebuttal testimony, ¶ 33.

69 As discussed in the main text, ϕ captures substitution to other forms of music distribution, the revenue created by this substitution, and the royalties created by this revenue. For simplicity, I express it as a fraction of interactive streaming revenue R. This choice is not important to the conclusions of the model; using a different revenue amount would simply shift the appropriate level of ϕ.

70 Plugging in $\delta =$ [redacted] and $r_L =$ [redacted], the condition becomes $\phi <$ [redacted].

$$\frac{\partial \mu}{\partial \phi} = -\frac{(1-r_L)(1-r_d-\theta-\delta)}{[(1-r_d-\theta)(1-r_L)-\phi]^2}.$$

The expression $(1 - r_d - \theta - \delta)$ represents the share of revenue left to the service and must be positive, or the service would choose not to bargain. Thus, $\frac{\partial \mu}{\partial \phi}$ is negative for all values of ϕ.

Professor Watt's baseline bargaining model assumes that ϕ is equal to zero, but if there is any royalty recoupment from users who switch to other distribution channels, then ϕ is positive and the see-saw effect is lower than what Professor Watt finds. Moreover, the stronger is the substitution effect, the greater is the reduction in the see-saw effect.

Appendix C. Materials relied upon

C.1. Academic

- Binmore, Ken, Ariel Rubinstein, and Asher Wolinsky. "The Nash Bargaining Solution in Economic Modelling." *RAND Journal of Economics* 17, no. 2 (Summer 1986): 176–188.
- Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green. *Microeconomic Theory*. New York: Oxford University Press, 1995.
- Muthoo, Abhinay. *Bargaining Theory with Applications*. Cambridge, UK: Cambridge University Press, 1999.

C.2. Discovery

- [redacted] (CO EX. R-24).
- Supplemental Testimony of Rishi Mirchandani, March 31, 2021.
- Written Direct Remand Testimony of Benjamin Kung, March 31, 2021.
- Written Direct Remand Testimony of Christopher Bonavia, March 31, 2021.
- Written Direct Remand Testimony of George White, April 1, 2021.
- Written Direct Remand Testimony of Waleed Diab, April 1, 2021.
- Written Direct Testimony of Joshua Gans, October 31, 2016.
- Written Direct Testimony of Leslie Marx, PhD, November 1, 2016.
- Written Rebuttal Testimony of Leslie Marx, PhD, February 15, 2017.
- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017.
- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017, Appendix 3 (CO EX. R-110).

C.3. Legal

- Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB March 20, 2017).

- Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB March 27, 2017).
- Dissenting Opinion of Judge David R. Strickler, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB November 5, 2018).
- Final Determination, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB November 5, 2018).
- Final rule, Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords, No. 2011-3 CRB Phonorecords II (CRB November 13, 2013).
- Final rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, No. 2006-3 CRB DPRA (CRB January 26, 2009).
- Initial Determination, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB January 26, 2018).
- Opinion, George Johnson v. Copyright Royalty Board et al., No. 19-1028 (D.C. Cir. Aug. 7, 2020).
- Order Regarding Proceedings on Remand, Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), No. 16-CRB-0003-PR (CRB December 15, 2020).

C.4. Public

- 17 U.S.C. § 801(b)(1) (2004).
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Electronically Filed
Docket: 16-CRB-0003-PR (2018-2022) (Remand)
Filing Date: 01/24/2022 07:55:44 PM EST

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

WRITTEN SECOND SUPPLEMENTAL REMAND TESTIMONY OF LESLIE M. MARX, PHD

JANUARY 24, 2022

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I. Scope of charge and overview of report

(1) I have been asked to review and respond to the December 9, 2021 and January 6, 2022 Orders by the Copyright Royalty Board ("CRB").[1] My responses are contained in this testimony. The materials upon which I relied in forming the opinions expressed herein are cited throughout this testimony.

(2) The Judges propose both an algorithm for determining a headline percentage-of-revenue rate level and a rate structure consisting of the headline rate along with the mechanical-only floors defined in the Phonorecords III Final Determination.[2] They request feedback on their algorithm, on possible inputs into their algorithm, and on their proposed rate structure.[3]

(3) In Section II of this report, I discuss the Judges' rate-setting algorithm and their request for inputs along with the examples they provide. In Section III, I provide the Judges with inputs to their algorithm based on their examples and what I understand to be goal of the Judges—to identify the percentage of total services revenues that "the Majors agreed to allow the interactive service sector to retain" so that they can "survive."[4] In Section IV, I provide

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[1] Notice and Sua Sponte Order Directing the Parties to Provide Additional Materials, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018–2022) (Remand), December 9, 2021 [hereinafter, "December 9, 2021 Order"]; Order Granting in Part and Denying in Part Copyright Owners' Motion for Reconsideration or, in the Alternative, Clarification (Restricted), *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018–2022) (Remand), January 6, 2022 [hereinafter, "January 6, 2022 Order"].

[2] Final Determination, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018–2022) (CRB November 5, 2018) [hereinafter, "Phonorecords III Final Determination"], at 71–75.

[3] The Judges invite submissions on "the percent of royalties the Majors allow the interactive service sector to retain" as an input into their calculations, in light of the fact that "the extant record contains evidence and testimony that may support a range of various potential findings as to the percent of royalties the Majors allow the interactive service sector to retain." December 9, 2021 Order, at 2. The Judges also note that the parties may challenge any element of the rate or rate structure they propose: "more particularly, but without limitation, the parties may challenge any assumptions (express or implied), data, testimony, other evidence or legal bases they believe to be relevant to the rate and rate structure approach the judges have described herein." December 9, 2021 Order, at 4.

[4] December 9, 2021 Order, at 2–3 and fn. 2.

additional discussion of some of the difficulties with the proposed rate-setting algorithm and approach. In Section V, I discuss potential modifications to the algorithm that address some of these concerns. In Section VI, I discuss the Judges' proposed rate structure.

II. The Judges' rate-setting algorithm and inputs

(4) The Judges' rate-setting algorithm takes as a starting point the percentage of revenue that the Services' are "allowed to retain" by the major record companies to ensure their continued survival.[5] The balance of the Services' revenue above this "survival rate" is then divided between sound recording and musical works rightsholders according to the 3.82-to-1 ratio identified in the Phonorecords III Final Determination.[6] The resulting musical works royalty rate becomes the headline percentage-of-revenue royalty rate under the Judges' proposal.

(5) The Judges provide examples of inputs that might be plugged in to this algorithm in their orders. These are listed in Figure 1, along with some information about the sources of the inputs.

[5] December 9, 2021 Order, at 2.

[6] December 9, 2021 Order, at 1–4. The 3.82-to-1 ratio is derived by starting with the [redacted] ratio taken from Professor Gans' Shapley-inspired model and then adjusting it so that when the ratio is applied to the assumed all-in royalty rate of [redacted], the resulting musical works rate equals the musical works royalty rate from the Majority's model: 15.1%. The 15.1% was derived by the Majority by multiplying the all-in royalty rate of [redacted] derived from one Marx Shapley model by the [redacted] ratio used in the Gans Shapley-inspired model. Phonorecords III Final Determination, at 71–72.

Figure 1. [RESTRICTED] Royalty rate inputs discussed in Judges' orders

	Total royalties	Source description
1	[redacted]%	[redacted]
2	67% (midpoint of 64% to 70% range)	Services' total royalties from Professor Watt's Shapley model
3	68%	Illustrative example from Judges
4	[redacted]%	Approximate sound recording rate of [redacted]% from Eisenach WDT ¶ 169. Musical works rate of [redacted]% derived by applying a 26.2% TCC to that sound recording rate[1]
5	approximately 70%	"Industry standard" from Eisenach WDT ¶ 171[2]
6	[redacted]%[3]	[redacted]

Sources: December 9, 2021 Order at 2–3 and fn. 2; Written Direct Testimony of [redacted], October 31, 2016, ¶ 29; Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017 [hereinafter, "Watt WRT"], ¶ 34; Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016 [hereinafter, "Eisenach WDT"], ¶¶ 169, 171.
Notes:
1. "[A] review of license agreements for sound recordings between labels and interactive services demonstrates 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. This standard term is borne out by actual payments." Eisenach WDT, ¶ 169
2. Dr. Eisenach mentions "the industry standard that approximately 70 percent of service revenue is allocated to rightsholders" without citation. Eisenach WDT, ¶ 171.
3. The January 6, 2022 Order mistakenly reports the all-in musical works rate associated with Professor Watt's [redacted]% as [redacted]%. January 6, 2022 Order, at 10. The correct number, applying the algorithm in the Working Proposal, is [redacted]%.

(6) These inputs fall into three general categories:

1. What the Services "should" get in a fair allocation, according to a Shapley model (row 2 in Figure 1, based on Professor Watt's Shapley analysis);
2. What the Services actually pay in royalties, with the assumption that these payments demonstrate their "survival rate" (rows 3 through 5 in Figure 1, based on observations of actual royalty rates);
3. Financial information that may directly reflect the Services' "survival rate" (rows 1 and 6 in Figure 1).

(7) Each of these types of inputs has a different implication for what the algorithm will produce and relies on different assumptions. I discuss each in turn.

(8) Rate derived from Shapley: If the Judges' goal is to look to market-based evidence to determine the Services' survival rate, then it is not clear why they would consider results from a Shapley model. As I discussed in my original testimony, the Shapley model, when appropriately implemented, can "provide insights about the directional change for fair royalty rates relative to current values."[7] But the rates that emerge from a Shapley analysis are not market rates, competitive or otherwise.

(9) Observed rates: The Judges' view that observed total royalty rates reflect what the major record labels allow the Services to retain in order to survive embeds an assumption of a one-to-one see-saw. Because the Judges' rate-setting algorithm takes the total observed royalty as a given, and then redistributes that total royalty between the sound recording and musical works rightsholders, their algorithm assumes that if musical works rates change, then the labels will perfectly adjust their rates to maintain the survival royalty rate.[8] I have already discussed in this remand proceeding the theoretical and empirical evidence against a one-to-one see-saw.[9] In addition, because the Phonorecords III rates are now effectively being set retroactively, there is little reason to expect a one-to-one or near one-to-one see-saw to operate in this context. I discuss in more detail in Section IV the problems with assuming a one-to-one or near one-to-one see-saw.

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[7] Written Direct Testimony of Leslie M. Marx, PhD, November 1, 2016 [hereinafter, "Marx WDT"], ¶ 139.

[8] If, in contrast, sound recording rates do not perfectly adjust, then musical works rate increases risk pushing Services below their survival rate.

[9] Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021 [hereinafter, "Marx WDRT"], § V.A.

(10) Financial data: Using historical financial data to precisely infer a survival rate from which to derive royalty rates is a difficult task. It is not straightforward to allocate costs across regions or across products, it is not clear what measure of accounting profits corresponds to long-term survival, and the rate that would bring an individual service to any particular accounting measure of profits could vary significantly over time and across services. If forecasts are used, as is the case here,[10] then red flags are raised regarding the reliability of calculations based on those forecasts if the forecasts are subsequently revealed to have been incorrect.[11] Finally, if a "survival rate" derived from financial data differs from one derived from observed royalty rates, then the hypothesized one-to-one see-saw is, in practice, not operating because that would mean that labels are either leaving money on the table or over-taxing the Services, perhaps related to their being complementary oligopolists.

III. Potential alternative inputs

(11) In later sections, I discuss concerns regarding the Judges' approach and propose possible alternative approaches. Here, I provide inputs from the record that provide the types of information that the Judges seem to be requesting, but that are better tied to the underlying concepts than the example inputs that the Judges provide. Figure 2 lists those rates, their sources, and the all-in musical works royalty rates that they imply when they are used as

[10] January 6, 2022 Order, at 10 ("Professor Watt also cites [redacted] financial data that he understood to indicate that music services' non-content costs would fall to [redacted]% of 'Service Revenue' during the Phonorecords III rate period."). Professor Watt cites [redacted] Watt WRT, ¶33 n. 21.

[11] [redacted]. Watt WRT, ¶33 n. 21. [redacted]

inputs into the Judges' algorithm. In the discussion that follows, I provide additional context and reasoning for why I selected the inputs listed in Figure 2.

Figure 2. [RESTRICTED] Potential royalty rate inputs

[redacted]

(12) As noted above, Shapley values are not market rates and, accordingly, do not inform the question of what the major labels have determined that they need to leave the Services in order for the Services to survive. But, if the Judges are interested in using Shapley-based rates in their algorithm, a figure grounded in the Judges' prior analysis is the [redacted]% total royalty figure that formed part of the basis for their rate calculations in the Phonorecords III proceeding.[12] In contrast, the 67% that they point to from Professor Watt's Shapley model (row 2 of Figure 1) came from a model they had criticized and chose not to use in their royalty rate calculations.[13] The [redacted]% number yields an [redacted]% all-in musical works rate according to the Judges' algorithm, as shown in row 1 of Figure 2. A remaining problem with

[12] Phonorecords III Final Determination, at 75.

[13] January 6, 2022 Order, at 9; Watt WRT, ¶ 34; Phonorecords III Final Determination, at 75 ("The Judges give Professor Watt's 1.3:1 ratio no weight.").

this calculation, as I explained in my Written Direct Remand Testimony in this proceeding, is that it does not take into account the fact that sound recording rightsholders in reality receive more than what the Shapley value assigns to them, which distorts what the Services and Copyright Owners retain.[14] In that report, I outlined a way to solve this "imbalance problem."[15] I describe that approach in more detail in this context and use it to adjust all-in musical works royalty rates in Section V.A below.

(13) If the Judges are interested in using financial data along the lines of that used by Professor Watt to calculate a "survival rate," more accurate financial data are available. While the Judges point to a [redacted] that Professor Watt used as part of his Shapley analysis in his 2017 Written Rebuttal Testimony,[16] as mentioned above (see footnote 11), [redacted].[17] The actual [redacted][18] This figure yields an all-in musical works rate of [redacted]% of revenue, as shown in row 2 of Figure 2.

(14) If the Judges alternatively are interested in using observed total royalty rates as inputs into their calculation, then Figure 2 provides in rows 3 through 6 a series of rates that are observed in the market and that might be used as inputs into the Judges' algorithm. These

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14 Marx WDRT, § VI.A.

15 Marx WDRT, § VI.B.

16 December 9, 2021 Order, at 3; Watt WRT, ¶33 n. 21.

17 [redacted]

18 [redacted]

data seem to best address what the Judges appear to be looking for, namely "the percent of royalties the Majors allow the interactive service sector to retain."[19] Here I discuss the relative merits of the various figures included in rows 3 through 6 in Figure 2 and explain why these are preferable to the other observed total royalty rates that the Judges referenced in their prior orders.

(15) Because contracts are long-term and not renegotiated continuously, and because market parameters are constantly moving, even if one thought that a "survival rate" for a service could be derived from observed market rates, one could only rely on observed market rates being close to that service's survival rate at the time that the service's sound recording contract is being negotiated. Given that, a logical set of rates to consider for a "survival rate" are the musical works rates at the time of the renegotiations with the major labels and the sound recording rates that immediately followed. Rows 3 through 6 in Figure 2 show [redacted] and the sound recording rates that [redacted]. I focus on [redacted] because: (i) [redacted]; (ii) [redacted]; (iii) [redacted].[20]

[19] December 9, 2021 Order, at 2.

[20] *See, e.g.*, Phonorecords III Final Determination, at 72 ("The final column [of implied musical work and sound recording royalty rate tables] shows the rates yielded by applying the [various experts' sound recording to musical works] ratios to [redacted]."); Phonorecords III Final Determination, at 73 ("Using [redacted] as an example, however, actual combined royalties for musical works and sound recordings are approximately [redacted]% of revenue. […] The Judges find that the problem of, in essence, importing complementary oligopoly profits into the musical works rate through a TCC percentage can be avoided by reducing the TCC percentage. Specifically, the TCC percentage should be reduced to a level that produces the same (non-complementary-oligopoly) percentage revenue rate when applied to the existing [redacted]% combined royalty as the Shapley-produced TCC percentage. yields when applied to the theoretical combined royalties in the model."); January 6, 2022 Order, at 9 (citing Eisenach WRT that "interactive streaming services, such as [redacted], enjoy a standard split of revenues — roughly 70/30 in favor of copyright owners"); January 6, 2022 Order, at 10 ("Professor Watt also cites [redacted] that he understood to indicate that music

(16) Rows 3 through 6 in Figure 2 differ in whether they examine headline or effective rates. Headline sound recording rates are informative because they capture in a straightforward way what a label was asking for at the time the contract was negotiated. According to the logic behind the Judges' algorithm, that is informative of their expectations of a service's "survival rate." Because a label will not have complete foresight into exactly how all of the moving pieces of the contracts will play out, effective rates will be at least somewhat unknown at the time the agreement is negotiated. Nevertheless, resulting effective rates can also be informative as to expectations of rates at the time of negotiations, depending on how much insight the record label had into how the various contractual terms would play out. A label would likely have better insight into effective sound recording rates than effective musical works rates because the latter are based on data that are likely more opaque to them, and so I focus primarily on headline musical works rates. However, for completeness, I include both headline and effective musical works royalty rates in Figure 2.

(17) [redacted],[21] [redacted]. Those sound recording contracts [redacted][22] [redacted] effective

services' non-content costs would fall to [redacted] of 'Service Revenue' during the Phonorecords III rate period. […] On the Services' side [redacted]").

21 [redacted]

22 [redacted]

sound recording rate paid to the major labels [redacted], was [redacted]%.[23]

(18) On the musical works side, the headline rate in [redacted] was 10.5%, while the [redacted]% ([redacted]).

(19) These alternative rate measures yield total royalty rates ranging from [redacted]% to [redacted]%, with resulting all-in musical works rates according to the Judges' algorithm ranging from [redacted]% to [redacted]%, as shown in rows 3 through 6 of Figure 2. It is important to note, as I discuss in Section IV below, that these rates are all calculated according to an algorithm that is in tension with the 801(b)(1) factors. The bottom end of the range of rates is closest to rates that I found to be consistent with the 801(b)(1) factors in my Written Direct Testimony in this proceeding.[24] Accordingly, if the Judges use their new rate-setting algorithm without adjustment, it is my opinion that they should use the [redacted]% total royalty rate as the input into

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[redacted]

[23] [redacted]

[24] Marx WDT, ¶ 165 ("I conclude, based on an economic interpretation of the 801(b) factors, that mechanical royalty rates should decrease, yielding reasonable total musical works rates in a range of 7.7% to 10.5%").

their algorithm (the rate that comes from combining the [redacted] sound recording and headline musical works rates), resulting in an all-in musical works royalty of [redacted]%.

IV. Concerns with the rate-setting algorithm

(20) The 801(b)(1) factors are not focused on survival, but rather on interactive streaming services and publishers being rewarded for their relative contributions and earning "fair" incomes and returns, presumably above the rates that would just allow them to survive.[25] Thus, either assuming or moving in the direction of an outcome in which the Services retain only their "survival rate" is inherently in tension with the 801(b)(1) factors.

(21) Further, because the Judges' rate-setting algorithm embeds an assumption of a one-to-one see-saw, it is contrary to the goals of the 801(b)(1) factors and indeed the entire notion of CRB oversight of royalty rates.[26] The Judges' Working Proposal assumes that, whatever the level of musical works royalties, the Services will ultimately retain only their survival rate, and labels will capture the residual.[27] In other words, this approach assumes that sound

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[25] In this report, I sometimes use the word "publishers" to refer to musical works copyright holders more generally.

[26] Absent this proceeding or other regulation, there is no reason to expect that negotiations between Copyright Owners and Services would deliver rates that are reasonable and satisfy the 801(b)(1) factors. Unregulated negotiations cannot be relied upon because of the consolidation of rights to a large number of individual musical works by a small number of publishers, the must-have nature of their catalogs, their resulting complementary oligopoly power, their connections with major record labels who themselves have must-have catalogs and complementary oligopoly power, and the extensive split-ownership of musical works copyrights, which increases the number of rights holders that have veto power over an individual musical work. These forces suggest that unregulated rates would be higher than those satisfying the 801(b)(1) factors, which in turn suggests that the CRB's role is largely to constrain the exercise of market power over mechanical royalties, as the ASCAP and BMI "rate courts" similarly do for musical works performance royalties. *See, e.g., United States v. ASCAP (In re Application of RealNetworks, Inc.),* 627 F.3d 64, 76 (2d Cir. 2010) ("Fundamental to the concept of 'reasonableness' is a determination of what an applicant would pay in a competitive market. . . ."); *See also United States v. ASCAP (In re Application of Buffalo Broad. Co., Inc.),* No. 13-95 (WCC), 1993 WL 60687, at *16 (S.D.N.Y. Mar. 1, 1993) ("[T]he rate court must concern itself principally with 'defin[ing] a rate . . . that approximates the rates that would be set in a competitive market.'").

[27] To see how this is the case, consider the example used by the Judges in their December 9, 2021 Order. That Order contemplates a sound recording rate of 57% and a musical works rate of 11%, for a total rate of 68%. The Judges then apply their preferred ratio to the 68%, resulting in a new musical works rate of 14.1% and a new sound recording rate of 53.9%, yielding the same combined total royalty rate, just with a transfer of some of the royalty from the sound recording rightsholders to the Copyright Owners. December 9, 2021 Order ¶ 7.

recording rates will ultimately decline by exactly the amount that musical works rates go up. But if, in reality, sound recording rightsholders do not reduce their royalties to fully offset an increase in musical works rates, then the Services will be made even worse off than they were previously, potentially leaving them with even less than their "survival rate." That result is in tension with the Section 801(b)(1) factors, which call for, among other things, royalties that afford Services a fair income and reflect the Services' "technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication."[28]

(22) The problems with a one-to-one see-saw assumption have been discussed at length in this proceeding. I will not repeat them in detail here, but instead I emphasize a few points. First, even the Copyright Owners' experts do not claim that the see-saw is one-to-one—Professor Watt estimated a see-saw of [redacted]%, derived from a flawed model.[29] Second, the largely historical-looking nature of the rates that will ultimately be set in this proceeding points to a 0% see-saw as most relevant in this context—sound recording rates for the Phonorecords III period have already been negotiated and have largely already been paid. Third, the hypothesized theoretical see-saw mechanism does not take into account real-world phenomena, such as multiple overlapping long-term contracts between multiple Services and multiple record labels, each of whom has incomplete information regarding the others.

[28] The four 801(b)(1) factors are: "(A) To maximize the availability of creative works to the public. (B) To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions. (C) To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication. (D) To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices." 17 U.S.C. § 801(b)(1) (2004).

[29] CO EX R.-110, at 12; Marx WDRT, § V.A.

Fourth, a one-to-one see-saw effect is [redacted][30]

Finally, a one-to-one see-saw is at odds with reality in that the Services obviously are heavily invested in the outcome of this proceeding, but they would be indifferent if there were a one-to-one see-saw effect because then any profitability gained (or lost) from a musical works royalty rate change would be precisely offset through the corresponding sound recording royalty rate change in the opposite direction.

V. Alternative approaches that are more consistent with the 801(b)(1) factors

(23) In this proceeding, I have found in prior analysis that rates consistent with the 801(b)(1) factors are lower than the rates that were in effect under Phonorecords II.[31] In light of this, despite my concerns with the Judges' proposed rate-setting algorithm, I consider the rates shown in Figure 2 above (and also in Figure 3 and Figure 4 below) to be more in line with the 801(b)(1) factors than the rates in the Phonorecords III Final Determination.

(24) Further, given that the Phonorecords II rates are closer to rates that are consistent with the 801(b)(1) factors as determined by my analyses than either the Phonorecords III rates from the Final Determination or the range of rates that result from the Working Proposal combined with the inputs in Figure 2, an option that is more consistent with the 801(b)(1) factors would

[30] *See, e.g.*,Marx WDRT, ¶ 51; Written Supplemental Remand Testimony of Leslie M. Marx, PhD, November 15, 2021, ¶ 24; [redacted]

[31] Marx WDT, ¶ 165 ("I conclude, based on an economic interpretation of the 801(b) factors, that mechanical royalty rates should decrease, yielding reasonable total musical works rates in a range of 7.7% to 10.5%.").

be to revert to the Phonorecords II rates. That being said, if the Judges are inclined to use a rate-setting algorithm along the lines of what is contained in the Working Proposal, certain improvements can be made so that the resulting rates better satisfy the governing rate-setting standard. As noted above, the rate-setting algorithm included in the Working Proposal is problematic because it assumes the Services retain only their "survival" rate and, as a result, it does not reward the Services for their "relative contributions" or leave them with a "fair income." In addition, it is problematic because it assumes a one-to-one see-saw effect. Below I present two alternative calculations inspired by the Judges' Working Proposal that address some of these issues.

V.A. Alternative 1: correcting the imbalance problem

(25) The Majority's model in the Phonorecords III Final Determination included a "fair" return for the Services of [redacted]% and a "fair" return for the Copyright Owners of [redacted]%.[32] These "fair" returns both come directly out of the model used by the Majority in the Final Determination to derive musical works royalty rates.[33]

(26) Given that the supracompetitive rates charged by sound recording rights holders exceed [redacted]% (the residual available after [redacted]% is allocated to interactive streaming services and [redacted]% to musical works rights holders),[34] a problem with simply allocating [redacted]% to the interactive streaming services is that musical works rights holders would receive less than

[32] Phonorecords III Final Determination, at 75, 87 ("The Judges find that these rates are consistent with the experts' analyses and constitute a fair allocation of revenue between copyright owners and services.").

[33] Phonorecords III Final Determination, at 87, fn. 130.

[34] [redacted].

their "fair" return; analogously, simply allocating [redacted]% to the musical works rights holders would leave the Services with less than their "fair" return.

(27) My proposal in the Marx Remand WDT worked with the results from the Majority's model and addressed this problem (described there as the "imbalance" problem) by having musical works rights holders and Services each get an equal share of their "fair" allocation, taking as given the supracompetitive rates of the record labels.[35] In essence, this approach shares the burden of the record labels' market power between the Services and the Copyright Owners in proportion to their fair shares, rather than imposing it all on the Services as the Majority's model did.

(28) By leaving the Services with just their survival rate, the rate-setting algorithm in the Working Proposal suffers from the same imbalance problem. Rather than attempt to appropriately reward both the Services and the musical works rightsholders, it places all of the burden of label market power on the Services.

(29) In Figure 3, I correct the numbers in Figure 2 for the imbalance problem.[36] This correction holds sound recording royalties constant, rather than assuming that total royalties will remain constant, which means that I can focus on the two unique values of sound recording royalties from Figure 2: [redacted]% and [redacted]%. These result in all-in musical works rates of [redacted]% and [redacted]%, respectively. Because these rates give the musical works rights holders and Services the same portion of the "fair" outcome as previously determined by the Majority, they are more in line with the 801(b)(1) factors.

[35] Marx WRDT, § VI.B.

[36] I focus on the rows in Figure 2 that provide a value for sound recording royalties, so that the correction is possible.

Figure 3. [RESTRICTED] Rates from Figure 2 corrected for the imbalance problem

[redacted]

V.B. Alternative 2: using a real-world ratio and adjusting for market power

(30) The December 9, 2021 Order states that "the Judges might determine that the appropriate method and formula for setting an 'effectively competitive,' 'reasonable' and/or 'fair' mechanical royalty" is to use the rate-setting algorithm from the Working Proposal.[37] If the Judges are attempting to calculate an effectively competitive royalty rate, then the rate-setting algorithm in the Working Proposal cannot be used without adjustment. That algorithm assumes that the major labels will use their complementary oligopoly power to dictate the amount that the services will retain and leave them with just enough to survive. While it is difficult to see how such an approach can be squared with notions of effective competition—which generally reference markets in which no firm has substantial market power—modifications can be made to the Working Proposal so that it produces rates that better reflect effective competition.

[37] December 9, 2021 Order at 3, noting that the formula they provide might be "the appropriate method and formula for setting an 'effectively competitive,' 'reasonable' and/or 'fair' mechanical royalty."

(31) For the Working Proposal to yield rates that come closer to being effectively competitive, two changes should be made. First, the market sound recording rate should be reduced to mitigate the effect of the major labels' complementary oligopoly power, for example by applying an "effective competition" adjustment using a similar approach taken by the Judges in Web IV and Web V.[38] Second, the 3.82-to-1 ratio used to divide royalties between the sound recording and musical works rightsholders in the Working Proposal should be replaced with a real-world ratio in which both the numerator and the denominator contain rates that are intended to approximate those that would emerge in an effectively competitive market.

(32) To address the first issue, the Judges in Web IV and Web V made a downward adjustment of [redacted]% to the interactive streaming sound recording rates to convert those rates to effectively competitive rates.[39] [redacted][40]

(33) To address the second issue, the Judges can look to other ratios in the record. For example, the Judges have previously found a sound recording to musical works royalty ratio based on the noninteractive streaming rates paid by Pandora to be a "useful benchmark" for interactive streaming royalties.[41]

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[38] Determination, *In re: Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV)*, Docket No. 14-CRB-0001-WR (2016-2020) [hereinafter, "Web V"], at 64–65 ("Thus, the rate . . . should be adjusted to reflect such price competition, so that it is usable as an 'effectively competitive' rate . . ."); Web V, at 66 ("[T]he Judges find that the [redacted]% effective competition adjustment that they set in *Web IV* remains an appropriate measure for an effective competition adjustment . . . .").

[39] "[T]he Judges find that the [redacted]% effective competition adjustment that they set in *Web IV* remains an appropriate measure for an effective competition adjustment . . ." Web V, at 66.

[40] "[redacted]" Web V, at 72.

[41] Phonorecords III Final Determination, at 51 ("The Judges agree with Dr. Eisenach that the Pandora "Opt-Out" agreements are useful benchmarks. These agreements have the level of comparability necessary for a benchmark to be useful. However, the Judges do not agree with Dr. Eisenach's attempt to extrapolate from the actual rates in those Opt-Out Agreements. Rather, the Judges find that the [redacted] ratio Dr. Eisenach identified for the year 2018 in existing

(34) The non-interactive streaming sound recording to musical works ratio is particularly informative for setting an effectively competitive rate because both the numerator rate and the denominator rate are constrained by regulatory bodies charged with setting effectively competitive rates. Sound recording rates in the noninteractive streaming market are set by the CRB under the willing buyer/willing seller standard.[42] In both Web IV and Web V, the Judges concluded that the willing buyer/willing seller standard calls for effectively competitive rates.[43] In the denominator, the bulk of the musical works royalties for non-interactive streaming services are determined in negotiations with ASCAP and BMI, with a "rate court" that is charged with determining "reasonable" competitive rates providing oversight.[44]

(35) The Phonorecords III Final Determination found the ratio of sound recording to musical works royalties for Pandora's non-interactive streaming service to be [redacted][45] Applying this ratio to the interactive service sound recording rate, after making the market power adjustment to observed sound recording rates, is one way to work within the framework adopted by the Judges in the December 9, 2021 Order, and arrive at rates that are closer to effectively competitive rates.[46]

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agreements is the most useful benchmark derived from the "Opt-Out" data").

[42] *See* Web V, at 2 ("The Act requires that the Judges 'establish rates and terms that most clearly represent the rates and terms that would have been negotiated in the marketplace between a willing buyer and a willing seller.'").

[43] *See* Web V, at 6–7 ("In *Web IV*, the Judges held that the Copyright Act either required them, or permitted them, in their discretion, 'to set a rate that reflects a market that is *effectively competitive*.' . . . More particularly, the D.C. Circuit found reasonable the Judges' construction of the statutory 'willing seller/willing buyer-marketplace' standard as calling for the establishment of rates that would have been set in an effectively competitive market. . . . Consistent with the D.C. Circuit's decision affirming *Web IV*, the Judges in this *Web V* proceeding again apply the standard that royalty rates for noninteractive services should be set at levels that reflect those that would be set in an effectively competitive market.").

[44] *See United States v. ASCAP (In re Application of RealNetworks, Inc.)*, 627 F.3d 64, 76 (2d Cir. 2010) ("Fundamental to the concept of 'reasonableness' is a determination of what an applicant would pay in a competitive market. . . ."). *See also United States v. ASCAP (In re Application of Buffalo Broad. Co., Inc.)*, No. 13-95 (WCC), 1993 WL 60687, at *16 (S.D.N.Y. Mar. 1, 1993) ("[T]he rate court must concern itself principally with 'defin[ing] a rate . . . that approximates the rates that would be set in a competitive market.'").

[45] Phonorecords III Final Determination, at 51.

[46] Alternatively, one could also look to the sound recording to musical works ratio deriving from the settlement between

(36) Figure 4 applies these two adjustments to the measures of [redacted] sound recording rates from Figure 2 to arrive at all-in musical works rates.[47] This yields an all-in musical works royalty rate range of [redacted][48]

Figure 4. [RESTRICTED] Calculating effectively competitive rates based on non-interactive ratio approach

[redacted]

VI. Judges' proposed rate structure

(37) The Judges also ask for feedback on their proposed rate structure, which removes the total content cost ("TCC") rate prong but keeps a percentage of revenue headline rate with a mechanical-only per-subscriber minimum as a backstop for certain offerings.[49]

(38) I agree with the general idea articulated by the Judges that multiple backstops are not required to protect from revenue deferral or diminution concerns. For paid subscription services (including individual plans, family plans, student plans, and bundles), the

the Copyright Owners and the record labels for the mechanical rates paid by digital downloads. The settlement in the *Phonorecords IV* proceeding, which was the same as the settlement from the *Phonorecords III* proceeding, was against the backdrop of a proceeding that uses the willing buyer/willing seller standard that calls for effectively competitive rates. In the Phonorecords III Final Determination, the Judges, citing Dr. Leonard, noted that the musical works royalties from this settlement can be expressed as a percentage of sound recording royalties. That percentage was [redacted]%, implying a sound recording to musical works ratio of approximately [redacted]. Phonorecords III Final Determination, at 61.

[47] I focus on the rows in Figure 2 that provide a value for sound recording royalties, so that the calculation is possible.

[48] Using the [redacted] ratio of sound recording to musical works royalties from the digital download settlement would yield musical works rates that are even lower than those contained in Figure 4.

[49] December 9, 2021 Order at 1, 4; January 6, 2022 Order at 13.

mechanical-only per-subscriber minimum acts as a backstop against these concerns. [redacted][50] [redacted] Further, in light of the largely historical-looking nature of this proceeding, which means that revenues for the relevant period have largely already been recorded, any incentive effects associated with having a TCC rate prong are largely irrelevant.[51]

(39) In addition to a TCC rate prong not being necessary, such a prong has distinct drawbacks relative to other potential rate backstops. It is well recognized that sound recording royalties are inflated by the excess market power of the record labels.[52] A TCC rate prong risks importing that excess market power into musical works royalties and renders musical works rates subject to developments in the record label market that are unrelated to the relative contributions of the Copyright Owners and Services. The drawbacks of a TCC rate prong can

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[50] *See, e.g.*, [redacted]

[51] A backstop such as a TCC rate prong can make a strategy of deliberate manipulation of revenue to achieve lower royalty costs less profitable, but the existence of that prong during most of the Phonorecords III period has already had whatever impact on incentives that it is going to have, whether or not it is ultimately retained retroactively in this proceeding.

[52] *See., e.g*., Phonorecords III Final Determination, at 47 ("The Judges explained at length in *Web IV* how the complementary oligopoly nature of the sound recording market compromises the value of rates set therein as useful benchmarks for an "effectively competitive" market."). *See also* Dissenting Opinion of Judge David R. Strickler, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III),* Docket No. 16-CRB-0003-PR (2018-2022) (CRB, November 5, 2018), at 3 ("However, it is undisputed that the record companies, by statutory design, have the unfettered legal ability to set their sound recording royalty rates, allowing them to exercise their complementary economic power to demand rates that embody their 'complementary oligopoly' status, as previously described by the Judges.").

be mitigated by a cap on the TCC rate prong (assuming it is set correctly). That approach was used in the Phonorecords II settlement. But those concerns are removed entirely with the elimination of the TCC prong.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Second Supplemental Remand Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 24th day of January 2022 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

PUBLIC

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

In re **DETERMINATION OF ROYALTY RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords III)**	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

Exhibit Index

Exhibit No.	Bates No.	Sponsoring Witness	Description
Spot. Rem. Ex. 1	SPOTRMND0000098	Leslie M. Marx	[redacted]
Spot. Rem. Ex. 2	SPOTRMND0000001	Leslie M. Marx	[redacted]
Spot. Rem. Ex. 3	SPOTRMND0000322	Leslie M. Marx	[redacted]

SPOT. REM. EX. 1

Restricted

SPOT. REM. EX. 2

Restricted

SPOT. REM. EX. 3

Restricted

PUBLIC VERSION

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 III)	Docket No. 16–CRB–0003–PR (2018–2022) (Remand)

DECLARATION AND CERTIFICATION OF MARGARET L. WHEELER-FROTHINGHAM REGARDING RESTRICTED MATERIAL

(On behalf of Spotify USA Inc.)

1. I am counsel for Spotify USA Inc. ("Spotify") in the above-captioned proceeding. I respectfully submit this declaration and certification pursuant to the terms of the Protective Order issued July 27, 2016 (the "Protective Order") and in support of the Written Second Supplemental Remand Testimony of Leslie M. Marx, PhD and Exhibits Spot. Rem. Exs. 1-3 thereto. I am authorized by Spotify to submit this declaration on Spotify's behalf.

2. I have reviewed the Written Second Supplemental Remand Testimony of Leslie M. Marx, PhD (the "Second Supplemental Marx Testimony") and Exhibits Spot. Rem. Exs. 1-3 thereto (the "Exhibits"). I have also reviewed the definitions and terms provided in the Protective Order. After consultation with my client, I have determined to the best of my knowledge, information and belief that portions of the Second Supplemental Marx Testimony and the entirety of the Exhibits contain information that Spotify has designated as "confidential information" as defined by the Protective Order ("Protected Material"). The Protected Material is shaded in grey highlight in the restricted filings of the Second Supplemental Marx Testimony and is fully redacted in the public e-filing of Second Supplemental Marx Testimony, and is

described in more detail below. The Exhibits are filed as "Restricted" and the public versions of the Exhibits contain slip-sheets only.

3. The Protected Material includes, but is not limited to, testimony or analysis involving (a) contracts and contractual terms (including the negotiation thereof) that are not available to the public, highly competitively sensitive and, at times, subject to express confidentiality provisions with third parties; and (b) highly confidential internal business information, financial projections, financial data, negotiation correspondence, and competitive strategies that are proprietary, not available to the public, and commercially sensitive.

4. If this contractual, strategic, and financial information were to become public, it would place Spotify at a commercial and competitive disadvantage, unfairly advantage other parties to the detriment of Spotify, and jeopardize Spotify's business interests. Information related to confidential contracts or relationships with third-party content providers could be used by Spotify's competitors, or by other content providers, to formulate rival bids, bid up Spotify's payments, or otherwise unfairly jeopardize Spotify's commercial and competitive interests.

5. The contractual, commercial, and financial information described in the paragraphs above must be treated as Restricted Protected Material in order to prevent business and competitive harm that would result from the disclosure of such information while, at the same time, enabling Spotify to provide the Copyright Royalty Judges with the most complete record possible on which to base their determination in this proceeding.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that, to the best of my knowledge, information, and belief, the foregoing is true and correct.

Dated: January 24, 2022

/s/ Margaret L. Wheeler-Frothingham

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Proof of Delivery

I hereby certify that on Monday, January 24, 2022, I provided a true and correct copy of the Written Second Supplemental Remand Testimony of Leslie M. Marx, Phd to the following:

Nashville Songwriters Association International, represented by Benjamin K Semel, served via ESERVICE at Bsemel@pryorcashman.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Google LLC, represented by David P Mattern, served via ESERVICE at dmattern@kslaw.com

Amazon.com Services LLC, represented by Scott Angstreich, served via ESERVICE at sangstreich@kellogghansen.com

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

National Music Publishers' Association (NMPA) et al, represented by Benjamin Semel, served via ESERVICE at Bsemel@pryorcashman.com

Signed: /s/ Richard M Assmus

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Docket: 16-CRB-0003-PR (2018-2022) (Remand)
Filing Date: 02/24/2022 08:18:21 PM EST

PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

WRITTEN SUPPLEMENTAL REBUTTAL REMAND TESTIMONY OF LESLIE M. MARX, PHD

FEBRUARY 24, 2022

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I. Scope of charge

(1) I have been asked to review and respond to the additional written direct testimonies of Dr. Jeffery Eisenach, Professor Daniel Spulber, and Professor Richard Watt, submitted on January 24, 2022.[1] The materials upon which I relied in forming the opinions expressed herein are cited throughout this testimony.

II. Copyright Owners' experts sow confusion regarding the market power of the record labels

(2) The testimonies of Dr. Eisenach, Professor Spulber, and Professor Watt contain extended discussions of the market power of the major record labels. Among the three of them, they argue that the record labels should not be considered complementary oligopolists, that they in fact compete intensely with one another, and that any market power they have is deserved and should therefore be ignored in this rate setting proceeding.[2] Throughout their discussions, they obscure rather than clarify the notions of what constitutes market power, what constitutes complementary oligopoly power, the applicability of the specific model of Antoine Augustin Cournot, and the ways in which record labels do or do not compete with one another in their dealings with interactive streaming services. Below, I discuss these ideas within a unified framework and point out where Dr. Eisenach and Professors Spulber and Watt go wrong.

II.A. Market power and complementary oligopoly power

(3) Economists define market power as the ability of a firm to profitably set a price above the competitive price.[3] Because many firms have some degree of market power, economists and legal scholars often put substantial and sustained market power in a distinct category, which

[1] Additional Written Direct Testimony of Jeffrey A. Eisenach, PhD, January 24, 2022 [hereinafter, "Eisenach AWDT"]; Additional Written Direct Testimony of Daniel F. Spulber, PhD, January 24, 2022 [hereinafter, "Spulber AWDT"]; Additional Written Direct Testimony of Richard Watt (PhD), January 24, 2022 [hereinafter, "Watt AWDT"].

[2] On the first point, see Eisenach AWDT, ¶¶ 35–36; Spulber AWDT, ¶ 6; Watt AWDT, ¶ 49. On the second point, see Eisenach AWDT, ¶ 37; Watt AWDT, ¶ 52. On the third point, see Watt AWDT, ¶ 56.

[3] *See* Massimo Motta, *Competition Policy: Theory and Practice*, (Cambridge: Cambridge University Press, 2004), 40.

is sometimes labeled "monopoly power."[4]

(4) Major record labels have substantial and sustained market power because of the large agglomerations of recordings that they control, giving them "must-have" catalogs from the perspective of interactive streaming services. Because the record labels' market power derives from the must-have nature of their catalogs (implying that their catalogs are perfect complements) the term "complementary oligopoly" has often been used in Copyright Royalty Board proceedings.

(5) Economic theory teaches that when multiple suppliers control key complementary inputs, outcomes for buyers can be even worse than if these inputs were controlled by a single monopoly. The intuition behind this, associated with Antoine Cournot from his 1838 treatise, is straightforward.[5] In its pricing decisions, a complementary oligopolist seller exerts a negative externality on the other complementary oligopolist sellers that a single monopoly firm would instead internalize. So, if the monopoly price is defined as the price that exactly balances the inframarginal gains from a slightly higher price with the lost profits due to lost sales from a slightly higher price, a complementary oligopolist would have an incentive to deviate from that price by charging a higher, supra-monopoly price. Intuitively, the complementary oligopolist would receive the same gains from such a price rise that a single monopolist would, but incur only a fraction of the losses, and so would find a price increase at the monopoly price to be profitable.[6]

(6) The intuition that leads to supra-monopoly profits due to complementary oligopoly is robust to a variety of settings. It does not disappear outside of the stylized realm of a one-shot,

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[4] *See e.g.*, Herbert Hovenkamp, *Federal Antitrust Policy: The Law of Competition and its Practice*, 2nd ed. (St. Paul, MN: West Group, 1999), 78; William M. Landes and Richard A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review* 94, no. 5 (March 1981): 937; Austan Goolsbee, Steven Levitt and Chad Syverson, *Microeconomics*, 2nd ed. (New York: Worth Publishers, 2016), Ch. 9.

[5] Augustin Cournot, *Researches into the Mathematical Principles of the Theory of Wealth*, 1838, translated by Nathaniel T. Bacon, (London: The MacMillan Company, 1897).

[6] A comparable scenario arises with two monopolists at successive stages on a supply chain, an effect sometimes referred to as "double marginalization."

simultaneous-move game involving price-setting oligopolists and price-taking customers discussed in the original Cournot treatise, as Professors Watt and Spulber claim.[7] Even though real-world firms generally do not have one-shot interactions involving simultaneous moves, the complementary oligopoly intuition often applies in real world settings, and is a common and useful way of thinking about pricing by firms with complementary oligopoly power.[8]

(7) Professor Spulber and Professor Watt also seem to believe that if buyers and sellers want to get rid of the externalities that lead to supra-monopoly pricing, they will be able to negotiate them away.[9] But due to, for example, the inability to write complete contracts,[10] the lack of perfect information, and legal restrictions on firms sharing information, these types of inefficiencies persist in the real world.

(8) But even if Professors Watt and Spulber were right and complementary oligopolist sellers could coordinate to reach the monopoly outcome, such behavior hardly solves the market power problem. The price in that case is still the joint *monopoly* price rather than a supra-monopoly complementary oligopoly price. From either the perspective of the 801(b)(1) factors, which call for fair returns, or a notion of "effective competition," the complementary oligopoly price and the joint monopoly price both require substantial downward adjustment if they are used as an input to set the musical works rates at issue in this proceeding.

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[7] Professor Watt characterizes "[t]he Cournot model from which the concept comes" as "a strict mathematical proof of an unusual and counterintuitive scenario." Watt AWDT, ¶ 50. See also Watt AWDT, ¶¶ 51, 55. Similarly, Professor Spulber claims that because all of the strict conditions of Cournot's original model do not hold in the case of record labels' dealings with interactive streaming services, there is no reason to expect record labels to behave as complementary oligopolists. Spulber AWDT, ¶¶ 10–11, 13, 16–17. Dr. Eisenach similarly incorrectly asserts that the complementary oligopoly problem cannot occur in a bargaining market. Eisenach AWDT, ¶ 36.

[8] The complementary oligopoly intuition plays a key role in how the Department of Justice Antitrust Division analyzes mergers of firms selling complementary goods. U.S. Department of Justice, "Vertical Merger Guidelines," June 30, 2020, at 11. "Double markups" have been empirically detected in industries such as the television industry and the automobile industry. *See, e.g.*, Gregory S. Crawford et al., "The Welfare Effects of Vertical Integration in Multichannel Television Markets," *Econometrica* 86, no. 3 (May 2018): 891–954; Rebecca Hellerstein and Sofia B. Villas-Boas, "Outsourcing and pass-through," *Journal of International Economics* 81, no. 2 (July 2010): 170–183.

[9] Watt AWDT, fn. 10; Spulber AWDT, ¶ 18.

[10] By a "complete contract," I mean one that is perfectly verifiable and enforceable and takes into account all possible contingencies. It is a theoretical construct that does not actually occur in the real world. *See* Bernard Salanié, *The Economics of Contracts*: *A Primer* (Cambridge: MIT Press, 1997), at 175.

(9) The Copyright Owners' experts deny the necessity of a downward adjustment of price due to label market power for a variety of reasons that contradict each other. They sometimes imply the labels have no market power by arguing that because the theoretical model that they present does not exactly match the real world, there must be no market power problem. They sometimes say that the labels are intense competitors and that the price they charge is an effectively competitive price.[11] Other times they acknowledge the existence of record label market power but call it simply a valid return from their "necessity."[12]

(10) Findings of substantial and sustained market power on the part of the major record labels in their negotiations with interactive streaming services have been consistent and clear.[13] The "must-have" power of the major record labels does not derive from the unique value of individual recordings, but rather the agglomeration of sound recordings controlled by each major label. The fact of this agglomeration does not "validate" their obtaining a large share of the available surplus, as Professor Watt argues, or mean that such market power should be ignored when calculating musical works rates derived from them. Rather, if major label sound recording rates are used to derive musical works rates that satisfy the 801(b)(1) factors (or that are effectively competitive), a substantial downward adjustment is needed.

(11) Somewhat paradoxically, in addition to arguing that supracompetitive returns accruing to "must-have" sellers would be a just reward for their necessity, Professor Watt also argues that there are no supracompetitive returns available to record companies because "record

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[11] *See, e.g.*, Watt AWDT, ¶ 52. Eisenach AWDT, ¶ 37.

[12] Watt AWDT, ¶ 56.

[13] For instance, in its 2012 evaluation of the merger of Universal and EMI, two of the four major record labels at the time, the Federal Trade Commission found that each major label portfolio was "must have" for interactive streaming services. Statement of Bureau of Competition Director Richard A. Feinstein *In the Matter of* Vivendi, S.A. and EMI Recorded Music, September 21, 2012. This analysis is consistent with the findings of the Board in the Web IV and V and *Phonorecords III* proceedings. Final Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018–2022) (CRB November 5, 2018) [hereinafter, "Phono III Final Determination"], at 47; Determination, *In re: Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV)*, Docket No. 14-CRB-0001-WR (2016–2020) [hereinafter, "Web IV"], at 40–41; Final Determination, *In re: Determination of Rates and Terms for Digital Performance of Sound Recordings and Making of Ephemeral Copies to Facilitate Those Performances (Web V)*, Docket N. 19-CRB-0005-WR (2021–2025) [hereinafter, "Web V"], at 8.

companies appear to compete intensely, including on price."[14] This view contradicts prior CRB findings.[15] Further, Professor Watt points to no evidence of price competition among labels in their dealings with interactive streaming services, and, as discussed below, the [redacted]

II.B. Major labels' contracts reflect their market power

(12) Professor Watt argues that the nature of the contracts between record labels and interactive streaming services—[redacted]—demonstrates the lack of major record label market power. He says that this structure both induces competition and "places substantial risk upon the record companies" and thus "[i]f the record companies were indeed monopolists, they would not choose this royalty structure."[16]

(13) On the first point about inducing competition, Professor Watt [redacted].[17] [redacted][18] In addition, [redacted][19] On the second point about assuming risk, Professor Watt ignores the [redacted]

[14] Watt AWDT, ¶ 52.

[15] The Judges have previously concluded that no such price competition has taken place. *See, e.g.*, Web V, at 21–33; Web IV, at 67 ("the Judges cannot ignore the testimony from several record company witnesses, discussed in this determination, in which they acknowledged that they never attempted to meet their competitors' pricing when negotiating with interactive services.").

[16] Watt AWDT, ¶ 54.

[17] *See, e.g.*, Web V, at 25–27; [redacted].

[18] *See, e.g.*, [redacted]

[19] *See, e.g.*, [redacted]

[redacted][20]

(14) Thus, [redacted].

III. Copyright Owners' experts' use of a [redacted] ratio is incorrect

(15) Ignoring labels' market power leads the Copyright Owners' experts to call for replacing the 3.82:1 sound recording to musical works ratio in the Working Proposal with a ratio of [redacted]. Inserting the [redacted] ratio into the Working Proposal would create the exact problem that caused the Majority to adjust [redacted] to 3.82:1 in the *Phonorecords III* Final Determination in the first place.

(16) The [redacted] ratio was proposed by Professor Gans in the *Phonorecords III* proceeding.[21] It was used along with the total royalty as a percentage of revenue from one of my Shapley models ([redacted]) to arrive at the 15.1% musical works royalty rate that the Board adopted.

(17) The fundamental problem with using the [redacted] ratio in the Working Proposal is that it is meant to be a ratio of Shapley values, and it is undisputed that the record labels earn far more in the real world than the Majority's Shapley value analysis would allocate to them. The fact that the labels earn more than the Majority's Shapley allocates to them is the source of what I have called in this proceeding an "imbalance" problem. Because labels extract more than

[20] *See, e.g.*, Written Direct Remand Testimony of Christopher Bonavia, ¶ 11.

[21] Phono III Final Determination, at 69. As I have said earlier in this proceeding, I do not believe that the ratio derived from Professor Gans' partial Shapley model reflects a correct application of the Shapley methodology. Written Rebuttal Testimony of Leslie M. Marx, PhD, February 15, 2017 [hereinafter "Marx WRT"], at ¶¶ 182–186.

their Shapley value of [redacted], musical works rightsholders and Services will necessarily earn less together than their combined Shapley values. The *Phonorecords III* Final Determination gives musical works rightsholders their full Shapley value and assigns the burden of label market power entirely to the Services. I have advocated in this remand proceeding that, instead, the burden of label market power should be shared proportionately between musical works rightsholders and interactive streaming services to better satisfy the 801(b)(1) factors.[22]

(18) The Copyright Owners' experts' proposal would exacerbate this imbalance problem. Their preferred [redacted] ratio would transfer the labels' market power to musical works rightsholders, assigning both labels and the Copyright Owners more than their Shapley values, and thus assigning Services even less than their Shapley value as determined in the *Phonorecords III* Final Determination. This moves the musical works royalty rate even further away from any notion of the fair division of surplus called for by the 801(b)(1) factors.

(19) The Majority recognized in the *Phonorecords III* Final Determination that applying the [redacted] ratio to market sound recording rates imports market power from sound recording royalties to musical works royalties. As they wrote then, "[a]pplying the ratios derived from the experts' models to the higher total royalties that prevail in the marketplace would yield musical works royalty rates higher than the models predict."[23] The implications of this problem became evident in their attempt to calculate a TCC ratio.[24] To address the problem of "in essence, importing complementary oligopoly profits into the musical works rate," the Judges adjusted the [redacted] sound recording to musical works ratio to 3.82:1.[25]

(20) The Copyright Owners' experts ignore this reasoning when explaining why the Judges should

[22] Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021 [hereinafter "Marx WDRT"], § VI; Written Second Supplemental Remand Testimony of Leslie M. Marx, PhD, January 24, 2022 [hereinafter "Marx WSSRT"], § V.A.

[23] Phono III Final Determination, at 73.

[24] Phono III Final Determination, at 73.

[25] Phono III Final Determination, at 73.

use the [redacted] ratio rather than the 3.82:1 ratio in the Working Proposal. Professor Watt attempts to draw a distinction between applying the 3.82:1 ratio to market sound recording rates for the purposes of a TCC calculation versus applying the ratio to market sound recording rates for the purposes of determining a headline percentage of revenue rate.[26] In both cases, however, a ratio is applied to market sound recording rates to determine the musical works royalty rate. Professor Watt draws a distinction by claiming that record label market power can be "imported" in one case (when calculating the appropriate TCC) but not the other (when calculating the appropriate headline percentage of revenue rate).[27] This distinction makes no sense. If record company market power can be imported by applying a [redacted] ratio to actual royalty rates via the TCC prong, it can equivalently be imported by applying a [redacted] ratio to actual royalty rates within the context of the Working Proposal.

(21) Unlike Professor Watt, Dr. Eisenach does not attempt to reconcile his call for a [redacted] ratio to convert market sound recording rates to musical works rates with the use of the 3.82:1 ratio for the same purpose in the *Phonorecords III* Final Determination and the Working Proposal. He simply asserts that "when used with the [redacted] Shapley ratio, the Working Proposal is consistent with the *Final Determination*."[28] It is not. In the Final Determination, the Majority specifically found that a modification was necessary when applying the [redacted] ratio to real world sound recording rates so as not to import market power from the sound recording side of the market to the musical works side.[29]

IV. Professor Watt's and Dr. Eisenach's proposed inputs into the Working Proposal are flawed

(22) In their December 9, 2021 Order, the Judges requested inputs regarding "the percent of

[26] Watt AWDT, ¶ 22–24.

[27] Watt AWDT, ¶ 22–24.

[28] Eisenach AWDT, ¶ 22.

[29] Phono III Final Determination, at 73.

royalties the Majors allow the interactive service sector to retain."[30]

(23) Professor Watt proposes a number of Shapley-based rates as inputs into the Judge's Working Proposal, summarized in Figure 1 below.

[RESTRICTED] Figure 1. Shapley-based royalty rate inputs proposed by Professor Watt

	Proposed combined royalties	Source description
1	[redacted]	Shapley value combined royalties from Watt WRT, Table 1
2	[redacted]	Shapley value combined royalties from Gans WRT, Table 2, column 2
3	[redacted]	Shapley value combined royalties from Gans WRT, Table 2, column 3
4	[redacted]	Shapley value combined royalties from Gans WRT, Table 2, column 4

Source: Watt AWDT, ¶¶ 42–43.
*Gans WRT, Table 2 shows combined royalties of [redacted] for this input. I report in this table the values presented by Professor Watt.

(24) As I mentioned in my previous report, the rates that the Judges seem to be looking for do not correspond to the theoretical values that come out of the Shapley model, which in any case vary significantly depending on underlying modeling choices, data, and assumptions required to adapt data to the theoretical model.[31] In addition, Professor Watt draws heavily from the Shapley value model described in Professor Gans' rebuttal report, which I did not have a chance to rebut and was not relied on in the *Phonorecords III* Final Determination.[32]

(25) Dr. Eisenach proposes a variety of non-Shapley derived inputs to the Working Proposal, as

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[30] Notice and *Sua Sponte* Order Directing the Parties to Provide Additional Materials, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018–2022) (Remand), December 9, 2021 [hereinafter, "December 9, 2021 Order"], at 2. In my supplemental report, I provided a set of possible inputs in response to the Judges' request. Marx WSSRT, Figure 2.

[31] Marx WSSRT, ¶ 8.

[32] I did not have an opportunity to provide a report to critique this model in the initial *Phonorecords III* proceeding. I have not addressed it subsequently because it has not been relied upon by the Judges throughout the *Phonorecords III* proceeding, including the remand. Given page limitations, I am not able to fully critique that model here. One of its many flaws is that it relies heavily on picking a particular prediction of Service non-content costs as a percentage of revenue that is clearly an outlier among the models considered in Dr. Gans' backup, and that model predicts [redacted]. *See* Written Rebuttal Testimony of Joshua Gans, February 13, 2017, ¶¶ 44–47, Figure 6. [redacted].Marx WSSRT, ¶ 13.

summarized in Figure 2 below.

[RESTRICTED] Figure 2. Royalty rate inputs proposed by Dr. Eisenach

	Proposed combined royalties	Source description
1	[redacted]	Eisenach estimated combined royalty rate of Services from 2018 through end of P3 rate period
2	70%	"Industry standard" split according to Dr. Eisenach
3	70%	Apple iTunes (PDD) and Netflix royalty rates
4	>71.4%	Hulu royalty rate
5	71.5%	Apple's royalty rate announcement at launch of Apple Music in June 2015
6	[redacted]	Spotify's historical (2015/2016) combined royalty rate (from Phono III Final Determination)
7	[redacted]	Eisenach estimated combined royalty rate of Amazon, Google, Pandora, and Spotify in 2017.

Source: Eisenach AWDT, ¶¶ 27, 31–33 and Table 1.

(26) The highest rate that he proposes is his [redacted] estimated combined royalty rate of Amazon, Google, Pandora, and Spotify in 2017. The rates from which this combined rate is derived include a wide range of rates from different services ranging from [redacted].[33] It is not clear why [redacted], should be included when trying to calculate a "survival" rate for interactive streaming services.[34] Using Dr. Eisenach's data, but focusing just on [redacted].[35] Dr. Eisenach also points to 2015 rates for Apple and

[33] Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, PhD, July 2, 2021 [hereinafter, "Eisenach RWRT"], at C-9.

[34] Eisenach RWRT, at C-9.

[35] Marx WSSRT, Figure 2. [redacted]. Marx WSSRT, ¶ 15.

Spotify (and 2011 rates for Apple PDDs) that are less current and relevant than [redacted]

(27) Finally, Dr. Eisenach points to unregulated royalty rates for subscription video streaming services Hulu and Netflix without explaining their relevance to this context.[36] I do not consider any of the inputs put forward by Dr. Eisenach or Professor Watt to be better suited to the Judges' request than the four rates that I put forward in rows 3–6 of Figure 2 in my second supplemental report.[37]

[36] Eisenach AWDT, ¶ 33.

[37] Marx WSSRT, Figure 2.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Supplemental Rebuttal Remand Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 24th day of February 2022 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

Proof of Delivery

I hereby certify that on Thursday, February 24, 2022, I provided a true and correct copy of the Written Supplemental Rebuttal Remand Testimony of Leslie M. Marx, PHD to the following:

National Music Publishers' Association (NMPA) et al, represented by Benjamin Semel, served via ESERVICE at Bsemel@pryorcashman.com

Amazon.com Services LLC, represented by Scott Angstreich, served via ESERVICE at sangstreich@kellogghansen.com

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Google LLC, represented by David P Mattern, served via ESERVICE at dmattern@kslaw.com

Nashville Songwriters Association International, represented by Benjamin K Semel, served via ESERVICE at Bsemel@pryorcashman.com

Signed: /s/ Richard M Assmus

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In the Matter of	)	**Docket No. 16–CRB–0003–PR (2018–2022)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	)	

WRITTEN DIRECT TESTIMONY OF BARRY MCCARTHY

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Barry McCarthy. I am the Chief Financial Officer ("CFO") of the Spotify group of companies ("Spotify") and am an employee of Spotify USA Inc. I have served as CFO of Spotify since July 2015. Prior to that, I was a member of Spotify's board of directors. I graduated with a BA in History from Williams College in 1975 and an MBA in Finance from The Wharton School at the University of Pennsylvania in 1980.
2. Before joining Spotify, I served as a Venture Partner and Executive Advisor at Technology Crossover Ventures. Before that, I was CFO of Netflix for nearly 12 years and CFO of Music Choice for 6 years.
3. My testimony will primarily focus on three points: (1) Spotify has grown rapidly, benefitting rights holders, [redacted] (2) [redacted] and (3) the current mechanical rate structure is inefficient and hurts rights holders, listeners, and Spotify.

Spotify's Rapid Growth Has Benefited Rights Holders, But Spotify Has Not Turned a Profit Due to High Royalty Costs

Spotify Has Grown Rapidly

4. Spotify has grown tremendously since it launched its service in Sweden on October 7, 2008. [redacted][1]

5. Spotify's paid subscribers have also increased significantly. [redacted]

6. [redacted]

7. [redacted]

8. [redacted]

[1] Where I don't say otherwise, the user and revenue numbers I cite in my testimony are global numbers. I will indicate where I refer to U.S.-specific numbers.

<u>Spotify's Continued Growth Is Good for Spotify and Good for Rights Holders</u>

9. Spotify offers users two services: an ad-supported service that is free to users and a paid subscription service that costs $9.99 per month (assuming no discounts). I will refer to the former as the "ad-supported" service and the latter as the "paid" or "Premium" service.

10. [redacted]

11. The large increases in Spotify's user numbers have meant that Spotify pays more and more money to rights holders. This is true for both ad-supported and Premium users.

12. **Premium**. The average Spotify Premium subscriber pays more money to owners of musical works each year than the average person who buys CDs or PDDs. In 2015, for each Premium subscriber, Spotify paid approximately [redacted] per year to songwriters and publishers for public performance and mechanical royalties. (My colleague Paul Vogel explains Spotify's royalty payments in more detail in his testimony.[2]) In contrast, the average listener who buys CDs or PDDs resulted in only [redacted] per year being paid to songwriters and publishers. (My colleague Will Page discusses broader industry trends in more detail.[3]) For every CD or PDD purchaser who signs up for Spotify's Premium service, rights holders earn an additional [redacted] per year—even if the subscriber never buys another CD or PDD. And for the many people who *weren't* buying CDs or PDDs, subscribing to Spotify Premium adds even more money for rightsholders.

[2] *See* Written Direct Testimony of Paul Vogel (On behalf of Spotify USA Inc.), Nov. 1, 2016.
[3] *See* Written Direct Testimony of Will Page (On behalf of Spotify USA Inc.), Nov. 1, 2016.

13. **Ad-supported**. The growth of the ad-supported service leads to more payments to rights holders in two ways.

14. First, [redacted] And that leads to more revenue for rightsholders.

15. Second, many people simply will not pay for music—the terrestrial radio market is as large as it is because it is free. These people have a few options: terrestrial radio, piracy, and other free streaming services (such as YouTube). Terrestrial radio does not pay any mechanical royalties (or sound recording royalties). Of course piracy pays no royalties at all. Switching these listeners to Spotify results in significantly more revenue for rightsholders that was simply being left on the table. It also exposes listeners to music they otherwise might not have discovered. That leads to more royalties to songwriters who wouldn't be discovered through radio or piracy.

Despite Spotify's Growth, [redacted]

16. Despite the growth in MAU, paid subscribers, and total revenue, Spotify has not turned a profit. [redacted]

17. [redacted]

18. [redacted]

19. [redacted]

20. Spotify's growth has resulted in significant payments to rightsholders, but at a high cost to Spotify.

21. [redacted]

22. [redacted]

[4] This number represents U.S. earnings before interest and taxes ("EBIT"), defined as U.S. contribution less a pro-rata allocation of global indirect costs such as R&D, G&A, and headcount costs for content and distribution ("C&D") based on the United States' share of global revenue.

[redacted]

23. Spotify's non-royalty costs can be generally divided into four categories: (a) other cost of goods sold ("other COGS"), such as streaming delivery, ad-serving costs, payment fees (*e.g.*, for credit card processing), customer service, and headcount costs for employees working in content and distribution; (b) sales and marketing ("S&M"); (c) research and development ("R&D"); and (d) general and administrative ("G&A"), such as human resources, facilities, content administration, finance, and legal expenses.

24. [redacted]

25. [redacted]

26. [redacted]

[5] [redacted]

[redacted] The U.S. is also a large[6] and competitive[7] market, and it requires more money to grow awareness in the U.S. than smaller countries. However, the fact that the U.S. is such a large market means that it holds great potential and therefore is worth the investment.

[redacted]

27. Spotify wants to pay artists and songwriters well as part of a thriving competitive marketplace. [redacted] Spotify's interests in [redacted] and paying rightsholders are aligned with each other: [redacted] Songwriters and artists would see a huge drop in revenue, and the amount of music available to the public would decrease.

28. [redacted]

[6] Consider, for example, that the population of New York state alone is roughly twice the population of Sweden. The U.S. music market is nearly one-third of the global music market. *See, e.g.*, INTERNATIONAL FEDERATION OF THE PHONOGRAPHIC INDUSTRY, GLOBAL MUSIC REPORT: MUSIC CONSUMPTION EXPLODING WORLDWIDE 9, 72 (2016). A true and correct copy of the IFPI report is attached hereto as Spotify Exhibit 1.

[7] Spotify's competition for its free ad-supported service includes, among others, YouTube, Pandora, Deezer, SoundCloud, Grooveshark, iHeartRadio, Slacker Radio, terrestrial radio, and piracy. Spotify's competition for its paid subscription service includes, among others, YouTube Red, Pandora One, Deezer Premium+, SoundCloud Go, Amazon Music Unlimited, Apple Music, Google Play Music, Napster, Tidal, and satellite radio.

29. [redacted] This means decreasing the rate for all three types of royalties: sound recording, public performance, and mechanical.

[redacted]

30. [redacted] I will discuss each area of costs in turn. [redacted]

31. **Other cost of goods sold.** [redacted]

32. [redacted]

33. [redacted]

34. [redacted]

35. **Sales and marketing costs.** Sales and marketing costs are necessary to attract users. [redacted]

36. [redacted]

37. [redacted]

Fewer people using Spotify means lower royalty payments to rightsholders. And as my colleagues James Lucchese and Will Page discuss, more people using Spotify means more opportunities for rights holders to sell concert tickets and merchandise through Spotify's platform.

38. [redacted]

39. **Research and development costs.** [redacted] Other tech companies typically spend *at least* 7.5-10% globally, as shown in the table below:

Company	2015 R&D as a percentage of revenue
Facebook	26.9%[8]
Google	16.3%[9]
Netflix	9.6%[10]
Pandora	7.3%[11]

40. Conversely, Pandora, for example, spent only 5.2% on R&D in 2013 and 5.8% in 2014 [redacted].[12] (As shown in the chart above, its R&D spend is only recently catching up.)

41. R&D is not only about innovation; some R&D is necessary to have a minimally functioning product. For example, Spotify must continuously upgrade its infrastructure to handle increased workload, not only from a growing user base,[13] but also as music content and product features change and grow. Spotify must also continually update its

[8] Facebook, Inc., Annual Report (Form 10-K), at 41 (Apr. 27, 2016), *available at* https://s21.q4cdn.com/399680738/files/doc_financials/annual_reports/2015-Annual-Report.pdf. A true and correct copy of the Facebook Inc. Annual Report (Form 10-K) is attached hereto as Spotify Exhibit 2.

[9] Alphabet Inc., Annual Report (Form 10-K), at 24 (Feb. 11, 2016), *available at* https://abc.xyz/investor/pdf/20151231_alphabet_10K.pdf. A true and correct copy of the Alphabet Inc. Annual Report (Form 10-K) is attached hereto as Spotify Exhibit 3.

[10] Netflix, Inc., Annual Report (Form 10-K), at 38 (Jan. 28, 2016), *available at* http://files.shareholder.com/downloads/NFLX/3134691943x0xS1065280-16-47/1065280/filing.pdf. A true and correct copy of the Netflix, Inc. Annual Report (Form 10-K) is attached hereto as Spotify Exhibit 4.

[11] Pandora Media, Inc., Annual Report (Form 10-K), at 68 (Feb. 18, 2016), *available at* http://investor.pandora.com/Cache/33003946.pdf. A true and correct copy of the Pandora Media, Inc. Annual Report (Form 10-K) is attached hereto as Spotify Exhibit 5.

[12] *Id.*

[13] In general, [redacted] as the number of users, artists, and songwriters using Spotify's services increases. For example, more users generate more data [redacted] My colleague Nicholas Harteau addresses the scaling of infrastructure costs further.

apps to work with the latest mobile devices and operating system updates. [redacted]

42. But a minimally viable product is not enough; Spotify must innovate to compete. This is even more true with the increasingly rapid pace of technological change. Streaming music alone is no longer enough to be competitive. Competitive products must do more, such as providing personalized music recommendations to hundreds of millions of users.
43. Despite Spotify's [redacted] it continues to be a market leader in investing in new features. [redacted]
44. [redacted]
45. **General and administrative costs.** As Spotify grows, it needs to build up support functions, such as human resources, facilities, and so on. [redacted]
46. [redacted]
47. [redacted]

[redacted]

48. [redacted]

49. Netflix [redacted]: Years ago, it was engaged in a battle for users with Blockbuster. When Netflix raised prices by a small amount, customers fled to Blockbuster, who underpriced Netflix. Netflix was forced to retreat.

50. [redacted] For example, Amazon recently launched a new music streaming service that will cost $3.99 per month for users using an Amazon Echo device [redacted], $7.99 per month for Amazon Prime members, and $9.99 per month for others.[14]

[14] A true and correct copy of the article, *Amazon's Music-Streaming Service Completes on Price and Robotic Assistance*, published on Oct. 12, 2016 (available at http://www.wsj.com/articles/new-amazon-music-streaming-service-costs-echo-speaker-owners-4-a-month-1476255600) is attached hereto as Spotify Exhibit 6.

51. [redacted] Spotify previously offered a family plan for $9.99 for the first user and $4.99 for each additional user. Apple entered the market with a family plan costing $14.99 flat for up to six users. [redacted]

52. [redacted]

53. Moreover, raising prices would not put more money in the pockets of artists or songwriters. In many cases, [redacted] through lower royalty rates actually results in *more* money for rights holders. [redacted] Just as it is often in a company's own financial interest to [redacted] On the other hand, if all of the streaming music businesses *raised* prices or discontinued free ad-supported services, it would result in fewer users of these services.

54. [redacted] Spotify's decision to continue to provide a high quality service has fueled its own growth and the growth in royalty payments to publishers and labels. However, Spotify has been shouldering the burden of providing technological contributions and bearing the risks, [redacted]

External Financing Is Not an Alternative to Lower Rates

[redacted] It Has Had to Obtain [redacted] Financing

55. [redacted]

56. [redacted].

57. [redacted]

58. Investors see startup companies such as Spotify as a high-risk investment compared to established companies or companies employing established business models, such as music publishers.

59. [redacted]

60. Spotify is using this financing to fund its operating losses.

Spotify Has Invested Money Raised from [redacted] Financing to Build a Business That Increases Access to Music

61. From January 2010 through August 2016, Spotify has invested approximately [redacted] in R&D and [redacted] in S&M to build and market a business that offers numerous benefits to artists, songwriters, and listeners.

62. One of Spotify's overarching goals in doing this has been to empower artists and songwriters. Spotify aspires to be a platform that artists can "live off" of and use to manage their careers.

[redacted]

63. Investors in Spotify, like any company, are looking for a return on their investment. To date, investors have been interested in Spotify because it has grown faster than any other streaming music businesses and because they believe it will become profitable at some point. If investors do not continue to see this potential, they will not invest.

64. [redacted] it will be increasingly difficult for Spotify to raise capital to fund its losses.

Spotify's Mechanical Royalty Structure
Results in Inefficiencies and Unnecessary Risk

The Current Structure Improperly Aligns Incentives and Leaves Surplus On the Table

65. Spotify's all-in musical composition royalties (public performance plus mechanical) in the United States have a headline rate of 10.5% of revenue. However, mechanical royalties are subject to a number of minima. [redacted]

66. The most significant of the minima is the 50 cents per user floor that applies to Spotify's paid service.[15] [redacted]

67. Per-user floors result in inefficiencies that destroy value both for Spotify, rightsholders, and potential listeners. Student discounts show this potential value. [redacted]

[15] There is a lower, 15-cent, floor for subscribers of Spotify's "Basic Desktop" service, a grandfathered product with very few users.

[redacted]

68. [redacted]

69. But while [redacted] recognize that price flexibility is in everyone's interest, the current U.S. mechanical rate structure simply ignores this benefit. As a result, [redacted] This means that the [redacted], even though they increase profit to rightsholders (both initially and when the student accounts eventually become regular accounts) and increase the overall amount of music consumed on the service.

70. [redacted]

71. [redacted] A royalty structure that is a pure percentage of revenue

[redacted] would align Spotify's incentives with those of rightsholders.

72. [redacted] If Spotify were forced to lower its prices, mechanical royalties would increase as a percentage of revenue under the current structure. My colleague Paul Vogel will provide additional details.

73. [redacted] This would decrease competition, which would harm both listeners *and* rights holders. Competition incentivizes innovations such as Discover Weekly and Fan Insights. (James Lucchese and Will Page will speak more to some of Spotify's innovative features and their benefits to songwriters.) [redacted] This would hurt songwriters, artists, and listeners.

<u>Lower Royalty Rates Would Not Mean Lower Revenue for Rights Holders</u>

74. Lower royalty *rates* would actually result in higher royalty *payments* to rights holders due to the fact that they would enable Spotify to grow the pie. A (slightly) smaller piece of a larger pie is better for rights holders than a larger piece of a much smaller pie.

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16 [redacted]

75. As discussed above, rightsholders are better off when listeners switch to Spotify, for both the ad-supported and paid services. This is true even when a slight decrease in royalties is what is required to get listeners to make that switch.

76. On the ad-supported side, switching a terrestrial radio or piracy-using listener to Spotify's service results in increased payments to rights holders, even at lower than current royalty rates: These other options pay little or no royalties anyway, and the ad-supported service funnels customers into the Premium service.

77. On the paid side, the royalties to songwriters and publishers from a paid subscriber are more than the royalties from a typical purchaser of CDs or PDDs over a one-year period. Even if all Spotify users only bought CDs or PDDs prior to joining, growing the paid service would mean growing the pie. This would still be true even at somewhat lower royalty rates.

78. [redacted] more flexible) royalty rates would actually grow the pie even more, because a percentage of potential customers are willing to pay *more than nothing* but *less than $9.99 per month* (for example, students). Offering these users a discounted paid subscription results in higher payments to rights holders [redacted] because they understand that [redacted] royalty rates result in [redacted] faster subscriber growth, and higher royalty payments as a result of the faster growth.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	)))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF BARRY MCCARTHY

I, Barry McCarthy, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31 day of October 2016 in New York, New York.

Barry McCarthy

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN REBUTTAL TESTIMONY OF BARRY MCCARTHY

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Barry McCarthy. I am the Chief Financial Officer ("CFO") of the Spotify group of companies ("Spotify"). I previously provided testimony during the direct phase of this proceeding.

2. I offer this rebuttal testimony to address several issues raised in the written direct statements submitted by the National Music Publishers' Association and Nashville Songwriters Association International (collectively, "Copyright Owners"). My testimony will primarily discuss two points: (1) that the *magnitude* of the Copyright Owners' proposed rate increases would [redacted]; and (2) that the *structure* of the Copyright Owners' rate proposal — namely, per-user and per-stream rates — would misalign incentives and reduce revenue to the industry. Throughout my testimony, I show that a rate structure based on percentage of revenue would maximize value for the entire

ecosystem — including not only publishers and Digital Services but also songwriters, artists, and listeners.

3. My testimony concludes by summarizing the financial effects of the various parties' rate proposals. In particular, the level and structure of the Copyright Owners' rate proposal would be counterproductive to the goals of the statutory rate. It would place tremendous financial pressure on the Digital Services to drastically change their product offerings or exit the streaming music business altogether. At a minimum, if the Copyright Owners' proposal were adopted, [redacted] and the listening public would experience limitations on the widespread availability of new music, all of which would harm artists and songwriters, both in terms of popularity and financial reward.

The Copyright Owners' Rate Proposal Would [redacted]

4. As discussed in my written direct testimony, Spotify offers a free-to-users ad-supported service and a paid subscription service. I will refer to the former as the "ad-supported" service and the latter as the "paid" or "Premium" service.

5. The Copyright Owners propose a mechanical rate that is the greater of $.0015 per play or $1.06 per end user.[1] This proposal would [redacted].

[1] Unless otherwise noted, I will use "play" and "stream" interchangeably.

6. Spotify pays three types of royalties: *mechanical* royalties to songwriters and publishers, *public performance* royalties to the same songwriters and publishers, and *sound recording* royalties to record labels and artists.

7. For the period from July 2015 to June 2016,[2] Spotify paid out approximately [redacted] of its U.S. revenue in mechanical royalties and [redacted] in public performance and sound recording royalties.

8. [redacted][4].

[2] [redacted].

[3] I understand the Copyright Owners believe the mere ability to access music should trigger a royalty. *See, e.g.*, Written Direct Testimony of David Israelite ("Israelite WDT") ¶ 42 ("Each end user account has an inherent value. The user is secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place.").

[4] Calculations are based on the July 2015 – June 2016 period.

9. [redacted].

10. [redacted].

11. [redacted]

[5] Calculations are based on the July 2015 – June 2016 period.

[6] *E.g.*, Written Direct Testimony of Barry McCarthy ("WDT") ¶¶ 16-19

[redacted].

The Ad-supported Service [redacted]

12. The Copyright Owners' greater of per-stream or per-user rate would [redacted].

13. The Copyright Owners' per-user rate applies if the average user listens to 706 or fewer streams per month ($1.06 / $0.0015 = 706.7). [redacted].

14. [redacted].

[7] I understand that these figures are for the United States, using the Copyright Owners' proposed definition for a "play."

15. [redacted].

16. The Copyright Owners present some suggestions for how the Digital Services could [redacted]. But these suggestions are not only uninformed, they are blind to the economic complexities of the digital streaming market.

17. For example, the Copyright Owners assert that [redacted]. This suggestion is unrealistic, as [redacted].

18. [redacted].

19. Without any analysis of Spotify's financials, the Copyright Owners further suggest that the company could [redacted]. *See, e.g.*, Rysman WDT ¶ 101 *et seq.* This is simply not the case.

20. Spotify's paid service would [redacted]. This would have numerous negative consequences for [redacted] rights holders. As discussed below, it would shunt listeners to piracy, [redacted].

21. [redacted]. As discussed in my written direct testimony (*see* Written Direct Testimony of Barry McCarthy ("WDT") ¶¶ 12-15, 75-77), switching a terrestrial radio or piracy-using listener to Spotify's ad-supported service results in increased payments to rights holders — piracy pays no royalties and terrestrial radio pays little.[8] [redacted]

[8] I understand that Dr. Leslie Marx will include supporting calculations in her written rebuttal testimony.

[redacted]

22. The Copyright Owners' suggestion that consumers are willing to pay for interactive streaming is only partially correct.[9] Listeners have varying levels of price sensitivity, and there is a segment of listeners who are *not willing to pay at all.* These listeners will only use free-to-users options, such as terrestrial radio or piracy. It benefits both the Copyright Owners' and the Digital Services' to earn as much as possible from these users. In addition, Spotify and rights holders earn even more when [redacted]. Some users are willing to pay for interactive streaming, but only after they see the benefits through a free option that offers less functionality than the paid service. [redacted], they will not be willing to pay. The ad-supported service has strong promotional effects — approximately [redacted] of Spotify's paid subscribers in the United States were previously active on the ad-supported service. This is similar to how terrestrial radio encouraged listeners to purchase CDs. That same promotional effect applies today to digital streaming services and, particularly, to Spotify — which has introduced novel features to connect artists with their fans, promote new artists, and to enable listeners to find previously undiscovered music.

[9] *See, e.g.*, Israelite WDT ¶ 42 ("Users are willing to and do pay Digital Services for such access [to the songs offered by the Digital Service.]"); Written Direct Testimony of Peter Brodsky ("Brodsky WDT") ¶ 53 ("[C]onsumers have paid and are willing to pay for that value."); Written Direct Testimony of Gregg Barron ("Barron WDT") ¶ 29 ("Digital Services promote this access as a consumer benefit, and consumers have paid and are willing to pay for it ....").

23. [redacted].

24. Ad-supported services must balance a set of often-competing goals, such as generating revenue, attracting and retaining customers, and promoting the paid service. An ad-supported service that only prioritizes revenue could run more ads, but this might harm the service's efforts to attract and retain customers as the service becomes a less attractive alternative to radio, piracy, or other streaming services [redacted]. If users were to leave the service, ad revenue would fall as the service becomes less attractive to advertisers. Losing users would also affect how many ad-supported users could be converted to paid users, and revenue from the paid service could also fall. Balancing these goals is complicated, and the mechanical rates for ad-supported services need to take into account how these services bring in revenue to the overall pool, including revenue to paid services.

25. [redacted].

26. [redacted]

27. As discussed above, I understand that if we were to apply the Copyright Owners' proposal to Spotify's business [redacted]

[10] Calculations are based on the July 2015 – June 2016 period.

[11] Calculations are based on the July 2015 – June 2016 period.

[redacted].

28. [redacted].

29. [redacted].

30. [redacted].

31. [redacted]

[12] [redacted]

[13] [redacted].

[redacted].

32. [redacted].

33. [redacted].

34. [redacted]. This would [redacted] and result in less money for rights holders. [redacted]

35. The Copyright Owners' testimony concludes that "the Copyright Owners' rate proposal will not be disruptive and will hardly be noticed." Rysman WDT ¶ 92. They suggest that [redacted]

[14] [redacted].

[redacted].

36. [redacted].

37. [redacted]. The Copyright Owners argue that Spotify prioritizes growth *at the expense of revenue*, purportedly to obtain a higher price in a sale or IPO.[15] In other words, the Copyright Owners suggest that Spotify is

[15] *E.g.*, Brodsky WDT ¶ 66 ("Even Spotify … appears to be less focused on generating revenue than on obtaining customers to increase its enterprise value …."); Written Direct Testimony of David Kokakis ("Kokakis WDT") ¶ 61 ("[Spotify] has kept subscription fees low … and has sold less advertising inventory on its free tier than it can with the apparent goal of obtaining the largest possible user base …, which will inure to the benefit of Spotify and its owners and investors when it completes its (highly-publicized) initial public offering.").

under-pricing to grow customers. But the Copyright Owners do not present any evidence that Spotify is under-pricing its services, has sold less ad inventory than it could have sold, or that either of these actions would benefit Spotify in a sale or IPO. That is because they cannot.[16]

38. The Copyright Owners argue that "a change in market-wide royalty rates such as this would affect all participants in a similar way," suggesting that the industry as a whole could increase prices without affecting their relative price points. Rysman WDT ¶ 94.

[16] Contrary to the Copyright Owners' assertions, Spotify constantly works to improve its advertising services and revenue on the ad-supported service. Our service attracts top-tier brands like

[redacted].

39. [redacted], the Copyright Owners ignore how sensible prices that promote growth can help listeners, the Digital Services, and rights holders. As discussed in my written direct testimony, student discounts illustrate this potential. [redacted]. While lower prices result in less revenue per user, they often bring in more than enough users to make up the difference. *See* WDT ¶ 53. The Copyright Owners' proposal would inhibit Spotify — and rights holders — from capturing this revenue.

40. The Copyright Owners further argue that the Digital Services could raise revenue through a tiered subscription pricing system with monthly stream caps, overage charges, and other limits (*e.g.*, $9.99 per month for 1000 streams, $14.99 for 2000 streams, an ad-supported service capped at 500 streams, etc.). *See, e.g.*, Rysman WDT ¶¶ 27, 95. They cite no evidence in support of their argument, whereas Netflix is proof that a flat rate price for unlimited

[17] http://fortune.com/2016/10/18/youtube-profits-ceo-susan-wojcicki/. A true and correct copy is attached hereto as Spotify Exhibit 1.

consumption offers a compelling value proposition — one which has propelled the growth of streaming video and resulted in very substantial consumer engagement.

41. [redacted].

42. The Copyright Owners argue that Spotify can cut costs by analogizing to SiriusXM's experience. *See* Rysman WDT ¶¶ 98-100 (stating that SiriusXM's subscriber acquisition, S&M, G&A, and R&D costs have declined as a percentage of revenue). This argument betrays a fundamental lack of understanding of SiriusXM's or the Digital Services' businesses. First, and as the Copyright Owners recognize, SiriusXM's S&M, G&A, and R&D costs declined as a percentage of revenue *as they grew their subscriber base*. *See* Rysman WDT ¶ 99. Their costs declined as they achieved scale. [redacted]. Second, Sirius Satellite Radio and XM Satellite Radio nearly bankrupted each other and merged in order to survive. This led to economies of scale as well, and the merged company had 100% market share as the only satellite radio service. Third, SiriusXM's content costs were almost entirely a

percentage of revenue [redacted], which enabled it to more easily scale.

[redacted]

43. [redacted].

44. As I explained in my written direct testimony, external financing is not an alternative to lower rates (*see* WDT ¶ 55 *et seq.*), [redacted]. [redacted].

45. In sum, the Copyright Owners' proposal would severely disrupt the streaming music industry, [redacted]

[redacted]. Moreover, as I explained in my written direct testimony:

> [redacted]. Spotify's decision to continue to provide a high quality service has fueled its own growth and the growth in royalty payments to publishers and labels. However, Spotify has been shouldering the burden of providing technological contributions and bearing the risks, losing money while publishers' profits are growing. [redacted].

WDT ¶ 54. [redacted].

Monetization of User Data Is Not Relevant to This Proceeding

46. The Copyright Owners' testimony throughout this proceeding suggests that they believe they deserve a cut of any monetization of Spotify's user data.

47. [redacted]

48. , the Copyright Owners are not entitled to revenue that is unrelated to Spotify's licensed use of musical works, just as they are not entitled to any of Billboard's, IFPI's, or a record label's revenue from their use of listener data.[18]

49.

[18] Should the Copyright Owners make the argument that , this would be an attempt by the Copyright Owners to get a cut of revenue that did not come from musical works. For example, Billboard does not pay musical works royalties for selling listening data, and Ticketmaster does not pay musical works royalties for selling concert tickets. This is because these activities do not require a license. any such activities should be disregarded in setting a rate for Subpart B royalties. The Copyright Owners' references to the large sizes and deep pockets of some of the Digital Services' parent companies (*see, e.g.*, Israelite WDT ¶ 104; Rysman WDT ¶ 27) also shows their interest in tapping other revenue streams. The Copyright Owners raise the issue to suggest that , and their reasoning is essentially a demand for a cut of the parent companies' other revenue streams.

[redacted].

Per-User and Per-Stream Rates Prevent Spotify from Growing the Pie for All Rights Holders

50. Even ignoring [redacted], there are other problems with their proposal. Per-user and per-stream rates in general would not provide the right incentives to maximize either revenue and profits to rights holders and the Digital Services or benefits to the public. A pure percentage of revenue royalty structure would align Spotify's incentives with those of rights holders for the reasons set forth in my and others' earlier statements submitted to the Board.

A Per-User Rate Would Adversely Affect Listeners and the Industry

51. As discussed in my written direct testimony, the per-user floor in the current Subpart B royalty structure for Spotify's paid service misaligns incentives and leaves surplus on the table, resulting in inefficiencies and unnecessary risk. *See, e.g.*, WDT ¶ 65 *et seq.* For example, it disincentivizes Spotify and others from offering student accounts even though these accounts promote the growth of the overall pie and payments to rights holders. *See, e.g.*, WDT ¶¶ 67-69. [redacted]. In general, a varied willingness to pay among consumers means we need to target customers with different pricing levels. Any minimum inhibits our ability to target different customers based on price.

52. The Copyright Owners' proposal "doubles down" on the current per-user floor for paid services, increasing it from $0.50 to $1.06 and expanding it to ad-supported services. This is wrong for all of the reasons that the current per-user floor for paid services is wrong, such as those noted above.

53. In addition, a per-user rate for ad-supported services is counterintuitive. First, ad-supported accounts are monetized by ads, which play periodically when users listen. But account creation is unrelated to ad monetization. A user who has an account but does not listen generates no revenue.

54. Second, access is different for ad-supported services than paid services. The Copyright Owners argue that a per-user rate is appropriate because mere access is of value. *See, e.g.*, Israelite WDT ¶ 42 ("Each end user account has an inherent value. The user is secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place."). This argument misses the mark. Anyone with a radio has *access* to radio stations at any time. But the stations generate ad revenue based on who is actually consuming radio content, not based on who *could be* consuming it. The "security" comes from the existence of the radio station itself, or for Spotify, the existence of the ad-supported service. It does not come from setting up a username and password, for example.

55. Third, the ad-supported tier [redacted]. Forcing Spotify to pay a monthly fee for every user

who has ever used its service makes as little sense as charging a radio station for every user who had ever tuned in.[19]

56. In sum, a per-user floor is value-destroying and should be removed from the Subpart B formula — not expanded.

A Per-Stream Rate Would

57. As stated above, a per-stream rate applicable to both ad-supported and paid services ignores the different value propositions and monetization structures of the two services. Spotify's services are built on the "freemium" model, — a model that has been endorsed by over 120 million users worldwide.

58. A per-stream rate would misalign incentives between Digital Services and Copyright Owners in a way that would hurt both Spotify and songwriters. Engagement depends on the ability of a user to listen to as much music as he or she

[19] This seems to be a solution in search of a problem.

wants. For example, there is no additional cost for a Spotify user to try out the lesser known artists and songwriters Spotify promotes. [redacted]

59. But a per-stream rate would disincentivize Spotify and other providers from encouraging listening. This would cause at least two problems: first, user engagement is a key driver of retention for access-based subscription products, such as streaming music. As engagement declines, a user's perception of the service's value declines and user attrition increases. A user who heavily uses the service (for example, by not only listening to her favorite music but also discovering new music) is much more likely to retain her subscription than a user who uses it less frequently, or who only uses it to listen to a few favorite songs. Higher churn means less money for Digital Services and rights holders. Thus, a per-stream rate, which incentivizes services to decrease engagement, effectively incentivizes them to increase churn, and as such misaligns incentives.

60. Second, if Digital Services moved away from offering music recommendation products, like Discovery Weekly, it would mean fewer streams and fewer artists and songwriters receiving exposure. As discussed by Mr. Page and Mr. Lucchese, Spotify's music discovery products result in exposure for many "long-tail" artists and songwriters who may otherwise not receive any exposure. Such rights holders would be disproportionately affected by a per-stream

rate structure, whereas the current royalty structure allows the Digital Services to grow the pie (*i.e.*, the royalty pool) as much as possible without worrying about how that pie is divided up.

61. [redacted]

62. The Copyright Owners attempt to justify a per-stream rate on the notion that "musical works have inherent value and the Digital Services should pay more when their users stream or play more music." Brodsky WDT ¶ 68. But as discussed above, a per-stream rate means higher churn, which means less money for rights holders. Rights holders would earn more total dollars under Spotify's proposal.

63. **Apple's proposal suffers from the same deficiencies.** All of the problems with a per-stream rate generally apply to Apple's proposal as well as the Copyright Owners'.

64. Apple's rate is lower than the Copyright Owners' rate, and [redacted]. However, like the Copyright Owners, Apple proposes one per-stream rate for both ad-supported and paid services.

65. [redacted]

Conclusion

66. Spotify wants to pay artists and songwriters well as part of a thriving competitive marketplace. But Spotify must also have a sustainable business in order to do so. Significant rate increases would threaten Spotify's sustainability.

67. The Copyright Owners' proposal would be highly disruptive to the streaming music industry as a whole and [redacted]. This would hamper the Digital Services' growth and destroy many of the benefits they provide to listeners and rights holders. The Copyright Owners' use of per-user and per-stream rates would misalign incentives and destroy value, even if the rates were lower.

68. It seems to me that the Copyright Owners' proposal is little more than a thinly-veiled attempt to control the retail pricing of our service by imposing a punitive cost structure on the business [redacted].

69. Apple's proposal, [redacted], would still create poor incentives due to the use of a per-stream rate. [redacted]

70. Spotify's proposal properly aligns incentives and maximizes revenue to the industry as a whole. By removing the per-user floor, Spotify's proposal enables the Digital Services to focus on growing the pie and monetizing musical works to the fullest extent possible. And it allows Digital Services to take into account various market segments' willingness to pay.

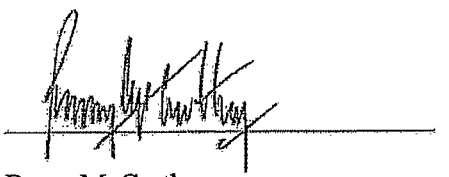
71. As I explained in my written direct testimony, "lower royalty *rates* would actually result in higher royalty *payments* to rights holders due to the fact that they would enable Spotify to grow the pie. A (slightly) smaller piece of a larger pie is better for rights holders than a larger piece of a much smaller pie." WDT ¶ 74. Spotify's proposal would be better for everyone, not just Spotify.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of	)	**Docket No. 16–CRB–0003–PR (2018–2022)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	)	

DECLARATION OF BARRY MCCARTHY

I, Barry McCarthy, declare under penalty of perjury that the statements contained in my Written Rebuttal Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15 day of February 2017 in New York, United States.



Barry McCarthy

LIBRARY OF CONGRESS

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

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IN THE MATTER OF:)

)

DETERMINATION OF RATES) Docket No.

AND TERMS FOR MAKING AND) 16-CRB-0003-PR

DISTRIBUTING PHONORECORDS) (2018-2022)

(PHONORECORDS III),)

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OPEN / CLOSED SESSION

Pages: 1988 through 2286

Place: Washington, D.C.

Date: March 21, 2017

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1 Spotify, will be testifying to restricted
2 information. I have just a couple of background
3 questions about him. I'm not sure it's worthwhile
4 to proceed in public and quickly turn to restricted,
5 maybe just for a time benefit -- benefit if we just
6 begin immediately in restricted.
7 JUDGE BARNETT: Go ahead with your
8 questions. We don't want to close until we
9 absolutely have to.
10 MR. MANCINI: Okay. The second point is
11 Mr. McCarthy has submitted a written direct
12 testimony and a written rebuttal testimony.
13 Pursuant to an agreement with counsel for the
14 Copyright Owners, he's going to be testifying today
15 for both portions of his submissions.
16 JUDGE BARNETT: Okay. Thank you.
17 MR. SEMEL: We have agreed to that, yes.
18 JUDGE BARNETT: Thank you.
19 DIRECT EXAMINATION
20 BY MR. MANCINI:
21 Q. Mr. McCarthy, can you inform the panel
22 where you work?
23 A. Spotify.
24 Q. And what is your title?
25 A. Chief financial officer.

1 Q. And when did you become chief financial
2 officer of Spotify?
3 A. July 2015.
4 Q. Have you held any other roles at Spotify
5 prior to that time?
6 A. Sorry, I'm having a hard time hearing
7 you.
8 Q. Sorry. Have you held any other roles at
9 Spotify prior to that time?
10 A. Before I became CFO, I was on the Board
11 of Directors.
12 Q. Of Spotify?
13 A. Correct.
14 Q. And have you been employed as a CFO of
15 other public or private companies previously
16 thereto?
17 A. For roughly 12 years, I was chief
18 financial officer at Netflix, both as a public
19 company and as a private company. And six years
20 before that, I was the chief financial officer of a
21 company by the name of Music Choice.
22 Q. And did you submit a written direct
23 statement in this proceeding?
24 A. I did.
25 Q. Let me ask you to turn your attention in

1 the binder before you to Spotify Trial Exhibit 1060,
2 and ask if you can identify that as a copy of the
3 written direct testimony you have submitted in this
4 proceeding.
5 A. It appears to be.
6 Q. And let me ask you to turn your attention
7 to the last page of that document. Does that bear
8 your signature?
9 A. Yes.
10 Q. Is everything in this document true and
11 correct, to the best of your information and belief?
12 A. It is.
13 MR. MANCINI: Your Honors, I would like
14 to move into evidence Spotify Trial Exhibit 1060.
15 MR. SEMEL: No objection.
16 JUDGE BARNETT: 1060 admitted.
17 (Pandora Exhibit Number 1060 was marked
18 and received into evidence.)
19 BY MR. MANCINI:
20 Q. Mr. McCarthy, did you also have occasion
21 to submit rebuttal testimony in this proceeding?
22 A. I did, yes.
23 Q. Let me ask you to turn your attention in
24 the binder before you to Spotify Trial Exhibit 1066
25 and ask you if that's a copy of your written

1 rebuttal testimony in this proceeding. 1066.
2 A. It appears to be.
3 Q. And let me ask you to turn your attention
4 to the last page. Is that a copy of your signature
5 on that document?
6 A. It is.
7 Q. And is everything contained in your
8 written rebuttal testimony true and correct, to the
9 best of your information and belief?
10 A. To the best of my information, yes.
11 MR. MANCINI: Your Honors, I'd like to
12 move Spotify Trial Exhibit 1066 into evidence.
13 MR. SEMEL: We'd like to reserve the
14 right to move to strike some of these passages for
15 lack of foundation, but subject to that, we will
16 admit -- agree, actually.
17 JUDGE BARNETT: And you're going to do
18 that in writing? Is that your --
19 MR. SEMEL: I'll explore it on cross,
20 actually.
21 JUDGE BARNETT: Oh, okay, fine.
22 JUDGE STRICKLER: So you'll explore it on
23 cross and then you're going to move to strike after
24 you explore on cross?
25 MR. SEMEL: Yes. And then maybe I'll ask

1 you at that time if you'd like briefing on it.
2 JUDGE BARNETT: Subject to
3 cross-examination, 1066 is admitted.
4 (Pandora Exhibit Number 1066 was received
5 into evidence.)
6 BY MR. MANCINI:
7 Q. Mr. McCarthy, what types of streaming
8 music does Spotify offer?
9 A. It's a paid subscription -- sorry -- a
10 paid subscription service and an advertising support
11 service.
12 Q. And of those two services, what portion
13 drives the revenue for Spotify?
14 A. The majority of the revenue currently
15 comes from the subscription service.
16 Q. Besides streaming music, does Spotify
17 have any other material sources of revenue?
18 A. No.
19 Q. Has Spotify's revenue from streaming
20 music increased over the last few years?
21 A. Yeah, dramatically.
22 Q. Let me ask you to look to this slide,
23 this demonstrative before you. Does this reflect
24 the growth of Spotify's global revenue over the last
25 three years?

1 A. From 2013 to 2015?
2 Q. Yes.
3 A. Yes, it does.
4 Q. And how much has Spotify's global revenue
5 grown over that period?
6 A. Around 2013, as we see in this slide, it
7 was roughly 750 million euros, let's call it, round
8 it. Up to a billion and 950 by 2015. It grew
9 another billion this last year to roughly 2.9
10 billion. So it grew as much this year as the entire
11 revenue of 2014.
12 Q. And under a revenue share structure for
13 royalties, would rightsholders have shared in that
14 topline growth of Spotify?
15 A. Yes.
16 Q. And despite that revenue growth, has
17 Spotify turned a profit in any of these years?
18 A. No, the operating loss has continued to
19 grow as the revenues have grown.
20 JUDGE STRICKLER: When you say -- good
21 morning, sir.
22 THE WITNESS: Good morning.
23 JUDGE STRICKLER: When you say that --
24 that Spotify has not turned a profit, you're
25 referring to a GAAP-determined profit?

1 THE WITNESS: Well, we actually use
2 something different but similar. We're a
3 Stockholm-based business, as you may know, and we
4 report under IFRS. So under IFRS, yes. And in this
5 case, we're referring to operating income, and so we
6 would include any financial interest income and/or
7 loss.
8 JUDGE STRICKLER: So the --
9 THE WITNESS: And taxes.
10 JUDGE STRICKLER: So the lack of a profit
11 that you discuss is -- is an accounting-based lack
12 of profits?
13 THE WITNESS: Yes, correct.
14 JUDGE STRICKLER: Thank you.
15 BY MR. MANCINI:
16 Q. And what, on a global basis, would have
17 been the magnitude of some of those losses over the
18 last few years?
19 A. We see in this slide in 2013 it was
20 originally reported at 105 million. It grew to 184
21 million. We've just actually restated this. For
22 year-end 2016, it increased, I think, 225 million
23 euros on a restated basis, and for 2016 the
24 preliminary loss, which is still subject to review,
25 is about 350 million euros.

1 MR. MANCINI: Your Honor, at this point
2 I'd like to turn to a restricted session if we may.
3 JUDGE BARNETT: Yes. Anyone who is in
4 the hearing room who is not permitted to hear
5 confidential or restricted information, then please
6 wait outside.
7 (Whereupon, the trial proceeded in
8 confidential session.)
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CONFIDENTIAL SESSION
PAGES 2043-2071

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of	)	**Docket No. 16–CRB–0003–PR (2018–2022)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	)	

WRITTEN DIRECT TESTIMONY OF WILL PAGE

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Will Page. I am the Director of Economics at the Spotify group of companies ("Spotify") and an employee of Spotify Limited ("Spotify"). I have served in this role since I joined Spotify in October 2012. I graduated with an MSc in Economics from the University of Edinburgh in 2002 and am a Fellow of the Royal Society of the Arts which characterizes itself as "an enlightenment organization committed to finding innovative practical solutions to today's social challenges."[1]

2. Before joining Spotify, I served for six years as the Chief Economist at the PRS for Music, a non-profit collection society representing music publishers and songwriters in the U.K., where much of my published work is still accessible online.[2] Prior to joining PRS for Music, I was a Government Economist working for the Office of the Chief Economic Adviser and Department of Finance of the U.K. Government Economic Service at the Scottish Executive.

[1] Royal Society of the Arts, https://www.thersa.org (last visited Oct. 31, 2016).
[2] PRS for Music, www.prsformusic.com/economics (last visited Oct. 31, 2016).

3. My testimony will chiefly focus on three areas: (a) how Spotify is reducing piracy and driving the recovery in music industry revenues; (b) the competitive environment in which Spotify operates, including the changing music industry landscape and the changed ways in which the public is consuming music; and (c) how Spotify's service and innovative features like Discover Weekly and Fan Insights on promote artists and increase the ease by which the public can access music. Ultimately, my testimony shows that Spotify's freemium model has helped the recent recovery in the U.S. music industry revenues in which all rightsholders are well compensated and a mechanical royalty rate structure that is sensible and aligns all parties' incentives to make this encouraging turnaround in songwriter fortunes sustainable.

Spotify Reduces Piracy and Grows the Industry Pie

Spotify's Impact on Piracy

4. Spotify was founded ten years ago with a simple goal: to beat piracy at its own game. One of the oft-cited remarks of Spotify's CEO and co-founder Daniel Ek was: "If we create the right product, better than piracy . . . people will come."[3]

5. The piracy debate stems back to May 1999 with the launch of Napster, the peer-to-peer file-sharing service. The takeoff of Napster caused or at least coincided with a rapid decline in recorded music revenues. According to the Recording Industry Association of America ("RIAA"), the U.S. recorded music industry saw a 47% decline in revenue between 1999 and 2009.[4] This section will explain the two-fold effect Spotify has had on reshaping the

[3] A true and correct copy of the hypebot.com article reporting this interview (available at http://www.hypebot.com/hypebot/2011/07/spotifys-daniel-ek-if-we-create-the-right-product-better-than-piracy-people-will-come-video.html) is attached hereto as Spotify Exhibit 7.
[4] A true and correct copy of the RIAA Publication, *Let's Play: The American Music Business*, published in 2010 (available at http://www.ifpi.org/content/library/RIAA_Brochure_Final.pdf) is attached hereto as Spotify Exhibit 8. *See* Spotify Exhibit 8 at 10.

music landscape since launching in 2009, both in terms of reducing piracy and growing industry revenues.

6. For a company that was founded in Sweden, it is important to offer local-contextualization to the piracy debate. Sweden is not only the home of Spotify, but also was home to many of the biggest piracy sites in the world, such as uTorrent and The Pirate Bay. In fact, Spotify was created in part by former employees of uTorrent,[5] further illustrating how Spotify has, from the outset, invested in beating piracy at its own game with a superior, legal alternative.

7. In 2002, the Swedish music industry was worth $287.3 million,[6] but by 2008, it had fallen to a low of $144.8 million in nominal terms, or nearly half.[7]

8. This trend was reflected around the world, but Sweden is especially relevant as it was not only the first adopter of Spotify, but was also the first music market to demonstrate a marked and sustained recovery in revenues. As the IFPI reports, by 2013, the Swedish music industry saw "an encouraging revival," with revenues growing to $194.2 million, up 34% from its low of $144.8 million in 2008.[8]

9. The "turnaround" fortunes of Sweden have been reflected in other key northern European markets such as Norway and Denmark. Spotify managed to secure licenses in each country which enabled it to scale. Many of the independent trade bodies in those markets have

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[5] A true and correct copy of the article, *Spotify Reminded of uTorrent Past After Groovshark 'Pirates'*, published on Nov. 12, 2014 (available at https://torrentfreak.com/spotify-reminded-of-utorrent-past-after-branding-grooveshark-pirates-141112) is attached hereto as Spotify Exhibit 9.
[6] A true and correct copy of the IFPI Publication, *The Recording Industry: World Sales*, published on Apr. 4, 2003 (available at http://www.ifpi.org/content/library/worldsales2003.pdf) is attached hereto as Spotify Exhibit 10. *See* Spotify Exhibit 10 at 9.
[7] A true and correct copy of the article, *Sweden: A Market Transformed* (available at http://ifpi.org/sweden.php) is attached hereto as Spotify Exhibit 11.
[8] *Id.*

published their own research on Spotify's impact on piracy, and a short summary of their work is offered below.

10. In Sweden, the report, "Music Sweden: File Sharing & Download, 2011 Q2," showed that the number of people who pirated music fell by about a quarter in Sweden between 2009 and 2011.[9, 10]

11. Spotify was launched in Denmark in October of 2011. In April 2013 (a year and a half later), the Danish IFPI published research finding that 48% of the users on legal streaming services had previously downloaded illegally, but 81% of them said that they had then stopped.[11]

12. In Norway, which continues to have the highest digital revenues per capita in the world, a recent IPSOS report showed that in 2008 almost 1.2 billion songs were copied without permission. However, by 2012 that figure had plummeted to 210 million, just one fifth of its level four years earlier.[12]

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[9] A true and correct copy of the article, *Musikverige – Fildelning & Nedladdnig [Music Sweden – File-sharing & Downloading]* (available at https://www.scribd.com/doc/66658516/Musiksverige-Svenskarnas-Internet-Van-Or-Q2-20111) is attached hereto as Spotify Exhibit 12. A certified English translation of the MediaVision article with the certification is attached hereto as Spotify Exhibit 13.

[10] A true and correct copy of the article, *Music Piracy Continues to Decline Thanks to Spotify*, published on Sept. 28, 2011 (available at https://torrentfreak.com/music-piracy-continues-to-decline-thanks-to-spotify-110928) is attached hereto as Spotify Exhibit 14.

[11] A true and correct copy of the article, *Lovlige Streamingtjenester Stopper Piratkopiering [Legal Streaming Services Put a Halt to Internet Piracy]*, published on Apr. 25, 2013 (available at http://politiken.dk/kultur/medier/ECE1953539/lovlige-streamingtjenester-stopper-piratkopiering) is attached hereto as Spotify Exhibit 15. A certified English translation of the politiken.dk article with the certification is attached hereto as Spotify Exhibit 16.

[12] A true and correct copy of the article, *Piratkopieringen I Norge Stuper [Internet Piracy Plummeting in Norway]*, published on Jul. 15, 2013 (available at http://www.aftenposten.no/kultur/Piratkopieringen-i-Norge-stuper-114335b.html#.UeU2Co0Q4lo) is attached hereto as Spotify Exhibit 17. A certified English translation of the aftenposten.no article with the certification is attached hereto as Spotify Exhibit 18.

13. One of Spotify's key beliefs in its commercial strategy is that moving someone from piracy to a legal music service needs to be frictionless—otherwise, they won't come. Often a Spotify user's journey begins in our free-to-users ad-supported tier, and upgrades to a paid (or premium) subscription as he or she becomes more familiar with the enhanced paid-only features through trial promotions and/or marketing efforts. See Exhibits 13 & 14 for just a few examples of Spotify's freemium (*i.e.*, path to paid) strategy.[13]

14. This presents a "you help me today and I'll help you tomorrow" licensing proposition: as rightsholders allow Spotify to use their content, Spotify in turn helps rightsholders, by first taking users from free options that pay little to no royalties—such as piracy, or even AM/FM radio—to an ad-supported service that generates higher royalties, and then further taking these users to a paid service that generates even higher royalties (in fact, more than even a typical CD or PDD purchaser would generate).

15. After successfully reducing piracy and growing revenues for the music industry and reducing piracy in Scandinavia, Spotify conducted its own research on the impact it was having in the Netherlands in 2012.[14] The vetted study was conducted with an independent company, MusicMetric, which was able to measure music files on BitTorrent. What made this market research unique was that at the time downloading copyrighted materials was considered

[13] A true and correct copy of the Spotify Powerpoint Presentation, "Premium Upsell 2.0," is attached hereto as Spotify Exhibit 19. A true and correct copy of the Spotify Powerpoint Presentation, "CREAM Conversion Roadmap" is attached hereto as Spotify Exhibit 20.

[14] A true and correct copy of the article, *Adventures in the Netherlands*, published on Jul. 17, 2013 (available at https://spotify.box.com/shared/static/nbktls3leeb0rcyh41sr.pdf) is attached hereto as Spotify Exhibit 21.

fair use in the Netherlands.[15] Hence the question Spotify wanted to explore was "could Spotify reduce piracy even where it wasn't against the law?"

16. The study "Adventures in the Netherlands" was published in July 2013 and marked an important advancement in studying the impact of streaming on piracy.[16] It used network measurements to look at four international artists who all released albums in the second week of November 2012. Two of those artists, [redacted] chose to release their albums on Spotify. The other two artists withheld their albums from Spotify.

17. The study sought to look at two issues: First, how often was an artist's album stolen? Second, what happens if that artist simultaneously releases that album on Spotify?

18. The findings are reflected in the charts below. The two artists that engaged with Spotify, [redacted] sold more albums than were stolen at a rate of *four* copies per BitTorrent download. The two artists that did not engage with Spotify sold only one copy per BitTorrent download.

19. The Netherlands study shows that streaming is not a zero-sum game between ownership and access: if an artist is not on Spotify, this doesn't mean a consumer will be forced to go out and purchase her albums—rather, the consumer could simply choose to steal it. To further understand the implications of the Netherlands study, it is relevant to note that this was Spotify's first non-Scandinavian success story back in 2012, and Spotify continues to grow the overall pie there today. In the first half of 2016, the Netherlands music industry grew by 23

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[15] A true and correct copy of the article, *Dutch Piracy Levy Ruled Unlawful, Downloading Pirated Materials Now Illegal in the Netherlands* (available at http://cimamusic.ca/dutch-piracy-levy-ruled-unlawful-downloading-pirated-materials-now-illegal-in-the-netherlands) is attached hereto as Spotify Exhibit 22.

[16] A true and correct copy of the press release, *Adventures in the Netherlands: New Spotify Study Sees Encouraging Downwards Trend in Music Piracy in the Netherlands*, published on Jul. 17, 2013 (available at https://press.spotify.com/us/2013/07/17/adventures-in-netherlands) is attached hereto as Spotify Exhibit 23.

percent year-over-year, making it the best performing market in the world.[17] Streaming revenues (driven by Spotify, with a vast majority of the market share) were almost entirely responsible for the increase: while physical sales grew (with vinyl playing a part), this was almost completely offset by a decline in PDD sales.[18]

Chart 7. [redacted]
Netherlands 2012. Sources: Spotify, GfK and Musicmetric

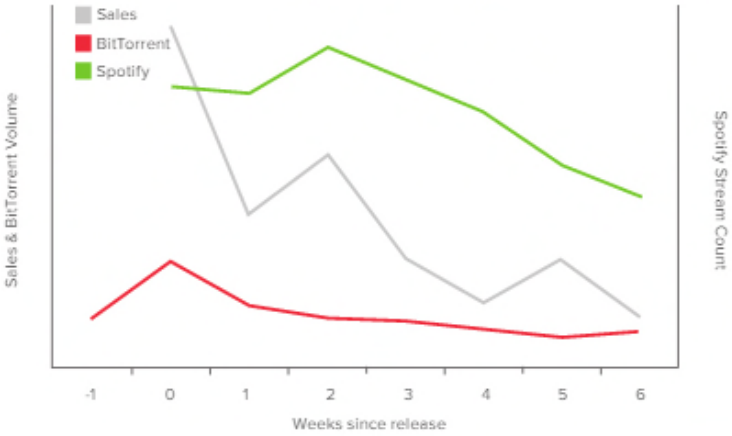
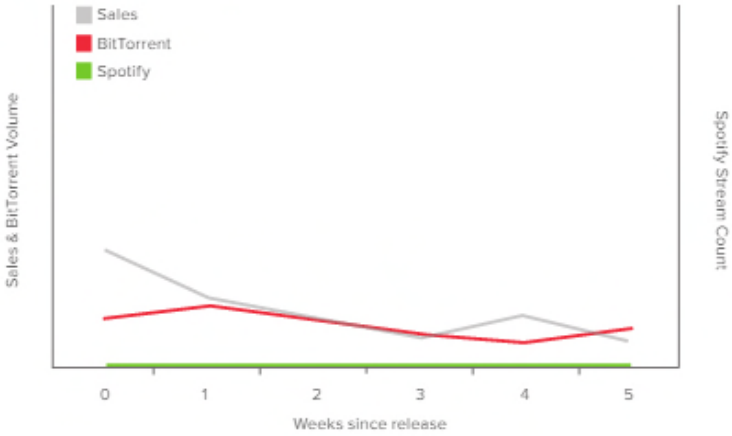
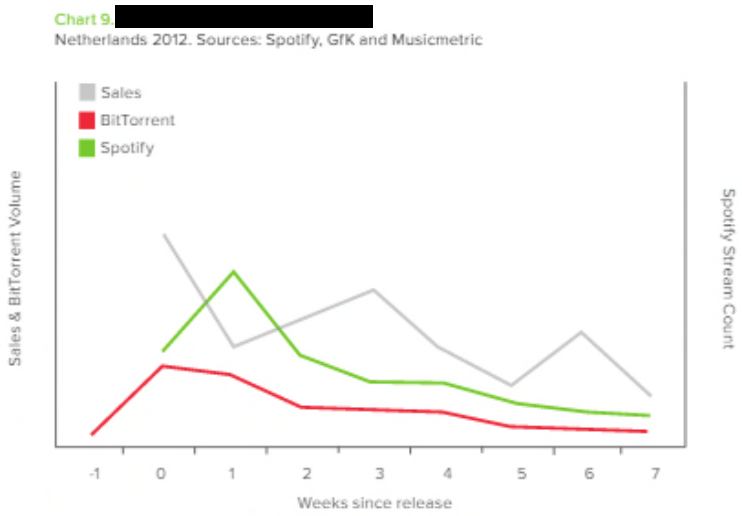


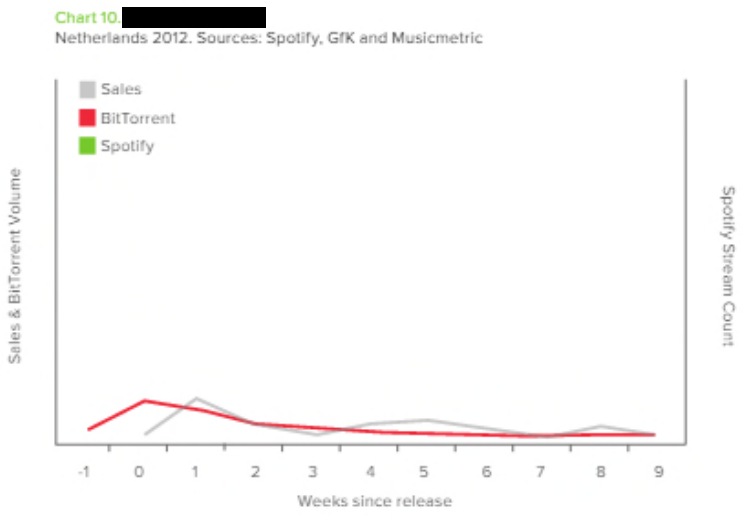
Chart 8. [redacted]
Netherlands 2012. Sources: Spotify, GfK and Musicmetric



[17] A true and correct copy of the article, *Netherlands Mid-Year Figures Reveal 23.2% Growth*, published on Sept. 15, 2016 (available at http://musically.com/2016/09/15/netherlands-mid-year-figures-reveal-23-2-growth) is attached hereto as Spotify Exhibit 24.

[18] *See id*. ("Music download sales fell by 13.2% to €4.5m, and . . . physical sales grew 2.4% to €27.8m"). In effect, these cancel out.



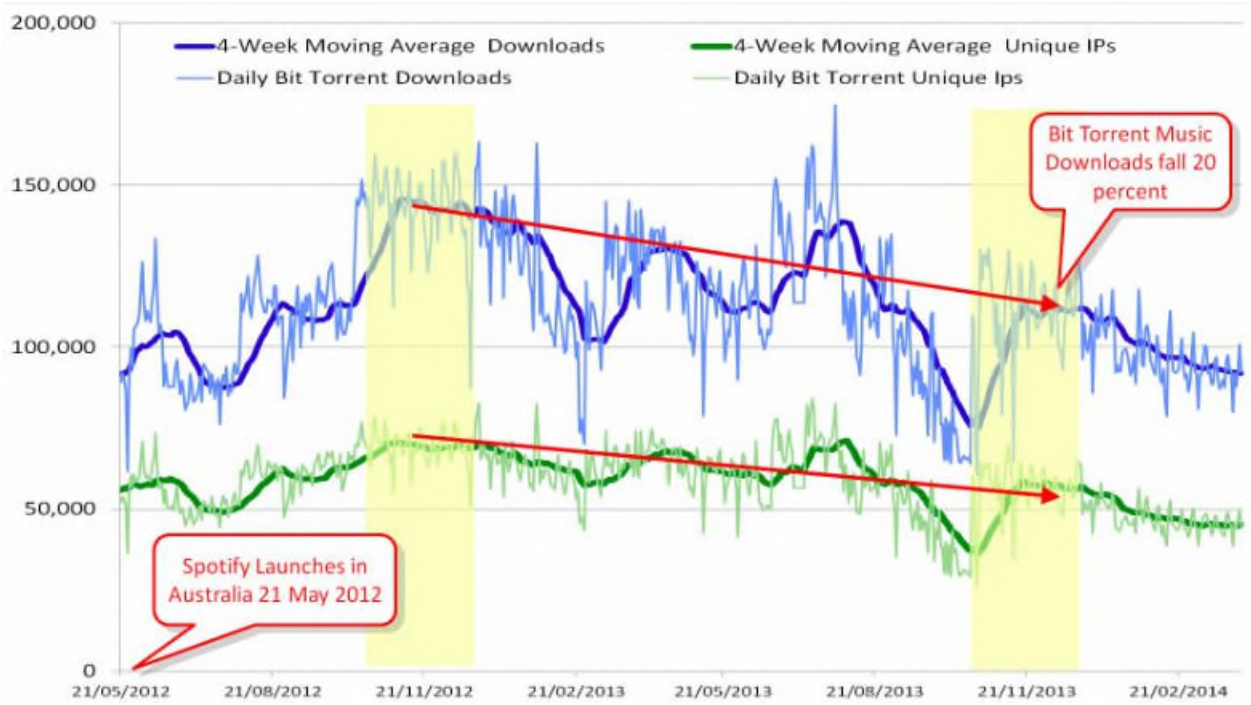


20. In 2014, Spotify conducted research on the Australian music market. Spotify had launched in 2012 at what was deemed a fair price of AUD 11.99.[19]

21. The study was never published, but the key chart was released in a Torrent Freak article and is presented below.[20]

22. The chart shows population (IP addresses in green) and volume (BitTorrent files in blue) over time. The Christmas release periods for 2012 and 2013 are highlighted. These periods of time are important as comparison periods—the strongest music releases tend to concentrate around Christmas, with peaks in sales, streaming, and piracy occurring at that time. What you can see is that BitTorrent music piracy fell by over 20 percent between the two periods, and continued to decline thereafter.

[19] By comparison, with iTunes, you could at the time get most new albums for AUD 16.99 with many on sale for AUD 9.99. A true and correct copy of the article, *Cheap Downloads? That's Music to Our Ears*, published on Sept. 16, 2014 (available at https://torrentfreak.com/spotify-music-piracy-down-australia-140910) is attached hereto as Spotify Exhibit 25.
[20] *Id.*



23. Evidence from the United States and North America supports the results from Australia and the Netherlands. For example, the Global Internet Phenomena Report states that P2P filesharing now accounts for less than 10% of total daily traffic in North America.[21] The report also notes that "[f]ilesharing continues to disappear from many fixed access networks across the globe as Real-Time Entertainment options [like Spotify] are providing subscribers a wealth of content at reasonable prices."[22] Importantly, and intuitively, if Spotify's freemium model is not given the licensing terms it needs to scale, its impact on piracy will be limited.

<u>Spotify Grows the Overall Industry Pie</u>

24. In 2009, Spotify's original commercial proposition to rightsholders was a user growth-focused model: the company was focused on growing average revenue per user

[21] A true and correct copy of the report, GLOBAL INTERNET PHENOMENA REPORT, published in 2013 (available at https://www.sandvine.com/downloads/general/global-internet-phenomena/2013/2h-2013-global-internet-phenomena-report.pdf) is attached hereto as Spotify Exhibit 26.
[22] *Id.*

("ARPU") through its freemium model. [redacted] But recall the story from Sweden: there, the music industry had already lost 40% of its value (either due to fewer buyers or buyers spending less or both) before legal streaming even entered the market. What wasn't understood then, but is appreciated now, is that the vast majority of the adult population in *all* key markets spends *zero* on music. Spotify's core commercial proposition was to grow the business by growing the average revenue per person across the entire population, not by holding onto a shrinking minority of people buying albums or PDDs.

25. Using data from MusicWatch,[23] we can illustrate the portion of the [redacted] U.S. consumer market[24] that spends on recorded music and how much they spend. First, [redacted]% of this consumer market purchased a CD or a PDD in 2015.[25] If we add in vinyl and paid subscriptions to interactive and non-interactive services, the number is [redacted]%.[26]

26. **Spotify versus other free services.** First, consider the [redacted]% of the consumer market that did not spend anything on recorded music. These people could be free streamers, pirates, or, more likely, people who have disengaged from paid recorded music completely and settle for listening to terrestrial radio; many may not actively listen to music at all. The value to rightsholders of a pirate or someone who simply does not listen to music is zero. The value to rightsholders of a radio listener is much less than an ad-supported user of Spotify. While radio stations pay songwriters and publishers via regulated rates set with the PROs, they

[23] A true and correct copy of the MusicWatch Powerpoint Presentation, "Annual Music Study 2015, Report to Spotify Ltd., June 2016," is attached hereto as Spotify Exhibit 27.
[24] Defined as the US internet population 13+. *See id*. at 2.
[25] *Id*. at 55.
[26] *Id*.

do not pay mechanical royalties, nor do they pay record labels. AM/FM pays to each of the two main the PROs around 1.7% of gross revenue in the U.S.[27]—a far cry from the [redacted]% Spotify pays to the PROs, the [redacted]% Spotify pays in mechanical royalties, and the [redacted]% Spotify gives back to *all music industry rightsholders*.[28] So whether it's shifting consumption to Spotify from piracy, or from AM/FM, focusing on the [redacted] who spend zero benefits not only songwriters and publishers, but all stakeholders.

27. **Spotify versus other paid services.** Not only does Spotify monetize better than AM/FM and piracy, Spotify also monetizes better than CDs and PDDs. According to MusicWatch, the 2015 blended average (CD/PDD) spend per buyer was [redacted]/year.[29] Compare this "top line" result with Spotify which had an average revenue per user ("ARPU") of around [redacted]/year for paid members in 2015 (this includes discounts; the undiscounted price is $120/year).

28. What's more, Spotify is also beating CDs and PDDs on the "bottom line." [redacted] per CD/PDD buyer per year equates to approximately [redacted] albums per buyer per year, resulting in [redacted] per buyer per year in mechanical royalties to publishers and songwriters.[30] Compare this with Spotify, which in 2015 paid around [redacted] per paid member per year to publishers and songwriters (mechanical plus public performance royalties), and around [redacted] per person when ad-supported users are averaged in. In other words, even if Spotify cannibalized CD and PDD

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[27] A true and correct copy of the article, *Federal Court Approves Radio Industry Settlement with ASCAP*, published on Jan. 27, 2012 (available at http://www.radiomlc.org/pages/4795848.php) is attached hereto as Spotify Exhibit 28. A true and correct copy of the article, *Federal Court Approves Radio Industry Settlement with BMI*, published on Aug. 18, 2012 (available at http://www.radiomlc.org/pages/6282052.php) is attached hereto as Spotify Exhibit 23.

[28] *See also Glenn Peoples: Pandora has its Mind on Your Money and Your Money on its Mind*, published on Jun. 30, 2016 (available at http://rainnews.com/glenn-peoples-pandora-has-its-mind-on-your-money-and-your-money-on-its-mind) ("Pandora's current publishing royalty is 67 percent larger than radio's publishing royalty per listen."). A true and correct copy of the article is attached hereto as Spotify Exhibit 30.

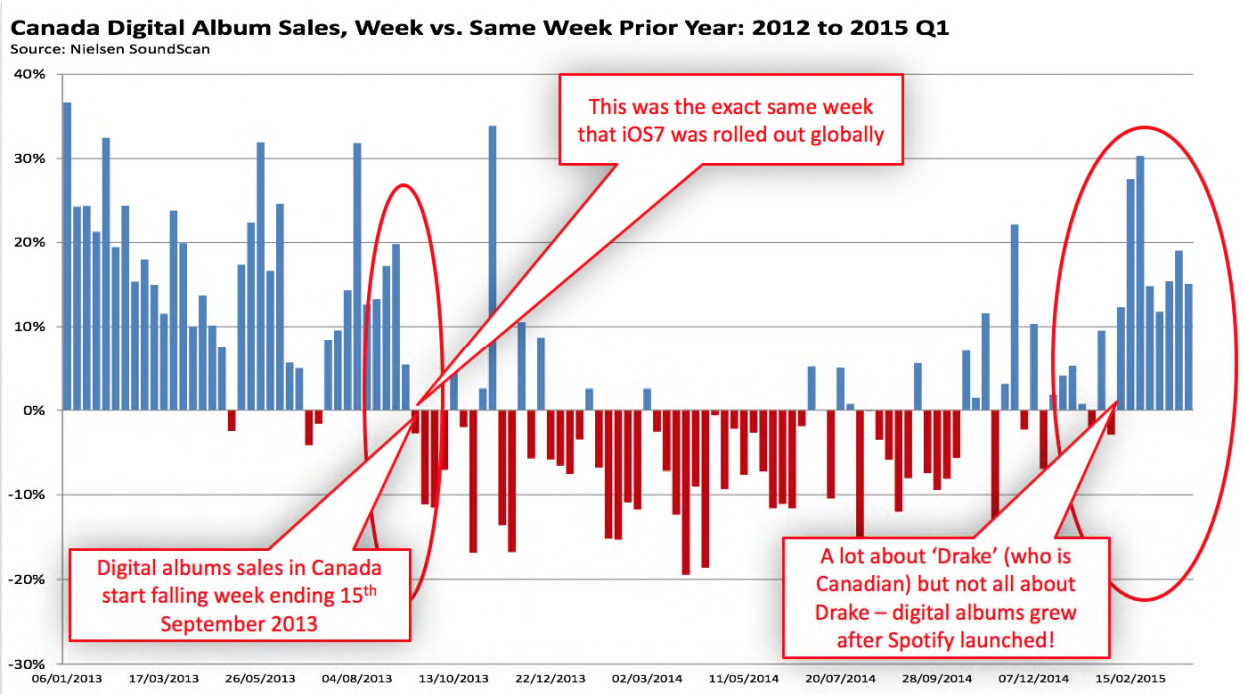
[29] Spotify Exhibit 27 at 51, 59.

[30] U.S. figures. *See* Spotify Exhibit 31 for details.

buying at 100%, publishers and songwriters would *still* be better off for each and every new user Spotify signs up. [redacted]

29. Nevertheless, cannibalization is still the most common argument made against streaming services, and is frequently used to impose a cost structure that is meant in some way to compensate rightsholders for the decline in album or download sales. But what if the ownership model had been on the decline *before* streaming was even introduced? A Canadian case study shows that this was actually the case. The study illustrates that in 2013, iTunes sales went into decline in a country which had no streaming.

30. In Canada, just like in the U.S. and U.K., downloads of tracks and digital albums went into decline in September 2013. Unlike the U.S. and U.K., however, the usual suspects blamed for this were not present, as there was no Spotify, no streaming, no Pandora, and no iTunes Radio. Streaming cannot be blamed for a decline in sales in a market where it did not exist. One of the most important lessons from Canada is that iTunes went into decline without any of the usual suspects (Spotify, streaming, Pandora, iTunes Radio) to take the blame, raising the question of who or what is to be blamed, worldwide, for the decline in digital ownership.



31. Finally, in a twist to the tale of Canada, shortly after Spotify finally did launch there towards the end of 2014, digital album sales *actually grew*. The likely explanation for this growth is the release of *If You're Reading This It's Too Late* by Canadian R&B/hip-hop superstar Drake, but Canadian digital album sales grew even if you removed Drake's album sales.[31] Canada grew its total revenues 8.3% last year, making it one of the best performing established markets in the world.[32]

32. Spotify's business model has grown the industry pie in the U.S. as well. As will be discussed by Professor Leslie Marx, Recording Industry Association of America ("RIAA") data for the U.S. music industry shows the decline in revenue started shortly after the advent of

[31] A true and correct copy of the report, 2015 NIELSEN MUSIC CANADA REPORT, published in 2016 (available at http://www.nielsen.com/content/dam/corporate/us/en/reports-downloads/2016-reports/2015-year-end-canada-music-report.pdf) is attached hereto as Spotify Exhibit 32. *Compare* Spotify Exhibit 32 at 7 (digital album sales from 10.9M units in 2014 to 11.2M units in 2015), *with id.* at 10 (If You're Reading This It's Too Late album sales of 121,000).

[32] *See* Spotify Exhibit 1.

Napster, the illegal peer-to-peer file sharing service, in 1999. However, industry revenue *stopped* decreasing with the rise of on-demand streaming, starting in 2010.

33. In September 2016, Billboard reported that "What labels hoped would happen seems to be happening."[33] The article reported that the U.S. music industry experienced an 8.1 percent growth in overall revenue during the first half of the year, with the RIAA stating that the overall market is estimated to be worth $3.43 billion, up from $3.17 billion in the first half of 2015.[34] This is the fastest uptick in growth since 1998—the year before Napster was introduced.

34. The record industry gets a disproportionate level of analytical attention simply because they make their data available in yearly reports, while the publishing sector has not traditionally provided the same level of detail. However, in an unprecedented study, the NMPA recently reported U.S. publishing revenues at $2.2 billion annually.[35]

35. An uptick in record revenues generally means an uptick in publishing revenues. Therefore, the encouraging record label headlines from the 2016 mid-year results should carry across to songwriters and publishers. This indirectly relates to what has long been the perceived

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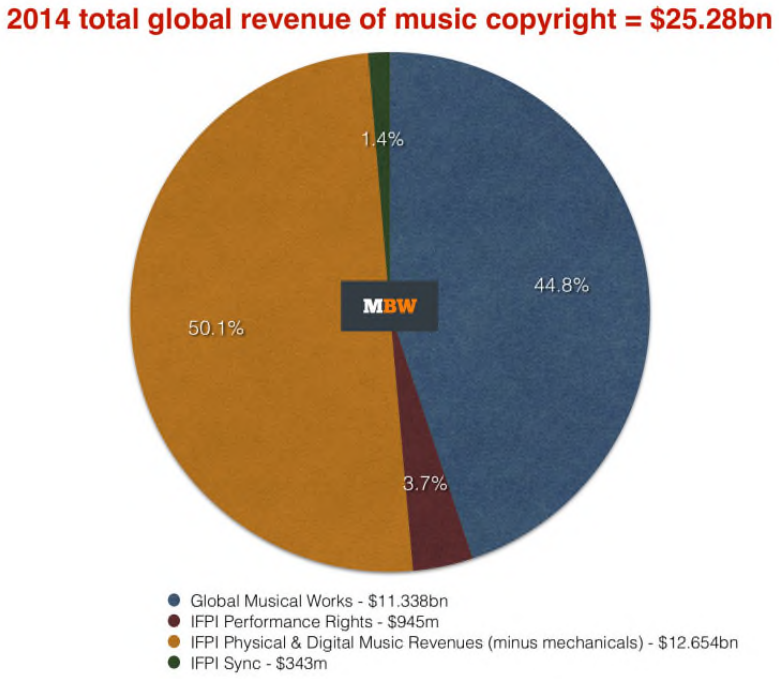
[33] A true and correct copy of the article, *Streaming Helps Drive 8.1 Percent Growth in Revenue for U.S. Recording Industry*, published on Sept. 20, 2016 (available at http://www.billboard.com/articles/business/7517904/streaming-8-percent-growth-recording-revenue-riaa-2016-half-year) is attached hereto as Spotify Exhibit 33; *see also* a true and correct copy of the article, *Music Labels Finally Hear the Sweet Sound of Success*, published on Oct. 20, 2016 (available at http://www.wsj.com/articles/music-labels-finally-hear-the-sweet-sound-of-success-1476946405) is attached hereto as Spotify Exhibit 34.

[34] A true and correct copy of the article, *News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics*, published in 2016 (available at http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf) is attached hereto as Spotify Exhibit 35. Spotify Exhibit 35 at 1, 3.

[35] A true and correct copy of the article, *NMPA Puts U.S. Publishing Revenues at $2.2 Billion Annually*, published on Jun. 11, 2014 (available at http://www.billboard.com/biz/articles/news/publishing/6114215/nmpa-puts-us-publishing-revenues-at-22-billion-annually) is attached hereto as Spotify Exhibit 36.

"David and Goliath" relationship between publishers and labels, or the impression that labels take the lion's share of revenues, leaving publishers with a small fraction of the rights pool.

36. In the first study of its kind, Spotify showed the global value of music copyright, capturing all of the revenues publishers receive, many of which record labels don't see, such as royalties from terrestrial radio (see image below).[36] The study concluded that the global value of music copyright was $25 billion, with publishers receiving almost *half* of the pie. Explaining this revelation, which overturns years of misconceptions, involves understanding the diversity of revenues publishers receive and the fact that they've grown throughout a decade of digital disruption.



[36] A true and correct copy of the article, *$25 Billion: The Best Number to Happen to the Global Music Business in a Very Long Time*, published on Dec. 10, 2015 (available at http://www.musicbusinessworldwide.com/25-billion-the-best-number-to-happen-to-the-music-business) is attached hereto as Spotify Exhibit 37.

37. Music publishers are far from the "poor cousins" of record labels. Their model has succeeded in growing when label revenues fell. [redacted]

38. The most recent collection and distribution figures from the two major performing rights organizations (PROs) underline this positive trend for music publishers. One can observe that in almost every year since Napster, despite hearing label revenue was "down," the two largest PROs in the U.S., ASCAP and BMI, reported "record collections."

39. In May 2016 ASCAP reported a new record for royalty collections, with revenue exceeding $1 billion for the second year running.[38] New media, which Spotify contributed

[37] ALICE ENDERS, GLOBAL MUSIC PUBLISHING 2016 6 (Jun. 28, 2016). A true and correct copy of the Enders Analysis report is attached hereto as Spotify Exhibit 38.
[38] SIMON DYSON, OVUM, ASCAP COLLECTIONS TOP $1BN FOR THE SECOND CONSECUTIVE YEAR 1 (May 9, 2016). A true and correct copy of the Ovum May 2016 report is attached hereto as Spotify Exhibit 39.

towards, recorded the biggest rise of all ASCAPs domestic income sources, with total collections increasing 36.3% to $56.1MM from $41.2MM in 2014.[39]

40. BMI has seen similar fortunes, and has registered a second consecutive year of record collections and distributions.[40] Total collections increased 4.6% in the 12 months to end-June, to $1,060MM, from $1,013MM in the 12 months to end-June 2015. Distributions grew 6.2% to $931MM from $877MM.[41] Digital revenue, which Spotify contributed towards, grew 50.5% to $152MM from $101MM.[42]

41. Thus, Spotify's contribution to American songwriters needs to be viewed in the dual context of payments from music publishers—which have reported flat or increasing revenues every year since on-demand streaming was introduced—and payments from the PROs—of which the two main U.S. PROs have reported "record collections" including significant increases in digital collections.

42. So what does this mean for U.S. music publishers and songwriters? First, Spotify has reduced piracy, which means it has reduced the unlicensed exploitation of publishers' works. Second, Spotify grows the ARPU of the entire U.S. population through its freemium model, reaching out to the minority who buy music and monetizing the lost majority who previously did not. Third, it's working—the U.S. music industry is growing at over 8 percent. Fourth, when you look at the overall revenues of labels and publishers, publishers can be seen to be making almost as much revenue from music copyright as labels do. In fact, publishers may have adapted better to the streaming model better than labels. Finally, publishers *continue to grow* (just as they have

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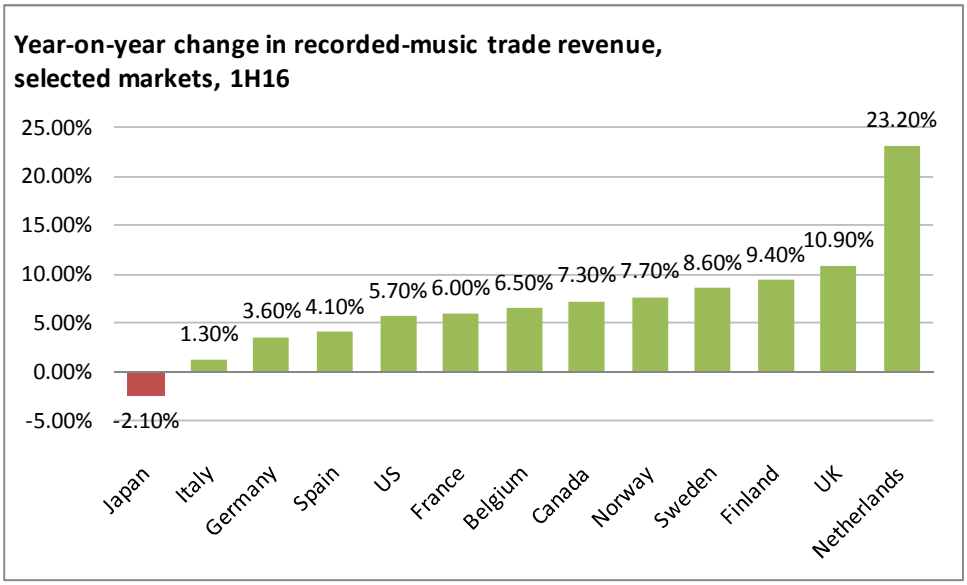
[39] *Id*. at 3.
[40] SIMON DYSON, OVUM, MUSIC STATISTICS ANALYSIS: FIRST ROUND-UP FOR SEPTEMBER 7 (Sept. 13, 2016). A true and correct copy of the Ovum Sept. 7, 2016 report is attached hereto as Spotify Exhibit 40.
[41] *Id*.
[42] *Id*. at 8.

been growing for the past decade and a half while record label revenues were falling), as do PROs.

43. These points can be brought together in the following chart, which presents a global picture of the recovery in music industry revenues. These revenues have been driven by streaming in general and Spotify in particular. Of the select markets which have reported mid-year results using their own methodologies and local currencies, you can see the headline growth rate in total revenues.[43]



44. Only one market, Japan, has reported a decline in the first half of 2016, and Spotify has only soft-launched in Japan in the second half of this year. As you read from left to right, the good news gets better. Recorded music revenues are not just growing, they are growing robustly. Indeed, to the right of the chart you can see Sweden, Norway, and the Netherlands. As already mentioned, these are our most established markets—markets we've not just been in for the longest, but been big in for the longest—and they are now growing at an accelerated rate.

[43] SIMON DYSON, OVUM, MIDYEAR TRADE RESULTS HINT AT A VERY POSITIVE YEAR FOR GLOBAL RECORDED-MUSIC SALES 2 (Sept. 26, 2016). A true and correct copy of the Ovum Sept. 26, 2016 report is attached hereto as Spotify Exhibit 41.

This bodes well for labels, artists, publishers, and songwriters as it refutes the often-held cynical view that Spotify's freemium model will reach a saturation point and flat-line. In the countries where this was most likely to happen, such as the countries with smaller overall populations, the opposite is holding true.

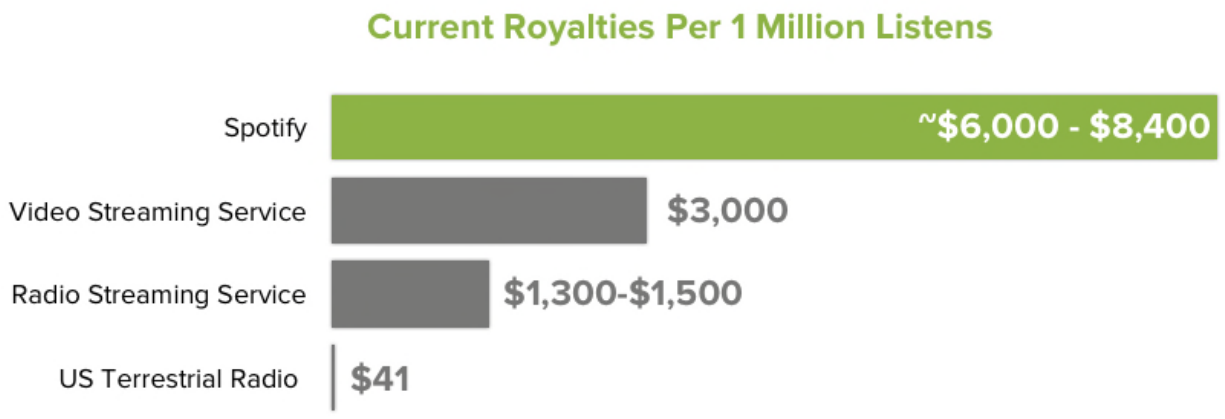
45. Quite simply, the music industry is growing, streaming is driving growth, and Spotify is driving streaming, making a significant dent into piracy and other non- or lesser-monetized sources of music listening in the process. Labels, publishers, artists, and songwriters have seen their prospects change from staring into the abyss in 2008 (note iTunes never once grew the *overall* market back then) to now reaping the benefit of this freemium model and the broader recovery it has driven in the U.S. and around the world.

The Competitive Landscape of Music

46. In this section, I will explain the competitive landscape that Spotify is a part of and needs to compete against. Spotify has attracted over 100 million monthly active users ("MAU")[redacted]. An illustration of the competitive landscape is important for considering where those users came from and where they might go if our ad-supported and paid products were adversely affected by the rate structure. Spotify users who previously used [redacted] FM radio and (as mentioned earlier) piracy know how to go back to their old sources of music. I will demonstrate that should that happen, *ceteris paribus*, publishers and songwriters would be worse off. The following table illustrates the difference between Spotify's ad-supported versus paid services, which is relevant background:

47. Spotify faces intense competition from other providers of music audio content, including terrestrial radio, satellite radio, and other digital music services. Spotify competes with these entities for listenership and advertising dollars. [redacted][44]

[44] A true and correct copy of the article, *How is Spotify Contributing to the Music Business?* (available at https://www.spotifyartists.com/spotify-explained/#how-is-spotify-contributing-to-the-music-business) is attached hereto as Spotify Exhibit 42.



48. Spotify is the modern-day answer to broadcast radio, albeit with enhanced functionality (like personalized music discovery capabilities and, for some users, the ability to stream any song on demand). The line between non-interactive and interactive streaming services, or, respectively, "lean back" and "lean forward" experiences, is eroding as music streaming matures [redacted].

49. Spotify users in any given moment may choose to "lean back" by simply putting on a playlist (whether created by users, Spotify's "Shows & Editorial" team, or Spotify's algorithms). This experience is much like the experience of a [redacted] user or someone listening to their favorite disc jockey on terrestrial radio: the user picks a station and the songs are chosen for them.

50. [redacted]

[redacted] Such lean back usage maximizes the availability of works to the public by promoting lesser-known artists and increasing the variety and number of artists listened to (as further discussed below and in my colleague Jim Lucchese's testimony), in turn creating greater returns for rightsholders.

51. **Competition with Broadcast Radio.** [redacted] Features like Discover Weekly and Release Radar are algorithmically-driven playlists that serve to introduce listeners to new music they may not have heard but which they will most likely enjoy, based on past listening preferences. Spotify's "Shows & Editorial" team also creates carefully-crafted playlists that contain more than just Billboard's Hot 100. These serve a promotional function much like traditional broadcast radio. With the introduction of podcasts for mobile devices—with which users can listen to a variety of talk content [redacted].

52. [redacted] Spotify's ad-supported service has limited "on-demand" functionality, prohibiting users from playing songs on-demand on a mobile device, but permitting them to play shuffled playlists. [redacted]

53. [redacted]

54.

55.

56.

[45] A true and correct copy of the MusicWatch Powerpoint Presentation, "Spotify Spring 2015 Research Agenda: Part 1," at 46, is attached hereto as Spotify Exhibit 43.

[48] Spotify Exhibit 27 at 13.

[redacted]

57. [redacted]

58. [redacted]

[redacted]

59. [redacted]

60. [redacted] Pandora is

[redacted]

set to launch yet another interactive music streaming product.[53] [redacted] Billboard reported that users can pay $3.99 per month to connect their Amazon Echo device to Music Unlimited (this price point only allows use of the service on one device). Amazon Prime members will also be able to subscribe to Music Unlimited for $7.99 per month, or $79.99 per year.[54] [redacted]

61. **Competition for Advertising Dollars.** Spotify's free-to-users ad-supported service, as the name implies, relies on advertising for its revenue. [redacted] Remarkably, in 2015 AM/FM radio still boasted advertising revenue of $17.4 billion, which has dipped only 1% since 2014.[55] To put that into context, more money is spent on advertising on AM/FM radio in the U.S. than the total IFPI stated value of the global recorded music market, which is about $15 billion.[56] Advertisers are aware that all these services are, at the end of the day, competing for the same

[53] A true and correct copy of the article, *Pandora to 'Unveil' On Demand Streaming Music Service on Dec. 6th*, published in 2016 (available at http://www.hypebot.com/hypebot/2016/10/pandora-to-unveil-on-demand-streaming-music-service-on-dec-6th.html) is attached hereto as Spotify Exhibit 49.
[54] A true and correct copy of the article, *Amazon Launches Three-Tiered Music Unlimited Streaming Services*, published on Oct. 12, 2016 (available at http://www.billboard.com/articles/news/7541029/amazon-music-unlimited-launch) is attached hereto as Spotify Exhibit 50.
[55] A true and correct copy of the article, *U.S. Radio Revenue: $17.4 Billion, Down 1% Last Year*, published on Mar. 3, 2016 (available at http://www.radioworld.com/article/us-radio-revenue-174-billion-down-1-last-year/278280) is attached hereto as Spotify Exhibit 51.
[56] Spotify Exhibit 1 at 8.

listeners, who have only a finite amount of time to devote to media—whether that is lean forward or lean back listening, or, on a broader level, whether it is watching Netflix or listening to music.

62. Another way to look at these services is to group them into categories by how they pay royalty licenses. "Licensed free" services are services such as the free [redacted] service that pay royalties to labels and publishers. "Partial-licensed free" services are services like terrestrial radio and [redacted] that are free-to-users services and for which either the service is statutorily obligated to pay only labels or publishers (such as terrestrial radio not paying record labels) or there is a reliance on statutory safe harbors (such as [redacted] and the DMCA safe harbor). "Unlicensed free" are services such as piracy that are free and pay no one. "Licensed paid" are services like [redacted] and [redacted] where the service pays both label and publishers and users pay to use the service.

63. Spotify is in competition with the services in each of these categories. Importantly, Spotify's freemium model offers a compelling alternative to partial-licensed free (such as terrestrial radio) and unlicensed free (piracy). It is in the interest of both rightsholders and Spotify to ensure that the dynamics of freemium continue to push consumers onto a path where their listening generates revenue on the free-to-users ad-supported tier, and, when they move down the "path to paid," the premium (or paid) tier. Conversely, if Spotify cannot continue to offer a compelling ad-supported product [redacted] And those who left these alternative free music services for Spotify's freemium proposition do know how to turn back. Listeners will always have the ability to get their music for free.

Spotify's Impact on Artists, the Public, and the Industry: Maximizing Availability to the Public and Returns to the Copyright Owner

64. One of Spotify's main missions is to maximize the utility of copyright both to rightsholders and to listeners in ways other than simply generating revenue for rightsholders and the company. Spotify does this by maximizing the amount of tracks available to a user, creating playlists and products that promote music discovery and tracks that are new to the user, and providing artists with data to help them connect with their fans and find avenues to non-streaming revenue.

65. As a streaming music service, Spotify maximizes the sheer number of tracks, albums, and artists available across sixty markets and to over 100 million users. Compare this with a physical record store. In 2005, Chris Anderson, editor-in-chief of Wired Magazine, estimated that the average Wal-Mart carried "just 4,200 CDs, for a total of about 50,000 tracks," down from 5,000 CDs (around 60,000 tracks) a year earlier.[57] By contrast, Spotify offers over 30 million tracks that can be instantly delivered to a user's laptop or mobile device.

66. Making an enormous catalog available does not always result in actual consumption of that catalogue. A study of U.K. PDD data from 2008 found that over 80 percent of the digital inventory went untouched.[58] Of the approximately 13 million tracks available on

[57] A true and correct copy of blog post, *Updated Music Data*, published on Jul. 7, 2005 (available at http://longtail.typepad.com/the_long_tail/2005/07/updated_data.html) is attached hereto as Spotify Exhibit 52. ("[T]he typical inventory of a conventional high street record store was around 4,000 CDs.").

[58] A true and correct copy of the article, *Chopping the Long Tail Down to Size*, published on Nov. 7, 2008 (available at http://www.theregister.co.uk/2008/11/07/long_tail_debunked) is attached hereto as Spotify Exhibit 53.

the digital shelf at that time, 10 million were dormant and hadn't received a single purchase.[59] Rightsholders in this "long tail" received little to no revenue.

67. Compare this number with the click-rate of Spotify tracks five years after its launch. In 2013, Spotify released public data showing that, of the over 20 million tracks then available on Spotify, *80%* had been streamed at least once.[60] As a result, Spotify is not just increasing the sheer number of tracks available to the public—it's ensuring that music can actually be heard.

68. Spotify has been able to promote streams of long-tail tracks through promoting user-created playlists, through carefully curating Spotify playlists, and, more recently, through introducing algorithmic tools that connect users with artists they may have never heard of but would likely love based on past user preferences.

69. One of the algorithmic tools is Spotify's Discover Weekly, a product on the Spotify platform that algorithmically creates a new playlist each week of tracks a user may not have heard before but may like. This is done individually each week for each user based on her past listening history.

70. The popularity and promotional effect of Discover Weekly cannot be disputed. In May 2016, Spotify released data showing that of the 100 million or so monthly active users Spotify had at the time, a little under half (around 40 million) had used Discover Weekly, and, of

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[59] A true and correct copy of the article, *The Long Tail of P2P* (available at https://www.prsformusic.com/creators/news/research/Documents/The%20long%20tail%20of%20P2P%20v9.pdf) is attached hereto as Spotify Exhibit 54. *See* Spotify Exhibit 54 at 8.

[60] A true and correct copy of the article, *We've Turned 5 – Here's Our Story So Far*, published on Oct. 7, 2013 (available at https://news.spotify.com/us/2013/10/07/the-spotify-story-so-far) is attached hereto as Spotify Exhibit 55.

that number, more than half listened to ten or more of the thirty weekly tracks suggested and saved at least one of the tracks to their favorites.[61]

71. One reason Spotify's discovery products are popular may be that they reduce discovery costs, or the time and effort it would otherwise take for a listener to find a new song she would like. Users who listen to a Spotify-curated or algorithmically-driven playlist are engaging in "lean back" behavior. These users are not actively searching for and playing songs they already know, but rather are allowing Spotify to *introduce them* to what they may like, just as traditional radio disc jockeys introduce listeners to new artists. Users in this state need not actively expend energy to try and *find* artists they will like. In turn, Spotify users spend more time actually *listening* to music.

72. [redacted]

[61] A true and correct copy of the article, *Discover Weekly Reaches Nearly 5 Billion Tracks Streamed Since Launch*, published on May 25, 2016 (available at https://press.spotify.com/bo/2016/05/25/discover-weekly-reaches-nearly-5-billion-tracks-streamed-since-launch) is attached hereto as Spotify Exhibit 56.
[62] Spotify Exhibit 43 at 34.

[redacted]

73. Broadcast radio and, more recently, non-interactive streaming, has traditionally been thought of as "promotional," and therefore justified in paying much lower royalties than interactive streaming, which has traditionally been thought of as substitutive of CD/PDD sales (due to the fact that listeners can engage in "lean forward" listening, where they actively search for, and play, songs).

74. However, the heavy use and promotional effect of Spotify-curated and algorithmically-driven playlists debunks that theory. Spotify's algorithmically-driven playlists aim to promote lesser-known and streamed artists. Spotify-curated playlists, created by Spotify employees, may include songs broken down by genre, top lists that are created based on popularity (showing what is popular globally, in the U.S., or what has gone "viral"), "mood" playlists (for example: "Chill," "Focus"), and playlists focusing on new releases ("New Music

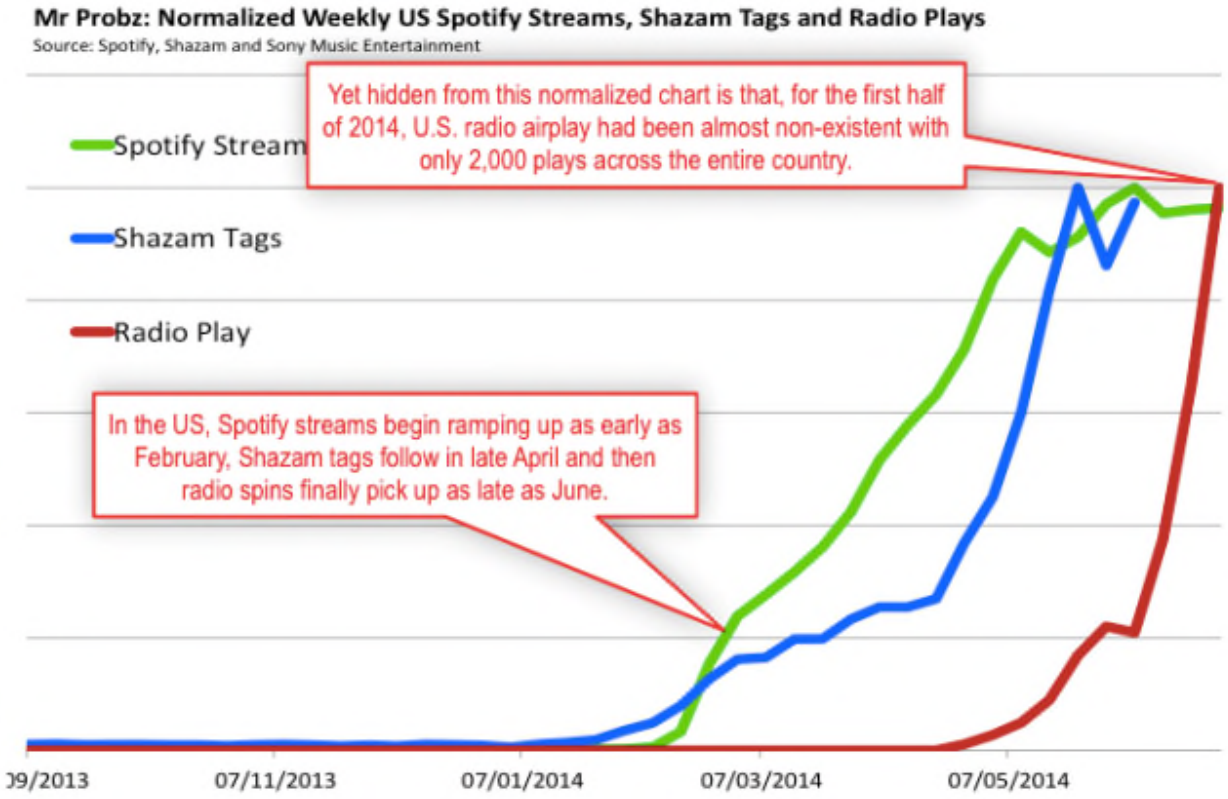
Friday," which includes the best new music of the week). The variety of options allows users to choose exactly what they are looking for in a "lean back" orientated way.

75. The use of Spotify's curated playlists is heavy, and continues to be on the rise. Thus, not only [redacted], but, like broadcast radio, Spotify *promotes* artists. And, even more remarkably, Spotify does so on an international level.

76. From a copyright owner perspective, Spotify's discovery products and promotional effects work. [redacted] The promotional value of Spotify-curated and algorithmically-driven playlists can be further illustrated in two simple case studies. Consider the case of the Dutch rapper Mr Probz.[63] His song, "Waves," had been heavily streamed on Spotify, but mostly in Europe, where the song received strong support from club DJs. But then something remarkable happened. In early February of 2014, the song started trending in the U.S. on Spotify. The source? Almost entirely curated, "lean back" playlists, which was in stark contrast to how the song was being streamed in Europe—through "lean forward" search. Most remarkably, the song began trending on Spotify a full *four months* before radio began spinning the track. The below chart, created from internal Spotify data, shows this progression (note that "Shazam" tags show that consumers have heard the song, whether at a

[63] A true and correct copy of the article, *Anatomy of a Hit: How Mr Probz Came to America*, published Sept. 30, 2014 (available at https://insights.spotify.com/us/2014/09/30/anatomy-of-a-hit-how-mr-probz-came-to-america) is attached hereto as Spotify Exhibit 57.

party, in a store, or at a club, and are using the app Shazam to figure out what the song is and who the artist is):[64]



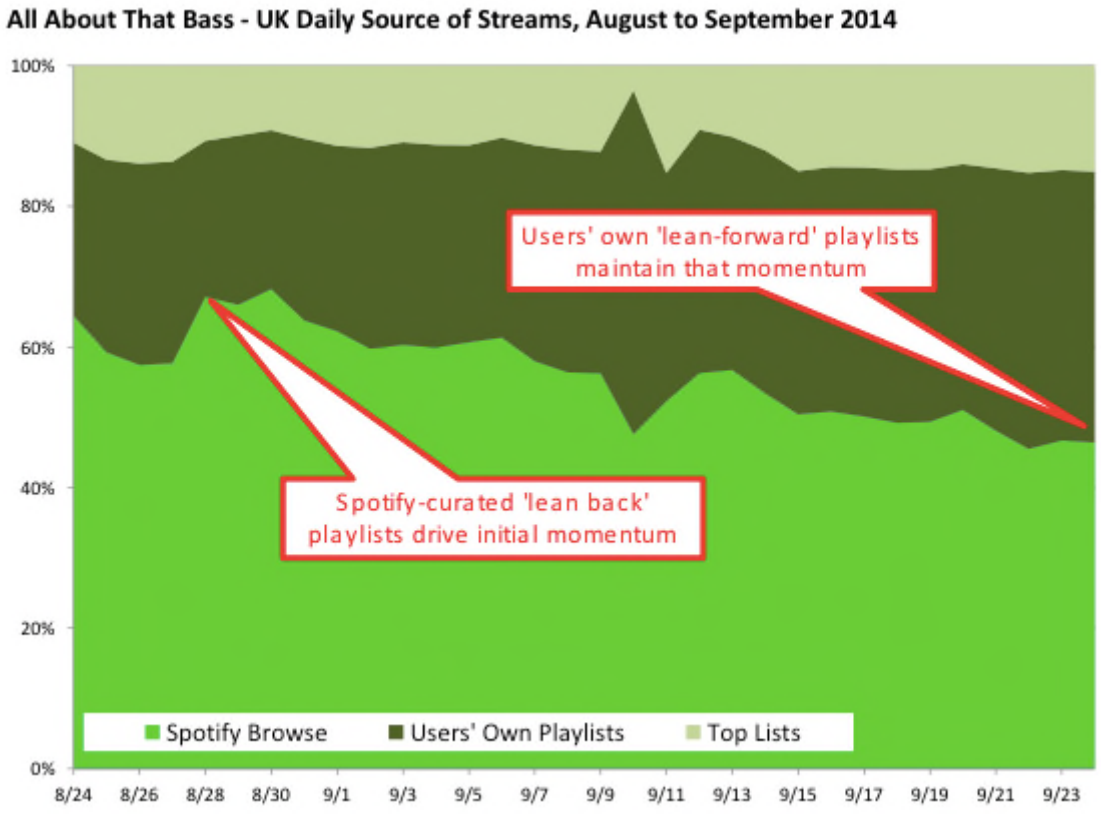
77. Thus, while conventional logic would dictate that radio spins are responsible for promoting a song that would then begin to be heavily streamed on Spotify, the story of Mr Probz illustrates that the age of interactive streaming can reverse the cycle. Spotify can *break out* an artist, and radio will follow.

78. Another case study for the artist Meghan Trainor essentially tells the story in reverse.[65] Meghan Trainor's extremely popular track, "All About That Bass," crossed U.S. borders onto U.K. charts based on Spotify streams. As the below chart illustrates, the track's

[64] The dates in this chart are DD/MM/YYYY.

[65] A true and correct copy of the article, *Anatomy of a Hit: How Meghan Trainor Made the UK Chart Without Selling Downloads* (available at https://www.spotifyartists.com/anatomy-of-a-hit-how-meghan-trainor-made-the-uk-chart-without-selling-downloads) is attached hereto as Spotify Exhibit 58.

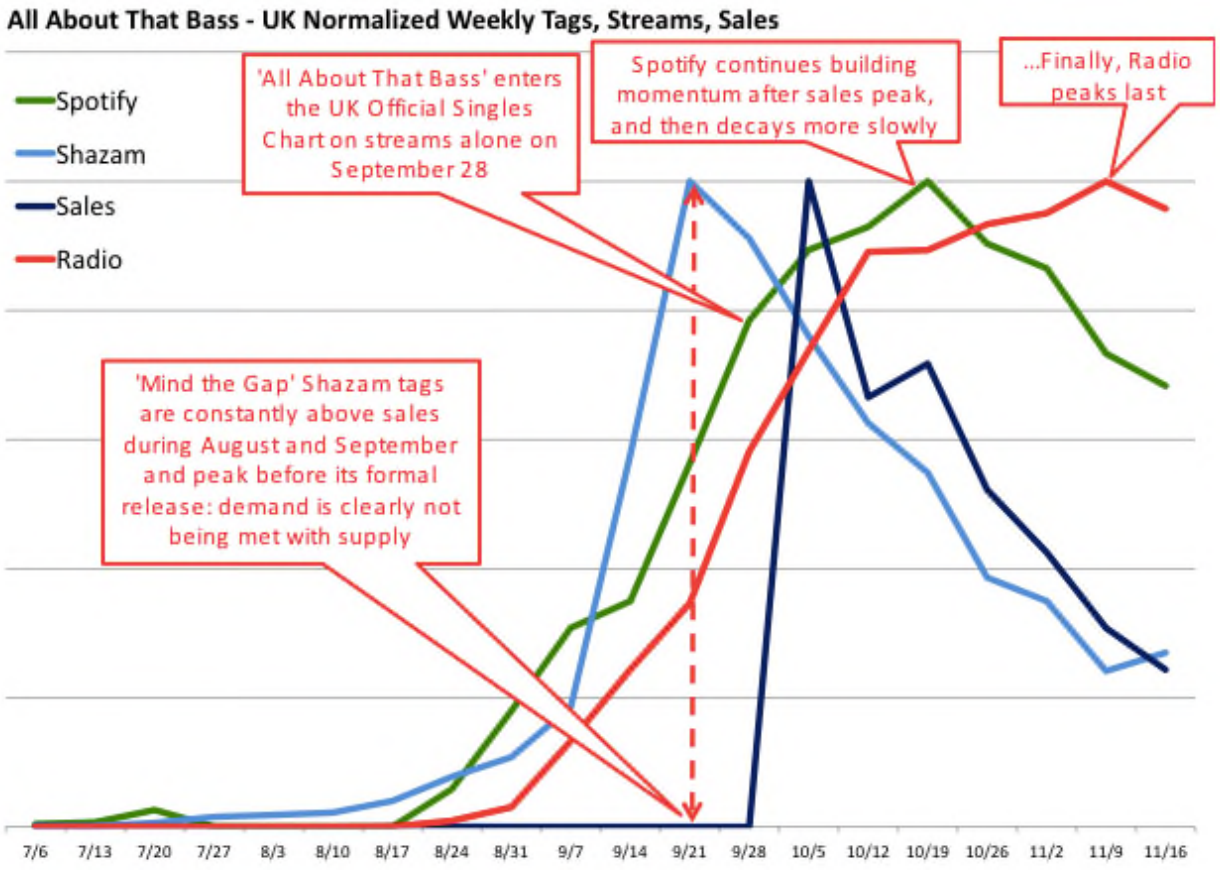
initial streams in the U.K. were driven entirely by Spotify-curated, "lean back" playlists (as illustrated in the light green area labeled "Spotify Browse," where Spotify presents users with a selection of Spotify-curated playlists), before users began adding the track to their own playlists.



79. Critically, the track was available a full *month and a half* on Spotify before it even went on sale in the U.K. as a download. The below chart shows that the entrance of the track onto the U.K. Official Singles Chart was based on *streaming alone*, on September 28—a full week before the track was released for download (on, for example, iTunes).[66] Note that radio plays peaked well after Spotify streams peaked. Interestingly, the Meghan Trainor example also shows that Spotify provides another value proposition to rightsholders—Spotify has cross-border

[66] *Id.*; a true and correct copy of the article, *Meghan Trainor Enters Charts on Streaming Alone* (available at http://www.bbc.co.uk/news/entertainment-arts-29404084) is attached hereto as Spotify Exhibit 59.

promotional capabilities that bypass the traditional, country-focused approach to music promotion.



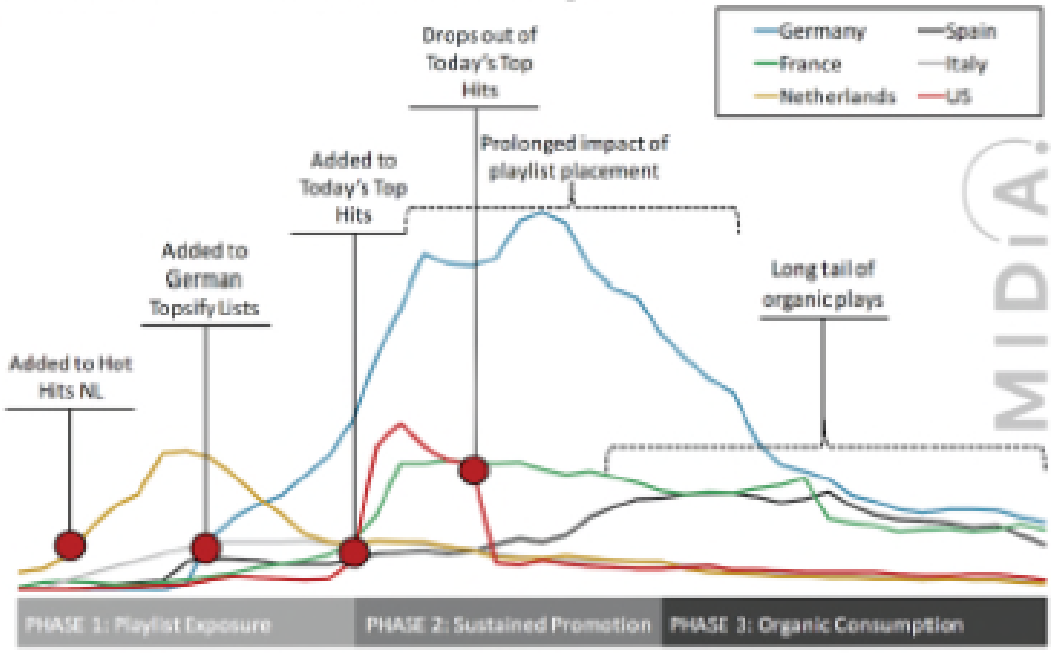
All About That Bass, in the UK

- **19 August** Spotify makes available ' 'All About That Bass' in the UK
- **28th September** With 1.17m streams, she climbed 20 places to Number 33 and makes chart history
- **29 September** iTunes and all download stores finally receive the track
- **5 October** All About That Bass goes straight to #1 when it went on sale selling over 100k copies.
- **16 December** To date, it's done over 500,000 downloads, over 10 million audio streams

80. The Mr Probz and Meghan Trainor case studies are just two examples of what is an established fact: Spotify helps break out artists (*i.e.*, it popularizes lesser-known artists). The below chart from a respected media and technology analysis company shows yet another example of this phenomenon, in which streams of the track "Goodbye" by the artist Feder turned a local French pop artist into an international success based on playlist exposure.[67]

[67] MARK MULLIGAN, MIDIA, CROSS BORDER LISTENING: BOARDERLESS HITS AND CURATED PLAYLISTS 10 (June 2016). A true and correct copy of the MIDiA report is attached hereto as Spotify Exhibit 60.

Figure 5: Border Breaker: Curated Playlists Transformed Feder From Local French Success To International Success
Spotify Streams Of Feder 'Goodbye (feat. Lyse)' March 2015 To December 2015 And Key Playlisting Activity

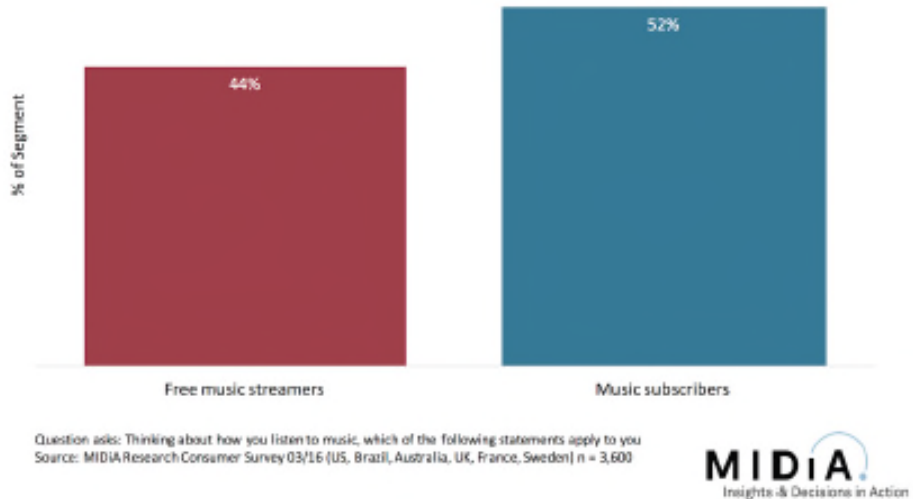


Source: Spotify

81. These data are consistent with data showing that those who subscribe to music streaming services have the most international music tastes.[68]

[68] *Id.*

Figure 4: Music Subscribers Have The Most International Music Tastes
Streaming Users That Say Streaming Services Help Them Discover More International Artists, By Segment



82. Spotify has also sought to increase its value proposition to artists and rightsholders by utilizing its user data and presenting it to artists in a way that allows them to connect with their fans.

83. My colleague Jim Lucchese's testimony explains in depth what products Spotify has invested in to help both artists and songwriters in the United States and around the world. One such product is Spotify Fan Insights, a new portal built by Spotify to benefit artists. This directly benefits singer-songwriters and independent producers who write their own songs, of course, and indirectly benefits other songwriters by, for example, increasing concert ticket sales. The key distinction between a Spotify feature like Fan Insights and the ownership model (CDs and PDDs) is that Spotify has a valuable trove of data on how content is actually being consumed. This provides new insights for artists and actionable evidence to help maximize returns to musical works owners. It is also free for them to use.

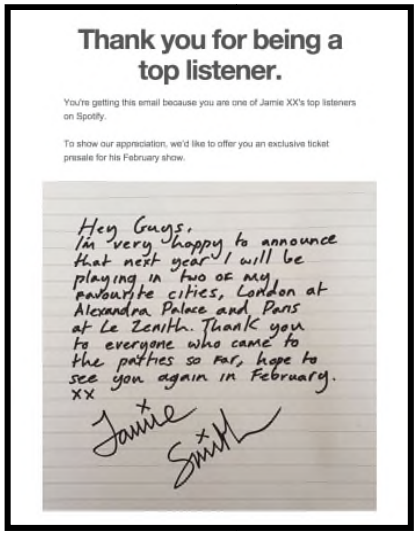
84. One example of Fan Insights I want to elaborate on is shown below. Top Cities ranks an artist's most popular cities during the past thirty days. This is real-time accurate analytics on where content is actually being *consumed*, not *sold*. It is also worth noting that New York City is broken out into boroughs.

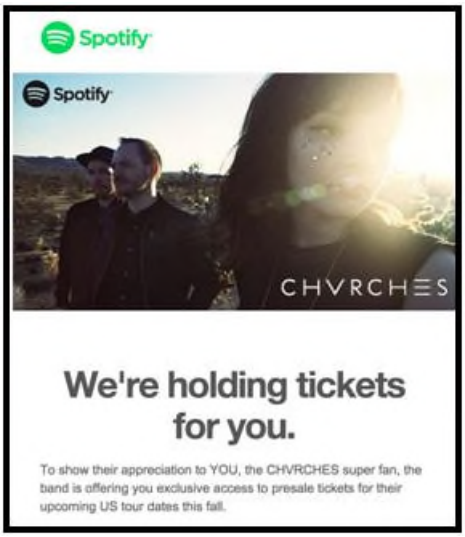
AUDIENCE SONGS PLAYLISTS

Top 50 Cities by Monthly Listeners

1	Manhattan	26.1k	26	Minneapolis	4.7k
2	Los Angeles	22.5k	27	Barcelona	4.7k
3	London	19.4k	28	Melbourne	4.6k
4	Chicago	14.9k	29	San Jose	4.4k
5	Mexico City	13.9k	30	Istanbul	4.2k
6	Brooklyn	13.7k	31	Phoenix	4.2k
7	San Francisco	12.3k	32	Brisbane	4.1k
8	Houston	10.3k	33	Santiago	4k
9	Seattle	8.9k	34	Stockholm	4k
10	Denver	7.9k	35	Oakland	3.6k
11	Washington	7.8k	36	Central District	3.4k
12	Singapore	7.3k	37	Oslo	3.4k
13	Madrid	6.5k	38	Salt Lake City	3.4k
14	Sydney	6.5k	39	Baltimore	3.3k
15	Dallas	6.4k	40	Warsaw	3.3k
16	Bronx	6.3k	41	Perth	3.2k
17	Boston	6.1k	42	São Paulo	3.2k
18	Toronto	5.9k	43	Montréal	3.2k
19	Austin	5.7k	44	San Antonio	3.1k
20	Atlanta	5.7k	45	Vancouver	3k
21	Miami	5.5k	46	Amsterdam	3k

85. Real-time insights (which are free for artists) are valuable in that you know who your fans are, how intensively they are listening, what playlists they are listening on, and where they are listening from. With this information, an artist can easily target these fans when it comes to, for example, planning and selling tickets to live concerts. The example below shows how Spotify is experimenting with this via pre-sales. Spotify can target an artist's "hardcore" fan base and reward them with tickets before they go on sale. This allows the creator to forge a closer relationship with the consumer and enhance their returns.





86. What does all this mean for publishers and songwriters? It means more money for them. Live performances of a songwriter's works are licensed by PROs and a royalty is distributed back to the songwriter(s) whose work(s) were performed on stage. This value-add for publishers and songwriters is not insignificant and is on top of the revenue generated from streams.

Concluding Remarks

87. Spotify is indisputably changing the music landscape for the better. It does so by *reducing* piracy, in turn reversing the downward trend in music industry revenues since the advent of Napster. We are now witnessing a long-awaited "sea change" in fortune for rightsholders, or as Ed Christman from Billboard magazine recently remarked: "what labels hoped would happen seems to be happening."[69]

88. The music industry is recovering, streaming is driving the recovery, and Spotify's freemium model is driving streaming. [redacted]

[69] Spotify Exhibit 33.

[redacted] All of these services generate less royalties for publishers and songwriters than Spotify's freemium (or "path to paid") service. Our value proposition to music publishers and songwriters means losing these users to the existing alternatives would be a net-negative for these and other rightsholders' welfare.

89. Finally, Spotify benefits artists and songwriters by increasing the diversity and amount of music listened to by users. Whether it's through algorithmically-curated playlists or the social act of sharing a playlist, Spotify broadens that world, such that listeners are exposed to artists they may never have heard of and who may not get any radio play. Spotify continues to invest and innovate every day. As my colleagues Barry McCarthy and Nicholas Harteau testify, Spotify invests millions into ensuring that we are on the cutting-edge of technology every single day in order to benefit artists, songwriters, publishers, the public, and the music industry as a whole. The benefits of our model are distinct and without precedent—just as the recovery that we are now seeing across the global music industry is also distinct and without precedent.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF WILL PAGE

I, Will Page, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31 day of October 2016 in London, United Kingdom.

Will Page

PUBLIC

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN REBUTTAL TESTIMONY OF WILL PAGE

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Will Page. I am the Director of Economics at the Spotify group of companies ("Spotify"). I previously provided testimony during the direct phase of this proceeding.

2. I offer this rebuttal testimony to address several issues raised in the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International (collectively, "Copyright Owners") Written Direct Statements ("WDT").

3. As I describe below, the Copyright Owners' testimony cherry-picks selective microeconomic case studies while ignoring the relevant macroeconomic trends, and by doing so misconstrues the issues. In particular, (a) the Copyright Owners' cannibalization argument obscures or outright ignores several critical facts, including the fact that streaming pays both mechanical *and* performance royalties and that the supply of musical works is increasing, not decreasing; (b) the Copyright Owners' focus on anecdotal examples of specific cherry-picked

"hits" receiving less in royalties in one calendar year fails to mention that overall revenue to both publishers and songwriters has increased with streaming; (c) the justifications Copyright Owners advance in support of their rate proposal are not only flimsy and conclusory but also will ultimately hurt publishers, songwriters, and the consuming public; and (d) the risk publishers take by issuing advances is more akin to high-interest loans than creative investment, and relative to other parts of the music ecosystem, publishing is generally a stable, low-risk industry.

4. As shown in my WDT and as I will further show in this Rebuttal, the new streaming/access paradigm *works*, and it works to the benefit of a greater number of songwriters and publishers than under the old ownership model. The global value of music copyright for labels and publishers grew by almost $1 billion in 2015, and all indicators point towards an accelerating global recovery in 2016 – especially in the U.S. Below, I further expand on why Spotify has benefitted both the consumers and creators of copyright alike, and why the Copyright Owners' rate proposal will ultimately harm not just digital services, but the public, rightsholders, and the music industry landscape as a whole.

Copyright Owners' "Cannibalization" Argument Is Wrong: Ownership Was on the Decline *Before* Streaming, and Streaming's Ascent Has Boosted Publishing's Recovery

5. One of the Copyright Owners' pervasive themes is the alleged dwindling fortunes of songwriters due to falling mechanical royalties. Indeed, the Copyright Owners would have the Judges believe that the fate of the music publishing industry has never looked so dire.[1]

[1] *See, e.g.*, Witness Statement of Bart Herbison ("Herbison WDT") at ¶ 31 ("The combination of rapid technological changes, low rates for compulsory mechanical licenses and archaic consent decrees, are devastating the American songwriting industry. In Nashville and across the United States there are alarmingly fewer songwriters than there were just a few years ago."); Witness

6. In this version of the story, streaming services are the villain. *See, e.g.*, Witness Statement of Peter Brodsky ("Brodsky WDT") at ¶ 77 (describing how "[e]ven as recently as five years ago, a song as popular as 'Fight Song' would have earned significantly greater mechanical royalty revenues than those earned by 'Fight Song,' and I believe the reason is the lower royalties paid by interactive streaming services"). But the Copyright Owners' testimony does not tell the whole story. Notably, Copyright Owners wholly omit: (a) any discussion of *performance* royalties, which streaming services also pay—and half of which goes directly to songwriters; (b) data on whether fewer works are being created than before; and looking at publicly-available data shows an *increase* in works created; and (c) a discussion of *piracy*, which, along with the availability of other services like YouTube, actually created the shift from ownership to access.

A. Streaming Pays Both Performance and Mechanical Royalties

7. Notably, the Copyright Owners focus solely on decreasing mechanicals from CD/PDD sales as evidence of streaming's damage to songwriters. But this focus on streaming vs. CD/PDD mechanicals also fails to mention that the two are not an apples-to-apples comparison, since streaming currently pays *both* performance *and* mechanical royalties. In fact, performance royalties from streaming are actually worth *more* to songwriters than mechanicals from physical

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Statement of David Israelite at ¶ 68 ("Nonetheless, mechanical royalties paid to music publishers have continued to decrease year after year in recent history, to a point where I have never seen mechanical royalties, as a percentage of revenues paid to the music publishing industry, lower than they are presently."); Witness Statement of Steve Bogard ("Bogard WDT") at ¶ 5 ("If the statutory mechanical rate structure for interactive streaming is not substantially increased to provide songwriters fair compensation for their contributions, successful professional songwriters who can no longer support themselves and their families will continue leaving the business at a faster rate.").

or PDD sales. That is, whereas mechanicals flow through publishers first before they are passed on to songwriters, songwriters receive their share of the performance royalties *directly* from the PROs.[2] *See* Witness Statement of David Kokakis ("Kokakis WDT") ¶ 21 ("[T]he writer's share of public performance royalties is almost always paid directly to the songwriter by the songwriter's performing rights organization…."). And, because publishers do not receive the 50% of performance income that is passed directly to songwriters, publishers are not booking that portion as revenue. Therefore, focusing solely on *publisher mechanical revenues* obscures the true amount of royalties that streaming provides to both publishers *and* songwriters.

8. In any event, independent evidence suggests that even the 50% of performance revenues publishers receive is enough to replace declining mechanicals. Separate data from MiDiA Research shows that [redacted].[3] And of course, this data does not take into account the fact that *songwriters* are better off under the streaming structure because they are receiving more revenue directly from PROs—royalties that publishers cannot directly apply toward the recoupment of any advances.

9. Indeed, the Copyright Owners' argument that "the rate of recoupment has dropped significantly"[4] also glosses over this important fact. Whereas mechanical rights management agencies pay mechanical royalties entirely to publishers, who may then hold on to

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[2] A true and correct copy of Kristin Thomson, *Music and How the Money Flows*, FUTURE OF MUSIC COALITION (Mar. 10, 2015), http://futureofmusic.org/article/article/music-and-how-money-flows, is attached hereto as Spotify Exhibit 2.

[3] [redacted]. Witness Statement of Annette Yocum ("Yocum WDT") ¶ 22.

them to recoup advances, the PROs pay a portion of performance royalties directly to songwriters. *See* Kokakis WDT ¶ 21 ("[T]he writer's share of public performance royalties...*is not in any instance used to recoup the advance*.") (emphasis added).

10. Thus, when comparing mechanical and performance royalties, the "pure mechanicals" model of physical sales stands to benefit publishers more on a dollar-to-dollar basis than performance compensation to songwriters. To the extent publishers may be slower in recouping advances under the streaming model, this is because streaming has shifted the songwriter compensation structure from a pay-publishers-only-mechanical model to, in part, a pay-songwriters-directly (and pay publishers separately) performance-plus-mechanical royalty model.

11. As such, the Copyright Owners' story about falling mechanical revenue is a straw man that focuses only on half of the equation—for publishers only. If what Copyright Owners are seeking is for Digital Services to make up for lost revenue due to declining physical/PDD sales (a proposition that in itself is absurd, as I explain below), then they must first acknowledge that a pure mechanical-mechanical comparison between CD/PDD and interactive streaming is inappropriate. By ignoring the amount of performance royalties generated by streaming, and the fundamentally different payment structure that entails, the Copyright Owners paint an incomplete and wholly inaccurate picture of the health of the publishing industry in their WDT.

B. The NMPA Hasn't Provided Actual Evidence That the Supply Side is Drying Up

12. Likewise, the Copyright Owners' anecdotal testimony as to how more songwriters are fleeing the profession due to poor returns is not consistent with the actual data, nor does it

provide any insight into actual trends.[5] On the contrary, The New York Times reported that Office of Employment Statistics ("OES") data show that songwriters "saw their average income rise by nearly 60 percent since 1999"—the year Napster was introduced.[6] According to OES statistics, "in 1999 there were nearly 53,000 Americans who considered their primary occupation to be that of a musician, a music director or a composer; [while] in 2014, more than 60,000 people were employed writing, singing or playing music. That's a rise of 15 percent, *compared with overall job-market growth during that period of about 6* percent."[7] That is, "[s]omehow the turbulence of the last 15 years seems to have created an economy *in which more people than ever are writing and performing songs for a living*."[8] Notably, The New York Times points out that job market growth overall has been slow because of the recession.[9] Therefore, to the extent *some* songwriters are suffering, the Copyright Owners haven't shown causation, and the songwriters' anecdotal circumstances could be for any number of reasons, including the overall recession.

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[5] *See, e.g.*, Herbison WDT ¶ 31 ("By NSAI's approximation, roughly 80% to 90% of songwriters in Nashville who earned a full-time living from royalty payments on songs released by recording artists are no longer signed to a publishing deal, no longer writing songs as a profession and no longer receiving royalties from new titles. The decline in Nashville is consistent with trends in the songwriting industry nationwide."); Bogard WDT ¶ 5 ("If the statutory mechanical rate structure for interactive streaming is not substantially increased to provide songwriters fair compensation for their contributions, successful professional songwriters who can no longer support themselves and their families will continue leaving the business at a faster rate. Talented young songwriters will not choose the songwriting profession if they can't earn enough to support themselves and their families.").

[6] A true and correct copy of Steven Johnson, *The Creative Apocalypse That Wasn't*, N.Y. TIMES (Aug. 19, 2015), http://www.nytimes.com/2015/08/23/magazine/the-creative-apocalypse-that-wasnt.html?_r=0, is attached hereto as Spotify Exhibit 4.

[7] *Id.* (emphasis added).

[8] *Id.* (emphasis added).

[9] *Id.*

13. The Copyright Owners' drastic proclamations regarding the dire straits of the songwriting industry are also contradicted by PRO data showing that more songwriters are joining year after year. Indeed, a recent ASCAP annual report stated that "[m]ore than 40,000 music creators joined ASCAP in 2014."[10] Likewise, a recent BMI annual review also reported "56,000 new songwriters, composers and publishers" joining BMI in 2015.[11] The statistics simply don't bear out Copyright Owners' claims that the supply side is drying up.

14. Works in the ASCAP/BMI repertory are also increasing. A review of relevant BMI court filings from 2009 to 2017 shows this supply-side increase:

- **2009**: 400,000 Affiliated Songwriters and 6.5 million works[12]
- **2014:** 7.5 million works[13]
- **2016**: 700,000 Affiliated Songwriters and 10.5 million works[14]
- **2017**: 750,000 Affiliated Songwriters and 12 million works[15]

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[10] A true and correct copy of the ASCAP 2014 Annual Report (at 9), https://www.ascap.com/~/media/files/pdf/about/annual-reports/ascap_annual_report_2014.pdf, is attached hereto as Spotify Exhibit 5.

[11] A true and correct copy of the BMI 2014-2015 Annual Review (at 15), https://www.bmi.com/pdfs/publications/2015/BMI_Annual_Review_2015.pdf, is attached hereto as Spotify Exhibit 6.

[12] A true and correct copy of the Response of Broadcast Music, Inc. to the Petition of WPIX, Inc., et al. (at 3) in *WPIX, Inc., et al. v. Broadcast Music, Inc.*, C.A. No. 09-cv-10366, is attached hereto as Spotify Exhibit 7.

[13] A true and correct copy of the Verified Complaint (at 2) in *Broadcast Music, Inc., et al. v. Flatiron Room Operations LLC, et al.*, C.A. No. 14-cv-1970, is attached hereto as Spotify Exhibit 8.

[14] A true and correct copy of the Response of Broadcast Music, Inc. to the Petition of ESPN, Inc. for the Determination of Reasonable Final License Fees (at 4) in *ESPN, Inc. v. Broadcast Music, Inc.*, C.A. No. 16-cv-1067, is attached hereto as Spotify Exhibit 9.

[15] A true and correct copy of the Petition of Broadcast Music, Inc. for the Determination of Reasonable Interim License Fees (at 3) in *Broadcast Music, Inc.v. Radio Music License*

15. As evidenced by the above numbers, between March 2016 and January 2017, according to the documents BMI itself filed in federal district court, the number of works in BMI's repertoire grew by 1.5 million, or about 167,000 works each month. Furthermore, it looks like the rate of production of new works is dramatically increasing as well: compare a 1 million increase in works from 2009 - 2014, followed by 4.5 million in 2014 - 2017.[16]

16. Overall, the evidence suggests that the number of songwriters and musical works are growing or, at the very least, not diminishing at a rapid pace.

C. The Shift From Ownership to Access Happened Well Before Streaming, and Streaming Is Helping with the *Recovery*

17. If anything, streaming has been the reason for U.S. publishing's *rebound* in the past several years. As the attached International Federation of the Phonographic Industry ("IFPI") data (which measures label revenue) show, [redacted].[17] This was *11 years* before Spotify, the largest interactive streaming company, launched in the U.S.

18. Nor did the launch of iTunes in 2003 stem this free-fall. As also shown in IFPI data, [redacted]. In fact, if iTunes can be said to have changed the industry landscape in any way, [redacted]

Committee, Inc., C.A. No. 17-cv-00004, is attached hereto as Spotify Exhibit 10.

[16] ASCAP/BMI numbers are a far more reliable indicator of the health of American songwriting versus any testimony specific to, say, NSAI, or to a specific publisher. This is because ASCAP/BMI are open to all comers, and therefore not susceptible to the whimsies or other operating limitations of a specific publisher or a specific group of songwriters (like NSAI).

[17] [redacted]

[redacted] PDDs were not the savior of the music industry—if anything, the introduction of PDDs likely contributed to decreasing revenues by allowing consumers to spend only $0.99 on the song they actually want to listen to, rather than $11.99 on an album just for one song they want to listen to and 11 other songs they did not want.[18]

19. Indeed, at times, it is unclear if the Copyright Owners themselves know what caused the changing state of the industry, as they cite to the "sales of digital media (sold increasingly as unbundled tracks)" as one of the "changes [that] have profoundly affected the ways in which music is distributed and consumed, disrupted traditional business models, and reduced overall revenues."[19] Yet in other places, the Copyright Owners insist that "interactive streaming is cannibalizing physical sales and downloads" and hold up the 9.1 cents per download as a hero number versus "micro-pennies per stream." Herbison WDT ¶ 6. The Copyright Owners have their story wrong. PDDs are not the hero, streaming services are not the villain, and CDs are not the eternal return. Access is the future, and Spotify is providing fair and growing returns to artists and songwriters for that service. Given their proposed rate for mechanical royalties, it appears that Copyright Owners are unwilling to adapt to the new digital model and instead are either hoping for a statutorily-imposed subsidy from the Digital Services to compensate for

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[18] A true and correct copy of Glenn Peoples, *Recording Industry 2015: More Music Consumption and Less Money, That's Digital Deflation*, BILLBOARD (Jan. 7, 2016), http://www.billboard.com/articles/business/6835350/recorded-industry-2015-consumption-grew-revenues-digital-deflation, is attached hereto as Spotify Exhibit 12 [*hereinafter* RECORDING INDUSTRY 2015] ("Money spent on physical purchases were only partially replaced by money spent on downloads. Consumers were able to spend less when previously bundled tracks became unbundled and a la carte shopping was made possible. Many people opted to buy a few tracks (or obtain illegally, although piracy is a separate issue) rather than the entire digital album. Physical formats didn't offer that choice.").

[19] Expert Report of Jeffrey A. Eisenach ("Eisenach WDT") ¶ 41.

changing consumer behavior or, if streaming were decimated, to force consumers to return to CD and/or PDD purchases.

20. But fighting against consumer behavior is pure wishful thinking. As described in my prior testimony, *streaming services* did not cause the decline in ownership. *See* Page WDT ¶ 30 (showing Canadian data that digital album sales began falling before streaming was even introduced in that country). Nor did interactive streaming cause the shift from ownership to access: YouTube and piracy—both "access" services—were available and popular before interactive streaming.

21. More importantly, consumers aren't going to shift back to old listening habits even *if* interactive streaming went away—they'd just go back to other access models like piracy or YouTube. As explained in my WDT, [redacted].[20] As I describe *infra*,[21] [redacted].

<u>The Copyright Owners' Focus on the Microeconomics of the "Effective" Per-Play Rate Again Conveniently Ignores the Macroeconomics of An Increasing Pie</u>

22. The Copyright Owners' justifications for a per-play rate, just like its mechanicals-mechanicals comparison, conveniently ignore that overall publishing industry revenue is *up*.

[20] *E.g.*, Page WDT ¶¶ 56 & 57.
[21] ¶ 48.

Below, I first discuss why the Copyright Owners' focus on the "inherent" value of a play is unprecedented in a publishing industry that operates almost exclusively on a percentage-of-revenue basis. Next, I focus on why discussions of a "per-play" rate obscures the more important point that overall publishing revenue is *up* under streaming. Likewise, the Copyright Owners' focus on revenue generated by individual "hits" also misses this point—and misses the greater point that streaming enables distribution to a *wider variety* of artists, not just the "top 40" radio stars.

A. The Copyright Owners Cannot Name One Scenario in Which Musical Works Are Licensed on a Per-Play Rate

23. The Copyright Owners' argument for why their rate proposal—which incorporates a per-stream component for the total amount paid by Digital Services—is appropriate rests on the argument that a "percentage of revenue prong is problematic precisely because it is not tied to a fixed per play rate. Musical works have inherent value and the Digital Services should pay more when their users stream or play more music." Brodsky WDT ¶ 68.

24. This argument ignores the realities of music promotion and consumption. Terrestrial radio—which the Copyright Owners cite to again and again as a positive counterexample in contrast to the Digital Services[22]—like interactive streaming pays on a percentage-of-revenue basis.[23] Nor does this argument apply to consumption such as CD and PDD sales, the other example Copyright Owners routinely hold up. Once a consumer purchases a

[22] *See* Witness Statement of David M. Israelite ("Israelite WDT") at ¶ 66; Witness Statement of Lee Thomas Miller at ¶ 7 ("Today the one thing keeping us working is the performance royalty from terrestrial radio.").
[23] *See* Page WDT ¶ 26 & n. 27.

CD or PDD, they can access the music—by playing a song—as often or as little as they would like. There is no "per-play" charge in either, contrary to the Copyright Owners' argument that "users' consumption" forms "the basis of most statutory rates, including the rates for Subpart A products such as downloads." Israelite WDT ¶ 39. There is simply no precedent in the musical works context as a whole (including in the CD/PDD context), for the Copyright Owners' argument that "Digital Services should pay more when their users stream or play more music" (Brodsky WDT ¶ 68) for interactive consumption.

B. Copyright Owners Fail to Mention That Overall Publishing Revenue is Increasing

25. Next, the Copyright Owners argue that a per-play rate would eliminate "some cases [where] the number of streams per month is growing at a more rapid rate than the revenue," resulting in cases where "a songwriter can have more streams than in a prior month and actually make less money." Israelite WDT ¶ 39.

26. The Copyright Owners' argument that in *some* cases number of streams per month grows at a more rapid rate than revenue paints an inaccurate picture, and this unerring focus on per-stream microeconomics overlooks the greater macroeconomic picture. Spotify has demonstrated that stable microeconomics (a steady royalty stream) has resulted in scalable macroeconomics (a thriving industry), essentially optimizing the trade-off for both parties while (a) simultaneously competing with lower-royalty services like non-interactive streaming or zero-royalty services like piracy and, in turn (b) driving the recovery.

27. Indeed, *overall publishing revenue is up,* as I showed in my WDT. *See* Page WDT ¶¶ 36-37. In 2015, publishing generated *$10.4 billion* in revenue to labels' $13.98 billion,[24] debunking the "David and Goliath" argument that the Copyright Owners consistently present in this rate proceeding about the dwindling fortunes of publishers.[25] That is, *publishing brought in 42.7%* of the total music copyright global revenue in 2015—just a bit less than labels. The 2015 data also shows that performance right collections constituted *28%* of the *total overall global revenue for music copyrights, and mechanicals brought in an additional 6.5%.*[26] This data on the global value of musical works copyright produces two valuable insights. First, the growth in CISAC (the International Confederation of Societies of Authors and Composers) -sourced mechanicals (+$73 million) actually *off set* the decline in non-CISAC-sourced mechanicals (-$70 million).[27] Second, the global value of musical works was $10.397 *billion* globally in 2015—only a few billion less than labels, which brought in $13.975 billion globally in 2015. These figures illustrate actual parity between the Copyright Owners and record labels.

28. Moreover, interactive streaming services like Spotify pay out *more* Average Revenue per User (ARPU) to rights holders than either CD/PDDs or terrestrial radio, contrary to

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[24] A true and correct copy of Tim Ingham, *The Global Music Copyright Business is Worth More Than You Think—And Grew By Nearly $1Bn Last* Year, MUSIC BUSINESS WORLDWIDE (Dec. 13, 2016), http://www.musicbusinessworldwide.com/the-global-music-copyright-business-is-worth-more-grew-nearly-1bn-last-year/, is attached hereto as Spotify Exhibit 13 [*hereinafter* 2016 MBW].

[25] *See, e.g.*, Kokakis WDT ¶ 73 ("[T]he current rate structure has also resulted in strikingly low payments to songwriters for even the biggest of hits. Those songwriters and their publishers have suffered economically....").

[26] Spotify Exhibit 13, 2016 MBW.

[27] CISAC is the "umbrella" organization for many of the world's collecting societies.

the Copyright Owners' testimony.[28] As I testified to in my WDT, the average Spotify user pays more in royalties to publishers and songwriters each year than the average CD/PDD buyer. *See* Page WDT ¶¶ 27-28 (the average CD/PDD buyer paid only $[redacted] per year in musical works royalties, compared with $[redacted] for the average Spotify paid user and $[redacted] for the average Spotify user generally, including ad-supported). It is my understanding that Dr. Leslie Marx's testimony will also show that Spotify's ad-supported service alone pays out more royalties per listening hour than terrestrial radio, a crucial comparison at the unit level.

29. **Synch Licenses Are Inappropriate Comparisons.** As I discussed above, publishers' diverse income streams (many of them more lucrative than labels) place them almost at parity with labels, unlike the David-and-Goliath tale Copyright Owners paint in their WDT. Yet the Copyright Owners' attempt to argue for parity with labels *in mechanical rights* by using the synch license as a benchmark ignores crucial dynamics of the industry. Dr. Eisenach opines that synchronization licenses show a 1:1 ratio of rates paid for sound recordings relative to musical works, and therefore serve as an appropriate comparison to the rights at issue in this proceeding. However, Dr. Eisenach's testimony ignores the differences between the consumption patterns and demand dynamics between music played on movies and television shows—for which synchronization licenses are needed—and music played on a Digital Service—for which mechanicals are needed. Music in films and TV shows are chosen for a variety reasons, including for the fit of the underlying composition to the movie or show—the musical notes and lyrics of the songs. The artist who performs the recording is, in likely many

[28] Eisenach WDT ¶ 69.

respects, a secondary consideration. By contrast, the performing musician will have a greater impact on a consumer's choice to listen to a song on a streaming service. Thus, while a film or TV show can pick a cover band for a song, an Adele cover is generally not as popular as the original song. This dynamic makes the rights for the underlying composition more valuable in synchronization licenses than in mechanical licenses.

C. That Cherry-Picked Individual Songs May Bring in Less Royalties Tells Us Nothing About the Overall Impact of Streaming for All Songwriters.

30. Copyright Owners' anecdotes regarding specific "hits" likewise tell us less than figures showing overall industry revenue. *See, e.g.*, Kokakis WDT at ¶¶ 50-54 (comparing a hit in 2011 by Adele to a hit in 2015 by Imagine Dragons, or, a hit in 2015 by Nick Jonas to a hit in 2010 by Justin Bieber). Rather than focus on overall revenue, which, again, has either remained flat when streaming was introduced or, as streaming has ascended in the past three years, increased, Copyright Owners choose to present stories from isolated "hits," which are disparate comparisons. For example, it is unclear why Copyright Owners compare a 2010 song by one of the world's most well-known artists, Adele, which peaked at *Number 1* on the Billboard *Hot 100* chart, to a 2015 song by a lesser-known rock group, Imagine Dragons, which merely peaked at Number 3 on a completely different chart—the Billboard *Hot Rock* chart. Further, it is unclear why Copyright Owners present *2015* sales figures for Nick Jonas' track "Jealous" when the single was released in the U.S. and Canada in 2014, as compared to 2010 figures for Justin Bieber's "Baby", as that track was, appropriately, released that same year. Regardless, the import of the Copyright Owners' decision to focus on hits is clear: Copyright Owners' case is focused

on a radio-centric, "top 40s" paradigm, where a few songs are expected to bring in all the revenue.

31. But streaming has the ability to shift this paradigm for the benefit of all songwriters. Spotify has increased revenue going to "long tail" artists and songwriters by increasing listening diversity, as discussed in my WDT (*see* pp. 28-40) and as has been widely reported in the industry. IFPI's annual report quotes top label executive Per Sundin as stating: "[redacted]"[29] Similarly, an executive from Sony Music Entertainment stated: "[redacted]"[30]

32. Therefore, streaming's access model helps level the playing field, whereby consumers are able to access more music and exercise more choice, and publishers and songwriters both large *and* small are able to exploit more opportunities. In addition to the industry's acknowledgment of this fact, data shows the same: The attached MiDiA Research Music Publishing Model shows that [redacted][31]

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29 [redacted]

31 [redacted]

33. Further, comparing revenue generated by streaming and revenue generated by physical sales in 2015 overlooks how sales are front loaded and streaming is back-ended. This means that the nature of physical sales are better designed to produce more money upfront (in the same year the song is "hot"). As has been widely reported by Billboard, "[w]hat was roughly a 50/50 split between current and catalog music [under physical sales] is now a 30/70 split [under streaming]. Put another way, as purchases fall and streaming activity increases, current music is losing market share to catalog music. Using Nielsen's numbers, it's clear catalog music is getting twice the streaming gains as current music."[32]

34. Therefore, streaming generates more revenue for repertoire over a longer period of time (in turn generating more revenue for artists)—a fact widely-known in the industry, and which Copyright Owners omit or otherwise contradict in their testimony.[33] Again, this just shows that Copyright Owners' comparison of revenue generated by specific "hits" in one calendar year is not an apples-to-apples comparison.

35. In any event, these individual specific stories do not tell us the whole story about the overall welfare of songwriters as a whole. For every song by Nick Jonas or Imagine Dragons that did not bring in as much revenue as an Adele or Justin Bieber, there are other songs released in recent years—by Drake or Rihanna—that probably did just as well. With the data provided,

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[32] Spotify Exhibit 12, RECORDING INDUSTRY 2015.

[33] *Cf.* Spotify Exhibit 14 at 34, [redacted]; Written Statement of Michael Sammis ("Sammis WDT") at ¶ 2 (stating, without support, that "income being generated by existing catalogues [is] diminish[ing]").

we simply don't know whether other hits in 2015 did equally as well as hits in 2011—and indeed, overall industry numbers I've provided above would strongly imply that is the case.

The Copyright Owners' Rate Proposal Hurts the Public and Publishers Alike

36. The Copyright Owners advance several ad-hoc arguments in support of their rate proposal, which would apply to Spotify's ad-supported and paid tiers alike. The first is that a per-user rate is necessary because the ability to "access" a service has some inherent value that must be compensated. The second is that a per-user and/or per-stream rate on ad-supported is necessary because services like Spotify are insufficiently monetizing their service. Lastly, the Copyright Owners point to the existence of so-called "streamripping" apps to justify why a per-user rate is necessary. As I discuss immediately below, these arguments are flimsy and conclusory.

A. "Mere Access is of Value" Argument is Unprecedented in the Industry

37. The Copyright Owners' justifications for a "greater of" rate structure that consists of a per-user rate for both ad-supported and paid tiers also fall apart upon closer examination. For example, the main argument the Copyright Owners advance appears to be that the mere ability of a user to access Spotify, in and of itself, has an inherent value that demands a separate "per-user" prong. *See, e.g.*, Israelite WDT ¶ 42 ("Each end user account has an inherent value. The user is secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place.").

38. Again, analogizing to the Copyright Owners' seemingly favored mode of distribution—CDs and PDDs—this argument makes little sense. Publishers don't get a cut any

time a CD is made available for purchase in a record store. Nor do they impose a toll on a customer who wishes to enter the store. Under the ownership model, the *sale* of the CD (or PDD) is what triggers the royalty, not mere *availability* of a CD at a consumer's nearest record store.

B. Copyright Owners Offer No Actual Evidence that Spotify is Insufficiently Monetizing Its Service

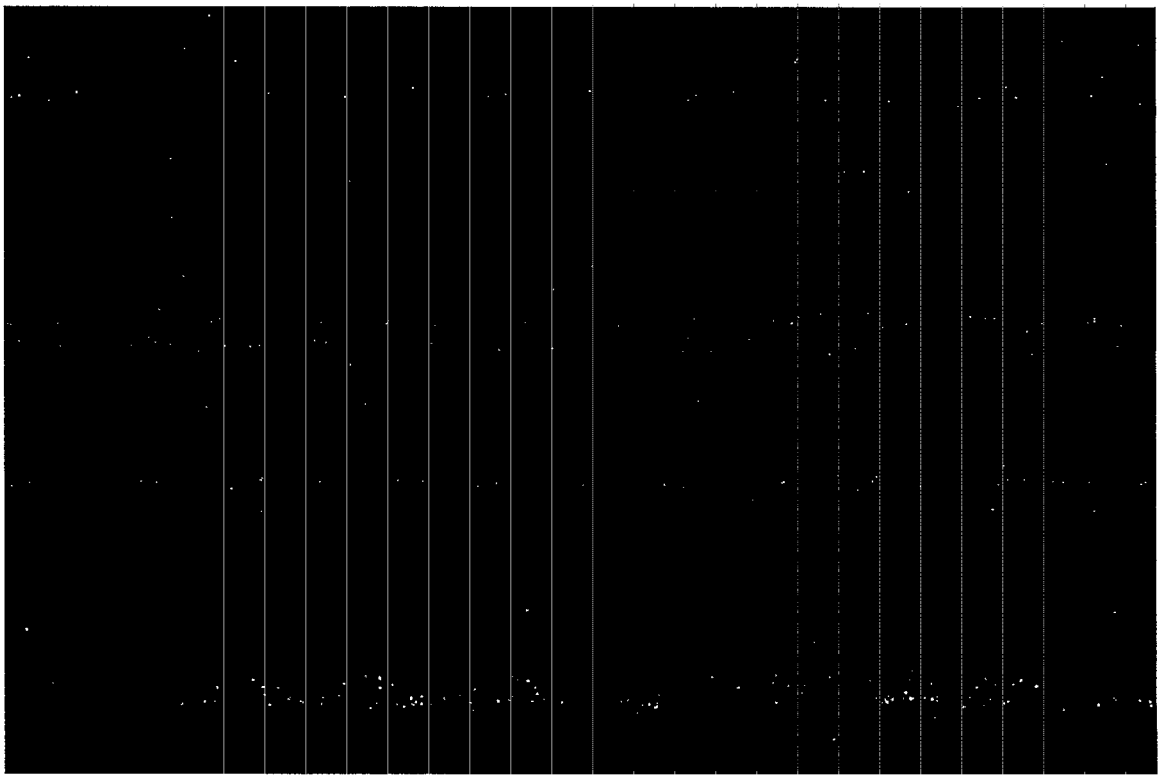
39. Second, to the extent the Copyright Owners are arguing that a per-user or per-stream rate is superior to a percentage-of-revenue structure because the services are *insufficiently monetizing their offerings* (*see* Brodsky WDT ¶ 66[34]), this argument is flawed as well.

40. **Copyright Owners Provide No Basis for the Argument That Spotify Could Increase Conversion By Introducing More Limitations On Its Ad-Supported Tier.** The Copyright Owners suggestions, made under the assumption that they can run Spotify's business better than Spotify, do not work in the real world. Brodsky tells Spotify that it would do well to "limit the catalog on its free tier, thereby enticing users who want access to 'all of the music' to subscribe [to Spotify's Premium tier],"[35] or else implement functional limitations or increase the number of ads it serves consumers. *Id.* But as my colleague Paul Vogel explains, Spotify could [redacted] under the Copyright Owners' rate proposal.

[34] For example, Brodsky implies that Spotify is more concerned with increasing user base via its ad-supported tier than it is with converting that user base to paid subscribers. Brodsky WDT ¶ 66 ("But if Spotify was truly focused on converting free users to paid subscribers, it would differentiate its free tier from its premium tier in a more meaningful way in order to entice consumers to upgrade to a subscription.").

[35] Brodsky WDT ¶ 66.

41. In terms of increasing conversions to Premium, [redacted]



36 [redacted] Spotify Exhibit 16.

42. As shown in the above graphic, [redacted].

43. Therefore, not only will [redacted]. The Copyright Owners' per-stream proposal thus stands to harm the overall music landscape more than it benefits it.

44. The survey study also found that, [redacted]

45. The below chart [redacted].

46. Importantly, the O&O study illustrates why [redacted] That is, the Copyright Owners seem to be operating under the assumption that users only know how to use one service: thus, if Spotify limits functionality in the ad-supported tier, ad-supported users would have no choice but to subscribe to Spotify Premium. But that is not the reality of the competitive landscape. [redacted]

47. Therefore, the suggestion that Spotify is not "truly focused" on conversion (Brodsky WDT ¶ 66) simply because the service have not adopted some wildly-speculative product suggestions obscures the complicated nature of digital streaming. [redacted].

48. **The Copyright Owners' Per-User Proposal Harms Spotify's Ad-Supported Tier, Removing a Valuable Freemium Funnel.** As Barry McCarthy testifies, the effect of the Copyright Owners' per-user rate would be to [redacted] The O&O study shows that [redacted]:

[redacted]

49. **Spotify** [redacted] Likewise, the Copyright Owners speculate (again with little to no support) that the Digital Services "could charge higher subscription fees...without a loss of net revenue." Kokakis WDT ¶ 62.[37] A critical

[37] Kokakis also states that "Pandora executives have stated that consumers can and would pay more than $9.99 per month, the current subscription fee for Spotify and Google Play Music, for a music streaming service." But the article Kokakis cites to (John Paul Titlow, *Inside Pandora's Plan to Reinvent Itself – And Beat Back Apple and Spotify*, Fast Company (Apr. 26, 2016), available at https://www.fastcompany.com/3058719/most-innovativecompanies/inside-pandoras-plan-to-reinvent-itself-and-beat-back-apple-and-sp) says no such thing. Rather, it simply states that Pandora will have "multiple price tiers that cater to fans of varying levels of intensity," and analogize to the "gaming industry," where "people are willing to spend thousands if they're a superfan." There's nothing controversial in this testimony—in the music industry, fans spend thousands a year if they're a music superfan, on vinyl or concert tickets. Indeed, concert tickets were cited by the Pandora executive as something fans may pay a "premium" for. *Id.* But

examination of the interactive streaming competitive landscape shows that [redacted] Again, the culprit is cross-usage: if [redacted] All three of these competitors, by the Copyright Owners' own logic, can afford to subsidize its music offering with higher-margin business lines and will not feel the same pressure to recover revenue loss from higher rates through higher prices.[38] Therefore, short of all the Digital Services colluding to raise prices simultaneously, [redacted]

50. Secondly, actual studies on the price elasticity concluded that [redacted] The below O&O graph[39] presents these findings. The ultimate conclusion is that [redacted].

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spending by both videogame and music superfans are for many different products and experiences. This example has no bearing on whether services can *raise prices on current offerings* without losing users and net revenue.

[38] *See* Kokakis WDT ¶ 60 ("Apple, Amazon, and Google do not raise the subscription fees for their respective music services because, rather than focus on driving revenue and profits from their music services higher, they appear to be more interested in growing their base of customers to whom they can then market their other products and services.").

[39] A true and correct copy of the Spotify – O&O Key Research Findings (final report) is attached hereto as Spotify Exhibit 17 (at 38).

[redacted]

C. The Copyright Owners' "Streamripping" Argument is a Red Herring.

51. In an attempt to justify its exorbitant rates, the Copyright Owners argue that so-called "streamripping" software mandates a per-user fee, since such software enables users to "rip" songs for undocumented streaming. *See* Israelite WDT ¶ 43. This argument is a red herring. First, Spotify actively employs digital rights management measures to prevent such unauthorized piracy on its platform. Second, Spotify engages in active notice-and-takedown of streamripping apps. Moreover, in my time at Spotify and in my personal experience, [redacted] other streaming services such as YouTube (which is the most common platform for streamripping)—are low.

52. In the limited number of instances of streamripping apps I have seen, [redacted]. Notably, in my experience, not a single *publisher* has ever notified Spotify of a streamripping app—whereas labels have. Indeed, Israelite's own testimony would appear to acknowledge that

labels are much more active in policing such piracy. *See* Israelite WDT ¶ 43 ("In fact, just last month, a group of major independent record labels, backed by the Recording Industry Association of America, the British Recorded Music Industry and other industry lobbyists, sued YouTube-mp3.org...."). If streamripping were actually as important to Copyright Owners as they claim in their WDT, publishers would be a lot more active in policing. The fact that they haven't suggests that Copyright Owners are just raising the specter of streamripping as a post-hoc justification for the per-user rate.

53. Finally, the Copyright Owners' argument makes much of nothing, as streamripping apps are on the decline. For example, data from analytics firm App Annie shows that [redacted][40]

Publishing Is a Stable, Low-Risk Industry In Which Advances Can Act as High-Interest Loans

54. In what appears to be an attempt at diverting the Judges' attention away from the large amount of revenue publishers make every year, the Copyright Owners argue that publishing "is an expensive endeavor, and one which is fraught with risk." Brodsky WDT ¶ 110.[41] The suggestion is that the Copyright Owners generally, and publishers specifically,

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[40] [redacted]

See also Witness Statement of Gregg Barron at ¶ 14 ("The payment of an advance is, of course, a risky endeavor. While BMG generally expects to recoup the advance from the royalties earned from licenses of the songwriter's works, frequently the royalties earned are less than the amount of the advance, so BMG is never repaid its investment in these...."); Sammis WDT ¶ 23

invest a lot of time and money into risky endeavors, and that this risk justifies a higher royalty rate.

55. But risk is relative, and it can be mitigated. The Copyright Owners take risks by giving songwriters advances and promoting their works, but they also profit when the risks succeed and the invested songwriters become successful. In these instances, the Copyright Owners recoup not just their initial advancement but also the rewards of royalties for years to come.

56. Moreover, publishers can actually profit off of advances as they act more like high-interest loans. Publishers are able to apply much of the royalties a song receives towards recoupment of advances. This operational model has led some songwriters to claim that "publishers are more like banks with a very high interest rate." [42] Publishers are also better situated vis-à-vis labels in that they have the unique opportunity to place songs with other artists should the initial "bet" (*i.e.*, a song is rejected by a recording artist or a recording session fails to monetize) not pay off. Labels simply do not have this option of "multiple placements" — or a second bite of the cherry. As such, any risk that publishers take on are less than labels.

("Thus, the financial risks that must be assumed by UMPG to find and develop the writers of the 'hits' of the future, the income from which will, in turn, support the continued search for succeeding generations of new great writers, are therefore increasing.").

[42] A true and correct copy of Helienne Lindvall, *Behind the Music: Publishing Deals Explained,* THE GUARDIAN (Oct. 23, 2008), https://www.theguardian.com/music/musicblog/2008/oct/23/behind-the-music-publishing-deal, is attached hereto as Spotify Exhibit 19; a true and correct copy of Zack O'Malely Greenburg, *Golden Oldies: How To Become a Music Publishing Mogul,* FORBES (Feb. 12, 2014) http://www.forbes.com/sites/zackomalleygreenburg/2014/02/12/golden-oldies-how-to-become-a-music-publishing-mogul/#2f9e0eb2786a, is attached hereto as Spotify Exhibit 20.

57. Traditional publishers will also hold on to royalties and only account to a songwriter semi-annually, or quarterly.[43] This "pipeline income" has led one industry report to observe, "[a]s a result [of the semi-annual accounting], pipeline publishing income may not be immediately accessible to a songwriter in times of financial hardship, and he may require a supplemental advance."[44] Publishers are in turn sitting on "millions of dollars" that simply do not get paid out.[45]

58. No wonder, then, that publisher "disruptors" like Kobalt Music Group are gaining ascendance. The same industry report observes that traditional publishers have "reporting and collection limitations" and highlights a well-known problem in the industry of poorly-kept records by publishers and collection societies.[46] These limitations in turn affects the efficiency, frequency, and accuracy of payments to songwriters. For this reason, the article concludes, "Kobalt Music Group's rise to prominence as one of the most successful independent music publishers in the world" is due to its "technologically advanced collections system" and, "[g]iven the accuracy of its collections and reporting system, Kobalt is able to deliver royalty balances to its clients weekly."[47] This is in sharp contrast to traditional publishers, like the ones testifying on behalf of Copyright Owners, who pass on to artists digital streaming revenues appearing "as a

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[43] *See, e.g.*, A true and correct copy of Alexander Scott Alberti, *Kobalt Music Group: Redefining Music Publishing,* MUSIC BUSINESS JOURNAL (Dec. 2011), http://www.thembj.org/2011/12/kobalt-music-group-redefining-the-role-of-a-music-publisher/, is attached hereto as Spotify Exhibit 21.
[44] *Id.*
[45] A true and correct copy of Kevin Gray, *Kobalt Changed the Rules of the Music Industry Using Data – and Saved It,* WIRED UK (May 1, 2015), http://www.wired.co.uk/article/kobalt-how-data-saved-music, is attached hereto as Spotify Exhibit 22.
[46] Spotify Exhibit 21.
[47] *Id.*

single revenue line," simply because they "don't possess the tools to track it and break the usage down"—resulting in money "fall[ing] through the gaps."[48] If traditional publishers were truly focused on creative risk-taking, they would spend more investing in measures that actually benefit songwriters—the ones who create the works.

59. Publishers may argue that they are taking on risk because some of these advances go to relatively unknown songwriters. However, a risky songwriter is but one asset in a publisher's larger catalogue, and safer assets in that catalogue can balance the riskier assets. Consequently, the publishing business is generally seen as very stable,[49] and publishers' revenue numbers support this assessment. As I testified to in my WDT, [redacted][50]

60. While the Copyright Owners suggest that they engage in more than just making advances to songwriters,[51] I am not aware of any testimony that quantifies the level to which the Copyright Owners engage in such activities. To the extent that the Copyright Owners are now taking on "the financial support that labels used to provide," Kalifowitz WDT ¶ 17, this is evidence that publishers are thriving in the new streaming economy.

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[48] Spotify Exhibit 22.
[49] *See, e.g.*, *id.*
[50] Page WDT ¶ 37.
[51] *See, e.g.*, Witness Statement of Justin Kalifowitz ("Kalifowitz WDT") ¶ 17 (testifying that Downtown Publishing "not only furnish[es] advances to songwriters, but also often finance[s] the creation of recordings for our singer-songwriters prior to their obtaining a record deal").

61. Let me be clear: there are some publishers who do help songwriters in many ways. However, even if the Judges deem *some* publishing costs legitimate creative investment rather than pure bank lending, the marginal cost of the initial and ongoing administration of these investments will decline over time, yet many of the administrative costs placed on songwriters by publishers remain fixed. These costs and investments must be compared to Spotify's role in terms of creative and technological contribution, capital investment, cost, and risk. Not only has Spotify invested heavily in the dissemination of music content,[52] but Spotify has also invested heavily in bringing the benefits of technological advances to the creators of that content.[53]

62. In sum, risk is relative. Publishers may take on some risk, but relative to other parts of the music ecosystem they are exposed to less risk and have more ways to manage it. They don't take on more risk than Spotify, and certainly not more than that of the Services as a whole. Publishers are not innovators, and, as shown by their testimony, they do not want to be. They simply want higher rates to help support the same model they've always known—give advances that are essentially loans with high interest rates.

Conclusion

63. [redacted]. Consumers have been going to the

[52] *See, e.g.*, Written Direct Testimony of Nicholas Harteau ¶ 18.

[53] My colleague James Lucchese described Spotify's Creator department and all the innovative things that group has done to promote artists in his WDT, and my colleague Paul Vogel, in his Written Rebuttal Testimony, will testify to the [redacted] Spotify spends per year on this investment.

Internet to consume music for over a decade and half, but it's only the most recent five years where we've collectively worked out how to monetize that act. By sticking to that principle, Spotify stands out as a unique innovator in the landscape of digital music services that have tried and often failed to solve the problem of monetizing consumption after Napster made it voluntary to pay.

64. We should all be wary of having short memories. No one should overlook the long list of failures that lie behind us. Music streaming is a difficult business. It takes a lot to get it right—and due to failure to scale, high and uneconomical content costs, difficulty in sustaining the growth and conversions to paid services, and low profit margins, many, many services have exited the market.[54]

65. Copyright Owners may not be concerned—they may wish to convince themselves that there will always be *some* large technology company that are happy to serve music even as a loss leader. But this can't be the foundations of a healthy, thriving ecosystem, and a monotonous landscape dominated by one or two large industry players will not, in the long run, benefit songwriters or Copyright Owners. Only a thriving, competitive landscape with royalty rates that align incentives and allow fair compensation to performers, songwriters, and service providers alike can benefit the public and Copyright Owners. Spotify is dedicated to creating that thriving ecosystem—for publishers, artists, and the services that enable the public to enjoy the music they

[54] Indeed, [redacted] A true and correct copy of the presentation *Failed Music Services* is attached hereto as Spotify Exhibit 23. As I conclude in that study, while [redacted]

love. The Judges should set a rate that benefits all these parties that avoids disruption of the industry recovery we are all grateful for.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of	)	**Docket No. 16–CRB–0003–PR (2018–2022)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	)	

DECLARATION OF WILL PAGE

I, Will Page, declare under penalty of perjury that the statements contained in my Written Rebuttal Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15 day of February 2017 in London, United Kingdom.

Will Page

1 appear in this proceeding once on both submissions.
2 JUDGE BARNETT: Agreed?
3 MR. SEMEL: Yes, that is agreed.
4 JUDGE BARNETT: Thank you.
5 DIRECT EXAMINATION
6 BY MR. MANCINI:
7 Q. Would you please state your name for the
8 record?
9 A. Will Page.
10 Q. And where is your employment currently?
11 A. In Spotify U.K. based in London.
12 Q. And what is your position within Spotify?
13 A. Director of economics.
14 Q. Did you have the occasion to submit a
15 written direct testimony in this proceeding?
16 A. Yes, I did.
17 Q. Mr. Page, in your binder, I ask you to
18 turn to a document that has been previously marked
19 as Trial Exhibit 1061. And let me know when you've
20 located it.
21 A. I have that here.
22 Q. Is that a copy of the written direct
23 testimony that you've submitted in this proceeding?
24 A. Yes, it is.
25 Q. And I ask you to turn your attention to

1 the last page of that document, please.
2 A. I have that here.
3 Q. Is that your signature?
4 A. Yes, it is.
5 Q. Are the statements contained therein
6 true, to the best of your information and belief?
7 A. Yes, they are.
8 MR. MANCINI: Your Honor, I'd like to
9 move into evidence Spotify Trial Exhibit 1061.
10 MR. SEMEL: We do object, maybe if this
11 could be provisional to our briefing.
12 JUDGE BARNETT: Yes. 1061 is admitted
13 with the understanding that there will be follow-up
14 written materials.
15 (Spotify Exhibit Number 1061 was marked
16 and received into evidence.)
17 BY MR. MANCINI:
18 Q. Mr. Page, did you also have the occasion
19 to submit a written rebuttal testimony in this
20 proceeding?
21 A. Yes, I did.
22 Q. If you look, again, in your binder, I ask
23 you to turn your attention to Spotify Trial Exhibit
24 1067. Let me know when you've located it.
25 A. I have that here.

1 Q. Is this document a copy of your written
2 rebuttal testimony in this proceeding?
3 A. Yes, it is.
4 Q. And let me ask you to turn your attention
5 to the last page of that document, please.
6 A. I have that here.
7 Q. Is that your signature?
8 A. Yes, it is.
9 Q. Are the statements contained herein true
10 and correct, to the best of your information and
11 belief?
12 A. Yes, they are.
13 MR. MANCINI: Your Honors, I'd like to
14 move into evidence Spotify Trial Exhibit 1067.
15 MR. SEMEL: Same objection.
16 JUDGE BARNETT: Same circumstances.
17 (Spotify Exhibit Number 1067 was marked
18 and received into evidence.)
19 BY MR. MANCINI:
20 Q. Mr. Page, now coming back to your current
21 employment as director of economics at Spotify, how
22 long have you been in that position?
23 A. For just under four and a half years.
24 Q. And did you hold any positions at Spotify
25 prior to that time?

1 A. No, I did not.
2 Q. Were you previously employed, to Spotify?
3 A. No.
4 Q. Where were you employed prior to working
5 at Spotify?
6 A. I was employed at PRS For Music based in
7 London.
8 Q. And what was your role at PRS?
9 A. Chief economist.
10 Q. And what is PRS?
11 A. PRS For Music is akin to ASCAP or BMI in
12 the United States. It's a collection society that
13 represents interests of songwriters, music
14 publishers within the U.K.
15 Q. And how many years were you at PRS?
16 A. I was there for six years.
17 Q. And where were you employed prior to
18 working at PRS?
19 A. The U.K. Government Economic Service,
20 based in Edinburgh, Scotland.
21 Q. What was your roles and responsibilities
22 at the government economics in U.K. government?
23 A. A combination of macroeconomics,
24 forecasting and projections of spending, and
25 microeconomics in developing evidence-based policy.

1 Q. And what is your academic training?
2 A. A four-year honors degree from University
3 of Strathclyde in Glasgow and a one-year Master's
4 degree from the University of Edinburgh.
5 Q. Coming back to your current role at
6 Spotify as director of economics, what are your
7 roles and responsibilities?
8 A. Again, a combination of macroeconomics
9 and the landscape of the market and microeconomics
10 such as new market launches.
11 Q. When you say the landscape of the market,
12 have you had the occasion to study the landscape of
13 the music industry at the time Spotify was formed?
14 A. Yes, I have.
15 Q. And did you observe any industry trends
16 in the music industry at the time of Spotify's
17 foundation?
18 A. Yes.
19 Q. And what were some of those trends in
20 existence at the time?
21 A. Well, we're going back to 2006, which is
22 important. It's when I started in the music
23 industry and it's also when Spotify was formed. And
24 the music industry in Sweden, where -- where Spotify
25 came from, represented a global trend where piracy

1 was increasing and revenues were falling. There was
2 nothing unusual about that. The industry was
3 staring into an abyss globally at that point. But
4 the local twist to Sweden was many of the piracy
5 sites that were known around the world were coming
6 from Sweden.
7 So to give you some examples, uTorrent
8 and Kazar and probably most famously The Pirate Bay
9 all came from Sweden. So not just was Sweden seeing
10 their revenues decline and piracy grow, but they
11 were also seeing these globally famous piracy sites
12 come from the country so there was an environment of
13 piracy in Sweden, which made the birth of Spotify
14 particularly interesting.
15 Q. And was there something about the birth
16 of Spotify or its model that was a response to that
17 landscape of piracy?
18 A. Yes. If you go back to 2006, and again
19 as a lonely economist in the business, what I saw
20 was the debate about piracy was 95 percent focused
21 on sticks and 5 percent focused on carrots.
22 Everything was thinking about legal measures to stop
23 piracy, and they weren't necessarily thinking about
24 superior models to piracy.
25 And my thoughts at the time were very

1 similar to that of Daniel Ek, our founder, which was
2 that consumption of music was not a problem at that
3 point in time. Monetization of music was. This
4 point could be transferred to many other media
5 formats today.
6 So the vision that Spotify had back in
7 2006 that I shared back in 2006 was if you can build
8 a superior alternative to piracy, those consumers
9 will come and we can get the industry onto a
10 sustainable recovery.
11 Q. And have you had the occasion to study
12 the impact that Spotify has had on piracy?
13 A. Yes, I have.
14 Q. And do you speak about any of those
15 studies in your written testimony?
16 A. Yes, I refer to a study published in the
17 summer of 2013 called Adventures in the Netherlands.
18 Q. Let me ask you to turn your attention to
19 an exhibit marked 220 in your binder, document
20 called Adventures in the Netherlands.
21 A. I have that here.
22 Q. Is this a true and correct copy of the
23 study that you just referred to?
24 A. Yes, it is.
25 Q. And who performed this study?

1 A. I conducted this study.
2 Q. Did you conduct this study in connection
3 with anyone else?
4 A. I collaborated with an independent
5 measurement company, MusicMetric, and also with
6 rightsholders and independent academics to vet the
7 work.
8 MR. MANCINI: Your Honors, I'd like to
9 move into evidence Trial Exhibit 220.
10 MR. SEMEL: Objection here is that the
11 data underlying the study was not produced. We can
12 address that in the briefing as well.
13 JUDGE BARNETT: Thank you. So the
14 exhibit is admitted provisionally and the objection
15 is noted.
16 (Amazon Exhibit Number 220 was marked and
17 received into evidence.)
18 BY MR. MANCINI:
19 Q. Mr. Page, why did you choose the
20 Netherlands to perform this study?
21 A. I was conscious there were many academic
22 studies arguing to and fro about the impact of
23 piracy before setting about this project. I wanted
24 to advance the methods to which we measure piracy by
25 working with MusicMetric, that is, we could apply

1 network measurement as opposed to relying on
2 surveys. That in itself was a big step forward.
3 But the reason for Holland is twofold.
4 Firstly, and perhaps a point of irony, is that we
5 had really cracked the Dutch music market in 2012,
6 which I understand was the last time CRB process met
7 on this issue. That is we had proven the business
8 in many north European countries more than five
9 years ago.
10 And so not only was it the case that we
11 had had a lot of success in Holland and we could
12 look at our impact on piracy, but the legal twist to
13 this is fascinating, which is under Dutch law at
14 that particular time, the act of downloading a
15 BitTorrent file from an unlicensed music site was
16 not considered unlawful. I am not a lawyer, but I
17 want to be stress here it wasn't against the law.
18 Indeed, we used to joke that in Holland copyright
19 infringement was treated like cannabis; both were
20 allowed under Dutch law.
21 So the question I wanted to pose here was
22 can Spotify reduce piracy even when it's not
23 actually against the law?
24 Q. And what were the conclusions you reached
25 from that question?

1 A. So there are two conclusions I would draw
2 from the study. And the first was that we have an
3 encouraging downward trend in piracy in Holland, and
4 from this study and from many other supporting
5 documents that have come out of Holland since.
6 I should also cite with respect to my
7 written direct testimony and my written direct
8 rebuttal that the Dutch music industry is now the
9 best-performing market in the western world.
10 Revenues at the half-year stage were growing at
11 close to 23 percent, which is fantastic. It's a
12 huge goal that Spotify set out to do. We have
13 reduced piracy and we have increased revenues. That
14 twofold double dynamic is critical to what we set
15 out to do over ten years ago.
16 The second conclusion I would draw from
17 this study comes from chapter 3 of the report, and
18 that's where we were looking at some artist case
19 studies and the impact Spotify was having with
20 regards to piracy. Now, the important point of
21 chapter 3 is to understand that when people debate
22 sales versus streams, that presents a zero sum gain.
23 What I wanted to do was triangulate the question by
24 saying consumers can go to the Internet to buy
25 content, to access content through legal venues such

1 as Spotify's steaming model, but also to steal
2 content from piracy sites. So there are three ways
3 in which you can get content from the Internet, not
4 just two.
5 Q. And in your study, do you point to any
6 specific examples to illustrate your conclusions?
7 A. Yes. We performed two case studies
8 involving four artists, four international pop
9 artists, who all released their albums in the second
10 week of November of 2012. And two of those artists
11 engaged with Spotify; the other two withheld. And
12 that allowed me to conduct a sort of very
13 provisional AB experiment to look at the impact we
14 were having in the marketplace.
15 Q. I'd ask you to turn your attention to the
16 monitor in front of you. You have a demonstrative
17 that encapsulates, I believe, the results of those
18 two engagement studies; is that correct?
19 A. That is correct.
20 Q. What does this chart tell us?
21 A. So the chart may be a little bit
22 confusing on first glance, but to iterate, it's a
23 secondary access chart. That is we're plotting
24 sales and BitTorrent files on the left-hand access
25 and Spotify streams on the right-hand access. As we

1 go through the color codings, Spotify appropriately
2 is in green, sales are in white, and Torrent files
3 are in red.
4 And the two others that we're looking at
5 here are One Direction, with their album Take Me
6 Home, and Robby Williams with the album Take the
7 Crown. Both of these artists engaged with Spotify
8 and worked with this Freemium model to allow a legal
9 access alternative for the consumer.
10 And what we learned is the first
11 question, which is did you sell more than you were
12 stolen, that is, is the white line above the red
13 line? And in both artists, they sold three to four
14 times as much as they were stolen.
15 The second question in the way that we
16 phrased the logic of this experiment was given the
17 question one, how did you do in Spotify with respect
18 to streams? And the green lane shows considerable
19 progress on streaming volumes as well.
20 So to reiterate the first question, did
21 you sell more than you were stolen, and were you
22 stolen more than you were sold, and then the second
23 question is then what happened on streaming? We
24 felt this was the best objective logical approach to
25 -- to taking on this case study.

1 So to reiterate, the artists engaged with
2 Spotify, One Direction and Robby Williams, they both
3 sold considerably more than they were stolen, and
4 they both had considerable success on Spotify.
5 Q. And what did you find with respect to the
6 artists that did not engage with Spotify? And here
7 I'm going to turn your attention to a demonstrative
8 which is also taken from your report.
9 A. Great. So with this, we're now looking
10 at Taylor Swift's album Red and Rihanna's album
11 Unapologetic. And the twist here is that both these
12 artists withheld their content from Spotify. So
13 what we're asking here is did you sell more than you
14 were stolen? Question one. And, again,
15 objectively, how did you perform in Spotify?
16 Question two.
17 And what you can see is that the red and
18 white lines are basically moving in tandem. Across
19 the period of time, both artists were stolen as much
20 as they were sold. And to question two, they had no
21 success in Spotify.
22 Now, to reiterate, we go through in the
23 report all the caveats associated with this work.
24 We want to be explicitly clear about what you can
25 and cannot conclude. But what's clear for me is

1 artists who engage with Spotify have success in our
2 service and are able to reduce the level of piracy
3 they were experiencing. It's a very, very important
4 lesson. Firstly, it's not just about sales and
5 streams; it's about sales, streams, and piracy.
6 And, secondly, we can now appreciate the impact
7 Spotify has had in reducing piracy. And to
8 reiterate, reducing piracy in a country where it
9 wasn't even unlawful to steal a file.
10 JUDGE STRICKLER: Mr. Page, good morning.
11 THE WITNESS: Good morning.
12 JUDGE STRICKLER: Do you believe that the
13 results of this study or these studies that you've
14 just talked about can be extrapolated to the U.S.
15 market?
16 THE WITNESS: I would -- we haven't
17 conducted this type of study in America,
18 unfortunately. But I think the lesson that Holland
19 teaches us if we can crush piracy in a country where
20 piracy wasn't against the law, then it would
21 therefore hold that there's a considerable chance we
22 can crush piracy here in America, where it is
23 against the law. To remember the twist to the story
24 of Holland is I'm taking the most relaxed copyright
25 laws I can find in the western world and we still

1 did it. We still reduced piracy, and to go back to
2 the half year results, we still drew revenues. So I
3 would argue that you can apply that lesson to
4 countries with stronger copyright laws and expect a
5 similar effect.
6 JUDGE STRICKLER: Did I see that you've
7 made a comparison in your report between the results
8 in the Netherlands and in Italy?
9 THE WITNESS: Yes.
10 JUDGE STRICKLER: Why did you pick Italy
11 as the comparative?
12 THE WITNESS: So Italy was another
13 country which had rampant piracy. And to stress, I
14 worked with rightsholders in working out which would
15 be good countries to pick, and also in 2012 we had
16 yet to properly launch in Italy as well. So we're
17 taking a country where Spotify was active in and had
18 received scale. Remember we cannot reduce piracy
19 until we achieve scale.
20 And then we take Italy as a country where
21 we were only partially launched towards the end of
22 that year and we had no scale. And what was
23 interesting there was the level of piracy in Holland
24 was considerably smaller than that of Italy. And
25 that gave us a cross-country example within Europe

1 to further enhance results in terms of our impact in
2 reducing piracy in Holland.
3 JUDGE STRICKLER: Did you make any
4 determinations from the survey with regard to Italy?
5 THE WITNESS: And so I think what we can
6 learn from Italy was that piracy was more prominent
7 or more present, you could argue based on the data,
8 and, therefore, it would have been nice to have been
9 able to return to Italy and study again the impacts
10 over time.
11 But I should stress the ability to use
12 MusicMetric data was limited because the company got
13 acquired by Apple and -- which restricted what we
14 could do going forward with this particular
15 measurement company.
16 JUDGE STRICKLER: Thank you.
17 BY MR. MANCINI:
18 Q. Switching topics, Mr. Page, in your role
19 as director of economics, have you also had occasion
20 to study the performance of the music industry since
21 before and after the advent of piracy?
22 A. Yes, I have.
23 Q. And, specifically, did you have any
24 occasion to study the performance of the recorded
25 music industry since before and after the advent of

1 piracy?
2 A. Yes, I have.
3 Q. And what data did you look at to study
4 the performance of the recorded music industry?
5 A. I was able to refer to IFPI data, that
6 is, the international trade body for record labels,
7 and study the U.S. music revenues over time.
8 Q. And the data that you reviewed from the
9 IFPI, is that publicly available?
10 A. Yes, it is.
11 Q. Is it voluminous?
12 A. Yes.
13 Q. And did you prepare a summary chart of
14 that data?
15 A. Yes, I refer to it in my written direct
16 testimony and my written direct rebuttal.
17 Q. And if I could turn your attention now to
18 Demonstrative Number 3, which should be on your
19 slide. Is this the summary chart of the IFPI data
20 that you testified to in your written rebuttal
21 testimony?
22 A. Yes, it is.
23 Q. And who prepared this chart?
24 A. I prepared this chart.
25 Q. And, again, what data did you use to

1 prepare this chart?
2 A. I used the IFPI official database to
3 create this chart.
4 MR. MANCINI: Your Honor, we'd like to
5 move into evidence Spotify Exhibit 1021.
6 MR. SEMEL: Yes, Your Honor. This is the
7 beginning, I think, of probably a number of
8 objections like this. This is third-party data.
9 This is a fact witness. What he's engaging in is
10 what we'd typically seek from an expert witness.
11 But the -- the witness has not been
12 subjected to expert discovery, has not produced his
13 materials relied upon, his workpapers, or anything.
14 This is really just third-party data being submitted
15 to the Court by a fact witness, of which he
16 admittedly has no personal knowledge.
17 JUDGE BARNETT: Thank you.
18 MR. MANCINI: Your Honor, do you want me
19 to respond or we'll put it within the supplemental
20 submission?
21 JUDGE BARNETT: Let's just put it in the
22 supplemental submission. This is 1021?
23 MR. MANCINI: It is, yes, Exhibit 1021.
24 JUDGE BARNETT: Provisionally admitted.
25 MR. MANCINI: Thank you.

1 (Spotify Exhibit Number 1021 was marked
2 and received into evidence.)
3 BY MR. MANCINI:
4 Q. Going back to this IFPI summary chart,
5 Mr. Page, what were some of the industry trends you
6 observed that were impacting revenues for the
7 recorded music industry?
8 A. So I'm conscious of a lot of information
9 in the slide, but firstly let's just understand the
10 rows and columns. Our time period here is from 1997
11 to 2015. And on the Y axis, you have the different
12 formats of revenues that were making up the U.S.
13 music market at that time.
14 And let's remind ourselves this is
15 recorded music revenues, not publishing revenues.
16 Fair to say that we should remind ourselves, too,
17 that publishing revenues are contained in many of
18 these figures through pass-through.
19 So if we're taking a look at the area
20 that has been blown up here, which runs from 1997 to
21 2002, the first observation is there really is only
22 one line that's populated with revenue there, which
23 is physical revenues. That is to say the U.S. music
24 market was dominated by CD sales during that period.
25 And our second observation is when did

1 those numbers reach a peak? And they reached a peak
2 in 1999 at 8.4 billion U.S. dollars. That was the
3 same year that Napster entered the lexicon of the
4 modern-day culture of the American music consumer
5 and equally in Europe the same year that WinApp came
6 to success in European countries.
7 So what we can see there is that the year
8 that piracy again, the year that Napster entered the
9 sort of cultural language of American music buyers,
10 was the year that physical revenues started going
11 into decline.
12 Q. And taking the next few years, were you
13 able to identify any further trends a few years out?
14 A. Yes, I believe we're highlighting here
15 the midpoint of this table, which runs from 2003 to
16 2008. And I think the first observation is you can
17 start to see more rows get populated, that is,
18 revenue streams were becoming more diversified.
19 We're not just having all of our eggs in one basket,
20 so the entire industry is no longer just dependent
21 on CD sales.
22 The second top row there is download
23 revenues, without doubt dominated by iTunes and we
24 should remind ourselves iTunes actually launched in
25 America in 2003 but revenues start flowing through

1 in 2004. But what we can also see is as revenues
2 from iTunes start to grow, and as we go to the lower
3 end of that chart, the total revenues of the
4 industry continue to fall.
5 I think this is interesting. And when I
6 read the copyright holders arguments, there was
7 almost an nostalgia about the iTunes model, that
8 replicating the ownership model but in a digital
9 space. And I remember at the time, prior even to
10 joining the PRS, what was clear to me was this model
11 of replicating the ownership model in digital space
12 wasn't going to fill the gap, not in America and not
13 on a global stage.
14 So as iTunes and download revenues
15 started to expand, the overall pie started to
16 contract.
17 Q. And now finally coming to the last few
18 years of this chart, were you able to observe any
19 further industry trends impacting revenues for the
20 U.S. recorded music industry?
21 A. Right. So just to recapture, now we're
22 looking at 2009 to 2015. And we can see even more
23 rows being populated with even more revenues. For
24 example, synchronization revenue began in 2010. I
25 want to stress for everyone in the courtroom, when

1 you're trying to understand market data, you have to
2 be aware that there was synchronization revenues
3 before 2010, but only at that point did the IFPI
4 choose to register it.
5 But we can also see as we go down to
6 rows -- I would say, fourth and fifth rows and we
7 can see the introduction of streaming. That's
8 titled Subscription Streams Income which is paid
9 and, to reiterate, and I apologize to the Judges
10 because this is very confusing, our free revenues
11 are contained in that subscription income row and
12 ad-supported streaming income, which is defined as
13 IFPI as being video streaming revenue, mainly,
14 obviously, that of YouTube, Vivo, the Dailymotion,
15 and other services.
16 So that complexity explained what we can
17 now look at here is the growth of streaming income
18 and which starts at relatively small figures but, by
19 2015, is offering a very significant part of the
20 music industry's overall portfolio.
21 Then I draw your attention down towards
22 the percentage changes at the lower end of the
23 table. What you can see there is now a stability
24 and even growth appearing in the fortunes of the
25 U.S. music industry. That is, we see growth of

1 4.3 percent, .9 percent, 3.6 percent, a small dip
2 and then growth of 1.4 percent. So what we can
3 conclude there, I would argue, is firstly we learn
4 that when piracy was introduced, revenues started to
5 go into decline. Secondly, when downloads were
6 introduced, revenues for the best part continued to
7 contracting. And, thirdly, only with a diversified
8 portfolio of revenues and importantly with the
9 introduction of streaming, an access model, not an
10 ownership model, and giving the consumer access to
11 content they weren't getting access to anyway from
12 piracy sites, do we start to see the fortunes of
13 music industry change in the United States and
14 globally. And to reiterate my written direct
15 rebuttal and testimony, we're now seeing half-year
16 results the U.S. shows in the positive -- most
17 positive, strongest growth signal since 1998.
18 Q. And so what was the net impact of
19 streaming on the recorded music industry?
20 A. The net impact of streaming was to
21 essentially bring to the music industry an ARPU
22 model, that is, average revenue per user. And this
23 is a term that was foreign language to many
24 rightsholders back when I joined the business in
25 2006.

1 So, previously, and for the best part of
2 five decades, we've been selling products to the
3 consumers. We hadn't been selling access. And by
4 moving to a streaming model, we were able to look at
5 the average revenue per user. And that's important
6 because the number of people buying product was
7 shrinking. The amount of money they were spending
8 on product was shrinking too. This is all prior to
9 the introduction of streaming. But by moving the
10 model to access, which is what the Napster
11 generation were used to anyway, we were able to grow
12 ARPU, not just for the existing music buyers but
13 also for the vast majority of the population, of the
14 adult on-line population, not just in the United
15 States but in every western market I've seen which
16 spent zero.
17 And this for me was the one driving force
18 which gave me belief in our model, which is we can
19 be concerned about what happens to music buyers, as
20 you mentioned move to access, but what we mustn't
21 forget is the majority of an adult on-line
22 population spends nothing on music. How are you
23 going to monetize them? So bringing the new
24 propositions to the market is important.
25 And just to reiterate a point I've

1 reminded many lawyers, and there are many lawyers in
2 this room, if the majority of an adult on-line
3 population spends zero on music, you cannot
4 cannibalize zero.
5 Q. Turning now, Mr. Page from recorded music
6 to musical works, have you had the occasion to study
7 trends in the musical works industry over the last
8 decade or so?
9 A. Yes, I have.
10 Q. And where in your testimony can we find
11 studies on trends in the musical works industry over
12 the last decade?
13 A. With respect to my written direct
14 rebuttal, we would be looking at pages -- we're
15 going to be looking at paragraphs 36 through to 42.
16 Q. And what are the studies that you speak
17 to in that portion of your written direct testimony
18 that analyze the music works industry over the last
19 decade or so?
20 A. Firstly, just an apology, I said written
21 direct rebuttal; I meant to say written direct
22 testimony. And so I was able to look at the
23 performance of the American performing rights
24 organizations over time. I was also able to look at
25 the performance of U.S. music publishers over time.

1 Finally, I conducted my own work to illustrate the
2 global value of music copyright, both in 2015, and
3 since submitting my written direct testimony, I've
4 updated that work for 2016 as well.
5 Q. Let's take each of those studies in turn.
6 With respect to the analysis you did of performing
7 rights organizations, where can we find that in your
8 testimony?
9 A. So specifically looking at my written
10 direct testimony, we are referring to paragraphs 39
11 and 40.
12 Q. And what data did you study and/or review
13 in analyzing the performance of the performing
14 rights industry?
15 A. So I used publicly available data that
16 both ASCAP and BMI report every year that they
17 finalize their gross collection figures.
18 Q. And what did your analysis show with
19 respect to your study of the historical performance
20 of performance rights organizations?
21 A. What it showed was a contrasting picture,
22 or you could call it contrasting fortunes, as we
23 discuss the pain that record labels saw
24 post-Napster, that of the decline in 1999, which
25 went through for a decade onwards, the picture for

1 the performing rights organizations is in stark
2 contrast to those declines. That is, just about
3 every year without fail, both ASCAP and BMI have
4 reported record collections and you would therefore
5 assume record distributions to their U.S. songwriter
6 and U.S. publisher members. Indeed, I could only
7 find three instances in the time period where record
8 collections were not reported.
9 Q. And specifically what data with respect
10 to those performing rights organizations did you
11 study?
12 A. So this is the data that's released, for
13 example, in music and copyright, where these figures
14 are reported, but also on their web site where they
15 report through their press release their annual
16 achievements.
17 Q. And who are the main performing rights
18 organizations in the U.S.?
19 A. So my understanding is you now have four,
20 but the two largest ones here are ASCAP and BMI.
21 Q. And did you study any ASCAP data?
22 A. Yes.
23 Q. And if I could turn your attention to
24 demonstrative 4. Can you tell us what this shows
25 about the revenue inputs from ASCAP data?

1 A. So, firstly, this is a pie chart, and I
2 want to give the Judges some time context here.
3 Record-breaking collections means a record-breaking
4 size of pie. This pie has gotten bigger over the
5 past decade and a half where most other media
6 formats, not just music, have seen pain. But this
7 also presents a portfolio of revenues that ASCAP
8 collects. Now, this is their definitions. I want
9 to be clear here. That their definitions are not
10 entirely transferable to other collecting societies
11 in America, as well as other global institutions as
12 well.
13 But you can see a breakdown of revenues.
14 And in this chart, though, I'm highlighting new
15 media, which made up 5.5 percent of the pie. And I
16 wish to also report from my written direct testimony
17 and what I -- what I say here is that new media,
18 which Spotify contributed towards, the biggest rise
19 in all of ASCAP's domestic income sources were total
20 collections, increasing 36.3 percent to 56.1 million
21 from 41 million in 2014.
22 So what we're learning here is firstly
23 ASCAP had been reporting record collections for much
24 of the past decade and a half. Secondly, they have
25 a broad portfolio of revenues in contrast to the

1 record labels, if you remember the 1999 chart, where
2 there's just one form of revenue. And, thirdly, new
3 media captures Spotify's contribution. One of the
4 reasons why ASCAP was able to report record
5 collections was new media was growing. And one of
6 the reasons new media was growing was that Spotify
7 was driving that growth.
8 JUDGE STRICKLER: Do you know who else is
9 included in new media, not only just Spotify but
10 what other types of media? Particularly, does it
11 include non-interactive as well?
12 THE WITNESS: I don't. I'm actually
13 quoting from their press release, but just thinking
14 this one through, other on-demand streaming services
15 would be in there, but you may find other forms of
16 exploitation, such as ringtones can be classified as
17 new media as well. And -- but I apologize I
18 couldn't give you a clearer breakdown based on their
19 own disclosure as to what's consistent in there.
20 They do specifically state Spotify is classified in
21 that segment.
22 JUDGE STRICKLER: Thank you.
23 BY MR. MANCINI:
24 Q. And, Mr. Page, did you also have occasion
25 to study BMI data about the various inputs to their

1 collections?

2 A. Yes, I did.

3 Q. Let me turn your attention to

4 Demonstrative Number 5. Can you tell us what you

5 learned by analyzing BMI data about the various

6 inputs to their revenue?

7 A. So, again, I want to reiterate what we

8 learned about ASCAP, record -- record-breaking

9 collections from a record-breaking size of pie and,

10 to reiterate, success or gains where most other

11 media formats saw pains.

12 And we can see again for the Judges'

13 benefit a different set of classifications, which is

14 why you can't necessarily compare like with like

15 here. You have broadcast media, international

16 collections, general licensing, and then digital.

17 And then to quote from my written direct testimony

18 here, which is in paragraph 40, what I say there is

19 total collections increased 4.6 percent in the 12

20 months to end of June, to over 1 billion in the 12

21 months. Distribution grew 6.2 percent, digital

22 revenues, which Spotify contributed towards, grew

23 50.5 percent.

24 So a very similar story, record-breaking

25 collections, over a billion dollars coming from one

1 of the two largest American PROs, and one of the
2 reasons it's record breaking is digital. And the
3 reason why digital is growing is Spotify.
4 JUDGE STRICKLER: And, again, you --
5 given that you're relying on BMI's classifications,
6 are you able to subclassify within digital?
7 THE WITNESS: No, I am not, but I want to
8 stress for the Judges' benefit that you may have
9 different terms of digital. So, for example, the
10 revenues that come from Pandora could be in one of
11 those segments for BMI but in a different segment
12 for ASCAP. I apologize because I don't know how
13 they would classify those revenues. They don't make
14 that public.
15 JUDGE STRICKLER: Do you have any
16 knowledge as to whether digital also includes
17 digital downloads in this Demonstrative 5?
18 THE WITNESS: In this example, I would
19 argue without certainty that it is because --
20 JUDGE STRICKLER: That it is inclusive of
21 digital downloads?
22 THE WITNESS: Yes. And I simply say that
23 through working at the PRS and being familiar with
24 these terms. I can't see how you could file
25 downloads in general licensing, which is licensing

1 high streets, hair dressers, restaurants, even this
2 library; broadcast media would be television
3 revenues and radio revenues, and international would
4 be overseas income. So I would imagine that
5 download is digital as well, which captures a point
6 which is that streaming gains are offsetting
7 downloads pain.
8 JUDGE STRICKLER: Thank you.
9 BY MR. MANCINI:
10 Q. And, Mr. Page, did you also have occasion
11 to study music publishing revenues in the last
12 decade?
13 A. Yes, I did.
14 Q. And what specifically did you study with
15 respect to music publishing revenues?
16 A. So I refer to paragraph 37 of my written
17 direct testimony and -- which is a bar chart which
18 was sourced from Enders Analysis, a respected
19 consultancy.
20 Q. Let me ask you to turn your attention to
21 the slide before you, Demonstrative Number 6, is
22 this a copy of the chart you're referring to from
23 your direct testimony?
24 A. Yes, it is.
25 Q. And what does this chart tell us?

1 A. So this chart plots U.S. music publishing
2 revenues or, for the Judges' benefit, I would call
3 this turnover and -- from 2010 out to a forecast for
4 2019. And what we can see here is revenues are
5 broken down into three categories, performance,
6 mechanical, and synchronization.
7 And I want to reiterate for the Judges'
8 benefit that this is where classifications can get a
9 little bit confusing. You're seeing publishers use
10 one term and collecting societies use another, yet
11 collecting societies pass a lot of money through to
12 publishers. And -- but what I think we can take
13 from this chart is at best what we are seeing here
14 is stability in revenues and then growth going
15 forward.
16 But we can also see interest in the
17 breakdown of revenues. And mechanical revenues in
18 the copyright holders' arguments that I read through
19 were seen as being in trouble, in decline,
20 disappearing. But it's quite interesting to
21 observe, firstly, sustained growth in music
22 publishing turnover but, secondly, the blue segment
23 of this chart doesn't appear to be shrinking that
24 fast. I think this captures an important point,
25 which is there's more to mechanical revenues than

1 just downloads and streaming. There are many forms
2 of mechanical collections that publishers --
3 publishers gain beyond that as well.
4 So to reiterate, what we saw in our first
5 and second demonstratives on this issue was the
6 contribution Spotify is making to the performing
7 right, that is, paying the PROs who then pay
8 publishers and songwriters, a point that has to be
9 made explicitly clear. And then, secondly, we can
10 take a look at the turnover of U.S. music publishing
11 revenues and we can see the contribution we're
12 making to the mechanical right. And to reiterate,
13 the publishing business looks to be in good health,
14 and mechanical revenues do not look to be in the
15 same level of decline that was portrayed in the
16 Copyright Holders' written direct testimonies.
17 Q. And finally, Mr. Page, I believe you
18 testified a few moments ago about a third study you
19 performed yourself that addressed the total musical
20 works revenues in the last decade.
21 A. Yes.
22 Q. And what was that study?
23 A. This study was published in the on-line
24 music journals and blog Music Business Worldwide,
25 and we called it "The Global Value of Music

1 Copyright."
2 Q. And who performed this study?
3 A. I performed this study.
4 Q. And what data did you analyze in
5 performing this study?
6 A. I essentially had three pieces of a very,
7 very complicated jigsaw. And I want to stress for
8 the Judges' benefit this does get a little bit
9 complicated, but I'll take it from a very, very high
10 level. We have the IFPI's recording industry in
11 numbers, which is, roughly speaking, a 15 billion
12 dollar valuation of recorded music revenues. We
13 have the SESAC global music report, which I should
14 address is reported in euros, we convert to dollars,
15 which captures the total value of collecting
16 societies. And the third piece of the puzzle is
17 music publisher turnover. Not all music publishing
18 revenue comes from the collecting societies. They
19 also have synchronization and grant rights they
20 collect themselves.
21 So to get to a global value of musical
22 copyright for the first time in the industry's
23 history, and it really was a bit of a landmark
24 achievement to get this work finished, you have to
25 have all three pieces of the jigsaw together, then

1 cancel out the double counting that exists between
2 the two.
3 For example, if you look back to IFPI
4 data, those physical revenues that we report in the
5 IFPI contains mechanical copyright collections which
6 are passed on to publishers. So you have double
7 counting there.
8 So I was able to merge all three pieces
9 of the jigsaw together, remove the double counting,
10 and for the first time ever, represent the global
11 value of musical copyright.
12 Q. And with respect to those three data
13 inputs, are they publicly available?
14 A. Yes.
15 Q. And were they voluminous?
16 A. Yes.
17 Q. And you summarize them in this report?
18 A. So the data was the IFPI's recorded
19 industry in numbers. That report is now termed
20 Global Music Report. And the SESAC report is
21 published on-line on the SESAC web site. And,
22 thirdly, the publisher numbers came from a media
23 study called "Music Publishing in Crossroads," where
24 they provide a global turnover estimate for music
25 publishing.

1 JUDGE STRICKLER: So this report is -- is
2 about global revenue, so that means worldwide
3 revenue?
4 THE WITNESS: Correct.
5 JUDGE STRICKLER: And so each entity that
6 had -- in each country where entities had to pay or
7 were able to receive revenue, were subject to its
8 own particular structure, legal structure, with
9 regard to the -- to the payment of rates, right?
10 THE WITNESS: Correct.
11 JUDGE STRICKLER: Is that addressed in
12 this report?
13 THE WITNESS: Yes. So if we think about
14 some of the anomalies that happened in the global
15 copyright marketplace, and particularly here in
16 America, you have to adapt to the fact that not all
17 rights are the same, not all rights are exploited or
18 licensed in the same way.
19 And a classic example is FM radio in
20 America where ASCAP, BMI, SESAC, and presumably GMR
21 will collect moneys from radio stations, but record
22 labels do not collect money from FM and AM radio.
23 Indeed, the three countries in the world which don't
24 license AM and FM radio just now are North Korea,
25 Zimbabwe, and the United States of America. That

1 anomaly is captured in this work. A second example,
2 just to remind the Judges in this courtroom here --
3 JUDGE STRICKLER: Can I just interrupt
4 you so I don't miss the thread?
5 THE WITNESS: Sure.
6 JUDGE STRICKLER: Was that anomaly
7 captured in this?
8 THE WITNESS: Yes, yes.
9 JUDGE STRICKLER: And how did -- how did
10 you capture it?
11 THE WITNESS: So the SESAC report talks
12 about five regions. So with SESAC, you're able to
13 look at collections for North America, for Europe,
14 for Africa, and for Asia separately.
15 A second important anomaly here is
16 international reciprocity. So American collecting
17 societies, as we saw in the previous pie chart, are
18 collecting lots of money from overseas, lots of
19 money. There are three exporters of music in the
20 world, the United States, the United Kingdom, and,
21 bizarrely, Sweden. And these countries generate
22 revenues from the export of their music.
23 And that was also canceled out in double
24 counting adjustments for this work as well.
25 JUDGE STRICKLER: So these are cash flow

1 revenues; you didn't make any implicit adjustments
2 for the value of music because -- and attribute
3 revenues to terrestrial radio, for example?
4 THE WITNESS: No. I just -- I took a
5 very top --
6 JUDGE STRICKLER: For sound recordings?
7 THE WITNESS: Yeah, I took a very top
8 line view of turnover, that is, how much money came
9 in the factory gate as opposed to making assumptions
10 about the treatments of rights. So it's a very sort
11 of cash-driven model.
12 JUDGE STRICKLER: Thank you.
13 THE WITNESS: And I can also add there
14 the international reciprocity point is very
15 important, given that you last met five years ago in
16 these particular CRB proceedings, which is the
17 American PROs would have been collecting the
18 benefits of Spotify long before 2012 as the Swedish
19 and Norwegian and Dutch collecting societies passed
20 those revenues through to American publishers and
21 songwriters. It's an important consideration when
22 you're trying to get to a global value.
23 BY MR. MANCINI:
24 Q. And just to reiterate, Mr. Page, what
25 were the conclusions you reached about the overall

1 global value of the music copyright industry?
2 A. So the conclusions I reached were, if I
3 may offer, driven by annoyance I had with how people
4 were looking at the music market, that is, when
5 quarterly earnings for value were published,
6 everyone was looking at Spotify's impact on
7 Universal Record Company. Nobody that I met of all
8 the analysts were looking at Spotify's impact on
9 Universal Music Publishing Company.
10 By merging the two together, we can
11 appreciate the true value of copyright, not just
12 some. And by doing so, we can appreciate Spotify's
13 true contribution to the industry, labels, PROs, and
14 publishers, not just some.
15 And to get to a figure of 25 billion is,
16 explicitly obvious, much bigger than 15. So the
17 value of copyright globally is worth more than what
18 previously was perceived as a 15 billion dollar pie.
19 JUDGE STRICKLER: I have another question
20 for you.
21 THE WITNESS: Sure.
22 JUDGE STRICKLER: With regard to the same
23 demonstrative 7. Since you -- you subtracted
24 mechanicals from physical and digital music
25 revenues, do mechanicals show up as your item for

1 IFPI performance rights or does it show up somewhere
2 else?
3 THE WITNESS: So in this demonstrative,
4 it's captured in the value of publishers and PROs.
5 JUDGE STRICKLER: So which part -- which
6 part of the pie chart?
7 THE WITNESS: The global musical works,
8 which is the blue section of the pie chart, will
9 capture the mechanicals which had been transferred
10 from IFPI yearbook into that blue segment. So I'll
11 give you a very simple example. If the global
12 recorded music industry has reported as being worth
13 15 billion dollars, to use a round number, around
14 about 1 and a half billion belongs to publishers
15 through pass-through, that is, for all physical
16 revenues, mechanicals are captured in the IFPI
17 yearbook, and for certain countries, only certain
18 countries, digital revenues, that being download
19 revenues, will also include mechanical. United
20 States being one; Mexico, for a period, was another;
21 India was another one as well.
22 So that's where you have your double
23 counting adjustment.
24 JUDGE STRICKLER: Thank you.
25 THE WITNESS: It's very important for the

1 clarity of who gets what from the business.
2 BY MR. MANCINI:
3 Q. And, Mr. Page, a copy of this chart is
4 reproduced on page 15, paragraph 36 of your written
5 direct testimony, is it not?
6 A. It is.
7 MR. MANCINI: Your Honors, at this point,
8 we're going to be discussing confidential Spotify
9 data, so we'd like to move to restricted session.
10 JUDGE BARNETT: Anyone who is in the
11 courtroom who is not privy to privileged or
12 confidential information, if you would please wait
13 outside.
14 MR. MANCINI: Your Honor, if I may, I --
15 I believe an agreement was reached with Copyright
16 Owners, Spotify's in-house lawyers who are here and
17 are privy to this information may remain.
18 MR. SEMEL: We have no objection.
19 JUDGE BARNETT: Certainly. As long as
20 this is only confidential information from Spotify
21 and not from other parties.
22 MR. MANCINI: Yes, it is, indeed, Your
23 Honor. Thank you.
24 (Whereupon, the trial proceeded in
25 confidential session.)

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1 O P E N S E S S I O N

2 MR. SEMEL: Thank you. If all goes well,

3 it will stay that way throughout our time.

4 JUDGE BARNETT: Thank you.

5 BY MR. SEMEL:

6 Q. Mr. Page, you have been working at

7 Spotify since 2012; is that right?

8 A. That is correct.

9 Q. And you have also been granted stock

10 options in the company, correct?

11 A. Depending on how you define "granted,"

12 that is to a degree correct.

13 Q. In your written direct testimony, you

14 discuss reports concerning piracy trends in a number

15 of foreign countries, including Sweden and Denmark

16 and Norway, correct?

17 A. That is correct.

18 Q. And, in fact, as I think you touched on

19 briefly before, foreign countries have different

20 laws and enforcement mechanisms than the United

21 States does, correct?

22 A. That is correct.

23 Q. And you are not an expert in those laws,

24 correct?

25 A. In every country that I study try and get

1 a good familiarity from the legal context in those
2 particular countries.
3 Q. And your written testimony includes no
4 analysis of the effects of national legal or
5 enforcement schemes on piracy trends, correct?
6 A. In my written direct testimony, I don't
7 refer to legal schemes, but in the report Adventures
8 in the Netherlands, I do refer to a takedown of The
9 Pirate Bay web site, which happened during that
10 period.
11 Q. Right. And -- but your testimony doesn't
12 discuss whether -- what the effects of national
13 legal schemes are on piracy trends, correct?
14 A. That is correct.
15 Q. And your written testimony does not even
16 claim that piracy trends are, in fact, the same
17 across jurisdictions, correct?
18 A. It would be -- it would be unrealistic to
19 assume that could even possibly happen.
20 Q. And your written testimony does not
21 provide any methodology for translating a report of
22 a piracy trend in one jurisdiction to another
23 jurisdiction, correct?
24 A. No, that is not correct. With respect to
25 the Adventures in Netherlands study, I draw your

1 attention to chapter 4, indeed one of the Judges
2 actually referred to this earlier, where we do a
3 comparison with Italy, which is a like-for-like
4 comparison in terms of counting unique IP addresses
5 involved in at least one act of BitTorrent music
6 piracy, but you have to be very clear on the
7 definition here, to make sure it's a good
8 comparative economic example.
9 And I also refer in my written direct
10 testimony to the situation in Australia where the
11 legal setting was explored in the presentation.
12 And, again, due to the acquisition of my data source
13 company, MusicMetric, by Apple, we weren't able to
14 publish that work, but the legal situation was the
15 real driver of that particular work; namely, what
16 happens when the music industry offers an access
17 model to compete with piracy, but the TV and film
18 industries do not.
19 Q. Okay. So to be clear then, your written
20 testimony does not provide any methodology for
21 translating reports of piracy trends in other
22 jurisdictions to the United States, correct?
23 A. Correct, only insofar as I wasn't able to
24 use MusicMetric data to do an equivalent American
25 study at the time, but I do cite evidence of a

1 downward decline in piracy levels in America within
2 my written direct testimony.
3 Q. Are you referring to the discussion of --
4 in paragraph 23 on page 9 of your written direct
5 testimony?
6 A. Do you want to cite a sentence from that
7 paragraph?
8 Q. What's that?
9 A. For need of speed, do you want to cite a
10 sentence from that paragraph?
11 Q. It's -- this is the Sandvine report.
12 A. Yeah, that is correct.
13 Q. Okay. And that's a study of North
14 America, correct?
15 A. That's a study of North America, although
16 my understanding was that the press release referred
17 to United States within the actual press statement.
18 Q. And do you know if it was North America
19 including Mexico?
20 A. No, I do not.
21 Q. Do you know if it included the Caribbean?
22 A. No, I do not.
23 Q. And you didn't do this study or
24 participate in the research, correct?
25 A. That is correct.

1 Q. And you do not possess the data
2 underlying the study, correct?
3 A. That is correct, but if I could add, it
4 struck me as interesting that for a subject that
5 matters so much to me, I was surprised there was so
6 little research on piracy within the United States.
7 So to be aware of Sandvine had attempted to try and
8 measure something that is very, very hard to measure
9 was interesting.
10 What really struck me was their press
11 comment where they actually cited Spotify by name in
12 explaining why piracy rates in America were falling.
13 Q. And you, yourself, are very interested in
14 piracy, correct?
15 A. Correct.
16 Q. And you, yourself have done some research
17 concerning piracy trends, correct?
18 A. That is correct.
19 Q. But you have never done any research
20 concerning piracy in the United States, correct?
21 That's just a yes or no.
22 A. Yes, insofar I have done global work in
23 piracy which has included the United States, but I
24 haven't isolated the United States as a specific
25 country.

1 Q. Okay. And you are unaware of any
2 research undertaken by Spotify -- by Spotify on
3 piracy in the United States specifically?
4 A. Not to the best of my knowledge, I can't
5 remember Spotify conducting that work.
6 Q. Although Spotify -- the U.S. is Spotify's
7 largest market as an individual country, correct?
8 A. In absolute terms, but we also have to
9 remember a per capita comparison could yield
10 different results.
11 Q. You refer, to as I mentioned, some
12 studies in other countries, including on page 4 of
13 your direct report, you refer to certain studies or,
14 I don't know if I would call them studies, you refer
15 to certain documents that discuss piracy in Sweden,
16 Denmark, and Norway, correct?
17 A. Correct.
18 Q. You did not participate in these studies,
19 correct?
20 A. No. These are studies in large part
21 conducted by the rightsholders themselves. These
22 are the trade bodies for Sweden, Denmark, and Norway
23 that were publishing their own work to which we had
24 no involvement at all.
25 Q. And you don't possess the data underlying

1 any of these reports, correct?
2 A. That is correct.
3 Q. You, on page -- sorry -- on page 8 of
4 your report, you -- paragraph 20, you begin
5 discussion of some research you did in the
6 Australian music market, correct?
7 A. Correct.
8 Q. You say Spotify but, in fact, you were
9 involved in this directly, right?
10 A. Correct. The similar arrangement that I
11 did with MusicMetric, in that we commissioned them
12 to perform network measurement, again taking all
13 care and precautions with regards to privacy, and
14 how we could commission the work. And we had
15 experts ensure that we were vetting the data to
16 which I wish to apologize again that we weren't able
17 to publish this work due to the acquisition by
18 Apple.
19 Q. Right. And, in fact, you don't have the
20 data underlying -- so the chart at the top of page
21 9, that is the chart that goes along with this
22 Australian survey, correct?
23 A. That is correct.
24 Q. And you don't have the data that
25 underlies that chart, correct?

1 A. We have that data.
2 Q. I'm sorry?
3 A. We have that data.
4 Q. Well, you did not produce that data in
5 this proceeding, correct?
6 A. That is correct.
7 Q. And in your deposition you testified that
8 you did not possess it, correct?
9 A. Well, we -- forgive me if I misremembered
10 our deposition, but the data is held by ourselves,
11 but I just wish to clarify that the acquisition of
12 MusicMetric by Apple happened several weeks after
13 this work was presented.
14 So there may be legal issues in terms of
15 how that data is dealt with.
16 Q. Does MusicMetric possess the data?
17 A. They would possess that data.
18 Q. And so by -- by "we," you meant sort of
19 you and MusicMetric?
20 A. Yeah, yeah.
21 Q. All right.
22 A. So we worked around how we were going to
23 perform network measurement, which in itself is a
24 complex issue, and then when we produced the data,
25 had the data inspect, verified results. So, for

1 example, they would present this slide. I would
2 present the data on the slide. If I was
3 satisfactory with the data and the slide itself,
4 that would go into the presentation. And this was
5 one of three exhibits that we presented publicly in
6 what was a televised conference in Australia in the
7 autumn of 2014.
8 Q. But -- okay. But to be clear though, you
9 yourself, as opposed to MusicMetric, which is now
10 owned by Apple, don't possess the data underlying
11 this chart, correct?
12 A. I believe we do have that data saved. I
13 just wish to reiterate whether there may be legal
14 implications in terms of releasing data which has
15 been acquired by another company. But from my
16 perspective, I have no problems with that data. If
17 you wish to inspect it or if you wish to see the
18 full presentation, I'm more than happy to.
19 Q. Well, it was not produced in this case,
20 though, correct?
21 A. Yeah, it was not produced not just in
22 this case study but in this one press release on
23 TorrentFreak, which was the only way of exhibiting
24 this work.
25 Q. And this chart, in fact, the one you have

1 here, was actually cut and pasted from a web site,
2 correct?
3 A. That is correct, but it is the same chart
4 that was represented during the keynote presentation
5 in Brisbane, Australia.
6 Q. And the web site is TorrentFreak.com,
7 correct?
8 A. Correct.
9 Q. And if we look at this chart at the top
10 of page 9, that top line, that is -- represents
11 individual BitTorrent files; is that right?
12 A. Yes. The -- the blue line on the top
13 line there is unique instances of a music BitTorrent
14 file being downloaded from the network.
15 Q. Okay. And BitTorrent is a piracy site,
16 correct?
17 A. BitTorrent, I would call it more like a
18 protocol. It encompasses many piracy sites and also
19 driven by many search engines. It's worth thinking
20 about The Pirate Bay which, again, came from Sweden
21 as a signpost to where BitTorrent files are hosted.
22 Q. But BitTorrent, of course is not the only
23 method by which people pirate; it's just one among a
24 number, correct?
25 A. That is correct.

1 Q. And if we look at this line, am I right
2 that you've added those -- the red pop callouts and
3 the yellow lines to this chart from TorrentFreak?
4 A. Correct.
5 Q. And the -- the one on the left basically
6 indicates that you've chosen a timeline that begins
7 when Spotify launched in Australia, correct?
8 A. That is correct.
9 Q. So this is in effect to show what
10 happened after you launched in Australia?
11 A. That is correct.
12 Q. And the blue line at the top, again, we
13 don't have the underlying data so we can't get
14 particularly granular -- granular, so I'm just
15 eyeballing this, but the blue line ends the chart --
16 is it around February or March of 2014?
17 A. March 2014 --
18 Q. March. Okay.
19 A. -- is when the study concluded.
20 Q. So the blue line, which is the -- kind of
21 level of files downloaded, is that exactly the same
22 point as it is at the beginning of the chart in --
23 when Spotify launches, correct?
24 A. Correct. If I could ask would it help if
25 I explained the blue line and the green line in a

1 little bit more detail?
2 Q. I think you could probably do that on
3 redirect if your counsel feels that it's important
4 to flesh out.
5 And you've chosen to highlight two yellow
6 bands in the middle which correspond to, I think
7 what you term, holiday periods, correct?
8 A. Well, I refer to them as the festive
9 period or the Christmas release schedule. That is
10 to stress that in most music markets, with respect
11 to ownership, that of CD sales or downloads, the
12 record industry and the publishers alike will see
13 around about 35 to 40 percent of their business
14 happen in the fourth quarter of a calendar year.
15 So this is a point where release schedule
16 is strongest, where record labels and publishers
17 will put out their strongest releases to maximize
18 demand during that period.
19 So looking at this from what was the
20 first time ever we've done time trend analytics of
21 piracy, I wanted to pick the release schedule
22 Christmas festive period as my control for measuring
23 the trend.
24 Q. But, again, you did not actually compare
25 the release schedule for 2012 to the release

1 schedule of 2013, correct?
2 A. So we had anecdotally checked to make
3 sure the release schedules were equally strong
4 during these periods. And then since our
5 deposition, I've gone back and checked again to
6 ensure there is no self-contradictory evidence there
7 which would suggest a weaker Christmas reschedule in
8 the 2013-'14 period than in the 2012-'13 period.
9 Q. And you have not produced any of the data
10 that you may have relied upon in reaching that
11 understanding, correct?
12 A. I don't have access to record industry
13 sales data in Australia. If this was in the U.K. or
14 Holland or United States, that would be possible.
15 But if I can just offer one very important example
16 of an artist who released in the Christmas release
17 schedule 2013, who we didn't even know about in
18 2012, is the New Zealand artist Lorde, spelled
19 L-o-r-d-e. And that for me is a perfect example of
20 an artist who is a real Spotify success story who
21 has released in that Christmas release schedule and
22 did incredibly well on Spotify, incredibly well with
23 sales, but did not see a significant impact on
24 piracy.
25 And that helps reiterate firstly what we

1 learned earlier from the Netherlands study, which is
2 those artist case studies of the impact on sales,
3 streams, and piracy, but secondly Spotify is a
4 discovery tool. And in the past, I previously
5 published on-line articles showing how Sean Parker's
6 addition of Lorde to his playlist led to the viral
7 growth of the artist on our service.
8 JUDGE STRICKLER: Question for you,
9 Mr. Page, excuse me. In paragraph 20 of your
10 written direct report, you -- you tag the research
11 that was done that's shown in this demonstrative in
12 your -- at the top and your exhibit or chart --
13 chart that's on page 9. It was in 2014, and you say
14 Spotify conducted research on the Australian music
15 market.
16 THE WITNESS: Correct.
17 JUDGE STRICKLER: What was the purpose of
18 the -- of this research?
19 THE WITNESS: So I should also expand on
20 the word "music." The actual origins of the study,
21 of the presentation that was televised, of the
22 interview that we did with Malcolm Turnbull at the
23 time was to look at music compared to TV and film.
24 And this, to your other question, brings in the
25 legal context.

1 In Australia at that point, there was
2 debate about fair use, and there was also debate
3 about ISP liability for copyright infringement. So
4 there's a very interesting legal backdrop to this
5 study.
6 What was clear to me was that music was
7 operating with carrots, lots of carrots, compared to
8 sticks. Pandora is in Australia. There are local
9 services in Australia that Americans in this
10 courtroom would not be familiar with. And Spotify
11 got into Australia and we got in there at a fair
12 price. I think this is an important point.
13 And iTunes download album could cost 23
14 to 24 Australian dollars, and we launched at $11.99.
15 So a superior alternative to piracy at a fair price.
16 JUDGE STRICKLER: Okay. But -- but,
17 again, my basic question is -- is a little simpler
18 than that. Why did you conduct the research?
19 THE WITNESS: Because the TV and film
20 industries were, in my view, behaving in a way that
21 created piracy. They were pricing prohibitively.
22 Foxtail accounts were incredibly expensive. And
23 this was very important to the nature of the study.
24 They were windowing content by two to three months.
25 JUDGE STRICKLER: Well, my point though

1 is -- is a simple -- or my question is a simpler
2 question. You say Spotify conducted research and
3 Spotify utilized its own resources to do the
4 research. What was the reason, what was the
5 economic or financial benefit for Spotify in doing
6 such a -- such research?
7 THE WITNESS: Just like with Netherlands,
8 the transferable lesson is what can Spotify do in a
9 market where copyright infringement wasn't actually
10 unlawful? The transferable lesson I want to take
11 away from this was what happens when Spotify offers
12 an alternative to piracy but the TV and film
13 companies are behaving in a way that creates piracy?
14 Now, remember, cross-usage is very
15 important here. If I use KickAss Torrents to get
16 Homelands, to get Game of Thrones, to get my
17 favorite TV content, I could equally use KickAss
18 Torrents to get music as well.
19 JUDGE STRICKLER: Did Spotify utilize
20 this research to -- to provide product or price
21 product in Australia or any other market?
22 THE WITNESS: When you say "price
23 product," can you clarify what that means?
24 JUDGE STRICKLER: Price -- price of
25 subscription services or -- or any other services

1 that it was offering, whether it was ad supported or
2 otherwise?
3 THE WITNESS: I think it underlines the
4 point about the importance of the price that we
5 launched at, which was 11 Aussie dollars 99. Had we
6 gone into a higher price, we may -- we may not have
7 had the same level of scale, and that would
8 therefore mean we'd never have an impact on piracy,
9 and importantly if you look back at 2015 recording
10 numbers yearbook, the Australia industry wouldn't
11 recover. To reiterate, Australia industry is now
12 growing, and from this chart, we can see piracy is
13 falling.
14 JUDGE STRICKLER: So -- go ahead.
15 JUDGE FEDER: Let's try to get at this
16 maybe a slightly different way. Was there a
17 specific business purpose for conducting this study
18 or was this, shall we say, Spotify's contribution to
19 a public policy debate in Australia?
20 THE WITNESS: I saw it as an objective
21 contribution to the debate around public policy at
22 the time in that what we learned from the
23 Netherlands, which was quite interesting at this
24 point in time which was not only was the Netherlands
25 first success story outside of Scandinavia for

1 Spotify but equally for Netflix as well, a legal
2 alternative to piracy of TV and film content. And
3 it's interesting to see Australia now has Netflix.
4 It didn't have in 2014. But the important point for
5 me, the A-B experiment which you can tease out of
6 Australia that you can't tease out of anywhere else
7 is the fact that the TV and film industries were
8 windowing content by two to three months -- I had
9 finished Homelands before my friends in Australia
10 started it -- and also pricing at prohibitive rates.
11 So that was the transferable lesson I
12 wanted to get out, which is not all copyright
13 holders behave the same way. Musical rightsholders,
14 traditional music services have worked hard to
15 reduce piracy with carrots, but when TV and film
16 don't, it creates an asymmetric effect. And that's
17 really what I wanted to explore.
18 JUDGE STRICKLER: So this work was done
19 for public policy -- to explore public policy in
20 Australia as opposed to any particular economic
21 benefit for Spotify per se?
22 THE WITNESS: I would leave -- it was for
23 the benefit of public policy, and I would reiterate
24 to see Netflix launch in Australia at a fair
25 reasonable price is a sign that hopefully it had a

1 good impact on this. We learned during the study
2 that there was more piracy of Game of Thrones in
3 Australia than there was for music combined. That's
4 a problem for Australia. And it's consumption of
5 content on-line that's going unmonetized, the same
6 problem that Daniel Ek was looking at in 2006, the
7 same problem I was looking the when I moved down
8 from Scotland to London in 2006.
9 JUDGE STRICKLER: Did you -- did you use
10 this research to price streaming services in
11 Australia or anywhere else after the research was
12 concluded?
13 THE WITNESS: I've used this research to
14 defend a fair price for music, and maybe this
15 alludes to earlier discussions as well, which is the
16 risk of raising prices in a country like Australia
17 which are used to what they would all rip-off
18 prices, not only risks losing demand under the curve
19 but potentially a backlash from the consumer.
20 JUDGE STRICKLER: When you say you use
21 this research to defend pricing, defend it against
22 what?
23 THE WITNESS: Against -- you have what
24 you have and our company in the space of ten years
25 now has 50 million people paying a monthly fee for

1 something that was voluntary to pay. That is an
2 incredible achievement for a Swedish tech company
3 which many people in this room wouldn't have heard
4 of five years prior.
5 JUDGE STRICKLER: Maybe my question was
6 poor.
7 THE WITNESS: What happens if you lose
8 them?
9 JUDGE STRICKLER: My question may be
10 poor. Defending it in what form?
11 THE WITNESS: The importance of having a
12 fair price --
13 JUDGE STRICKLER: No, in what forum?
14 THE WITNESS: Oh, just within internal
15 discussions within our company around pricing
16 issues.
17 JUDGE STRICKLER: Thank you.
18 BY MR. SEMEL:
19 Q. And I believe you mentioned that you --
20 you presented this, it was never published, but you
21 did present it; was it at a festival or a --
22 A. The name of the conference was the Big
23 Sound Conference in Brisbane, Australia.
24 Q. Okay.
25 A. And it happened in September of 2014, two

1 days before the Scottish referendum.
2 Q. And, in fact, Spotify also gains a public
3 relations benefit from being seen as a company that
4 has positive effects on piracy, correct?
5 A. I don't think that is restricted to just
6 Spotify. I think it's applause of the entire music
7 industry that we are now moving forward to reducing
8 piracy and increasing revenues. And, indeed, I
9 would argue that as a point of irony, for the past
10 15 years, newspapers have been laughing at the music
11 industry and now they're constantly asking me to
12 attend their management off-sites. They want to
13 learn from how we did it.
14 Q. If we turn to page 21 of your written
15 direct testimony, you have a chart at the top of the
16 page, and I just want to clarify. Oh, I'm sorry,
17 I've been passed a note. I don't know that I
18 clarified in our last thing.
19 You did not produce to us the -- the data
20 underlying your survey of the Australian release
21 schedule, correct?
22 A. No, but --
23 Q. And -- and that was also not anything
24 that you did prior to the creation of your written
25 direct testimony, correct?

1 A. Correct.
2 Q. Okay.
3 JUDGE STRICKLER: Counsel, not that it's
4 dispositive of anything necessarily, but was the
5 underlying data requested in discovery?
6 MR. SEMEL: We certainly requested data
7 concerning piracy and all the -- the -- I can give
8 you more specific requests, but, yes, absolutely
9 data was requested concerning piracy. So if there
10 was a study done of piracy, I think it definitely
11 would have fallen under that request, any
12 documentation done concerning such a study.
13 JUDGE STRICKLER: And, again, not that
14 it's necessarily dispositive of anything, but when
15 -- when underlying data with regard to this study or
16 the Netherlands study was -- or you believe was
17 requested through a more omnibus request, was there
18 any motion to compel production?
19 MR. SEMEL: So in this case, we were
20 actually told in the deposition that there was no
21 underlying data, that he was not in possession of
22 it. So we didn't make the motion to compel because
23 there was apparently nothing to get.
24 This new information is something I just
25 found out about five minutes ago.

1 JUDGE STRICKLER: Thank you.
2 THE WITNESS: If I can just quickly add,
3 in both instances --
4 JUDGE STRICKLER: Wait. Maybe -- maybe
5 if you get a question on redirect from your counsel.
6 THE WITNESS: Absolutely. It's just that
7 I'm willing to provide whatever is requested.
8 JUDGE STRICKLER: Let's wait -- let's
9 wait for an appropriate question.
10 THE WITNESS: Sure.
11 BY MR. SEMEL:
12 Q. So getting to this chart at the top of
13 21, I just want to clarify, this is not a table that
14 you created, correct?
15 A. That is correct.
16 Q. And you did not have any hand in the
17 gathering or the crunching, shall we say, of the
18 data that went into the table, correct?
19 A. That is correct.
20 Q. And you do not know who did, correct?
21 A. Correct.
22 Q. And you got this from a web site that
23 Spotify put out, correct?
24 A. Yeah. This is the Spotify for artists
25 web site, which was launched in late 2013.

1 Q. Right.
2 A. And these are U.S.-specific figures.
3 Q. Right. So just to be clear, you have no
4 idea where these numbers came from specifically,
5 correct? Other than the fact that they came from a
6 web page?
7 A. That is correct.
8 Q. If we turn to page 13 of your direct
9 testimony, we have another chart here. This is -- I
10 want to be clear. First of all, this is a chart of
11 Canada album sales, correct?
12 A. Correct. This is digital album sales.
13 To reiterate, digital album sales in Canada in 2012
14 to 2015 Q-1. And the source of the data is Nielsen
15 SoundScan, the authoritative source on Canadian
16 recorded music industry trends.
17 Q. And am I correct that in your written
18 direct testimony, there is no analysis discussing
19 how Canadian album sales are relevant to trends in
20 the United States, correct?
21 A. That is incorrect. Indeed, if I can
22 highlight paragraph 30 of the direct testimony, I go
23 into extreme depth to explain why this is incredibly
24 relevant to this particular case.
25 JUDGE BARNETT: You need to wait for a

1 question, Mr. Page.
2 BY MR. SEMEL:
3 Q. Okay. Outside of paragraph 30, there is
4 no analysis to explain how Canadian album sales are
5 relevant to the United States, correct?
6 A. I wish to cite further paragraphs, and
7 paragraphs 29 and paragraphs 31 also touch on the
8 relevance of this particular Canadian case study to
9 the debate about streaming.
10 Q. And did you create this chart?
11 A. Yes, I did it in conjunction with Nielsen
12 and had Nielsen vet my analysis.
13 JUDGE STRICKLER: The chart you're
14 referring to is the one on page 13?
15 MR. SEMEL: Yes, yes. That's what I was.
16 THE WITNESS: Yeah, the one that we have
17 on our screen just now.
18 BY MR. SEMEL:
19 Q. And was it created for this proceeding?
20 A. No. It was created in an earlier
21 iteration, so we didn't have as recent data as we
22 were able to display here, and for an internal
23 discussion about Spotify and debate about
24 cannibalization.
25 Q. I'm sorry, you said it was created in

1 earlier version, and then I guess it was re-created
2 in this version?
3 A. Yeah, basically, I just went back to
4 Nielsen and said if we can get updated data, we can
5 update the story.
6 Q. Right. And was that done as part of this
7 proceeding?
8 A. This particular chart has been presented
9 at internal meetings in Spotify several times, and
10 the importance of it, the additional more recent
11 data is you actually see the uplift in the blue
12 lines happening at the end of that particular time
13 period. So that's a new revelation for the internal
14 discussions and I think a relevant part of the
15 evidence for these particular CRB proceedings.
16 Q. And the data here, I understand, right,
17 the data did not come from you, correct? It came
18 from Nielsen?
19 A. Nielsen SoundScan, which, again --
20 Q. And the underlying data was not produced
21 in this case, correct?
22 A. Correct, but you could actually access
23 the same data from yourself from Nielsen by request.
24 Q. And do you know how the data was -- do
25 you know the methodology used to gather the data?

1 A. The methodology of gathering and
2 structuring this chart, well, yes, I requested
3 additional album sales by week over time, and then I
4 also requested additional track sales by week over
5 time. And what I did, which I was interested to see
6 that the Canadian music industry didn't do, was
7 compare week against same week prior year. And that
8 was important in terms of identifying a trend.
9 So in 2013, the actual download figures
10 for Canada showed growth on 2012, if you take a
11 calendar year view, but by looking at it as week
12 against week prior year, I was able to identify this
13 very interesting trend where you see the decline
14 happening in the third quarter of that year.
15 JUDGE STRICKLER: Because you detect the
16 seasonality in the -- in the streaming service -- in
17 the sale of downloads?
18 THE WITNESS: It wasn't seasonality.
19 Seasonality would be -- see a spike around the
20 Christmas period, and then, by doing it this way,
21 you could see whether that spike around the
22 Christmas period is as big as the spike previously,
23 but this was able to capture the dramatic effects
24 which took place in the third week of September
25 where you can see the blue lines, that is, growth of

1 digital albums went into red for a lengthy period
2 thereafter.
3 That is, to reiterate, iTunes sales went
4 into decline in a country where Spotify didn't
5 exist, where streaming hadn't taken off, where there
6 was no Pandora and no iTunes radio. The usual blame
7 game for cannibalization wasn't present in Canada to
8 explain that downward trend.
9 BY MR. SEMEL:
10 Q. And was there a reason that you chose
11 Canada for this research?
12 A. Yes, and it actually goes back to prior
13 to 2012, when the CRB last met. We had launched in
14 America in the summer of 2011, a soft launch, but we
15 hadn't launched in Canada until Christmas 2014. So
16 there was a long period there -- indeed, we had
17 Canadian officials coming to our office in London,
18 saying when are you going to launch in Canada? You
19 launched in Colombia, but when will you launch in
20 Canada? As a point of irony, there's a website
21 called Cantada.com, you which shows all the cool
22 stuff you can get in America but you can't get in
23 Canada, Cantada, their sense of humor, not mine.
24 And that had Spotify on the front page for many,
25 many years.

1 So what was interesting was we were
2 getting criticized for cannibalization in countries
3 like Britain and America, where downloads went into
4 decline around the third quarter of 2013, but you
5 can't criticize Spotify for cannibalization in
6 Canada when iTunes went into decline at exactly the
7 same period. So that was an accidental A-B
8 experiment, which I think was informative to the
9 debate about streaming access and downloads
10 ownership.
11 JUDGE STRICKLER: So was this analysis
12 also done for -- for Spotify's own internal
13 commercial purposes?
14 THE WITNESS: Well, I did it internally,
15 but I also took the information back to Nielsen, and
16 Nielsen had certainly discussed this analysis with
17 their representatives in the Canadian recorded and
18 publishing industry as well.
19 JUDGE STRICKLER: What was the purpose of
20 the internal -- the internal purpose of the
21 analysis?
22 THE WITNESS: I wanted to know why iTunes
23 were going into decline. And what I learned was you
24 can't attribute the decline to Spotify if Spotify is
25 not there to cause it.

1 JUDGE STRICKLER: Why was that important
2 to Spotify to know?
3 THE WITNESS: For myself, it was --
4 cannibalization is a concern. It is also an
5 opportunity. As people move from ownership to
6 access, that could lead to cannibalization of
7 existing buying revenues for those high buyers,
8 equally a widening of the revenue base and growth of
9 revenues for those non-music buyers.
10 So it can go either way, but putting
11 aside the debate about cannibalization, which
12 dominated the discussions at that particular point,
13 I was interested in the causality. Was Spotify the
14 cause of the decline in ownership?
15 JUDGE STRICKLER: And did you understand
16 that by identifying the causality, that would assist
17 Spotify in some way in increasing its revenues,
18 whether in Canada or otherwise?
19 THE WITNESS: It wasn't just revenues,
20 not in the slightest. What I wanted to do was
21 understand the causal effects.
22 JUDGE STRICKLER: As an academic
23 interest?
24 THE WITNESS: Precisely.
25 JUDGE STRICKLER: Thank you.

1 BY MR. SEMEL:
2 Q. But to be clear, although Spotify was not
3 available in Canada during these -- this period,
4 plenty of other streaming services were, such as
5 YouTube or Pandora or the like, correct?
6 A. You are correct to highlight YouTube,
7 but, to stress, Pandora was not. And I think to
8 this day, and correct me if I'm wrong, Pandora is
9 still not available in Canada.
10 Q. YouTube is, though?
11 A. YouTube is, yeah.
12 Q. I want to turn to your written rebuttal
13 testimony, on page 4 of your written rebuttal
14 testimony. In paragraph 8 you state that -- going
15 down about five lines, "that songwriters are better
16 off under the streaming structure because they are
17 receiving more revenue directly from PROs."
18 Do you see that?
19 A. I see that.
20 Q. You do not know the terms of any
21 performance rights licenses, correct?
22 A. I don't know the terms of the licenses,
23 but I wish to clarify I am aware of distribution
24 policy through working for PRS For Music for six
25 years.

1 Q. But you've never been privy to any terms
2 of any licenses for the performance rights for
3 musical works, correct?
4 A. Correct.
5 Q. And you don't know the percentage of cut
6 that is taken by PROs under their licenses with
7 songwriters, correct?
8 A. It should be stressed under songwriters
9 and music publishers have experienced that cut.
10 Q. Correct. But there is a cut taken,
11 correct?
12 A. Yeah --
13 Q. You don't know what it is, but there is
14 one?
15 A. Some people refer to it as commission,
16 but the technical and correct description, for the
17 Judges' benefit, is administrative cost because they
18 are not-for-profit entities.
19 Q. Right, administrative cost. And when
20 advances are recouped, songwriters will likely wind
21 up with less for moneys that are passed through
22 performance rights organizations because they have
23 an administrative cost, correct?
24 A. That is incorrect.
25 Q. But you don't know the terms of any of

1 the licenses, correct?
2 A. I don't know the terms of the licenses,
3 but your statement assumes that only songwriters
4 experience that cost. That cost is applied to
5 songwriters and music publishers equally.
6 Q. Indeed. And you have -- you have no idea
7 how much in performance rights organization fees
8 songwriters and publishers pay in the aggregate,
9 correct?
10 A. You would need to clarify what fees
11 refers to here.
12 Q. Administrative fees.
13 A. Administrative costs?
14 Q. Yeah, administrative costs.
15 A. Okay. So in an example such as the U.K.,
16 somewhere around about 15 percent would be the
17 administrative costs a not-for-profit PRO would
18 deduct for the -- for the processing and
19 distribution of those royalties.
20 Q. I understand, but you don't know the
21 terms of any of the licenses for the performance
22 rights, correct?
23 A. Of the licensees --
24 Q. I think we established that.
25 A. Of the licensees, no, but administrative

1 cost, I have a good general awareness.
2 Q. But these fees which, as far as you know,
3 are not paid on mechanical license income, correct?
4 A. That is incorrect.
5 Q. You do not know the terms of any of the
6 mechanical licenses, correct?
7 A. Again, we are confusing and conflicting
8 two words of "licensing" and "fees." I would be
9 aware of the administrative cost structure of
10 processing mechanical royalties in certain markets,
11 just through experience in working for PRS for Music
12 for six years, but I don't want to confuse that with
13 the licensing terms that those mechanical rights
14 bodies might conduct with rights users.
15 Q. Well, with regard to mechanical licenses,
16 you are not privy to any of the terms of any
17 licenses for the mechanical -- mechanical licenses
18 for musical works, correct?
19 A. Correct.
20 Q. I'd like to turn to page 11 of your
21 rebuttal testimony. Look at -- there's a section A
22 in the middle of the page that says the Copyright
23 Owners cannot name one scenario in which musical
24 works are licensed on a per-play rate.
25 JUDGE STRICKLER: Where are you?

1 Which --

2 MR. SEMEL: I'm sorry. On page 11 of the

3 written rebuttal testimony.

4 JUDGE STRICKLER: Page 11?

5 MR. SEMEL: Page 11, yeah, sorry.

6 There's a section that begins in the middle of the

7 page.

8 BY MR. SEMEL:

9 Q. Did you draft this section of your

10 testimony?

11 A. Yes, I did.

12 Q. And did you conceive of this as an

13 argument that you wanted to make in your rebuttal

14 testimony?

15 A. Yes, I did.

16 Q. Did you conclude that you had personal

17 knowledge of this subject matter?

18 A. Yes, I did.

19 Q. But you stated that you do not know the

20 terms of a single musical works license, correct?

21 A. Correct.

22 Q. Have you reviewed the musical works

23 licenses that were produced in this case?

24 A. In this statement here?

25 Q. No, no. I meant have you reviewed the

1 musical works licenses, there have been a number of
2 them that have been produced, as part of this
3 proceeding?
4 A. I have a general awareness of musical
5 works licensing but not a specific one.
6 Q. Right. And the musical works licenses
7 produced in this case are restricted material,
8 correct?
9 A. Correct.
10 Q. And you have not been given access to
11 that material, correct?
12 A. Correct.
13 Q. And, in fact, you don't even know the
14 terms of Spotify's musical works licenses, correct?
15 A. Correct.
16 Q. You have never consulted within Spotify
17 on content agreements, correct?
18 A. Correct.
19 Q. You have never seen any of the content
20 agreements that Spotify has entered into, correct?
21 A. Correct.
22 Q. You are not aware of any of the terms of
23 any of the content agreements that Spotify has,
24 correct?
25 A. Correct.

1 Q. You do not even know whether Spotify pays
2 publishers or songwriters on a per-play basis,
3 correct?
4 A. Correct.
5 Q. You have no understanding of what royalty
6 rates have been deployed in commercial agreements in
7 the space that is covered by this proceeding,
8 correct?
9 A. Insofar as the inputs, that is, what is
10 being negotiated, correct.
11 Q. And you have never been privy to -- I
12 think we covered this but maybe not. You've never
13 been privy to any terms of any content licenses for
14 mechanical rights, correct?
15 A. Correct.
16 JUDGE STRICKLER: Question for you,
17 related to counsel's question. He highlighted
18 heading A, the Copyright Owners cannot name one
19 scenario in which musical works are licensed on a
20 per-play rate.
21 Did you mean by that that you reviewed
22 the -- the restricted version of their -- of their
23 direct testimonies and that is that they did not
24 name such a scenario, or are you saying that they
25 would never be able to -- because of your knowledge

1 of the industry, would not be able to name a
2 scenario in which musical works were licensed on a
3 per-play rate.
4 THE WITNESS: The former.
5 JUDGE STRICKLER: Thank you.
6 BY MR. SEMEL:
7 Q. To be clear, you did not review the
8 restricted versions of the testimony in this case,
9 correct?
10 A. I reviewed the 16 written direct
11 testimonies from the copyright holders.
12 JUDGE STRICKLER: They're divided into
13 restricted and public versions. So the question is,
14 if I -- if I may, counsel, is did you review -- I
15 assume you read the public versions; you did not
16 have access, authority to read restricted?
17 THE WITNESS: That's right. That's
18 absolutely correct, the redacted versions.
19 JUDGE STRICKLER: Thank you.
20 BY MR. SEMEL:
21 Q. And it was your understanding that any
22 musical works terms would have been underneath the
23 black bars in the public version, correct? Would
24 have been redacted?
25 A. That would not be a fair statement with

1 regards to how I concluded from reading the 16
2 written direct testimonies.
3 Q. You say in paragraph 23 at the beginning
4 of this sentence -- oh, no sorry. In paragraph 24,
5 you note -- about a -- an argument that is made that
6 ignores the realities of music promotion and
7 consumption, terrestrial radio, like interactive
8 streaming, pays on a percentage of revenue basis.
9 First of all, what do you mean by
10 interactive streaming in that sentence?
11 A. So there may be transatlantic differences
12 in terminology, but if you view web casting as akin
13 to Pandora, then interactive streaming is akin to
14 Spotify tech services.
15 Q. And where did you obtain the factual
16 information that interactive streaming pays on a
17 percentage of revenue basis?
18 A. I think I can say I consulted with
19 colleagues within my company, but also having a good
20 awareness of the industry landscape in America, one
21 of many countries I have to cover, I've been made
22 aware of that.
23 Q. But I do believe we just established that
24 you do not know the single term of a single license
25 for -- a single content license in the space,

1 correct?
2 A. Correct.
3 Q. And you cannot identify a single
4 mechanical license that operates exclusively on a
5 percentage of revenue basis, correct?
6 A. Correct.
7 Q. In fact, you cannot identify the terms of
8 any mechanical licenses, correct?
9 A. Correct.
10 Q. Do you know the terms of Spotify's rate
11 proposal in this case?
12 A. No, I'm not aware of our current proposal
13 in this particular case.
14 Q. You include a few pieces of financial
15 information for Spotify in your written direct
16 testimony. I'm not going to go to them because
17 they're restricted and I don't need to close the
18 session for these purposes, but you do not have
19 visibility or personal knowledge of financial data
20 at Spotify, correct?
21 A. That is too ambiguously worded for me to
22 be able to answer.
23 Q. You do not do -- you do not have
24 visibility over the financial data, I think is how
25 you said in your deposition; does that sound right?

1 A. That is correct.
2 Q. And none of your analyses have involved
3 analysis of Spotify's gross margins?
4 A. That is correct.
5 Q. And none of your analyses have involved
6 analyses of Spotify's revenues?
7 A. Our revenues in the macroeconomic context
8 for our contributions in the music industry but
9 perhaps not in the financial context of managing
10 mechanics, for example.
11 Q. Right. And you are not aware of any
12 analysis that Spotify has done concerning the impact
13 of mechanical royalty rates on its growth, correct?
14 A. That is correct.
15 Q. And you are aware that Spotify currently
16 has some bundled plan offerings, correct?
17 A. I'm aware of bundling on a global level
18 in our 60 markets, correct.
19 Q. Have you heard of the New York Times
20 bundle?
21 A. Yes, I've read about that in the press.
22 Q. But you have not evaluated the economic
23 ramifications for Spotify of proposed bundling terms
24 -- deals, correct?
25 A. Correct. I would be involved in the

1 landscape of what music are facing and how two
2 incentives can be aligned.
3 Q. And you have not evaluated the effect of
4 bundling programs on Spotify's revenues, profits, or
5 margins, correct?
6 A. Correct, much more economic analysis than
7 financial.
8 Q. You have also not done financial analysis
9 concerning the impact of the mechanical royalty rate
10 structure on Spotify's future or the viability of
11 its plans, correct?
12 A. Correct.
13 Q. If we could look at page 12 of your
14 rebuttal testimony, we'll be looking at paragraph
15 25 -- oh, actually, right above that, really, you
16 have a -- a section that discusses overall
17 publishing revenue.
18 A lot of publishing revenue -- is it your
19 understanding that the Copyright Owners in this
20 case, a number of publishers produced financials in
21 connection with this proceeding. Do you understand
22 that?
23 A. Correct, but to reiterate, I looked at
24 redacted versions of their statements.
25 Q. Right. That's what I was going to

1 clarify. You did not have access to that
2 information, correct?
3 A. Yeah, correct.
4 Q. So anything you are talking about here is
5 coming from a third-party source, correct?
6 A. Correct.
7 Q. You don't have direct access to any
8 publisher revenue information, correct?
9 A. Again, if I can distinguish financial and
10 economic data here, for example, a global musical --
11 global value of musical copyright, the turnover of
12 musical publishing globally, at the end there's
13 analysis referring to the turnover of U.S. music
14 publishers specifically.
15 So I would consider that as economic
16 information, not financial information in terms of
17 the management of accounts or the detailed margins
18 that publishers would disclose in that redacted
19 form.
20 Q. Right. But you're -- you are utilizing
21 third-party information, information compiled by
22 other people that's available publicly or for
23 purchase in connection with your analysis of
24 publisher revenue, correct?
25 A. Correct.

1 Q. If we look at page -- sorry, page 14,
2 paragraph 29, you have a discussion of synch
3 licenses are inappropriate comparisons. I just want
4 to clarify, you -- maybe this was wrapped up in the
5 questions we had earlier, but you don't know the
6 terms of any licenses for synchronization in the
7 musical work space, correct?
8 A. What I do know is you can't generalize in
9 those terms because they're directly licensed,
10 they're all unique to the terms of the particular
11 case.
12 Q. But you don't know the terms of any of
13 the licenses, correct?
14 A. Again, I wish to stress you can't
15 generalize terms. You can't say what the terms of
16 the synch license when every single synch license is
17 done differently.
18 JUDGE STRICKLER: Well, you would only
19 know that if you saw the licenses, right?
20 THE WITNESS: Yeah, but --
21 JUDGE STRICKLER: You might -- you might
22 be able to generalize if you had seen them?
23 THE WITNESS: You may be able to
24 generalize. You may conclude that they're a too
25 disparate nature to generalize from. The point

1 being they're all unique to the terms, so I would
2 hesitate to say there is a way that you can
3 generalize synchronization licensing.
4 JUDGE STRICKLER: Well, just to sort of a
5 logical point, and perhaps I'm missing it, if you
6 can't -- if you don't see the licenses, how do you
7 know you can't generalize? How do you know they're
8 not essentially standard? You could, through
9 economic logic, suggest that they would be
10 different, but you wouldn't know that unless you
11 actually looked at them and said there is no
12 generalization that you can make.
13 THE WITNESS: That's a fair --
14 JUDGE STRICKLER: Is that a fair
15 statement?
16 THE WITNESS: It's a fair and reasonable
17 point, but if I could augment that point by saying,
18 as you move up the value chain of synchronization
19 licensing from a small TV commercial worth 20,000
20 dollars to a major Coca-Cola campaign which could be
21 worth millions of dollars, you'd expect as value
22 grows, the uniqueness of the synchronization deal
23 itself will grow with it as well. So you would have
24 a sort of a bargain bin of standardized
25 synchronization licensing, but as you move up the

1 value chain, you would have more unique terms to
2 that contract, making them more -- more distinct
3 from each other.
4 JUDGE STRICKLER: So economic logic
5 suggests no generalization, but you don't know
6 whether, in fact, that logic holds in the individual
7 agreements because you haven't seen them?
8 THE WITNESS: Yes, but you can apply some
9 solid economics to what underpins the nature of a
10 synchronization license.
11 JUDGE STRICKLER: Thank you.
12 BY MR. SEMEL:
13 Q. And you -- you don't know -- yeah, I
14 think this was clarified, but let me just pin down.
15 You don't know the terms of a single synchronization
16 license, correct?
17 A. Well, through personal capacity, I've
18 looked at single synchronization licensing, but I
19 wanted to stress that's just one of millions, and
20 they will all be different from each other.
21 Q. You've looked at one synchronization
22 license, correct?
23 A. Yes, you -- you're aware of how a
24 synchronization license can work. For example,
25 working at PRS for Music, you are aware of

1 synchronization licensing, which could go through
2 the performing rights organization but equally
3 direct through the publisher.
4 Q. No, I didn't mean that you were aware
5 that the concept exists, but I meant you have never
6 actually inspected a license, a signed license for
7 synchronization rights, correct?
8 A. That is correct.
9 Q. And you've never, again, negotiated such
10 a license, correct?
11 A. That is correct.
12 Q. And do you know whether or not
13 synchronization licenses -- withdrawn.
14 If we move to page 11 to 12 of your -- I
15 guess we're moving back to page 11 to 12 of your
16 rebuttal statement, there's a sentence that begins
17 on the bottom of page 11, continues on to page 12,
18 that says, "Once a consumer purchases a CD or PDD,
19 they can access the music by playing a song as often
20 or as little as they would like." Correct?
21 A. Correct.
22 Q. And you agree with that statement; you
23 wrote it, correct?
24 A. Correct.
25 Q. And that statement is made in the context

1 of your argument that you're not being charged per
2 play when you purchase a CD, correct?
3 A. Correct.
4 Q. In essence, you're -- rather, you're
5 being charged an access fee after which you can play
6 it as much as you want, correct?
7 A. As much or as little as you want.
8 Q. Right. But -- but as you say it, once a
9 consumer purchases, they can access the music,
10 correct?
11 A. Correct.
12 Q. So the -- the payment is for the access,
13 correct?
14 A. I disagree with that term. I believe the
15 payment is for the ownership. And to offer a very
16 interesting example, you can sell that CD in the
17 secondhand market for a capital pain and not have to
18 pay the copyright holder. Again, one of the
19 benefits of Spotify is in monetizing the consumption
20 which would otherwise be forgone in that ownership
21 example. So I think it's the purchase of ownership
22 of intellectual property, to exhaust intellectual
23 property that's probably what we need to clarify
24 here.
25 Q. So you're making a distinction between

1 ownership and access?
2 A. Correct.
3 Q. And is the distinction that there is a
4 physical thing that you own?
5 A. Yes. The example of the CD, you purchase
6 the CD, you exhaust the intellectual property, and
7 the anomaly that I always like to refer to is the
8 fact that you can therefore sell that CD or that
9 vinyl record for a capital gain. It's yours to
10 sell. That doesn't apply for a digital download
11 file, but it does apply to CDs.
12 Q. But it doesn't apply for a digital
13 download file, does it? In that case, you're paying
14 a fee to access the download?
15 A. Correct.
16 Q. And then you can play it as much as you
17 want, correct?
18 A. But I would also perhaps add a legal
19 point, and I'm not a lawyer, but the ReDigi case,
20 which is going through the courts right now, raises
21 that question. I spent 2,000 pounds on my iTunes
22 catalogue; can I sell it on because I'm moving to a
23 different platform?
24 Q. Right. But even then, though, when you
25 sell it, you are losing your access, correct? So

1 the access is inextricably tied to your concept of
2 ownership, correct?
3 A. Unless you rip that CD to your computer
4 and therefore want to listen to it there, so there
5 are extensions to how you might want to access the
6 ownership.
7 Q. Well, you are postulating an illegal act,
8 correct?
9 A. Illegal act in some countries, not
10 illegal in others.
11 Q. If we could move ahead to page 18 of your
12 rebuttal statement, in the middle of the page, you
13 have a section A that says mere access is a value
14 argument is unprecedented in the industry.
15 Do you see that?
16 A. Yes, I see that here.
17 Q. But, in fact, as we just discussed,
18 payment for access is, in fact, much of the history
19 of recorded music, correct?
20 A. Incorrect.
21 Q. When you purchase a download as you said,
22 you get access to the CD, after which you can play
23 it as much as you want. Those were your words,
24 correct?
25 A. Correct.

1 Q. You didn't say when you purchase a CD,
2 you get ownership of the CD; you actually used the
3 word "access," correct?
4 A. I wish to clarify what I said earlier,
5 which is ownership gives you the intellectual
6 property of that CD. And I further illustrate my
7 example in this legal clarification of language,
8 which is that you can sell that CD on the secondhand
9 market. That's an ownership proposition. Accessing
10 is pressing the play button on your CD player, but
11 you own intellectual property.
12 Q. But when you sell it, you lose the
13 access? And another person purchases it, and they
14 get the access? The value comes in the access? If
15 you could own it but not access it, there wouldn't
16 be much value in that CD, would there? If someone
17 offered to sell you a CD but you could never play
18 it, I don't think you'd be able to charge very much
19 for it, correct?
20 A. That is correct, but it's a fairly
21 incoherent proposal to put forward to the CD
22 product.
23 Q. You are not aware of any econometric
24 analysis that's behind the $9.99 price point that
25 Spotify charges for its standard premium plan,

1 correct?

2 A. No econometric analysis, other than to

3 point out what I stressed earlier, which is very

4 important to appreciate which is that Rhapsody was

5 in America at $9.99 long before Spotify came. So

6 there's maybe a gravitational force towards that

7 price. And then, secondly, to consider a concept

8 that economists call shadow pricing, which is,

9 broadly speaking, the value of a monthly fee to an

10 access point like Spotify is equivalent to a monthly

11 purchase of an album. They are not econometrics.

12 They are fairly simplified terms. But I do think

13 those two economic factors had a role in this

14 gravitational force to $9.99, which happened long

15 before Spotify came and long before the last CRB

16 hearings.

17 Q. And it actually happened at Spotify

18 before you came to Spotify, correct?

19 A. Correct.

20 Q. And you have never done an analysis at

21 Spotify to estimate how many different streaming

22 services can be sustained in the U.S. market,

23 correct?

24 A. Correct. It's something that we are

25 constantly aware of in terms of number of players in

1 a market and, for the economists in the room, how
2 markets can converge on an oligopoly, but it's
3 interesting to think through, you know, that
4 question, something that I will do work around, but
5 I haven't done any pure economic analysis on that
6 topic.
7 Q. And you have not analyzed what the effect
8 on Spotify's revenues would be of not offering its
9 ad-supported tier, correct?
10 A. I believe the earlier discussion that --
11 with yourself and my counsel had regarding the O&O
12 study actually answered that question.
13 Q. Well, I'm -- I'm just looking at your
14 deposition testimony. So maybe something has
15 happened in between then and now. But you've never
16 analyzed what the effect on Spotify's revenues would
17 be of not offering its ad-supported tier, correct?
18 A. To clarify, what you can infer is that in
19 terms of share of preference, which is not revenues,
20 the impact of losing that free tier would be net
21 negative on the Freemium business that we operate.
22 And then to your question, it would be logical to
23 conclude that would be net negative upon revenues as
24 well, but I have not actually analyzed the revenues
25 equation per se. I'm just simply concluding that if

1 you have less of a business, you have less of a
2 business.
3 Q. But you haven't analyzed the effect on
4 revenues, correct?
5 A. Correct.
6 Q. And you have never done an analysis of
7 whether Spotify's ad-supported tier cannibalizes
8 users from its premium tier, correct?
9 A. It's correct, but it's the incorrect way
10 of looking at the Freemium model and the path to
11 paid that I explained earlier.
12 Q. And you've done no analysis into whether
13 or not aggregate performance income from live
14 performances in the U.S. has risen because of
15 Spotify, correct?
16 A. Correct, but with my global analysis of
17 live music and some very detailed analysis in the
18 U.K. live music market, I would also add that
19 revenues from live music were growing long before
20 Spotify got started. And, indeed, in a famous piece
21 of work in the U.K., I showed in March 2009 was the
22 first time in recent economic history live revenues
23 had overtaken recorded.
24 Q. And you -- you cite to reports by the
25 company MiDia, M-i-D-i-a, numerous times in your

1 report, correct?

2 A. Correct.

3 Q. Do you know the managing director of

4 MiDiA?

5 A. Yes, he's a very well respected

6 consultant.

7 Q. This is Mark Mulligan, correct?

8 A. Correct.

9 Q. And -- and you find MiDia and

10 Mark Mulligan one of the more or most reliable

11 sources of information in the industry, correct?

12 A. Correct. And I would also include many

13 publishers who also subscribe to his work and would

14 echo the same sentiments.

15 MR. SEMEL: I have no further questions

16 at this time.

17 MR. MANCINI: Your Honor, I have only a

18 couple of questions, and we can release him before

19 the lunch break.

20 JUDGE BARNETT: Let's go ahead now and

21 wrap it up.

22 REDIRECT EXAMINATION

23 BY MR. MANCINI:

24 Q. Mr. Page, a few minutes ago, you were

25 asked by Mr. Semel to compare the difference between

1 ownership and access, and I just want to probe that
2 a bit further with you.
3 Is it true that for a CD and a PDD, the
4 user has ownership over that music, correct?
5 A. Correct.
6 Q. And with Spotify, if a user no longer
7 renews their Premium service, can they access those
8 songs any longer?
9 A. They can't access those songs in the same
10 interactive on-demand way. It's one of the key
11 features which splits first class and standard
12 class.
13 Q. And if a user no longer is a Spotify
14 Premium user, they only have access to the free
15 service, correct?
16 A. Correct.
17 Q. So their access is limited?
18 A. Correct.
19 Q. You were also asked about what would
20 happen to Spotify if its free tier was in effect
21 shut down.
22 A. Correct.
23 Q. Can I ask you to turn your attention to
24 Spotify Trial Exhibit 1025, specifically slide 3.
25 Did you have occasion to study that question?

1 A. Yes.
2 Q. And what did you conclude?
3 A. So if you're referring to slide 3 here,
4 and the question that we were addressing here is
5 removing mobile free tier would have very little
6 impact on the uptake to pay. So, again, this was
7 about restrictions on our Freemium model, not
8 restrictions on the features within Free but on the
9 entire Freemium model.
10 So to read the subheading there,
11 withdrawing Spotify's mobile feature would have
12 little impact on the uptake of Premium services.
13 Only 6 percent of the current Free users say that
14 they would make the leap. That is, by pulling the
15 rug from under the feet of the sheep that are in
16 that pen, very few of those sheep would go into the
17 superior first-class proposition.
18 Q. Just one more question. Do you recall
19 previously, I think, that Judge Strickler asked you
20 about Demonstrative Number 5, if I may put that on
21 up on the screen. If you were made aware that
22 there's no legally recognized public performance
23 associated with a ringtone or a download, does that
24 change your understanding of how digital is
25 reflected here in BMI's revenue sources?

1 A. If I can just repeat your question, if --
2 Q. If there's no legally recognized public
3 performance right in the U.S. associated either with
4 a ringtone or a download.
5 A. That is correct. And may I apologize, I
6 was perhaps confusing transatlantic licensing
7 models. There is a performance right in the
8 download in many European countries. So just --
9 this actually enhances the results. The reason that
10 digital segment of the pie is growing, to quote
11 ASCAP and BMI's press release, will be even more to
12 do with streaming and less to do with the offsets of
13 downloads.
14 MR. MANCINI: So, Your Honors, at this
15 point, I'm concluded with Mr. Page. I would like to
16 just move into evidence a series of exhibits that
17 were attached to his WDT and WRT, subject to the
18 same understanding we had with Mr. Semel to further
19 brief. And those would be Trial Exhibits 65, 82,
20 215, 218, 898, 985, 986, 987, 989, 990, 992, 994,
21 995, 996, 997, 1020, 1021, 1024, 1027, 1514, 2686,
22 2898, 2742, 2658, and 2868.
23 MR. SEMEL: The only thing I would
24 note -- we'll deal with this in the briefing,
25 though -- is that we had sort of thought they were

1 going to try to lay a foundation for these documents
2 because they are all third-party documents that the
3 witness has no personal knowledge of. So we'll
4 address it in the briefing, but I'm a little bit
5 surprised that there's an attempt to move in 20
6 documents that do not come from Spotify and come
7 from third parties, without having any attempt being
8 made to lay a foundation during testimony.
9 JUDGE BARNETT: But, Mr. Mancini, your
10 representation is that all of these were attached to
11 either the written direct or the written rebuttal
12 testimony of this witness?
13 MR. MANCINI: That is correct, Your
14 Honor.
15 JUDGE BARNETT: You agree on that?
16 MR. SEMEL: Yes, that's correct.
17 JUDGE BARNETT: Thank you.
18 (Spotify Exhibit Numbers 985, 986, 987,
19 989, 990, 992, 994, 995, 996, 997, 1020, 1021, 1024,
20 and 1027 were marked and received into evidence.)
21 (Amazon Exhibit Numbers 65, 82, 215, and
22 218 were marked and received into evidence.)
23 (Apple Exhibit Number 1514 was marked and
24 received into evidence.)
25 (Pandora Exhibit Number 898 was marked

1 and received into evidence.)

2 (Copyright Owners Exhibit Numbers 2658,

3 2686, 2742, 2868, and 2898 were marked and received

4 into evidence.)

5 MR. MANCINI: I have no further questions

6 for this witness.

7 JUDGE BARNETT: Thank you.

8 Judge Strickler?

9 JUDGE STRICKLER: Yeah, I have two

10 questions for you, Mr. Page. Both of them deal with

11 paragraph 76 of your written direct testimony, where

12 you talk about you assert to be the promotional

13 value of Spotify-curated and algorithmically driven

14 playlists. If you could turn to that for just a

15 second. And paragraph 76 begins on page 32.

16 THE WITNESS: Thank you.

17 Okay, thank you, I have that here.

18 JUDGE STRICKLER: Okay. Now turn one

19 more page, if you would, still staying in paragraph

20 76. It's really a very basic question, two

21 questions.

22 You have a graph there, and you're

23 showing streaming relative to -- to months from --

24 from September 2013 through July -- through May of

25 2014.

1 THE WITNESS: Um-hum, that's correct.
2 JUDGE STRICKLER: The vertical axis
3 doesn't have any numbers on it. What are we looking
4 at there?
5 THE WITNESS: Correct. So in the -- I
6 will stress that in the footnote that links to the
7 article that's publicly available on-line, we
8 explain our approach here. And perhaps it's
9 important to elaborate here which is we're doing
10 normalized charts, that is, I have radio plays, I
11 have Shazam tags, and I have Spotify streams, three
12 completely different entities.
13 For the purpose of normalizing, it's
14 important firstly to get permission from
15 rightsholders to present this work, and this was
16 done in conjunction with Mr Probz publisher and
17 record label, and secondly to highlight the order of
18 events. When in a normalized chart do things reach
19 their natural peak?
20 Now, all peaks mean different things.
21 Peaks in radio spins is not the same thing as a peak
22 in streams, but a peak is a peak, and by that, we
23 can determine the order of events. And the purpose
24 of this chart was to show for this Dutch artist, who
25 I have to stress didn't have a house at the start of

1 this particular calendar year, finished a year with
2 a gold record in the United States, streams move
3 first, then Shazam tags, then radio plays.
4 JUDGE STRICKLER: I -- I understand the
5 point of the chart, but because there -- it's sort
6 of an apples to oranges comparison, you have three
7 different things here, it couldn't be normalized by
8 a -- by a percentage change on the -- on the
9 vertical axis?
10 THE WITNESS: That wouldn't work in that
11 economic analysis for this purpose, because the
12 percentage changes, again, refer to different
13 entities. A radio play, a stream, and a Shazam tag
14 are different things by nature. So I felt the best
15 way to construct this chart -- and we've pursued
16 this going forward even making data available to the
17 artist, the writers, the labels, and publishers --
18 is to normalize the data so you can tease out what
19 moved first.
20 And that led us to draw a very important
21 conclusion, which is up until this piece of work
22 which went public, everyone consumed -- everyone
23 assumed that you broke music on radio, and then
24 sales and streaming would follow. And what we show
25 here is that you break music on Spotify, then Shazam

1 tags and then radio follows after that. So it was
2 the change in order of events which was the lesson
3 that we wanted to teach.
4 JUDGE STRICKLER: So the chart is showing
5 us the timing of the change and the direction of the
6 change and the relative timing of the change between
7 streaming and -- and radio plays?
8 THE WITNESS: Yeah.
9 JUDGE STRICKLER: But the magnitude of
10 those changes cannot be gleaned from this chart
11 because -- because of the -- of the way that the
12 chart is normalized; it does not include any kind of
13 a volume measure?
14 THE WITNESS: Yeah. I understand your
15 question thoroughly. And maybe I can just capture a
16 comment that was made in the full blog article which
17 led to this work, which was that Mr Probz' Waves,
18 the Robin Schulz remix of Waves, commences its
19 ascendancy in America through our playlist and
20 entered the top 40 on the Spotify visible chart.
21 To which I then got a phone call from the
22 CTO of Shazam, saying how on earth is this artist in
23 your chart where I don't have one single Shazam tag
24 to justify their presence.
25 JUDGE STRICKLER: This conversation that

1 you're referring to is not in your testimony?
2 THE WITNESS: It's not in the testimony,
3 but it is in public presentations which are, I
4 presume, on YouTube, and in the blog article as
5 well, we actually state and cite Shazam on this
6 point.
7 JUDGE STRICKLER: You're talking about
8 the reference in paragraph 65 -- in footnote 65?
9 THE WITNESS: Let me just make sure.
10 Yeah, in paragraph -- in footnote 65, yeah, that is
11 correct.
12 JUDGE STRICKLER: Maybe I'm -- maybe I'm
13 mistaken because you're referring to Mr Probz now,
14 not -- not Meghan Trainor. Is it 63, paragraph 63,
15 for Mr Probz?
16 THE WITNESS: I may be confusing mine
17 with his. Yeah, sorry, 63 is Mr Probz, and then 65
18 is Meghan Trainor. They're both available on the
19 same public venue, Spotify for Artists web site.
20 JUDGE STRICKLER: Okay. So the absence
21 of a -- of a vertical axis measure on page 35 for
22 the Meghan Trainor release is -- the reason for that
23 absence the same as you just testified for with the
24 previous -- the previous song, correct?
25 THE WITNESS: Yeah, it's correct. Just

1 to clarify, again, with Meghan Trainor what we were
2 able to do here is normalize the charts to show the
3 order of events but, with the permission of the
4 rightsholders, present her case study. And on this
5 occasion publishers, record labels, and the artists
6 were happy for it to be presented this way to
7 demonstrate how the order of events was different
8 from what people conventionally would have thought.
9 That is radio is not breaking music in this case;
10 rather than coming first, the red line comes last.
11 JUDGE STRICKLER: You say that the -- who
12 do you say was happy to have it presented this way?
13 THE WITNESS: So if you read the blog
14 articles, you see I take time to thank all the
15 people involved, and you'll see the record labels
16 and publishers provided third-party data were all
17 granted consent and were allowed to review the blog
18 posting before we went public.
19 But to reiterate, normalizing the data
20 allows us to present an artist case study without
21 revealing commercially sensitive information.
22 JUDGE STRICKLER: Were these two charts
23 that I just referred to on pages 33 and 35 of
24 written direct testimony prepared specifically for
25 this proceeding or were they prepared internally at

1 Spotify for -- or anywhere else or by anyone else
2 for any other reason?
3 THE WITNESS: I prepared them for many
4 workshops that we were doing with artists and
5 songwriters at the time, and then we continue to do
6 to this day, which is to make, firstly, a point that
7 we're all on a very steep learning curve, as we
8 adapt to this access model, and, secondly, that many
9 conceptions you had about the order of events in
10 music industry may have changed now. So this is
11 taught to someone as an artist in terms of if you
12 want to break music, the viral approach at Spotify
13 where sharing is done on a legal platform, where
14 rightsholders get compensated is often moving first.
15 And in both situations, it was three to
16 four months before radio followed, which makes you
17 ask questions such as why do you have a radio
18 promotional department in a record label? It
19 doesn't break music, have a relationship, but
20 Spotify is breaking that music.
21 JUDGE STRICKLER: Thank you.
22 MR. MANCINI: Thank you, Your Honors.
23 JUDGE BARNETT: Thank you, Mr. Page. You
24 may be excused. And we will be at recess until
25 1:15.

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN DIRECT TESTIMONY OF PAUL VOGEL

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Paul Vogel. I am Vice President, Head of Global Financial Planning and Analysis and Investor Relations at the Spotify group of companies ("Spotify") and an employee of Spotify Limited. I have served in this role since I joined Spotify in June 2016. I graduated with a BA in Economics from the University of Pennsylvania in 1995 and am a Chartered Financial Analyst ("CFA").
2. Before joining Spotify, I served as a Managing Director at Barclays PLC, where I was a Senior U.S. Internet Analyst and Head of the Internet and Media Research Team. I have held numerous other positions, including ten years as a Senior Vice President, Portfolio Manager, Analyst, and Global Sector Head of Consumer, Media, and Internet at AllianceBernstein L.P.
3. My testimony will primarily focus on four areas: (1) the mechanical royalties paid by Spotify; (2) the effect on Spotify's financials of removing the per-user floor for

mechanical royalties; (3) the pricing risk Spotify faces as a result of the per-user floor; and (4) the importance of royalty rates to Spotify's business.

4. Unless otherwise noted, all calculations refer to fiscal year 2015—the most recent full year for which data is available.[1]

In 2015 Spotify Paid an Average of [redacted] of Revenue for Mechanical Royalties, Driven by the Paid Subscription Service

Background

5. Spotify offers two types of streaming music services: a free-to-users ad-supported service, which I will refer to as the "ad-supported" service, and a paid subscription service, which I will refer to as the "paid" service.[2]

6. Both services pay three types of royalties:

   (1) royalties to record labels for the public performance of sound recordings;

   (2) royalties to performing rights organizations ("PROs")[3] for the public performance of compositions, which I will refer to as "PRO royalties"; and

   (3) mechanical royalties to the Harry Fox Agency ("HFA").

7. Both PRO royalties and mechanical royalties flow to publishers and songwriters (through the PROs and HFA, respectively), and both are for the use of compositions. I will refer to the sum of these as "total composition royalties."

[1] Spotify's fiscal year starts in January and ends in December.

[2] [redacted]

[3] Spotify pays public performance royalties to four PROs: ASCAP, BMI, SESAC, and GMR.

<u>Calculation of Spotify's Mechanical Royalties</u>

8. We calculate mechanical royalties as follows: First, we calculate a so-called "all-in" royalty pool, which includes both PRO royalties and mechanical royalties. This calculation begins with a nominal "headline" rate of 10.5% of revenue, but is subject to minima which vary between the ad-supported service and the paid service. For the ad-supported service, the all-in royalty pool is the same as total composition royalties: all we do is subtract the PRO royalties—which are set separately—from the all-in rate to get the mechanical royalties we owe.

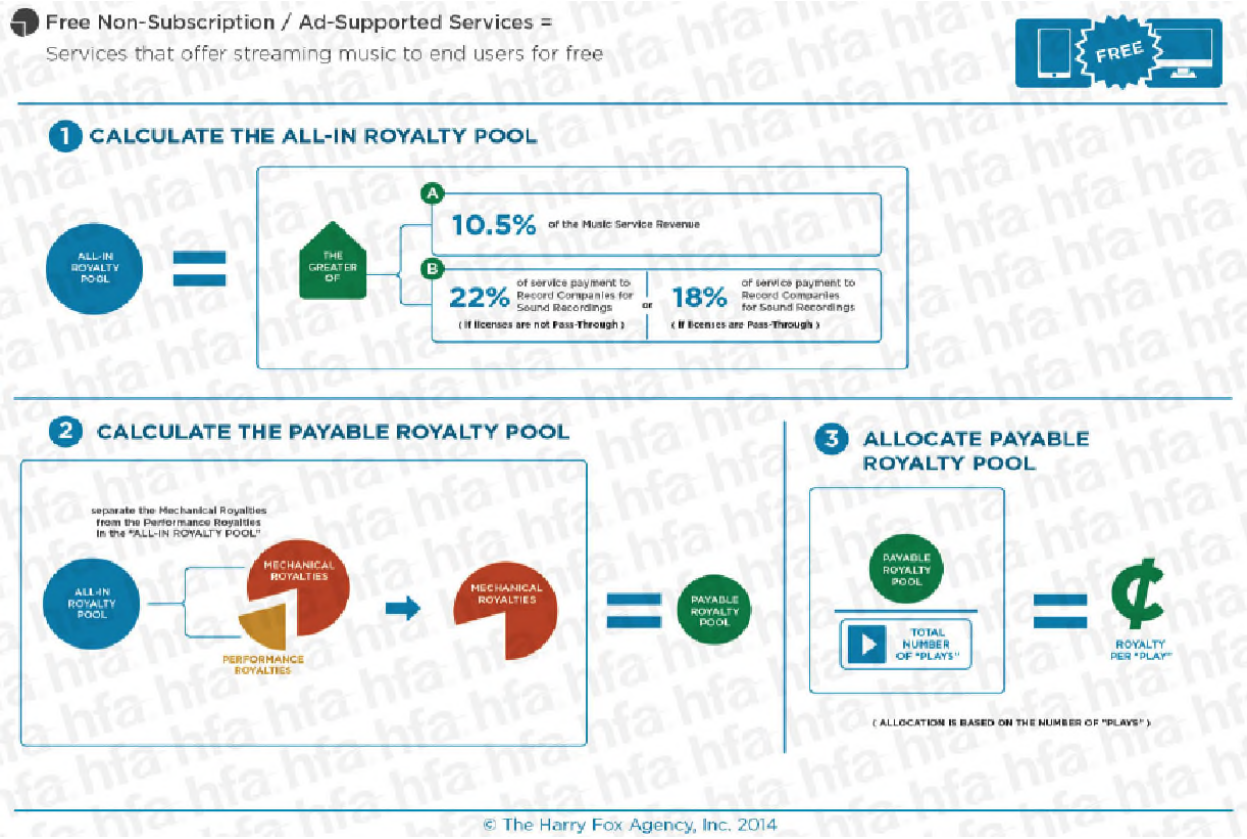
9. For the paid service, however, after we subtract the PRO royalties, if we would owe less than a certain per-user floor (50 cents per user), we owe that per-user floor instead, in which case total composition royalties will be greater than all-in royalties. I will refer to this as the "second step per-user floor."

10. [redacted]

11. [redacted]

Mechanicals for the Spotify's Ad-supported Service Averaged [redacted]

12. The mechanical royalties formula for Spotify's ad-supported service is illustrated below (see 35 C.F.R. 385.12–13):



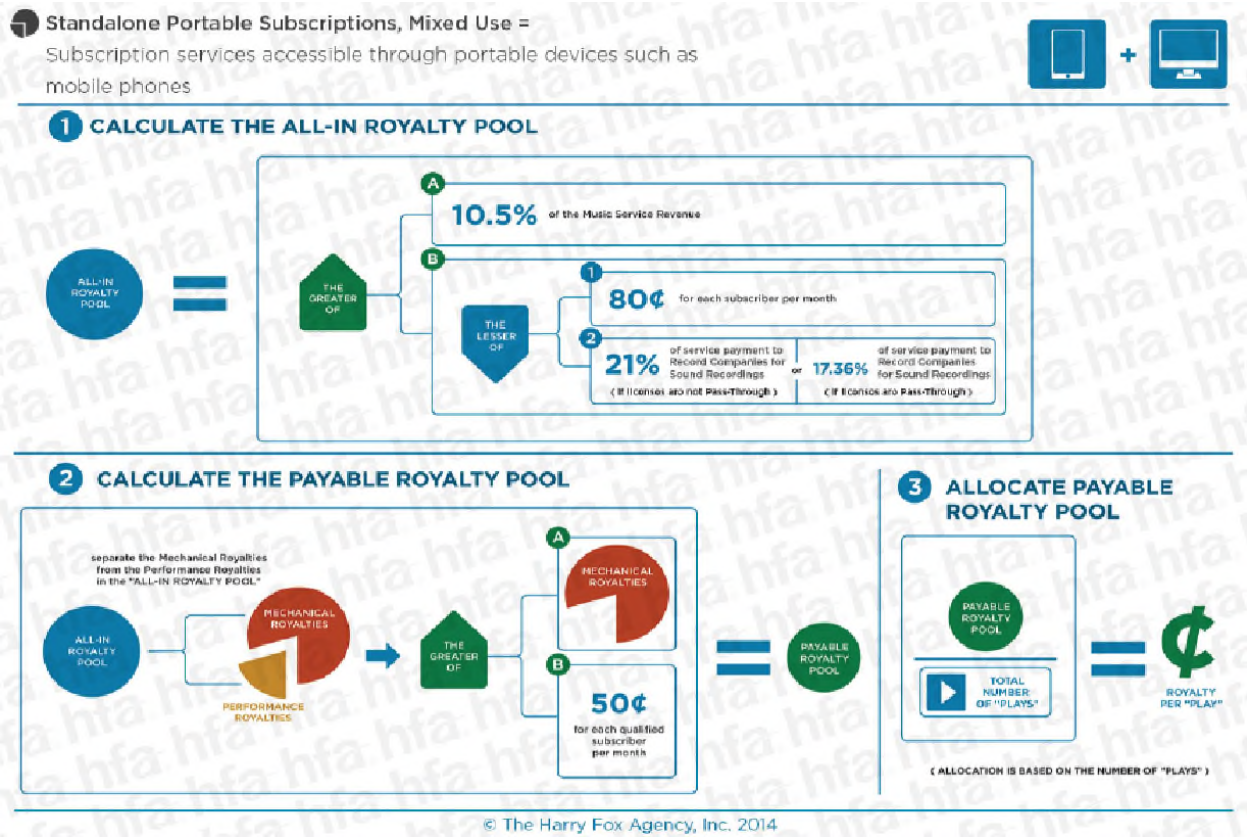
13. In 2015, Spotify's average all-in royalty rate for its ad-supported service was [redacted] of revenue. [redacted] This is also equal to total composition royalties for this service because there is no second step per-user floor applicable to ad-supported services.

14. Spotify's average PRO royalty rate for its ad-supported service was [redacted] of revenue, and because there is no second step per-user floor, Spotify's average mechanical royalty rate was simply the all-in royalty rate minus the PRO royalty rate, or [redacted]

15. [redacted]

Mechanicals for the Paid Service Averaged [redacted] ***with*** [redacted]

16. The formulas for mechanical royalties for Spotify's paid service is illustrated below (see 35 C.F.R. 385.12–13):



17. In 2015, Spotify's average all-in royalty rate for its paid service was [redacted] of revenue. [redacted] (I will refer to this as the "first step per-user floor" to distinguish it from the other.) Spotify's average PRO royalty rate for its paid subscription service was [redacted] of revenue.

18. Unlike the rates for free-to-users ad-supported services (such as Spotify's ad-supported service), mechanical royalties for so-called "Standalone Portable Subscription, Mixed Use" services (such as Spotify's paid service) are subject to an additional floor as discussed above, the second step per-user floor. [redacted]

19. [redacted]

20. [redacted]

Blended Average Mechanicals (Ad-Supported and Paid) Averaged [redacted] and Are Driven By Paid

21. [redacted]

22. [redacted][4]

23. The following tables summarize the above information:

[redacted]	[redacted]		[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]				

[redacted]	[redacted]		[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]				

24. In 2015 Spotify paid around [redacted] per paid member per year in total composition royalties, and around [redacted] per person when ad-supported users are averaged in. [redacted]

[4] Figures include Spotify's Basic Desktop service, [redacted]

The Impact of Removing the Per-user Floor on Spotify's Financials

25. [redacted]

26. [redacted]

27. The following tables summarize the above information:

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

The Per-user Floor Unfairly Sets a Higher Effective Mechanical Rate [redacted]

28. The second step per-user floor of the mechanical calculation (and to a lesser extent, the first step per-user floor) introduces pricing risk [redacted] This is because as long as the floor is triggered, it causes the mechanical royalty rate [redacted]

29. This problem is not merely theoretical. [redacted] For example, in 2016 Spotify launched [redacted]

30. Ignoring royalty costs, [redacted] has generated revenue for Spotify and rightsholders from customers [redacted]

31. [redacted]

32. More flexible royalty rates would enable Spotify [redacted] So long as people [redacted] getting them to pay grows the pie for everybody. Therefore, these flexible royalty rates would benefit not only Spotify but also rightsholders and are in everyone's interest.

The Importance of Royalty Rates to Spotify's Business

33. [redacted] and royalty rates have a large impact on our ability to operate profitably. Our ability to maintain and attract investment into Spotify, in order to grow and innovate, [redacted]

34. The ability for Spotify to innovate and grow our business will be dependent [redacted] We invest heavily in research and development as well as sales and marketing. These activities improve our product and expand the music universe for both our current and future users. As we grow our business, as well as the overall market, our efforts create value for both rightsholders and users. With lower royalty rates, we can develop a better product, and if we can develop a better product, more people will be willing to pay, the market will expand, and the total value to the entire ecosystem will grow.

35. Therefore, lower royalty rates are critical to Spotify's future and promote revenue not just for the company but also for copyright owners. Lower royalty rates would allow Spotify

to spend more on revenue growth drivers, which would result in more absolute revenue for everyone as well as a [redacted] for the company.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF PAUL VOGEL

I, Paul Vogel, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31st day of October 2016 in New York, New York.

Paul Vogel

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN REBUTTAL TESTIMONY OF PAUL VOGEL

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Paul Vogel. I am Vice President, Head of Global Financial Planning and Analysis and Investor Relations at the Spotify group of companies ("Spotify"). I previously provided testimony during the direct phase of this proceeding.

2. I offer this rebuttal testimony to address several issues raised in the written direct statements submitted by the National Music Publishers' Association and Nashville Songwriters Association International (collectively, "Copyright Owners"), and to describe the effects of the Copyright Owners' and the Digital Services' rate proposals on Spotify's royalty payments and U.S. earnings before interest and taxes ("EBIT").[1] I discuss these with respect to the Copyright Owners' proposal and other proposals.

[1] [redacted]

3. Unless otherwise noted, all calculations refer to the period from [redacted] which I will refer to as the "analysis period."

Background

4. To provide context, I will begin by recapping a number of points from my written direct testimony.

5. Spotify offers two types of streaming music services: a free-to-users ad-supported service, which I will refer to as the "ad-supported" service, and a paid subscription service, which I will refer to as the "paid" service.[3]

6. Both services pay three types of royalties:[4]

(1) royalties to record labels for the use of sound recordings;

(2) royalties to performing rights organizations ("PROs")[5] for the public performance of compositions, which I will refer to as "performance royalties;" and

(3) mechanical royalties to publishers.[6]

---

[2] [redacted]

[3] I use the words "service" and "tier" interchangeably in this context.

[4] Unless I specifically say otherwise, my statements in this document refer to our U.S. business.

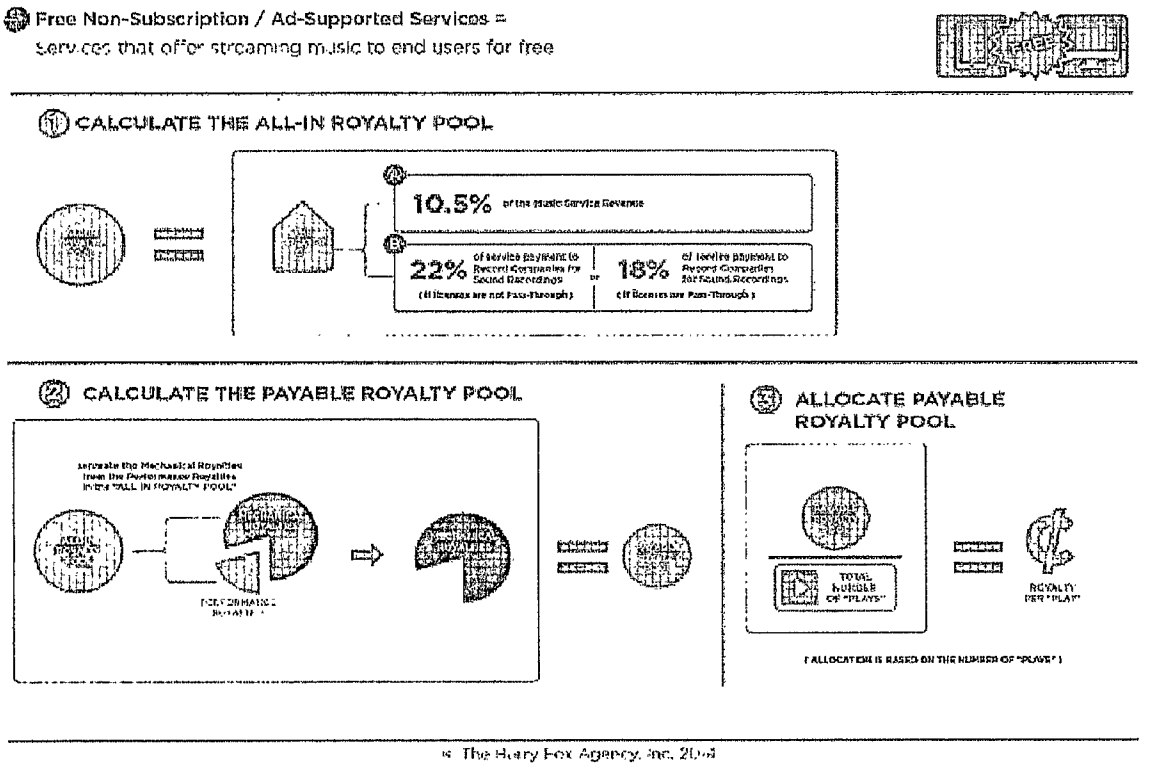
[5] Spotify pays public performance royalties to [redacted].

[6] Spotify works with a third-party agent, the Harry Fox Agency ("HFA"), to administer its mechanical royalty payments in the U.S.

7. Both performance royalties and mechanical royalties flow to publishers and songwriters, and both are for the use of compositions. I will refer to the sum of these as "total composition royalties."

8. The current formulas set forth in Subpart B for mechanical royalties for Spotify's ad-supported and paid services (respectively) are illustrated below.

Current formula for the ad-supported service:



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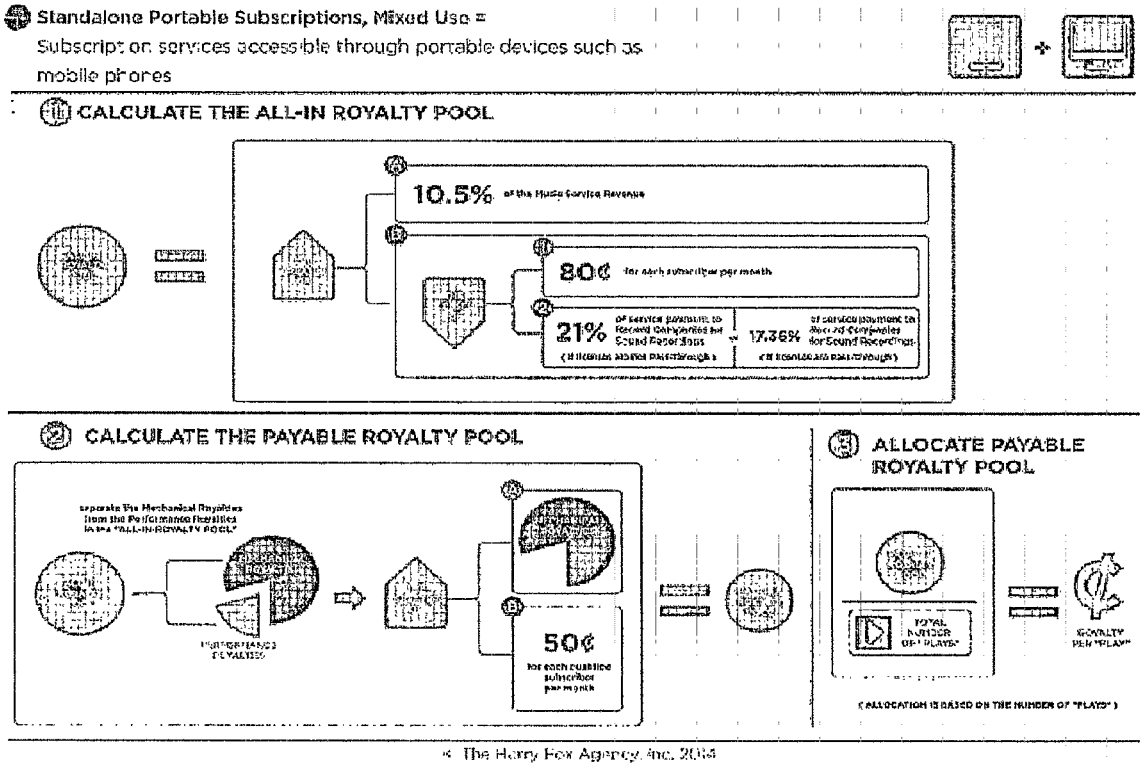
Current formula for the paid service:



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Methodology

9. The table below summarizes the elements of the rate proposals I included in my analysis.

Proposal	Elements included in calculations
Copyright Owners	Greater of $1.06 per user per month or $0.0015 per stream,[7] for all users and all streams regardless of whether the users and streams are on the ad-supported or paid service, regardless of whether the users are active users of Spotify, and regardless of the length of the streams.
Apple	$0.00091 per stream 30 seconds or longer, for all such streams regardless of whether they are on the ad-supported or paid service, less performance royalties.
Amazon	Continue current rate structure, counting family plans as 1.5 users and student plans as 0.5 users for per-user rates in steps 1 and 2 of the formulas.
Pandora	Continue current rate structure, counting family plans as 1.5 users and student plans as 0.5 users for per-user rates in step 1 and eliminating any per-user floors in step 2.
Spotify	Continue current rate structure, counting family plans as 1.5 users and student plans as 0.5 users for per-user rates in step 1 and eliminating any per-user floors in step 2 (*same as Pandora*).
Google	Continue current rate structure, counting family plans as 1.5 users for per-user rates in step 1, lowering Record Company royalty-based payment floors in step 1 to 13.5% of such payments, and eliminating any per-user floors in step 2.

10. Notably, unlike ***all*** of the other proposals, the Copyright Owners' proposal does not allow any deduction for performance royalties, which flow to the same publishers and songwriters as mechanical royalties.

11. For each rate proposal, I describe what the effect would have been on Spotify's royalty rates [redacted] over the analysis period ([redacted]).

[7] Unless otherwise noted, I will use "play" and "stream" interchangeably.

The Copyright Owners' Proposal Would [redacted].

12. As stated above, the Copyright Owners' proposal would require services to pay the maximum of $1.06 per "end user" per month or $0.0015 per "play," adding together all streams and all users regardless of whether they are ad-supported or paid.

13. It is my understanding that the proposal defines a "play" as "the digital transmission of any portion of a musical work" (*Copyright Owners' Proposed Rates and Terms* at B-7 to -8, B-13) and an "end user" as "each unique individual or entity that has access" via a user name and a password (*i.e.*, each registered user) on a service (*id.* at B-6, B-12). I will discuss issues with both the per-end user and per-play parts of the rate below.

14. Under the Copyright Owners' proposal, Spotify would have owed [redacted].

---

8 [redacted].

15. The following table summarizes this information:

16. The effect of the Copyright Owners' proposal on Spotify's over the analysis period is shown in the following table:

17. There are a number of issues with the Copyright Owners' rate proposal and the assumptions underlying it.

18. .

9

10 .

11 .

19. The publishers' executives argue that Spotify could simply run more ads. *See, e.g.*, Written Direct Testimony of Marc Rysman ("Rysman WDT") ¶ 96. [redacted] [13].

[12] To determine this number, I applied the following calculations: [redacted]

[13] [redacted].

20. [redacted]. This balances revenue per user[14] with user growth to maximize total revenue growth.

21. Ad revenue can be increased by charging more *per advertisement*. However, the market for advertisements is competitive. Spotify must compete with other media, such as television and radio, as well as internet advertisements and a host of other competitors. [redacted]. Advertisers want to see engagement, recall, and interaction with the product before they will pay more.

22. This additional value is lost if there are a glut of ads on the service. There has to be a supply of advertisers interested in advertising on your medium. [redacted]. The advertising market needs time to mature and see that interactive streaming is a great way [redacted]. This is happening and will continue to happen, [redacted]

23. Thus, service cannot simply choose to run X times more ads and expect X times more ad revenue. [redacted]

[14] Revenue per user includes not only revenue per ad-supported user but also revenue from users converting to the Premium service.

24. Despite the challenges, Spotify is increasing its overall revenue and ad revenue yield from the ad-supported tier. For example, comparing [redacted], Spotify's U.S. ad-supported RPM, or revenue per thousand music listening hours, increased more than [redacted].[15] Under the current rate structure, this is resulting in additional payouts to the Copyright Owners.

25. [redacted].

26. [redacted].

27. [redacted]

[15] Spotify's ad RPM was [redacted] in [redacted], and it grew to [redacted] in [redacted]. RPM is a common metric for examining how effective advertisements are in generating revenue. Since advertising is seasonal, comparing the same [redacted]-month periods in consecutive years helps control for any seasonality fluctuations in ad revenue.

28.

[16]

[16]

29. In addition to [redacted] included in the Copyright Owners' proposal, it has numerous structural flaws, which I will discuss next. These would persist even if the per-user or per-stream rates [redacted].

30. **Problems with the per-user rate.** The Copyright Owners' proposal states that:

> *End user* means each unique individual or entity that has access to an offering whether by virtue of the purchase of a subscription to access the offering or otherwise. Licensees or service providers shall be required to obtain from each individual or entity that wishes to access an offering a unique user name and valid e-mail address, and to provide each such individual or entity with a unique password or identifier, prior to granting such access.

Copyright Owners' Proposed Rates and Terms at B-6, B-12.

31. Under the Copyright Owners' definition, "users" includes *all* registered users, whether or not they actively use the service. For example, if a user signed up for Spotify's ad-supported service and listened to one song — or zero songs, for that matter — years ago, Spotify would be required to pay $1.06 per month for that user, even if he or she never signed in again.

32. The Copyright Owners suggest that *mere access* to the musical works available on Spotify is of value. *See, e.g.*, Israelite WDT ¶ 42 ("Each end user account has an inherent value. The user is secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place.").

33. But a Spotify ad-supported account does not provide a user with any additional "security" than someone who does not have an account. A user can create a Spotify ad-supported account in a matter of *seconds* by clicking on a button and using his or her Facebook login, with

no need to enter any additional information.[17] It takes more time to tune to a radio station. The fact that the user has clicked a button to create such an account does not suddenly make him or her "secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place." That security comes from the very existence of the ad-supported service. Thus, to assign a $1.06 per month value to musical works copyright owners for each and every user that has ever clicked such a button or registered is completely unfair.

34. Unlike the paid service, where the price users pay is a monthly fee to have an account, the price users "pay" for the ad-supported service is listening to ads; thus, when users are not active, they do not generate ad revenue. This means that for ad-supported users, Spotify cannot monetize mere access to pay royalties that are assessed on a per-user basis. In this way, the ad-supported service is akin to radio: the price the user pays is listening to ads; the account itself does not generate any value and only the use of the account leads to ad revenue.

35. [redacted]. Many of these ad-supported users are casual listeners that would otherwise not pay for music but may, after spending some time learning the benefits of music streaming, convert to a paid account.

36. [redacted]

[17] Alternately, the user can choose a username and password, which takes but a moment longer.

[redacted].

37. A per-user rate also means less money for Spotify and rights holders from the paid service, because, for example, such a rate disincentivizes the use of different pricing schemes (such as student discounts and family plans) as growth levers. *See* Written Direct Testimony of Paul Vogel ("WDT") ¶¶ 28-32; Written Direct Testimony of Barry McCarthy ("McCarthy WDT") ¶¶ 67-71. [redacted]. Without providing any foundation for their speculation, the Copyright Owners argue that Spotify is not "truly focused" on conversion. *See* Written Direct Testimony of Peter Brodsky ("Brodsky WDT") ¶ 66. But this is exactly what these results-driven pricing plains aim to achieve, and the Copyright Owners' proposal would undermine our ability to offer them. The reality of the music market is that there are different segments with differing levels of engagement (from casual and infrequent listeners to super-fans) and differing willingness to pay (as low as zero for some segments). Everybody wins when we charge an appropriate price and deliver an appropriate product to each segment.

38. Even if the Copyright Owners backed off of their proposal to apply a per-user rate to all ad-supported accounts and only applied it to recently active ad-supported accounts, my conclusions would not change. [redacted]

[redacted]

[redacted]

[18] [redacted]

39. **Problems with the per-play rate.** . Specifically, the Copyright Owners' proposal defines a "play" as "the digital transmission of *any* portion of a sound recording of a musical work in the form of an interactive stream or limited download" (*Copyright Owners' Proposed Rates and Terms* at B-7, B-13 (emphasis added). .

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40. [redacted] Thus, the Copyright Owners' proposal that Spotify pay a fixed per-play rate is as unreasonable as its proposal that Spotify pay a fixed per-user rate.

41. The Copyright Owners' proposal would also incentivize Digital Services to minimize royalty payments [redacted]. For example, Digital Services would be incentivized to include fewer lesser-known "long tail" artists and songwriters in their curated playlists, and to bias their recommendations against these artists and songwriters. For terrestrial radio, there is a large risk associated with playing an unknown song: many listeners may dislike it, [redacted] With Spotify, no such risk exists. [redacted] This would diminish music exploration, one of the defining benefits of the music streaming revolution.

42. Of course, introducing listeners to new music and providing a platform for lesser known artists and songwriters are key components of Spotify's business model, as described by my colleagues Will Page and James Lucchese in their Written Direct Testimony. For example, Spotify offers a broad range of music discovery products weighted towards the "long tail" of artists and songwriters (such as Discover Weekly and Fresh Finds), and in 2017 is expected to spend [redacted] on its Creator group's products and services aimed at artists and songwriters.

43. In addition, the per-play rate would incentivize the Digital Services to discourage engagement with the service, such as by instituting listening caps. [redacted]. More generally, lower user engagement results in lower willingness to pay, which increases user attrition. I understand that my colleagues Barry McCarthy and Will Page discuss this further in their Written Rebuttal Testimony.

44. In sum, both the size of the Copyright Owners' increase in rates and the structure of their proposal would be highly disruptive [redacted] to the industry generally.

Apple's Proposal Would [redacted]

45. Apple also proposes a flat rate per stream; however, unlike the Copyright Owners' rate, Apple's rate (a) does not have a per-user floor, (b) includes both mechanical royalties and performance royalties; (c) only applies to streams 30 seconds or longer; and (d) is $0.00091 per stream, not $0.00150 per stream. [redacted].

46. [redacted].

47. [redacted]

48. The following table summarizes this information:

[redacted]

49. The effect of Apple's proposal on [redacted] over the analysis period is shown in the following table:

[redacted]

50. [redacted]

---

22 [redacted]

23 [redacted]

24 [redacted]

[redacted].

51. In addition to having a lower per-stream rate, Apple's proposal slightly lessens two of the problems of the Copyright Owners' proposal: it does not include a per-user minimum, [redacted]. As such, it does not punish services for infrequent listeners or [redacted] as harshly as the Copyright Owners'. However, it still has all of the other problems of a per-stream rate. In addition, by having a singular per-stream rate applicable to both ad-supported and paid services, it fails to recognize that ad-supported services work by funneling users away from piracy and other low-paying alternatives such as terrestrial radio. This means that [redacted].

52. [redacted]

---

25 [redacted].

26 [redacted].

[redacted]

[redacted].

The Other Parties' Proposals Would Result in [redacted]

53. The other parties' rate proposals are generally similar to each other, with some variations as shown in the table in paragraph 9 of this document. The effects of each proposal on royalty rates and [redacted] over the analysis period are shown in the tables below. Given the elements of each proposal considered (see above), Pandora's and Spotify's proposals have an equivalent effect on Spotify's financials, and only Google's proposal results in changes for the ad-supported tier.

Amazon's Proposal

[redacted]

27 [redacted]

28 [redacted].

29 [redacted].

Pandora's/Spotify's Proposals

Google's Proposal

54. As shown in the tables,

[30]

[31]

[32]

[redacted], and none would disrupt Spotify's business.

55. In addition, Pandora's, Spotify's, and Google's proposals would eliminate the value-destroying "second step" per-user floor (*see* WDT ¶ 9) in the current rate formula. As discussed in my written direct testimony, eliminating this floor grows the pie for everybody (*e.g.*, by incentivizing the Digital Services to capture the segments of the market willing to pay more than free but less than $9.99 per month). *See* WDT ¶¶ 28-32; *see also* McCarthy WDT ¶¶ 67-71. Further, these proposals would result in a modest [redacted].

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of	)	**Docket No. 16–CRB–0003–PR (2018–2022)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	)	

DECLARATION OF PAUL VOGEL

I, Paul Vogel, declare under penalty of perjury that the statements contained in my Written Rebuttal Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15 day of February 2017 in New York, United States.

Paul Vogel

LIBRARY OF CONGRESS

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

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IN THE MATTER OF:)

)

DETERMINATION OF RATES) Docket No.

AND TERMS FOR MAKING AND) 16-CRB-0003-PR

DISTRIBUTING PHONORECORDS) (2018-2022)

(PHONORECORDS III),)

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REVISED AND CORRECTED TRANSCRIPT

OPEN / CLOSED SESSIONS

Pages: 5203 through 5472

Place: Washington, D.C.

Date: April 6, 2017

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1 THE WITNESS: Thank you.

2 JUDGE STRICKLER: Before this witness

3 begins, do we know what the rest of the lineup is in

4 terms of the order of witnesses?

5 MR. ELKIN: I think Mr. Klein is after

6 Mr. Vogel.

7 JUDGE STRICKLER: After Mr. Klein?

8 MR. WEIGESNBERG: And I believe

9 Dr. Leslie Marx will return for rebuttal tomorrow.

10 MR. MANCINI: That's correct.

11 JUDGE STRICKLER: So the next economic

12 expert coming up is Dr. Marx, not Dr. Hubbard?

13 MR. SEMEL: Correct. I believe

14 Dr. Hubbard is the last witness.

15 MR. MANCINI: Your Honors, Spotify would

16 like to call Mr. Paul Vogel as our next witness.

17 JUDGE BARNETT: Mr. Vogel, I don't think

18 you can raise your right hand.

19 MR. VOGEL: I cannot.

20 JUDGE BARNETT: In any event.

21 Whereupon--

22 PAUL VOGEL,

23 having been first duly sworn, was examined and

24 testified as follows:

25 JUDGE BARNETT: Please be seated.

1 MR. MANCINI: Your Honors, can I just
2 begin on one point? Your Honors, before we begin, I
3 want to remind the Panel that the Copyright Owners
4 and Services have agreed that Mr. Vogel, due to his
5 surgery, can appear once in this proceeding.
6 Although he submitted both a written direct
7 testimony and a written rebuttal testimony, he will
8 be testifying live today as to both.
9 JUDGE BARNETT: Thank you.
10 JUDGE STRICKLER: With the one available
11 arm, he wouldn't be able to testify as an economist?
12 MR. MANCINI: Yes, but we also have a
13 favor to ask. We would like to place one of our
14 associates next to him to turn the pages in the
15 binders, if that would be permissible.
16 JUDGE BARNETT: Certainly.
17 MR. MANCINI: Thank you.
18 THE WITNESS: Thank you.
19 MR. SEMEL: And if I may just quickly,
20 Your Honors, hopefully a minute to save more than a
21 minute. While my colleague Mr. Weigensberg will be
22 handling the cross, this witness -- you may recall a
23 couple weeks ago, we had an evidentiary question
24 with Mr. McCarthy, and there was a question about
25 another witness coming. As we understand it, this

1 is that witness.

2 And we do have some similar foundational

3 questions of evidence, but we would propose to use

4 the similar proceeding we used before to speed

5 things along, which is we'll note the objections on

6 the record, we'll have an opportunity to cross on

7 foundation; as to the testimony, just a standing

8 objection so we're not objecting to every question.

9 And then if at the end there's still open questions,

10 we would submit briefly to you those issues.

11 JUDGE BARNETT: Thank you.

12 MR. MANCINI: If I may just address those

13 briefly, because I'm hopeful that after today, they

14 will decide the better of filing a motion, but if I

15 may -- if I may just make a few points.

16 I think as Your Honors will recall from

17 the testimony of Mr. McCarthy, the primary objection

18 they had was lack of foundation. The testimony that

19 you will hear from Mr. Vogel, we think, will satisfy

20 that but, more importantly, I think it's important

21 to note for the record all of the sources relied

22 upon by Mr. Vogel were produced, in fact, produced

23 within five days of each other. And we can cite the

24 Panel chapter and verse.

25 In addition, to aid the Copyright Owners,

1 we didn't think that was necessary, we even added
2 column headings to make it clear so they can
3 understand from our documents. Furthermore, they
4 never asked for Mr. Vogel's deposition. They never
5 served an interrogatory asking these questions about
6 how the information was derived. In fact, they
7 could have served interrogatories. We did. In
8 fact, we sent an interrogatory to them to ask very
9 similar types of calculations.
10 Furthermore, we think this argument has
11 been waived. There was no motion in limine filed.
12 They did not serve a notice of a deposition on
13 Mr. Vogel, despite having one remaining deposition
14 of their ten.
15 Notwithstanding all of that, we are
16 hopeful after they hear today piece by piece how
17 this calculation was done, which was simple math,
18 that they will think the better of a motion on this
19 issue.
20 JUDGE BARNETT: Thank you, Mr. Mancini.
21 And if they don't think better, we'll hear all of
22 that -- we'll read all of that again in your written
23 submittal.
24 MR. MANCINI: Thank you, Your Honor.
25

1 DIRECT EXAMINATION

2 BY MR. MANCINI:

3 Q. Mr. Vogel, where are you currently

4 employed?

5 A. I work at Spotify.

6 Q. And what is your position there?

7 A. I'm vice president, head of financial

8 planning and analysis and investor relations.

9 Q. And when did you join Spotify?

10 A. I joined about ten months ago.

11 Q. And where were you previously employed?

12 A. I was at Barclays.

13 Q. Where were you employed previous to

14 Barclays?

15 A. Prior to that, I worked at OpenSky.

16 Q. And what is your educational and

17 financial training?

18 A. I have a BA at the University of

19 Pennsylvania, and I have a designation of a charter

20 financial analyst.

21 Q. And as the head of global financial

22 planning and analysis for Spotify, what are your

23 responsibilities?

24 A. I help plan our forecasting models for

25 how the business is going to do.

1 Q. NS within those responsibilities, do you
2 model the effect of variables in Spotify's cost
3 structure and profitability?
4 A. I do.
5 Q. And is one of those variables the impact
6 of changes on royalty rates?
7 A. It is.
8 Q. And have you had occasion to model the
9 effects of royalty rate changes on Spotify's cost
10 structure and profitability?
11 A. I have.
12 Q. And, in fact, have you modeled the impact
13 of proposed changes in this proceeding on Spotify's
14 cost structure and profitability?
15 A. I have.
16 Q. Did you submit a written direct testimony
17 in this proceeding?
18 A. I did.
19 Q. And I believe you have a binder before
20 you. I would ask you to turn your attention to
21 Spotify Trial Exhibit 1062.
22 MR. MANCINI: Sorry, can we go back on
23 the original slide? Thank you. We're still in
24 open.
25 BY MR. MANCINI:

1 Q. Is that a copy of the written direct
2 testimony that you submitted in this proceeding?
3 A. It is.
4 Q. With assistance, can I ask you to turn to
5 the last page of that document.
6 A. Yes.
7 Q. Is that a copy of your signature on the
8 written direct testimony?
9 A. It is.
10 Q. And are all of the statements made
11 therein true and correct to the best of your
12 information and belief?
13 A. They are.
14 MR. MANCINI: Your Honors, I'd like to
15 move Spotify Trial Exhibit 1062 into evidence.
16 MR. WEIGENSBERG: I'm just going to note
17 our standing objection.
18 JUDGE BARNETT: Noted. 1062 is admitted,
19 subject to that objection.
20 (Pandora Exhibit Number 1062 was marked
21 and received into evidence.)
22 BY MR. MANCINI:
23 Q. Mr. Vogel, did you also have occasion to
24 file a written rebuttal statement in this
25 proceeding?

1 A. I did.
2 Q. I'm going to ask you to turn your
3 attention, again with assistance, to Spotify Trial
4 Exhibit 1060. I'm sorry, 1068. Is that a copy of
5 your written rebuttal testimony in this proceeding?
6 A. It is.
7 Q. And I'll ask you to turn your attention
8 to the last page of that document. Does that
9 contain your signature?
10 A. It does.
11 Q. And are all the statements in that
12 written rebuttal testimony true and correct to the
13 best of your information and belief?
14 A. They are.
15 MR. MANCINI: We'd like to move Spotify
16 Trial Exhibit 1068 into evidence.
17 MR. WEIGENSBERG: Same note, Your Honor.
18 JUDGE BARNETT: Same -- same acceptance,
19 with the same note.
20 (Pandora Exhibit Number 1068 was marked
21 and received into evidence.)
22 BY MR. MANCINI:
23 Q. Did you also prepare a set of
24 demonstratives to aid your testimony today?
25 A. I did.

1 Q. And are those up on the screen?
2 A. Yes.
3 MR. MANCINI: At this point, Your Honor,
4 we're going to begin in restricted session.
5 JUDGE BARNETT: Anyone in the hearing
6 room who is not authorized to view restricted
7 material or confidential information, please wait
8 outside.
9 (Whereupon, the trial proceeded in
10 confidential session.)
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CONFIDENTIAL SESSION
PAGES 5293 - 5359

1 O P E N S E S S I O N
2 A F T E R N O O N S E S S I O N
3 (1:32 p.m.)
4 MR. MANCINI: Your Honor, we only have a
5 few minutes of redirect of Mr. Vogel, and my
6 associate, Mr. Schmidt, will perform it.
7 JUDGE BARNETT: Thank you.
8 REDIRECT EXAMINATION
9 BY MR. SCHMIDT:
10 Q. Good afternoon, Mr. Vogel.
11 A. Thank you.
12 Q. Can I ask you to turn to Exhibit 1041.
13 That's, again, the document with the registered
14 users and streams, and around the seventh page where
15 the streams start.
16 A. Yes.
17 Q. I want to clear up a little bit how
18 these, how this data was combined to get the numbers
19 in your report. Did your team, for example, add all
20 the rows with CRB_tier equals paid for a given month
21 to get total streams for that month?
22 MR. WEIGENSBERG: Objection, leading. I
23 recognize that we have allowed some leading
24 questions on redirect in this proceeding, but I
25 really feel like this is handing the witness the

1 answer.

2 JUDGE BARNETT: Overruled.

3 THE WITNESS: They did.

4 BY MS. SCHMITT:

5 Q. And did you do the same for the

6 ad-supported tier, adding up the rows with CRB_tier

7 equals free?

8 A. Yes.

9 Q. And could there be multiple rows, for

10 example, for CRB_tier equals paid because there were

11 in the underlying database other fields irrelevant

12 for this purpose?

13 A. Yes.

14 Q. And is that a common occurrence in

15 pulling data from databases in your experience at

16 Spotify?

17 A. Yes.

18 Q. And did you review the results of

19 combining these streams to get total streams?

20 A. Yeah, the consolidated results, yes.

21 Q. Did you calculate as part of your team's

22 analysis the number of average monthly streams per

23 paid user based on these results?

24 A. Yes.

25 Q. And did you similarly calculate the

1 number of average monthly streams per ad-supported
2 user based on these results?
3 A. Yes.
4 Q. And I'd ask you to turn to Exhibit 1068
5 of your WRT, paragraph 27. I will give you a moment
6 to read this paragraph.
7 A. Paragraph --
8 Q. It is on page 10, paragraph 27 and
9 continues on to page 11 of your written rebuttal
10 testimony.
11 A. Okay.
12 Q. Does this paragraph contain the average
13 number of streams per month per paid user?
14 A. It does.
15 Q. And likewise for ad-supported users?
16 A. It does.
17 Q. And did you review the numbers in this
18 paragraph?
19 A. Yes.
20 Q. And did you -- in your experience were
21 they in line with other numbers you have seen at
22 Spotify for average number of streams, zero per
23 seconds or greater per user?
24 A. Yes.
25 Q. Did that give you confidence in the

1 results of your analysis?

2 A. Yes.

3 Q. And do you generally rely on your team to

4 pull these kinds of numbers from large and disparate

5 databases into usable Excel files?

6 A. I do.

7 Q. And is one of those files what is

8 reproduced as this exhibit that we just looked at?

9 A. Yes.

10 Q. And is it your understanding --

11 MR. WEIGENSBERG: I just want to launch

12 one objection because I don't believe that it was

13 his testimony during the cross, and I think it is

14 implicit in Mr. Schmidt's question that his team

15 actually pulled together the spreadsheet.

16 My objection is that I think it misstates

17 his testimony.

18 MR. SCHMIDT: Your Honor, if I may.

19 JUDGE BARNETT: Yes, please.

20 MR. SCHMIDT: I simply asked does his

21 team generally do these types of things.

22 MR. WEIGENSBERG: So long as he is not

23 asking with reference to the specific spreadsheet, I

24 am fine with that.

25 JUDGE BARNETT: Thank you.

1 THE WITNESS: Yes.
2 BY MR. SCHMIDT:
3 Q. And is that your understanding of what
4 happened here?
5 A. Yes.
6 Q. And do you rely on them to tell you how
7 to interpret the data they pull?
8 A. Yes.
9 Q. And have you in the past checked their
10 work?
11 A. To the conclusions, yes.
12 Q. And have you generally found them to be
13 reliable?
14 A. Very.
15 MR. SCHMIDT: Thank you very much. No
16 further questions.
17 MR. WEIGENSBERG: Your Honor, if I may
18 very briefly, we're not going to do a recross, but
19 we're most likely going to draft up something
20 over -- very brief -- over the weekend submitting
21 once we're back after the long weekend on this
22 issue, on the various objections we have raised.
23 JUDGE BARNETT: Okay. Thank you. As
24 long as you share it with each other and give us
25 both sides of any questions that are raised.

1 MR. WEIGENSBERG: Of course.
2 MR. MANCINI: Yes. And it would be
3 useful if we can just meet and confer on the
4 schedule for that.
5 MR. WEIGENSBERG: Of course, Mr. Mancini.
6 JUDGE BARNETT: Thank you, Mr. Vogel.
7 You may be excused.
8 THE WITNESS: Thank you.
9 MR. ELKIN: Good afternoon, Your Honor.
10 Amazon calls Robert Klein.
11 JUDGE BARNETT: Thank you. Before you
12 sit down, please raise your right hand.
13 Whereupon--
14 ROBERT KLEIN,
15 having been first duly sworn, was examined and
16 testified as follows:
17 JUDGE BARNETT: Please be seated.
18 MR. ZAKARIN: Your Honor, before Mr.
19 Elkin starts with his direct examination of the
20 witness, we have a motion in limine directed to this
21 witness on a variety -- I hesitate to use the word
22 prongs, but I will -- on a variety of prongs that
23 relate to his testimony, his report, the propriety
24 of it, and whether it is a rebuttal or whether it
25 really, among other things, should have been part of

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN DIRECT TESTIMONY OF NICHOLAS HARTEAU

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Nicholas Harteau. I am the Vice President of Engineering and Infrastructure for the Spotify group of companies ("Spotify") and an employee of Spotify USA Inc. I joined Spotify in 2011 as Engineering Manager, before becoming VP of Engineering and Infrastructure in 2014.

2. Prior to joining Spotify, I was the Engineering Manager at Yahoo! Inc., from September 2005 to November 2011. I was an engineer/partner at Stasis Engineering from 2004 to 2005, and, prior to that, Director of Technology at CoreComm.

3. As VP of Engineering and Infrastructure at Spotify, I oversee a team of [redacted] employees, most of whom are responsible for operating and scaling the "backend" of the service—the systems and algorithms that make the system work for users behind the scenes. I report to Oskar Stål, the Chief Technology Officer. I also play an active role in managing the general technology development and engineering strategy of Spotify.

4. My testimony will provide an overview of the technological investment that Spotify has made and continues to make in its technological infrastructure. As I explain below,

in this cutting-edge industry, Spotify must continuously engage in innovation to ensure that we are delivering the best product to our users.

Spotify's Costly Technological Infrastructure and High Operating Costs

5. My testimony today focuses only on the costs associated with maintaining Spotify's *backend* technological platform: that is, the research and development ("R&D") costs, operating costs, and capital expenditures associated with developing and maintaining the streaming platform. These costs do not include the "frontend" costs associated with the customer-facing Spotify product itself. (Frontend costs include, for example, the time and resources invested in innovative features of the Spotify service, about which my colleague Jim Lucchese will testify.)

6. Spotify's R&D spending is designed to create the best possible user experience for listeners. The Spotify app makes the user feel as if she has the entire world's music available in the palm of her hand. This is far from simple. Making the delivery of music seamless to users requires enormous operating costs, capital expenditures, and R&D spending.[1] I discuss these below.

7. Spotify's infrastructure team has built a streaming platform that delivers over 30 million tracks to over 100 million active users worldwide. To create this platform, Spotify has invested significantly in R&D.

8. In 2011, infrastructure R&D costs totaled [redacted] And, in

[1] Operating costs are recurring non-personnel costs to run Spotify's infrastructure and range from the electric bill for computer equipment to payments to service providers such as Google. Capital expenditures are one-time costs such as purchasing a server. R&D spending includes the costs to research and develop infrastructure, such as personnel expenses.

the first half of [redacted]

9. This number is projected to [redacted] During the 2018-2022 period, I expect Spotify's infrastructure R&D costs [redacted]

10. Spotify's [redacted] Our recent Google Cloud Platform ("GCP") project is just one example of a current substantial technological investment Spotify is making in our efforts to continuously scale our platform to match the needs of our users. I describe this recent project below.

11. [redacted] This approach gives the majority of Spotify's customers instant access to music. But as Spotify grew quickly in users, markets, and features, keeping pace with scaling demands required ever-increasing amounts of resources. The way our engineers saw it, [redacted]

12. However, Spotify has a large and complex backend, [redacted] to GCP became, and is, an enormous—and costly—task. Spotify is not only [redacted] and GCP, but Spotify must also shift user traffic from one to the other, and, in doing so, maintain a high quality of service for its users. It's not simply a flip-of-the-switch operation.

13. Thus, [redacted] We look to [redacted] but do anticipate other projects to take over. [redacted] to take time, effort, and enormous amounts of expense to manage and implement.

14. R&D costs are one aspect of Spotify's investment in its technological backend, and our GCP project involves both R&D costs as well as operating expense costs. Our infrastructure operating costs totaled [redacted]

15. Spotify further anticipates incurring non-R&D infrastructure costs of [redacted] These costs are necessary to provide our service, and to ensure that Spotify remains competitive in delivering a great user experience. [redacted]

16. The [redacted] infrastructure that allows Spotify to make personalized listening recommendations (powering, just as one example, Discover Weekly) costs an estimated [redacted] The infrastructure for providing [redacted] costs [redacted]

17. Spotify also has substantial infrastructure costs unrelated to data. These costs are incurred to improve, broaden, and deepen the user experience. For example, Spotify has invested substantially in the ability of its users to listen to music on a variety of devices. The Spotify Connect system allows users to listen to Spotify on Wi-Fi speakers, TVs, and other devices using the Spotify app as a remote control. The associated infrastructure costs to set up this feature are at least an estimated [redacted]

18. In sum, Spotify's investment over the past five years in creating and supporting its streaming service (including R&D, capital and operating expenditures) exceeds [redacted] during the 2018-2022 rate period.

High Infrastructure Costs are Essential to Spotify Delivering a Seamless User Experience

19. Spotify cannot simply cut costs in order to accommodate an unexpected royalty rate increase or to improve margins. [redacted] and in order to maintain that position we must continue to invest in content delivery costs. Attempting to decrease costs in one place to accommodate for higher costs (*i.e.*, the GCP transition) in another would only have the adverse effect of restricting and decreasing our listeners' use of the service.

20. If Spotify's other costs—for example, royalties—were to increase, then my team would have to look for ways to cut costs, with results against the interests of users. [redacted]

21. A third option would simply be delivering a lower quality of service to the user. [redacted] Because Spotify tries very hard to make the user feel as if she has the world's music on her phone, [redacted]

22. In sum, it would be simply extremely difficult to cut costs without cutting user experience.

Spotify Must Continue Innovating to Grow the Overall Industry Pie, and This Requires Costly Technological Investment

23. Spotify is continuously asking: how do we ensure that we are giving consumers what they are looking for in the new digital age where the shelf life of every innovation is only a few years? Today, we tout our innovations—our product features, platform scope, and predictive capabilities—as value propositions to encourage more users than ever to listen to more music, and greater variety of music (as James Lucchese and Will Page will testify to). But likely, the shelf life of these new innovations may only be a few years. [redacted] Short of evolving to meet that demand, the consumer interest in actually paying for the *experience* of music will at best stagnate, and at worst stop.

24. The music industry has never stood still. Spotify is committed to pushing the envelope on streaming and on leading the product innovation and revolution. Once we stop doing so, the overall music industry pie stops growing. The more Spotify can encourage users to

listen to music, the greater the industry pie. This requires enormous amounts of technological investment. As my testimony has shown, content is only but one piece of the larger puzzle. Our technological contribution—and the capital investments, costs, and risks we take on—drives our product. Without it, we would be just another cassette manufacturer, confined to the rubble of history.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	)))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF NICHOLAS HARTEAU

I, Nicholas Harteau, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31 day of October 2016 in New York, New York.

N. HARTEAU

Nicholas Harteau

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

WRITTEN DIRECT TESTIMONY OF JAMES LUCCHESE

(On behalf of Spotify USA Inc.)

Introduction

1. My name is James Lucchese. I am the Head of Creator at the Spotify group of companies ("Spotify") and am an employee of Spotify USA Inc. I have served in this role since I joined the company in March 2015. I graduated with a JD in 2005 from Georgetown University Law Center in Washington, DC, and a BA in English from Boston College in 1994.
2. I joined Spotify through its acquisition of The Echo Nest, an industry-leading music intelligence company, where I served as CEO for eight years prior to the acquisition. Prior to The Echo Nest, I was an attorney with Greenberg Traurig, representing artists, music publishers, and new media companies in a range of music and digital media transactions.
3. My testimony will first provide an overview of Spotify's artist-focused initiatives, internally known as Creator. I will then focus on two key areas: (1) how Spotify helps artists understand their fans and generate revenue beyond streaming royalties; (2) how

Spotify's music discovery products and global reach has made it materially easier for artists to find their audience.

Creator Overview: Built to Serve Artists and Songwriters

4. I joined Spotify two and a half years ago when Spotify acquired The Echo Nest. The Echo Nest was widely recognized as the leading "music intelligence platform"—a set of technologies that maintain a deeper understanding of music content and music fans in order to enable better music discovery and personalization. The Echo Nest served over 70 enterprise customers and over 30,000 smaller app developers, working with companies such as Twitter, EMI, VEVO, MTV, and Spotify, to understand music fan behavior, preferences, ultimately to enable better music discovery. When I joined Spotify, I worked on the integration of The Echo Nest's technology and employees into Spotify for approximately six months, before moving over to run Creator.

5. Spotify has [redacted] Spotify completed the Echo Nest integration about two years ago, after which I took over leadership of the Creator team at Spotify, augmenting Spotify's teams focused on artist services.

6. Our goal within Creator is to apply our technology and data capabilities solely to the benefit of artists. We believe we exist because of artists — the songwriters, producers, instrumentalists and performers responsible for the incredible music available on Spotify. Creator's mission is to help these artists in four ways: (1) to help them better understand

their audience; (2) to help them grow their fanbase; (3) to help them directly engage with fans; and [redacted] Creator has developed a number of services and products, many of which I will describe below, to accomplish this mission.

7. The Creator team has expanded rapidly, growing from myself and one other person two years ago to almost [redacted] employees who are focused on the artist as the stakeholder. [redacted]

Creator Helps Artists Understand Their Fans and Generate Revenue

8. One example of how the Creator team is dedicated to helping artists better understand their audience is Spotify Fan Insights, an analytics product launched in November 2015. SFI, as we call it, is recognized as the most in-depth fan analytics tool in the industry, providing artists with insights such as [redacted] Data from SFI have helped artists route tours, pick their next single, connect different artists for music collaborations, and serve as the blueprint for global promotional campaigns.

9. SFI is part of a fully automated self-service website that can be accessed 24/7 anywhere in the world. Currently, over [redacted] monthly active users visit the site.

10. SFI was created to help artists tackle one of their biggest challenges—understanding their most passionate fans. Many artists generate 80% of their revenue from the top 20% of their fans, so in-depth understanding of these "superfans" can help artists target their highest-value fans to maximize promotional efforts and increase revenue. Though these fans are the most valuable, most platforms don't give artists the ability to segment fans based on passion or depth of engagement. Facebook, for example, knows that a fan clicked "like," but they don't know whether that fan tuned out years ago or is still listening to your record every day.
11. To help artists gain this insight and ability to segment listeners and fans, SFI provides the following data (the list is not exhaustive):

[redacted]

[redacted]

12. This information provides real-time data that artists can act upon. . For example, insights around an artist's fan base's preferences for other artists has helped artists find music collaborators and opening acts. Geographical data have helped many artists plan tours, even down to optimizing their set lists for the song preferences of a local market. The [redacted] for example, used these data in collaboration with our team to route a [redacted]

13. These real-time, detailed insights simply were not possible in the days of CD sales or even permanent digital download ("PDD") sales, and certainly cannot be derived from terrestrial broadcast. On-demand streaming is different than CDs, PDDs, or broadcast—[redacted] We serve as the musical companion to a music fan throughout his or her day—from discovering a new artist while listening to a playlist on the way to work, to

sharing that new song with a friend through Spotify's social features, and to listening to the artist's album every day for the next week. [redacted] we can obtain an in-depth understanding that can help an artist grow, engage and monetize his or her fan base.

14. Data also allow Spotify to help artists engage their top fans—listeners who are most passionate about an artist—in "SuperFan" campaigns. [redacted]

15. We have done SuperFan campaigns for a wide range of artists and songwriters, from superstars to developing artists. Artists we've worked with include [redacted] On average, artists generate approximately [redacted]

16. These campaigns, along with other approaches to apply our audience understanding to drive ticket sales for artists, have connected thousands of artists with millions of fans, generating over [redacted]

<u>Spotify Has Changed Music Promotion and Discovery to the Benefit of Artists</u>

17. For about a decade, Spotify has sought to *democratize* music discovery, making it easier for any artist to find his or her audience, without the constraints of traditional gatekeepers—or even geography—that have defined music promotion and discovery in the music industry.
18. Before Spotify and streaming, the means to build a commercially-sustainable audience was defined by scarcity, and because of that scarcity, large-scale promotion was largely controlled by intermediary gatekeepers.
19. When I refer to scarcity, I'm talking about scarcity in two areas: first, in the very small number of artists broadcast radio is able to promote and second, in physical inventory in record stores. Terrestrial radio has between 12-16 primary radio formats (for example, "Pop", "Rock", "AAA", etc.) that are essentially the same nationwide, and controlled by only a few companies. Between the overlap in songs and relatively non-diverse radio formats, there simply are not very many open "slots" for an artist to get on the radio. As a result, very few artists and songwriters were fortunate enough to have the supporting resources to promote their music to a very small group of radio programming decision makers. Also, those promotional opportunities are only available to certain mass-market genres, leaving radio out of reach for thousands of deserving artists.
20. These hurdles were not the only barriers for artists. Before streaming, "break on US radio, then we'll promote you elsewhere" was a very common marketing strategy that defined the industry for years. For that tiny percentage of artists who were fortunate enough to get their songs on the radio, if a song didn't immediately resonate with the

audience (based on fairly antiquated survey techniques), promotional support by the artist's record label would typically end. So even if an artist were able to get radio play—a difficult thing given the limited slots—ongoing marketing support of her music would be determined by how a song resonated within a very non-diverse radio programming station. If an artist didn't meet that exacting formula, global promotion typically would not happen. This approach left the vast majority of well-deserving artists and songwriters without the ability to reach a willing audience.

21. Spotify has broken down these barriers in two ways: First, by applying data-driven personalization [redacted] Spotify has built products that create a personalized "radio format" for every one of our 100+ million users, without any limitations in spectrum scarcity or mass-market formulas. The key is whether a song connects with that specific listener—if it does, Spotify will promote that song to that listener. This approach is free of the well-established 'popularity bias' inherent in terrestrial radio, offering a powerful promotional platform to lesser known artists. Second, by breaking down territorial approaches of promoting an artist and reaching an audience, Spotify makes it much easier for an artist to reach a global audience.

Spotify's Recommendation Products Understands Listeners and Drives New-Artist Discovery and Revenue

22. With nearly [redacted] Spotify has the largest streaming consumer base in the world. By having a two-way conversation with its

users, Spotify can learn from its listeners to create playlists filled with artists users will love. Many of these users will become fans, opening up a massive audience for artists.

23. [redacted]

24. By focusing on personalized music recommendations and tailored editorial playlists that are queued to specific listening situations, such as by genre, activity, or mood, we can greatly expand the number of artists we promote at any given time. While a large radio station may have a few hundred songs in rotation, Spotify is recommending millions of songs to millions of fans at any given time.

25. To illustrate this effect, I will discuss two of our important discovery products, Discover Weekly and Fresh Finds, below.

Discover Weekly Is an Innovative Tool for Promoting Thousands of Artists to Millions of Fans

26. Discover Weekly is one of Spotify's most popular music discovery products. Using machine learning techniques that build "taste profiles" on each Spotify user, then identify [redacted] that match a user's taste, Discover Weekly brings each user two hours of custom music recommendations, tailored specifically to each and every user and delivered at the beginning of each week as a unique Spotify playlist. The technology combines an understanding of each user's personal taste with analysis of artist similarity and user vectors. As a user's taste evolves, so do the personalized playlists. Users can

also share the playlist with their friends, turning music discovery into social interconnectivity.

27. The personalization of Discovery Weekly playlists means that there are no limits on available slots or the number of artists we can promote. While a large radio station may have a few hundred artists in rotation, Discover Weekly has recommended over [redacted] to millions of fans, pushing a new unique playlist of 30 songs to every Spotify user *every week*. In total, Spotify has introduced an artist to a fan for the first time approximately [redacted] times per month.

28. The result is a promotional effect that is not reliant on traditional gatekeepers or decision makers—instead, artists are promoted based on how their songs will resonate with each individual listener and large-scale machine learning technologies enable this as a massive, global scale—over 100 million personalized radio station, customized to each listener's specific taste. This personalized approach is absolutely helping relatively unknown artists build a fan base. As of October 2016, there are more than [redacted] such artists who got [redacted] of their listeners in the past month from Discover Weekly.

29. For example, in January 2016, Discover Weekly drove [redacted] As of this month, [redacted] are coming from *their own* saved music. That means that after Discover Weekly introduced [redacted] to a large audience, many of those listeners became fans and saved his music to their own collection on Spotify and have continued to listen to [redacted] habitually. The group [redacted] of their weekly listeners from

Discover Weekly in January 2016. Since then, they experienced [redacted] of which are coming from their own saved music. [redacted]

30. By growing artists' fan bases, Discover Weekly has created big breaks for many emerging artists. [redacted] The song was promoted on Discover Weekly as well as picked up by Spotify-curated playlists, and it became so popular that he quit his day job to pursue his music career full-time. As of September 2015, he had almost [redacted] with over [redacted] streams.

Fresh Finds Is Especially Focused on the Long-Tail of Artists Who Would Have Simply Remained Unknown Under the Old Radio System

31. As the success of Discover Weekly shows, by focusing on taste profiles and personalizing the discovery experience, Spotify's music discovery products can have a powerful promotional effect on songs that connect with listeners. And where Discover Weekly works by connecting each listener with the unique artists he or she would love, another discovery product, Fresh Finds, is especially focused on replicating this effect with lesser-known artists. This means that artists who were traditionally underserved by the old system of breaking out based on radio play can break out on Spotify simply by making great music.

32. Spotify seeks to find these artists through its product Fresh Finds. By focusing solely on unknown artists—the long tail of singer-songwriters, producers, and other artists who were grossly underserved under the old paradigm—Spotify is seeking once again to democratize music promotion and discovery, breaking down the legacy "gatekeeper" system.

33. With a soft launch on July 22, 2015 and official launch on March 2, 2016, the product uses a process that applies technology to understanding Spotify's music community and combines that with Spotify's Shows & Editorial team: Algorithms identify "tastemakers" among Spotify users [redacted]—think of these tastemakers like your friend who is always the first to hear about a cool new band. The algorithms take a look at what other songs these tastemakers are listening to, identify the artists and songs that are generating the most buzz among these tastemakers and then hand those results to Spotify curators, who organize the songs into playlists that have a smooth flow from one song to the next. Six Fresh Finds playlists are released each week—one flagship playlist and five genre-based playlists. The playlists are updated each Wednesday and are available to all (i.e., they are not user-specific).

34. During the soft launch, artists on Fresh Finds increased their listener counts by an average of [redacted] The top 10% of Fresh Finds artists increased their listener counts by an average of [redacted] Current data show that artists gain [redacted] more listeners after their Fresh Finds debut.

35. [redacted] The only factor considered is how a song connects with a listener.

36. The group [redacted] is a great example of Fresh Finds and the Spotify [redacted] Fresh Finds was the first Spotify playlist to feature [redacted] At that time, the band had a [redacted] monthly listeners. Fresh Finds listeners heard and loved [redacted] and based off of this listener engagement, the band was added to several Spotify curated playlists, including [redacted] With the additional listeners from Fresh Finds and Spotify-curated playlists, the Discover Weekly algorithms started promoting the band to even more listeners. The band now has [redacted] monthly listeners and had [redacted] monthly listeners at their peak. They reached #2 on Spotify's Global Viral Chart and #23 on Billboard's Spotify Velocity Chart, accumulating [redacted] streams and receiving multiple record label offers. Though their

success is primarily driven by the power of their music, the Spotify promotional ladder has created opportunities for them that were incomprehensible before Spotify.

37. Another band that broke out through Fresh Finds is Los Angeles-based [redacted] group. [redacted] was the first track delivered to Spotify in the fall of 2015. At the time [redacted] was featured on Fresh Finds, the band had about [redacted] monthly listeners. Following success in Fresh Finds, a similar "promotional ladder" effect ensued. Today, [redacted] has reached over [redacted] monthly listeners. [redacted] performed at the 2016 [redacted] along with a number of other artists who surfaced through Fresh Finds, including [redacted]

38. Discover Weekly and Fresh Finds are but just two of our popular music discovery products, and the stories I've shared above are just a few of the many, many success stories of artists who have found mass audiences on Spotify—success stories that likely may never have happened under the old paradigm of radio as tastemaker. But Spotify has done more than just create innovative technological tools for artist discovery. As I describe below, Spotify's global reach means that today's artists can connect with music fans on a truly international—not just regional—scale.

Spotify Opens a Global Audience to Artists

39. As previously noted, the legacy, radio-first music marketing strategy focused first on promotion to U.S. radio, then, if an artist "broke" in the U.S., campaigns would then expand globally . The drawback to this strategy is pretty clear: Suitability for terrestrial

radio play in the U.S. is a very poor predictor of whether a song will connect with fans in Mexico City, or Brisbane, Australia, or Barcelona, Spain.

40. Under the old paradigm, many American artists were unable to reach their international audiences. As a global service active in 60 territories around the world, Artists have immediate access to a global audience. So on Spotify, a Nashville-based singer songwriter can reach fans in Mexico, Australia or Spain just as easily as reaching a fan in Nashville or New York. Combining this global scale with Spotify's personalization capability means we can help artists find their fan base, no matter where they live. This results in larger, more global fan bases for artists, resulting in more listening and ultimately, more revenue.

41. Take, for example, Major Lazer's "Lean On." The song was released globally in March 2015, and by May, Lean On had about 2.5 million streams. The song initially gained traction outside the U.S., which in turn resulted in fan-to-fan sharing, which in turn resulted in the song appearing in Spotify social charts and ultimately to other Spotify-curated playlists. Lean On eventually reached the top of Spotify's *global* chart, from the week ending May 31 to the week ending July 30. By the end it had *38 million* streams—more than 15 times as many as two weeks earlier. Had Lean On been solely dependent on the old "break it in US radio, then go global," [redacted]

42. Or take the small electronic music duo [redacted] Upon release of their single [redacted] the editorial team at Spotify noticed positive trending data and added it to the "New

Music Friday" and "Weekly Buzz" playlists. After two weeks, it was competing with [redacted] for top performing track and added to "Today's Top Hits." The band landed a record deal with [redacted] and confirmed a 50 date North American Fall Tour. They have over [redacted] streams to date, with New York City (Manhattan), Singapore, Los Angeles, London, and Oslo as the top five cities where residents have streamed their songs.

Conclusion

43. Spotify deeply believes we exist because of artists. For that reason, we have worked to empower artists to better build a fan base, grow that fan base and ultimately earn more from that fan base.
44. By helping artists understand and engage their superfans, Spotify is helping artists generate more revenue across a diverse range of revenue streams.
45. By democratizing music discovery, Spotify is helping tens of thousands of artists that previously had no means to reach large-scale audiences.
46. By breaking down geographic boundaries, Spotify is helping artists reach a global audience, finding their fans anywhere in the world.
47. Though we are proud of what we've accomplished thus far, we have just started to unlock the power of streaming to maximize each artist's reach to relevant fans around the world and to help artists build larger, sustainable incomes by better understanding and engaging that global fan base. In all cases, what benefits the artist also benefits the fan, increasing

the availability and discovery of music, no matter what niche or musical style and enables a deeper connection between artist and fan.

48. As the leading streaming provider in the world, Spotify envisions a future where every artist reaches every relevant fan around the world and every fan is connected to a larger, more vibrant global community of songwriters, performers and producers than ever before. We have invested substantially to realize that vision and will continue to do so.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	))))))))	**Docket No. 16–CRB–0003–PR (2018–2022)**

DECLARATION OF JAMES LUCCHESE

I, James Lucchese, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31st day of October 2016 in New York, New York.

James Lucchese

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In re:	)	
	)	**Docket No. 16-CRB-0003-PR (2018-2022)**
DETERMINATION OF RATES	)	**(Remand)**
AND TERMS FOR MAKING AND	)	
DISTRIBUTING PHONORECORDS	)	
(PHONORECORDS III)	)	

WRITTEN DIRECT REMAND TESTIMONY OF BENJAMIN KUNG

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Benjamin Kung. I am a Director in the Financial Planning & Analysis ("FP&A") team at Spotify USA Inc. ("Spotify"), currently serving as our Head of Strategic Planning and Licensing Finance. I have been a Director within the FP&A group since December of 2018. My current job responsibilities include overseeing teams that forecast and manage the economics of our music licensing deals, provide guidance and visibility to business teams and senior leadership on matters impacting Spotify's consolidated margins, and long-range planning for the company. Prior to my current role, I was a Manager in the Content FP&A team and then Senior Manager of Licensing Finance at Spotify. I have also held a number of finance roles at other companies, including Director of Finance for the New York Red Bulls, Financial Analyst at Touchtunes, and Investment Banking Analyst at Morgan Stanley.

2. I graduated from Princeton University with a B.A. in Economics and Certificate in Finance in 2010.

3. In this testimony, I set forth the [redacted]

4. As discussed in greater detail in the Written Direct Remand Testimony of Christopher Bonavia, [redacted]

5. [redacted]

[1] [redacted]

6. Next, we look at [redacted]

7. Finally, [redacted]

8. [redacted]

	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]

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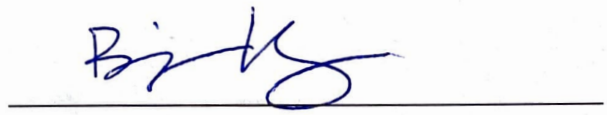
Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In re:	)	
	)	**Docket No. 16-CRB-0003-PR (2018-2022)**
DETERMINATION OF RATES	)	**(Remand)**
AND TERMS FOR MAKING AND	)	
DISTRIBUTING PHONORECORDS	)	
(PHONORECORDS III)	)	

DECLARATION OF BENJAMIN KUNG

I, Benjamin Kung, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31 of March 2021 in New York, New York.



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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In re:	)	
	)	**Docket No. 16-CRB-0003-PR (2018-2022)**
DETERMINATION OF RATES	)	**(Remand)**
AND TERMS FOR MAKING AND	)	
DISTRIBUTING PHONORECORDS	)	
(PHONORECORDS III)	)	

WRITTEN DIRECT REMAND TESTIMONY OF CHRISTOPHER BONAVIA

(On behalf of Spotify USA Inc.)

Introduction

1. My name is Christopher Bonavia. I am Global Head of Label and Rights & Clearances Business Affairs at Spotify USA Inc. ("Spotify"). I have served in this role since September of 2020. My current job responsibilities include managing a team focused on securing sound recording licenses from record labels. In my nearly five years working for Spotify, I have held multiple other positions, including Associate General Counsel, Global Head of Recorded Music Licensing and Original Content, a role I held from July 2017 to September 2020. In this prior role, I also worked on licensing deals with record labels, including negotiating and drafting deal terms with in-house attorneys at record labels.

2. Through my roles at Spotify, I have become familiar with Spotify's record label agreements with the three largest record labels, the so-called "Major" labels—Universal Music Group ("UMG"), Sony Music Entertainment ("SME"), and Warner Music Group ("WMG")—including the rates in effect since 2017 and negotiations related thereto.

3. I graduated with a BA in Economics and Music from the University of Virginia and a JD from the George Washington University Law School.

4. Prior to joining Spotify, I worked for UMG for more than three years and held multiple roles during my time there, including Senior Director and Vice President, Business and Legal Affairs. I also worked for SME, where I served as Director, Business and Legal Affairs for more than two years, and at XM Satellite Radio where, among other things, I served as Vice President, Business Affairs and Counsel. I served on the Global Digital Business teams at both UMG and SME, with responsibilities that included negotiating catalog-wide deals with digital streaming services and drafting the terms of those agreements.

5. I understand that a central issue for the rates set by the Copyright Royalty Board in the *Phonorecords III* proceeding is the "see-saw" theory adopted by the Majority. According to this theory, as I understand it, sound recording royalty rates will decline in response to an increase in the Section 115 compulsory license rate for musical works. In other words, the theory is that record labels will agree to lower sound recording royalties in response to an increase in mechanical royalty rates.

6. In my testimony, [redacted]

7.

8. For example,

[1]

9. In my experience,

[1]

[redacted]

10. [redacted]

11. [redacted]

12. [redacted] In doing so, I work with our finance team who extract and compute this information. One of my colleagues, Benjamin Kung, has submitted testimony explaining the process used for calculating [redacted] upon which I rely in part in my testimony.

[redacted]

13. [redacted]

14. [redacted]

15. [redacted]

16. [redacted][2]

17. [redacted]

18. [redacted]

[2] [redacted]

19.

20.

21.

[redacted]

[redacted]

	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]

RESTRICTED — Subject to Protective Order in
Docket No. 16-CRB-0003-PR (2018-2022) (Phonorecords III)

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In re:	)	
	)	**Docket No. 16-CRB-0003-PR (2018-2022)**
DETERMINATION OF RATES	)	**(Remand)**
AND TERMS FOR MAKING AND	)	
DISTRIBUTING PHONORECORDS	)	
(PHONORECORDS III)	)	

DECLARATION OF CHRISTOPHER BONAVIA

I, Christopher Bonavia, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 31st of March 2021 in Los Angeles, California.

Proof of Delivery

I hereby certify that on Tuesday, April 26, 2022, I provided a true and correct copy of the Written Rebuttal Statement of Spotify USA Inc. (Vol. 4A of 4) [Public] to the following:

Zisk, Brian, represented by Brian Zisk, served via E-Service at brianzisk@gmail.com

Johnson, George, represented by George D Johnson, served via E-Service at george@georgejohnson.com

UMG Recordings, Inc., represented by Steven R. Englund, served via E-Service at senglund@jenner.com

Google LLC, represented by Gary R Greenstein, served via E-Service at ggreenstein@wsgr.com

Pandora Media, LLC, represented by Benjamin E. Marks, served via E-Service at benjamin.marks@weil.com

Joint Record Company Participants, represented by Susan Chertkof, served via E-Service at susan.chertkof@riaa.com

Sony Music Entertainment, represented by Steven R. Englund, served via E-Service at senglund@jenner.com

Copyright Owners, represented by Benjamin K Semel, served via E-Service at Bsemel@pryorcashman.com

Warner Music Group Corp., represented by Steven R. Englund, served via E-Service at senglund@jenner.com

Apple Inc., represented by Mary C Mazzello, served via E-Service at mary.mazzello@kirkland.com

Amazon.com Services LLC, represented by Joshua D Branson, served via E-Service at jbranson@kellogghansen.com

Powell, David, represented by David Powell, served via E-Service at

davidpowell008@yahoo.com

Signed: /s/ Joseph Wetzel