

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



In the Matter of:

Determination of Royalty Rates and Terms
for Transmission of Sound Recordings by
Satellite Radio and "Preexisting"
Subscription Services (SDARS III)

Docket No. 16-CRB-0001 SR/PSSR
(2018-2022)

**UNOPPOSED MOTION FOR LEAVE TO CORRECT
THE WRITTEN DIRECT TESTIMONY OF RAVI DHAR, Ph.D.**

SoundExchange, Inc., the Recording Industry Association of America ("RIAA"), Sony Music Entertainment ("Sony"), Universal Music Group ("UMG"), Warner Music Group ("WMG"), the American Association of Independent Music ("A2IM"), the American Federation of Musicians of the United States and Canada ("AFM"), and the Screen Actors Guild and American Federation of Television and Radio Artists ("SAG-AFTRA") (collectively, "SoundExchange"), through their undersigned counsel, respectfully move for leave to submit the attached corrected version of the written direct testimony of Ravi Dhar, Ph.D.

Sirius XM and Music Choice (the "Services") have indicated, through their counsel, that they do not oppose this motion. Counsel for SoundExchange provided these corrections to counsel for the Services via email correspondence on March 28, 2017. The corrections are minor and non-substantive. They correct inadvertent technical errors in Tables 20 through 27 of Dr. Dhar's report, in which certain figures were inaccurately transcribed. Attachment A highlights the figures that have been corrected. These transcription errors have no effect on Dr. Dhar's analysis or conclusions, which refer to the correct figures, and they do not appear

elsewhere in Dr. Dhar's report. The documents and information produced to the Services pertaining to Dr. Dhar's report also are not affected by the errors.

The public and restricted versions of Dr. Dhar's corrected testimony accompany this motion as Attachments B and C. SoundExchange respectfully requests that the Judges grant the motion and replace the previously submitted testimony with the corrected versions.

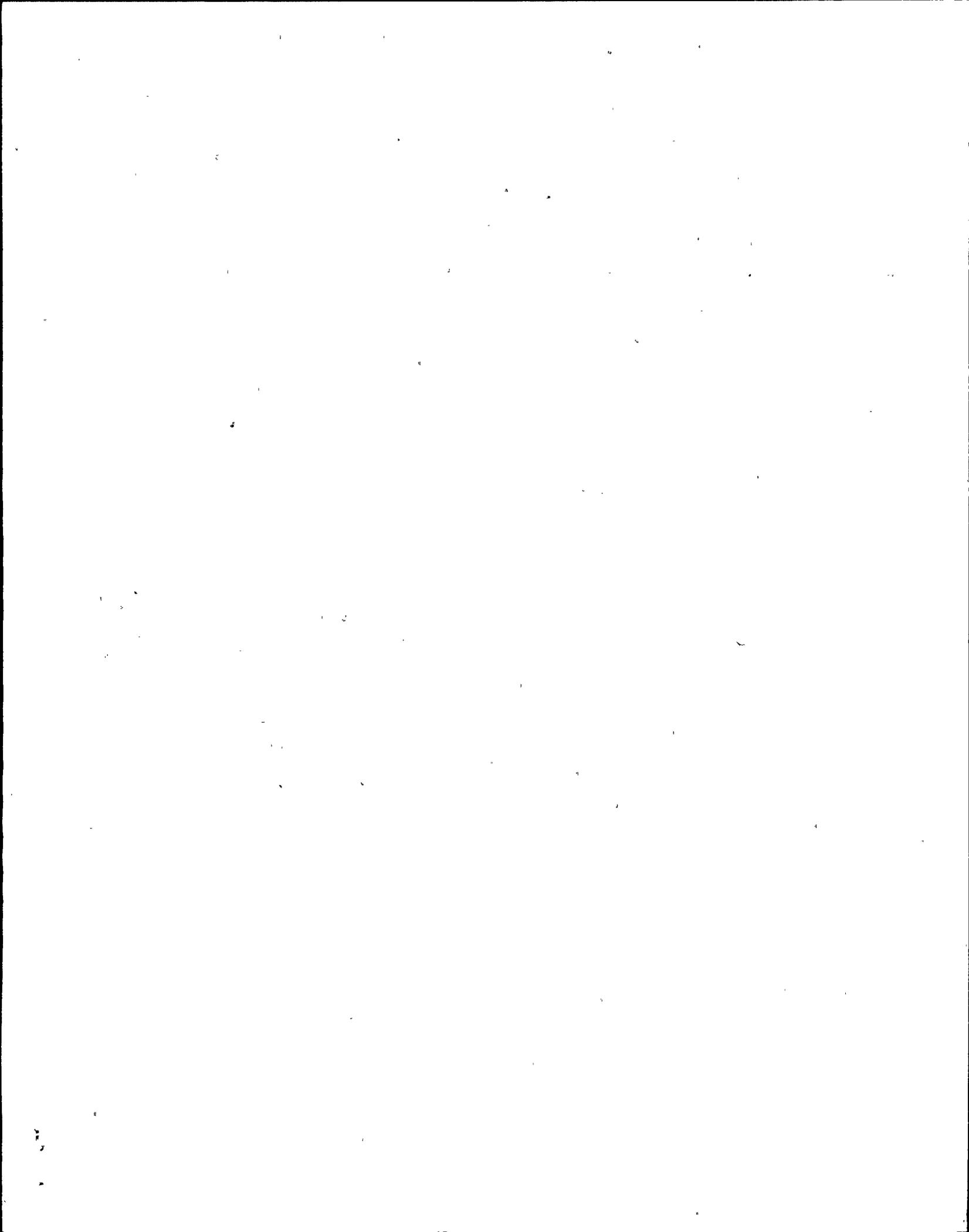
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March 30, 2017



CERTIFICATE OF SERVICE

I, Alex Trepp, do hereby certify that, on March 30, 2017, copies of the foregoing motion are being sent via electronic mail to all parties at the email addresses listed below. Hard copies will follow by first class mail.

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Alex Trepp

Attachment A

Table 20: Weighted Responses for Sirius XM Sirius Select Subscribers

Price	Unweighted			Age-gender-region weighted			Rate-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 11.49	509	390	82	502.8	387.3	76.9	513.1	395.0	81.4
\$ 12.99	427	343	43	425.9	343.5	41.9	431.6	348.2	42.8
\$ 14.49	384	259	71	384.0	257.4	70.9	388.8	263.5	70.8
\$ 15.99	313	209	50	313.1	207.6	49.4	318.1	212.1	51.2
\$ 17.49	263	140	80	263.7	134.1	85.9	266.8	143.2	80.9
\$ 18.99	183	122	24	177.8	117.1	23.9	186.0	124.6	24.6
\$ 20.49	159	92	38	153.9	87.2	38.2	161.4	94.1	38.0

Table 21: Weighted Responses for Sirius XM Sirius Select Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand
\$ 11.49	82	17	11	76.9	15.3	9.9	81.4	17.4	11.3
\$ 12.99	43	11	7	41.9	11.0	6.4	42.8	11.1	6.8
\$ 14.49	71	25	10	70.9	25.4	9.2	70.8	25.5	10.0
\$ 15.99	50	22	8	49.4	21.3	7.6	51.2	22.5	8.1
\$ 17.49	80	17	8	85.9	18.8	9.8	80.9	17.3	8.5
\$ 18.99	24	5	5	23.9	4.9	4.5	24.6	5.2	5.0
\$ 20.49	38	13	5	38.2	14.6	4.8	38.0	13.0	5.0

Table 22: Weighted Responses for Sirius XM Trial Subscribers

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Subscribe	Not Subscribe	Number of Respondents	Subscribe	Not Subscribe	Number of Respondents	Subscribe	Not Subscribe
\$ 11.49	503	280	151	502.9	278.3	152.5	506.6	285.4	149.8
\$ 12.99	352	246	42	350.3	243.1	44.5	356.8	251.9	42.5
\$ 14.49	310	184	85	305.8	181.4	83.7	314.3	188.6	85.1
\$ 15.99	225	165	40	222.1	161.3	40.9	229.2	169.0	40.7
\$ 17.49	185	135	27	181.2	131.4	27.2	188.5	138.6	27.4
\$ 18.99	158	122	18	153.9	117.0	19.6	161.1	125.3	18.3
\$ 20.49	140	108	16	134.3	104.6	14.7	142.8	111.1	15.6

Table 23: Weighted Responses for Sirius XM Trial Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand
\$ 11.49	151	7	15	152.5	8.2	14.7	149.8	7.4	14.9
\$ 12.99	42	6	7	44.5	7.8	7.4	42.5	6.3	7.1
\$ 14.49	85	30	9	83.7	28.1	10.4	85.1	30.7	9.4
\$ 15.99	40	18	8	40.9	19.8	7.5	40.7	18.5	8.4
\$ 17.49	27	11	7	27.2	11.9	6.7	27.4	11.5	6.9
\$ 18.99	18	8	5	19.6	9.4	5.2	18.3	8.3	5.2
\$ 20.49	16	7	2	14.7	6.8	1.7	15.6	7.0	2.0

Table 24: Weighted Responses for On-Demand Paid Subscribers (Apple Music and Spotify Premium)

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 6.99	504	474	20	512.0	480.4	21.8	519.1	488.1	20.6
\$ 7.99	484	432	29	490.2	437.4	28.7	498.5	445.0	29.8
\$ 8.99	455	385	33	461.6	387.5	33.2	468.6	396.3	34.0
\$ 9.99	422	358	31	428.3	359.9	32.9	434.6	369.1	31.7
\$ 10.99	391	274	67	395.4	275.0	65.6	402.9	282.6	68.6
\$ 11.99	324	245	37	329.8	242.7	41.4	334.3	252.5	37.9
\$ 12.99	287	221	29	288.3	218.2	30.5	296.3	227.9	29.8

Table 25: Weighted Responses for On-Demand Paid Switching to Not-On-Demand Music Streaming Services and Sirius XM

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM
\$ 6.99	20	6	11	21.8	6.5	11.4	20.6	6.1	11.3
\$ 7.99	29	12	7	28.7	11.6	6.7	29.8	12.3	7.0
\$ 8.99	33	12	11	33.2	11.9	11.4	34.0	12.4	11.4
\$ 9.99	31	9	13	32.9	9.5	13.2	31.7	9.2	13.2
\$ 10.99	67	28	12	65.6	26.9	11.8	68.6	29.1	12.3
\$ 11.99	37	18	7	41.4	20.3	5.9	37.9	18.5	7.3
\$ 12.99	29	10	8	30.5	10.2	7.9	29.8	10.3	8.3

Table 26: Weighted Responses for Not-On-Demand Paid Subscribers (Pandora One)

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 3.49	499	461	22	504.1	465.8	23.1	512.5	473.3	22.9
\$ 3.99	477	446	18	481.0	450.1	18.4	489.6	458.0	18.4
\$ 4.49	459	382	42	462.6	382.8	43.6	471.2	392.1	43.0
\$ 4.99	417	362	21	419.0	362.1	21.8	428.2	371.7	21.5
\$ 5.49	396	303	50	397.2	303.8	49.8	406.6	310.7	51.5
\$ 5.99	346	296	21	347.4	297.2	21.4	355.2	303.5	21.6
\$ 6.49	325	254	35	326.0	253.6	36.4	333.6	260.6	35.9

Table 27: Weighted Responses for Not-On-Demand Paid Switching to On-Demand Music Streaming Services and Sirius XM

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM
\$ 3.49	22	6	9	23.1	6.3	9.5	22.9	6.3	9.4
\$ 3.99	18	6	4	18.4	6.9	3.1	18.4	6.0	4.3
\$ 4.49	42	16	10	43.6	16.1	10.6	43.0	16.6	10.1
\$ 4.99	21	14	3	21.8	14.8	2.7	21.5	14.4	3.0
\$ 5.49	50	16	7	49.8	14.9	7.4	51.5	16.7	7.3
\$ 5.99	21	6	5	21.4	6.8	4.8	21.6	6.1	5.1
\$ 6.49	35	16	11	36.4	16.7	11.7	35.9	16.4	11.4

Table 28: Weighted Responses for On-Demand/Not-On-Demand Free Subscribers

Percent Discount	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Subscribe	Continue with Free	Number of Respondents	Subscribe	Continue with Free	Number of Respondents	Subscribe	Continue with Free
10%	501	154	285	524.5	159.3	300.8	510.1	157.5	289.9
20%	347	25	268	365.2	24.6	281.5	352.6	25.3	271.9
30%	322	11	257	340.6	11.7	269.0	327.3	10.9	261.5

Attachment B

**Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Washington, D.C.**

In the Matter of:

**Determination of Royalty Rates and Terms
for Transmission of Sound Recordings by
Satellite Radio and “Preexisting”
Subscription Services (SDARS III)**

**Docket No. 16-CRB-0001 SR/PSSR
(2018-2022)**

CORRECTED WRITTEN DIRECT TESTIMONY OF

Ravi Dhar

**George Rogers Clark Professor of Management
Yale School of Management**

March, 2017

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I. QUALIFICATIONS

1. My name is Ravi Dhar. I am the George Rogers Clark Professor of Management and Marketing at the Yale School of Management, and the Director of the Yale Center for Customer Insights at the School of Management at Yale University in New Haven, Connecticut. I also have an affiliated appointment as a Professor of Psychology at the Department of Psychology at Yale University and serve on the editorial board of leading consumer research journals, such as *Journal of Consumer Psychology*, *Journal of Consumer Research*, *Journal of Marketing*, and *Marketing Letters*. I am the past Associate Editor of *Journal of Marketing Research*, the past Area Editor of *Marketing Science*, and the past Associate Editor of *Journal of Consumer Research*.
2. I hold a Ph.D. and M.S. in Business Administration from the University of California at Berkeley. My doctoral dissertation ("Consumer Preference for a No-Choice Option") was focused in the area of consumer decision-making. I have published more than sixty papers in journals, proceedings, and as book chapters, including in the leading marketing, psychology, and management journals, including among others, the *Harvard Business Review*, *Journal of Behavioral Decision Making*, *Journal of Business*, *Journal of Consumer Psychology*, *Journal of Consumer Research*, *Journal of Marketing Research*, *Journal of Personality and Social Psychology*, *Management Science*, *Marketing Science*, *Organizational Behavior and Human Decision Processes*, and *Sloan Management Review*.
3. Several of my publications were also considered for research awards such as the Paul E. Green Award ("The Effect of Forced Choice on Choice," Finalist in 2004) and the William O'Dell Award ("Consumer Choice Between Hedonic and Utilitarian Goods," Winner in 2005; "Making Complementary Choices in Consumption Episodes: Highlighting Versus Balancing," Finalist in 2004; "The Effect of Forced Choice on Choice," Finalist in 2008; "Preference Fluency in Choice," Finalist in 2012). The William O'Dell Award is presented to the *Journal of Marketing Research* article that has made the most significant, long-term contribution to marketing theory, methodology, and/or practice. The Paul E. Green Award is presented to the *Journal of Marketing*

Research article that shows or demonstrates the most potential to contribute significantly to the practice of marketing research and research in marketing. I have been awarded the 2012 Distinguished Scientific Contribution Award from the Society of Consumer Psychologists, which is given annually to honor a scholar who has made significant and lasting contributions in the field of consumer psychology. A detailed listing of my educational background and publications is set forth in the curriculum vitae, which is attached as Appendix A.

4. My fields of expertise are consumer and customer behavior, consumer psychology, branding, marketing management, marketing strategy, survey methodology and evaluation. In my work as a marketing professor and as a consultant to major corporations, I have conducted, supervised, and/or evaluated more than 250 surveys, as well as analyzed questions relating to different aspects of consumer behavior. Most of my research focuses on consumers' decision making—the manner in which consumers acquire and process information when forming product perception and preferences, the effect of product attributes and information presentation on consumer purchase and consumption decisions, and the effect of different marketing mix activities (such as promotions and advertising) on consumer buying decisions.
5. My teaching responsibilities at Yale University's School of Management include two doctoral courses that examine advanced research topics in the area of consumer behavior, judgment, and decision-making. I teach or have taught several different courses for graduate students who are enrolled in the MBA program or the Executive MBA program at Yale: Consumer Behavior, E-Business and Marketing, Marketing Strategy, Marketing Management, Marketing of Financial Services, and Strategic Marketing Leadership. I have given seminars to mid-level and senior-level executives in more than a dozen countries in North and South America, Asia, and Europe. I have also worked as a consultant or adviser to companies on marketing-related issues in different types of industries (*e.g.*, consumer products, high technology, health, and financial services).

6. I have served as an expert witness on marketing research issues in a variety of litigation matters. A list of cases in which I have testified as an expert, at trial or at deposition in the preceding four or more years is attached as Appendix B.
7. I am being compensated for my work on this case at \$795 per hour. My compensation is not contingent upon the conclusions I reach or on the outcome of this matter.
8. In forming my opinion, I reviewed materials provided to me by counsel as well as other materials, listed in Appendix C, academic research on the principles of consumer information processing and decision making, the survey results discussed below, and the other documents discussed in this report. In addition, I relied on my education, training, and experience, on general principles of marketing research and survey research, as well as consumer information processing and decision-making.
9. I reserve the right to supplement my testimony and this report in response to any further information provided by the parties, and/or in light of additional documents or testimony brought forth through the ongoing discovery in this proceeding, at the hearing, or otherwise, which may be brought to my attention after the date of my signature below.

II. BACKGROUND AND PURPOSE OF THE REPORT

10. I understand that this proceeding will determine the royalties that Sirius XM will pay to copyright holders for the right to publicly perform sound recordings on its service.¹ I have been asked by Counsel for SoundExchange, Inc. ("SoundExchange") to conduct a survey to measure the preferences of subscribers to certain music services who would choose to cancel their subscriptions at a given price. The survey measures whether the subscribers would instead prefer to subscribe to another music

¹ I am aware that rates will also be set in this proceeding for the "preexisting subscription services" or "PSS," which are among the services providing music channels included in an existing cable or satellite TV subscription. Such services were included among certain of the potential survey responses described below, but my analysis does not otherwise address the PSS.

subscription service. Specifically, Sirius XM subscribers surveyed were current paid subscribers to the Sirius Select package² and current users of a free trial subscription to Sirius XM (typically available with certain new or used car purchases).³

11. In addition to examining these behaviors for Sirius XM Satellite Radio subscribers, I was also asked to examine similar preferences of subscribers who would choose to cancel their subscription to certain music streaming services. Specifically, these services include the following categories of music streaming services, represented by the most popular brand(s) within the category.
 - a. Paid subscriptions to certain On-Demand music streaming services (Spotify and Apple that represent approximately 12 million paid On-Demand music streaming subscriptions);⁴
 - b. Paid subscriptions to certain Not On-Demand music streaming services (Pandora One with almost four million paid subscribers);⁵
12. I was also asked to measure preferences of consumers who use certain free, ad-supported music streaming services. The survey measures whether those users would subscribe to a corresponding subscription music service at a given price. Specifically, these services include the following music streaming services, represented by the most popular brand that offers a free, ad-supported account.

² My analysis of paid Sirius XM subscribers was limited only to those respondents subscribing to the Sirius Select package, which I understand is one of the most popular subscription packages.

³ Purchasers and lessees of new cars or trucks with satellite radio-enabled radios generally receive trial subscriptions of between three and twelve months. See Sirius XM Holdings, Inc., Form 10-K filed with the Securities and Exchange Commission for the Period Ending December 31, 2015, p. 22, 40.

⁴ Cowen & Co. estimate that Spotify and Apple Music have approximately 8 and 4 million paid subscribers respectively in the U.S., approximately 75% of the 16 million subscriptions to On-Demand music streaming services. Patrick Seitz, "Streaming Music Leader Spotify Challenged by Apple, Amazon, Pandora," *Investor's Business Daily*, June 29, 2016, accessed October 17, 2016, <http://www.investors.com/news/technology/click/streaming-music-leader-spotify-challenged-by-apple-amazon-pandora/?ven=YahooCP&src=AURLLED&ven=yahoo>.

⁵ *Pandora 2016 Annual Report for the Fiscal Year Ended December 31, 2015*, at p. 46, accessed October 17, 2016, <http://investor.pandora.com/phoenix.zhtml?c=227956&p=proxy>.

- a. Free, ad-supported users of the On-Demand music streaming service Spotify were asked about whether they would subscribe to Spotify Premium at various price points. (Free-ad-supported Spotify represents approximately 24 million users in the U.S.)⁶
 - b. Free, ad-supported users of the Not On-Demand music streaming service Pandora were asked about whether they would subscribe to Pandora One at certain prices. (Free, ad-supported Pandora represents over 80 million unique monthly users.)⁷
13. In this context, I conducted a survey to determine who would continue or cancel their subscription to Sirius XM or one of the music streaming services at price levels that varied by approximately ten, twenty, or thirty percent from the standard price of a service that they reported to use.⁸ Respondents who indicated that they would cancel their service at a given price were asked whether they would instead subscribe to a different subscription music service.⁹
14. This report presents the details of the survey that I supervised and the conclusions I have reached based on the data collected.

⁶ Spotify is the only major On-Demand music streaming service that offers a free, ad-supported tier. As noted in Footnote 4, Spotify is reported to have approximately 8 million paid subscribers in the U.S. Spotify has approximately three times as many free, ad-supported users as paying subscribers worldwide. Applying this ratio applies to the U.S., implies Spotify has approximately 24 million free, ad-supported users in the U.S.

⁷ *Pandora 2016 Annual Report for the Fiscal Year Ended December 31, 2015*, at p. 46, accessed October 17, 2016, <http://investor.pandora.com/phoenix.zhtml?c=227956&p=proxy>.

⁸ The survey I designed, which asked respondents whether they would continue subscribing to a given service at alternative price points, uses a common method of ascertaining respondents' willingness to pay for a product or service. See, e.g., Robert J. Dolan and John T. Gourville, "Principles of Pricing," Harvard Business School Case 9-506-021, April 3, 2009.

⁹ Respondents were screened for qualification as a current user for each one of the Sirius XM and music streaming services, but only asked about a single service in the main survey. Respondents who were asked about their subscriptions to a music streaming service (Apple Music, Spotify Premium, or Pandora One) were told to assume that all music streaming services in that category had the same monthly subscription price when providing their preferences for switching among subscription music services.

15. The design, execution and analysis of the survey followed accepted scientific standards of my profession and were consistent with the principles for survey research discussed in the Federal Judicial Center's Manual for Complex Litigation (4th, Section 11.493)¹⁰, as well as guidelines set forth in the *Reference Guide on Survey Research*.¹¹ To illustrate:
- a. The survey population was properly chosen and defined;
 - b. The sample chosen was representative of that population;
 - c. The questions asked were clear and not leading;
 - d. The data gathered were accurately reported;
 - e. The data were analyzed in accordance with accepted statistical principles;
 - f. The process was conducted to ensure objectivity;
 - g. The survey was conducted by qualified people following proper interview procedures.
16. In the remainder of this report, I describe the protocol used to implement the survey and present my findings. Section III presents a summary of my opinions and findings in this matter. Section IV describes the survey methodology used to determine (i) the preferences of subscribers of Sirius XM and the other music streaming services for those who would choose to cancel their subscriptions at a given price and (ii) the preferences for subscribing to another music subscription service among those who would choose to cancel their subscriptions at a given price. Section IV also describes the methodology used to determine the preferences of users of the free, ad-supported music streaming services for subscribing to the corresponding ad-free music subscription music service at a given price.¹² Section V describes how the survey

¹⁰ Federal Judicial Center, Manual for Complex Litigation, Fourth Edition, Section 11.493.

¹¹ See, e.g., many of the recommendations in Shari Seidman Diamond "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 359-423.

¹² By corresponding ad-free music service, I mean that respondents who used the free, ad-supported version of Spotify were asked about whether they would subscribe to Spotify Premium at various price points, and respondents who used the free, ad-supported version of

population and the survey sample were chosen and defined. Section VI sets forth the screening criteria used to qualify respondents for participation in the study. In Section VII, I discuss the survey rollout, and in Section VIII, I describe the key survey questions. Finally, Section IX presents my findings on respondents' preferences for switching to another music service for subscribers who would choose to cancel a given music service subscription.

III. SUMMARY OF OPINIONS

17. Based on the results of the study I conducted, and my education, background, professional experience, analysis, and review of relevant materials in this case, it is my opinion that the survey results described below and related empirical conclusions concerning the preferences of subscribers to certain music services who would choose to cancel their subscriptions at a given price and whether they would instead subscribe to another music subscription service are supported with a high degree of scientific certainty. It is also my opinion with a high degree of scientific certainty that the survey reliably measures the preferences of users of free, ad-supported music streaming services for subscribing to a subscription music service at a given price.
18. An Internet survey was conducted under my direction between September 14 and September 22, 2016 to measure (i) the preferences of subscribers who would choose to cancel their subscriptions at a given price; (ii) the preferences for subscribing to another music subscription service among those who would choose to cancel their subscriptions at a given price; and (iii) the preferences of users of free, ad-supported music streaming services, and whether they would subscribe to a corresponding subscription music service at a given price.
19. The survey was carefully designed and executed, adhering to scientific principles of survey research to ensure reliability and validity of the results. In total, 2,602

Pandora were asked about whether they would subscribe to Pandora One at various price points.

respondents completed the survey and their responses were analyzed and are reported below.

20. The survey results demonstrate that 76% of Sirius XM Sirius Select subscribers would cancel their subscriptions to Sirius XM at various prices between \$11.49 and \$20.49 per month. Of the 76% who would cancel their subscription to Sirius XM Select at any of the price levels examined, the data show that 22% of Sirius XM Select subscribers would switch to a paid On-Demand music streaming subscription, and 11% would switch to a paid Not-On-Demand music streaming subscription.¹³
21. The survey results also demonstrate that 44% of subscribers to the On-Demand music streaming services Apple Music and Spotify Premium would cancel their subscriptions at various prices between \$6.99 and \$12.99 per month. Of the 44% who would cancel their subscription to the On-Demand music streaming services Apple Music and Spotify Premium at any of the price levels examined, the data show that 14% would switch to Sirius XM and 19% would switch to a Not-On-Demand music streaming service.
22. Likewise, 51% of subscribers to the Not-On-Demand music streaming service Pandora One would cancel their subscriptions at various prices between \$3.49 and \$6.49 per month. Of the 51% who would cancel their subscription to Pandora One at any of the price levels examined, the data show that 10% would switch to Sirius XM and 16% would switch to an On-Demand music streaming service.
23. Among users of free, ad-supported music streaming services, 38% indicated that they would subscribe to a subscription music service if the price was discounted between 10% and 30% below the standard price for the subscription. 51% of those respondents would not subscribe to a subscription music service if the price was discounted between 10% and 30% below the standard price for a subscription.

¹³ The results reported here are unweighted figures. In Section IX, I report figures using alternative weighting methods.

IV. SURVEY METHODOLOGY

24. In implementing the survey, I was assisted by the Brattle Group, an economic consulting firm, and the Target Research Group, a marketing research company with extensive experience in conducting surveys.¹⁴ Both the Brattle Group and Target Research Group worked under my direction to implement the online survey, including the management and coordination of the data collection, and to conduct the empirical analysis supporting my opinions in this report. Their compensation is not contingent upon the conclusions I reach nor on the outcome of this matter.
25. To ensure objectivity, it is standard practice to conduct research in a double-blind manner (i.e., both the interviewer and the respondent are blind to the sponsor of the survey and its purpose).¹⁵ The survey replicated double-blind conditions. The survey questionnaire did not provide any information on the sponsor of the survey or about its underlying purpose. The full sequence of survey questions is presented in Appendix D, with screenshots of the programmed survey presented in Appendix E.
26. The survey questions were tested to ensure that respondents understood and could respond accurately to the questions.
27. Respondents were instructed, "If you don't know an answer to a question or if you are unsure, please indicate this in your response. It is very important that you do not guess" (underline in original).
28. In addition, the survey used quasi-filters (i.e., explicitly included the response option of "Don't know/unsure"), which substantially decreases any potential concern that the respondent will feel pressure to provide an answer when they are unsure.¹⁶

¹⁴ The survey was programmed and hosted by CarbonView Research (<http://www.carbonview.com>) under my direction and the guidance of the Brattle Group and the Target Research Group.

¹⁵ Shari Seidman Diamond, "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 410-411.

¹⁶ Shari Seidman Diamond, "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 390.

29. Respondents were also given an option to choose “Other” when the options provided might not include their specific response to a question. Those who chose “Other” were asked to specify an answer to the question in a free-response text box. There were relatively few such responses; all such responses were included verbatim and were reviewed by the Brattle Group and by me personally.
30. When presenting respondents with a set of options in a closed-ended question, it is generally good practice, depending on the types of options, to randomize the answer options in order to control for possible order effects.¹⁷ Accordingly, I randomized response options so that different respondents saw the options in different orders, where it was appropriate. There are standard exceptions to the randomization rules. For example, certain options—such as “Other,” “None of the Above,” and “Don’t know/unsure”—always come last in order for the question to preserve logical flow.
31. The survey has two parts: a screening questionnaire, and a set of main survey questions. Respondents were screened for qualification as a current user for each one of the services of interest (Sirius XM Sirius Select or trial subscription; Apple Music; Spotify; or Pandora), but only asked about a single service in the main survey.¹⁸ As is best practice, respondents who qualified for more than one service were randomly assigned to a set of questions in the main survey about just one of their services.

V. SURVEY POPULATION

32. One of the first steps in ensuring that the survey results are meaningful is the selection of the appropriate target population or universe.¹⁹ The universe is that segment of the population whose beliefs and opinions are relevant to the issues in the case. The survey universe for this study is defined as U.S. adults (18 years of age or older) who

¹⁷ Shari Seidman Diamond, “Reference Guide on Survey Research,” *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 395-396.

¹⁸ Specific screening questions are outlined in Section VI: Screening Criteria.

¹⁹ Shari Seidman Diamond, “Reference Guide on Survey Research,” *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 376.

have Sirius XM Satellite Radio or who use certain On-Demand or certain Not-On-Demand music streaming services.²⁰ For users of paid subscriptions to Satellite Radio, an On-Demand service or Not-On-Demand service, only primary decision makers (those who made a decision by themselves or played a major role in the decision) were included as part of the respondent population.²¹

33. In order to survey relevant individuals, I designed an Internet survey that screened potential respondents to determine if they were members of the appropriate population. The sampling frame for any survey (i.e., the source from which the sample is actually drawn) should closely approximate the underlying population. An Internet-based survey offers this capability and many other advantages over different recruiting methodologies, such as broad geographic reach to areas of the U.S. where recruiting via malls or other face-to-face methods would not be feasible.²² Internet surveys also allow respondents to review instructions or a list of alternatives, as I discuss below. At present, 88.5% of U.S. households have Internet access;²³ by contrast, 52% of households have a landline phone. Moreover, Internet surveys are a

²⁰ The On-Demand music streaming services were Apple Music, Spotify Premium, and the ad-supported version of Spotify; the Not-On-Demand music streaming services were Pandora One and the ad-supported version of Pandora. Respondents who had more than one category of service, (e.g., Satellite Radio and Apple Music) qualified for the survey and later were randomly placed into a cell and asked about only one service.

²¹ As discussed in Paragraph 43, I also screened out respondents who work for certain employers or in certain industries.

²² See, e.g., Shari Seidman Diamond, "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 401; Gelb, G., and Gelb, B., "Internet Surveys for Trademark Litigation: Ready or Not, Here They Come," *The Trademark Reporter*. Vol. 97, 2007; Isaacson B., et al., "Why Online Surveys Can Be A Smart Choice in Intellectual Property Litigation," *IPL Newsletter* (ABA Section of Intellectual Property Law) Vol. 26, No. 3, 2008; Poret, H., "A Comparative Empirical Analysis of Online versus Mall and Phone Methodologies for Trademark Surveys," *The Trademark Reporter*. Vol. 100, 2010; Simonson, A., "Online Interviewing for Use in Lanham Act Litigation," *Intellectual Property Strategist* Vol. 14, 2007.

²³ <http://www.internetlivestats.com/internet-users-by-country/> (accessed October 14, 2016).

widely accepted form of market research.²⁴ Courts have accepted the findings of Internet surveys in a broad range of cases, including surveys that I have personally designed for a number of different cases.²⁵

34. In my experience, a properly designed Internet survey is representative of the target population and can be used to draw valid statistical inferences of the target population. In this case, the target population in this survey included respondents who are users of Internet-based services, making an Internet survey a natural venue.
35. The Internet survey was conducted by contracting with one of the numerous companies that have pre-recruited potential respondents who have indicated their willingness to participate in market research surveys. For this study, participants were recruited from the panel maintained by Survey Sampling, Inc. ("SSI"), a highly experienced and well-established firm that maintains a variety of panels with over six million panelists in the United States and 11.5 million panelists worldwide.²⁶ To draw statistical inferences for a target population, I ensured the representativeness of the survey population by "click-balancing" the inbound sample (i.e., targeting a representative sample from the market research panel based on the distribution of individuals by validated demographics) to the U.S. Census data. The demographic variables used for balancing were gender, age, and Census region, and the resulting survey population was within 3% of the U.S. Census.²⁷
36. During the survey invitation process, SSI included a link to the online survey. This link contained an embedded identification number to ensure that only invited

²⁴ Blumberg, Stephen J., and Luke, Julian V. "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2015," National Center for Health Statistics, May 2016, p. 2.

²⁵ See Appendix B for some recent examples.

²⁶ <https://www.surveysampling.com/knowledge-center/panels-respondent-experience/>, last accessed: September 27, 2016.

²⁷ U.S. Census Bureau, "Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015," Population Division, June 2016, accessed October 17, 2016, <https://www.census.gov/popest/data/state/asrh/2015/SC-EST2015-AGESEX-CIV.html>.

respondents could answer the survey, that each respondent could only complete the survey once, and that only one member per household could complete the survey.

37. Respondents who qualified and completed the survey were provided with a reward valued between \$1 and \$2. In my experience, such honoraria are common in survey research and do not influence the accuracy of the responses.

VI. SCREENING CRITERIA

38. At the beginning of the survey, respondents were screened to determine whether they qualified for any of the following services:
- a. Paid subscription to Sirius XM's Sirius Select service and have made the decision themselves or who played a major role in deciding whether to subscribe to Sirius Select;
 - b. Current trial subscription to Sirius XM;
 - c. Paid subscription to the On-Demand music streaming service Apple Music and have made the decision themselves or who played a major role in deciding whether to subscribe to Apple Music;
 - d. Paid subscription to the On-Demand music streaming Service Spotify Premium and have made the decision themselves or who played a major role in deciding whether to subscribe to Spotify Premium;
 - e. User of the free, ad-supported version of the On-Demand music streaming service Spotify;
 - f. Paid subscription to the Not-On-Demand music streaming service Pandora One and have made the decision themselves or who played a major role in deciding whether to subscribe to Pandora One;
 - g. User of the free, ad-supported version of the Not-On-Demand music streaming service Pandora.

Respondents who reported using one or more of the services were selected to answer questions about one of the services used.²⁸

39. As noted above, respondents who had a paid subscription to one of the qualifying services were separately asked about their role in the decision to take a subscription for each music service (Sirius XM's Sirius Select, Apple Music, Spotify Premium, or Pandora One) (Q53 and Q55). Respondents were allowed to continue the survey and answer additional questions about a particular service only if they made the decision themselves, or if they played a major role in deciding whether to subscribe to that particular service (Q53 and Q55).
40. After respondents read a brief, standard introduction about how to navigate the survey, assuring them of confidentiality, and instructing them not to guess when answering questions, respondents were prompted with a CAPTCHA challenge to ensure that their responses were not computer-generated.²⁹
41. After completing the CAPTCHA challenge, respondents were asked for their gender (Q30) and age (Q35). Answers to these questions were used to validate that the respondent who was invited to the survey was indeed the person taking the survey. Survey responses were mapped to panel data and any respondent with a data conflict on these questions was terminated from the survey.

²⁸ Respondents were screened for all the services they could potentially qualify for. After the initial screening, each respondent was randomly assigned to only one of the qualifying music service cells.

²⁹ A CAPTCHA challenge refers to a program that protects websites against bots (i.e., computer-generated responses) by generating and grading tests that humans can pass, but current computer programs cannot. The acronym CAPTCHA stands for Completely Automated Public Turing Test To Tell Computers and Humans Apart. *See, e.g.*, CAPTCHA, "CAPTCHA: Telling Humans and Computers Apart Automatically," <http://www.captcha.net>, visited on September 28, 2016.

42. Respondents were then queried as to the type of electronic devices they were using to complete the survey, allowing only those with desktop, laptop, or tablet computers to continue (Q40).³⁰
43. Respondents were then asked a standard industry exclusion question (Q50), screening out any respondents who indicated that they, or other members of their household, were employed by a Market Research Company or Public Relations Agency, for a Satellite Radio company, Streaming Music company, for Apple, Google or Amazon, or for a company that creates music such as a Recording Studio, Record Company, or a Music Publisher. Respondents who indicated that they, or a member of their household worked for one of those types of firms were terminated from the survey.
44. Next, in screening question Q51, respondents were asked about the music services they currently have, including all subscriptions—free, trial or introductory, or paid. Only those respondents indicating that they used Satellite Radio (Sirius XM) or a Music Streaming Service (e.g., Apple Music, Spotify or Pandora) were allowed to continue.
45. Respondents were screened about the types of Sirius XM services or Music Streaming Services they currently had. Respondents were screened for all the services for which they could potentially qualify. After the initial screening, each respondent was randomly assigned to only one of the qualifying music service cells: Sirius XM (Sirius Select) or Sirius XM free trial, or one of the other five categories of music streaming services (paid subscription to Spotify or Apple Music, use of free, ad-supported Spotify, subscription to Pandora One, use of free, ad-supported Pandora).³¹

³⁰ Respondents taking the survey on a smartphone, or on any other mobile device besides a desktop, laptop or tablet computer, were informed, "This survey is not formatted for viewing on smartphones and other mobile or electronic devices. Please return to the survey, using the same link, from a desktop, laptop or tablet computer." Respondents were not permitted to take the survey with a smartphone because respondents may have needed to access information through a pop-up window, which would not display well on smartphones.

³¹ In the survey 1,413 respondents qualified for multiple cells. For example, 41% of respondents indicated having a paid subscription to Sirius Select also indicated having a paid subscription to at least one On-Demand streaming music service (Apple Music or Spotify Premium) or to Pandora One. [REDACTED]

46. The next screening question (Q52) was only presented to respondents who responded that they currently have some type of Sirius XM subscription. They were asked if their Sirius XM subscription was a paid subscription, part of package from DISH network, or a free Trial Period subscription.³² Trial subscribers qualified to potentially be asked about a Sirius XM Trial subscription in the main survey. Paid Subscribers were asked two additional screening questions, to specify the specific subscription package (Q52.2), and indicate their involvement in the decision to purchase Sirius XM (Q53). Sirius XM subscribers with the "Select" package, who made the decision themselves or who played a major role in deciding whether to subscribe to Sirius XM, qualified to potentially be asked about a paid Sirius XM "Select" package subscription in the main survey.³³
47. Respondents who reported currently using a music streaming service were asked the next screening question (Q54). They were asked to identify which of the following streaming music services they currently have:
- a. Paid subscription to Apple Music
 - b. Paid subscription to Spotify Premium
 - c. Free, ad-supported version of Spotify
 - d. Paid subscription to Pandora One
 - e. Free, ad-supported version of Pandora
 - f. A music streaming service not listed above (those who chose this option were asked to identify the service)

³² Those who only had Sirius XM as part of a bundled DISH package were not eligible to be asked about Sirius XM in the main questionnaire.

³³ I included only subscribers to the Sirius XM Sirius Select package, which I understand is one of the most popular subscription packages.

48. Respondents who reported being users of the free, ad-supported versions of Spotify and/or Pandora qualified to potentially be asked about that service in the main survey. Paid Subscribers to Apple Music and/or Spotify Premium were asked an additional screening question to indicate their role in the decision to purchase a subscription to Apple Music and/or Spotify (Q55). Those who made the decision themselves or who played a major role in deciding whether to subscribe to that particular service qualified to potentially be asked about a paid subscription to Apple Music or Spotify Premium in the main survey.³⁴ As noted above, respondents who qualified for more than one service were randomly assigned to a set of questions in the main survey about just one of their services.
49. Lastly, as a quality control measure, respondents were asked to confirm that they understood and agreed to the following instructions before being assigned to a track of questions about a specific service in the main questionnaire (Q140).
- Please take the survey in one session without interruption.
 - While taking the survey, please do not consult any other websites or other electronic or written materials.
 - Please answer all questions on your own without consulting any other person.
 - If you normally wear glasses or contact lenses when viewing a computer screen, please wear them for the survey.

Only those respondents who answered affirmatively that they understood and agreed were allowed to proceed to the main survey.

³⁴ A total of 48 respondents indicated that they currently had both paid and ad-supported account to Spotify (21 respondents), to Pandora (24 respondents), or both (3 respondents), without qualifying for another cell (e.g., a subscription to Apple Music). These respondents were terminated from the survey.

VII. SURVEY ROLLOUT

50. The survey was conducted from September 14 through September 22, 2016. To ensure that the survey operated properly, I extensively tested the links, skip logic, randomization of cell assignment and response options, and screening questions. The Brattle Group, at my direction, also performed extensive testing on these features of the survey.
51. A total of 15,904 potential respondents who are representative of the general population responded to an invitation to take the survey and began the survey's screener. Those entering the survey had a personally encoded link that established survey security, ensuring that respondents could not take the survey multiple times. Appendix F provides screening statistics including the reasons that potential respondents were terminated from the survey.
52. Ultimately, 2,602 qualified respondents completed the survey. Of these, I removed 86 respondents who completed the survey in what I judged to be too little time or too much time.³⁵ The remaining 2,516 respondents constituted the final sample, and were asked about one of the services they reported using. Table 1 shows the number of respondents who were asked about each service.

³⁵ Specifically, I removed five respondents who completed the survey in less than one minute and 81 respondents who took more than 20 minutes to complete the survey. The results are similar if I include only 95% of the respondents, removing the 2.5% who took the greatest amount of time to complete the survey and the 2.5% who took the least amount of time to complete the survey.

Table 1: Survey Respondents by Service

Sirius XM Select	509
Sirius XM Trial	503
On-Demand Paid (Apple Music and Spotify Premium)	504
Not On-Demand Paid (Pandora One)	499
On-Demand and Not On-Demand Free (Pandora and Spotify)	501
Total Respondents	2,516

VIII. KEY SURVEY QUESTIONS

53. Respondents who qualified for the survey were asked a series of questions about one of the services they used. The specific set of questions for each service is outlined below.

A. SIRIUS XM SIRIUS SELECT SUBSCRIBERS

54. Sirius XM paid subscribers to the Select package started the main questionnaire by being introduced to definitions of music services (Q200), and were asked to confirm that they understood the descriptions of all three of these services (Q201). The exact text read by the respondent is as follows (bold in original):

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead

provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Only those who answered affirmatively proceeded to be asked the next set of questions.

55. Respondents were then informed that “The next few questions will be about your Satellite Radio subscription. If you have more than one paid subscription to Sirius XM Satellite Radio, please answer the following questions based on the one you have the **longest.**” And then told “You will be presented with several different monthly prices for a single Sirius XM Satellite Radio subscription. **This amount may be higher or lower than the amount you currently pay for your Sirius XM Satellite Radio subscription**” (Q202, bold and underline in original).
56. Next, respondents were asked a set of up to seven questions about whether they would continue their current subscription to Sirius XM at certain monthly subscription prices (Q203-Q203.6). These monthly prices started at thirty percent below the standard subscription \$15.99 price of the Sirius Select Package, and increased in increments of approximately 10%, as outlined in Table 2.

Table 2: Prices Offered to Sirius XM Subscribers

Sirius XM (Select Package)		
Question	Relative to Standard Price	Monthly Price
Q203	30% below standard price	\$11.49
Q203.1	20% below standard price	\$12.99
Q203.2	10% below standard price	\$14.49
Q203.3	standard price	\$15.99
Q203.4	10% above standard price	\$17.49
Q203.5	20% above standard price	\$18.99
Q203.6	30% above standard price	\$20.49

57. Specifically, they were asked in Q203 “If right now you were to be charged **\$11.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you ...? Continue to subscribe to Sirius XM Satellite Radio, Cancel your subscription to

Sirius XM Satellite Radio, or Don't know/unsure" (bold in original).³⁶ Respondents who answered they would continue to subscribe or chose the "Don't know/unsure" option were asked Q203.1, a parallel question with a monthly price of \$12.99, and so forth, until they chose the "Cancel your subscription" option, or until they were asked Q203.6, whether they would continue to subscribe to Sirius XM if the subscription price were \$20.49 per month.

58. For the price level at which a respondent selected "Cancel your subscription" option, a respondent was then asked, "You mentioned that you would cancel your subscription to Sirius XM if you were charged [PRICE AT WHICH THE RESPONDENT CHOSE TO CANCEL THE SERVICE] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of Sirius XM? This would only include a new subscription, and would not include a music service that you currently subscribe to." The response options were randomized and included the following: "Yes, I would subscribe to an On-Demand music streaming service like Apple Music or Spotify at \$9.99 per month", "Yes, I would subscribe to a Not-On-Demand music streaming service like Pandora One at \$4.99 per month", "No, I would not subscribe to a paid music service in place of Sirius XM", and "Don't know/unsure" (Q210, bold and underline in original).³⁷
59. Those who said they would not subscribe to a paid music service in place of Sirius XM were asked "You mentioned that you would not subscribe to a paid music service in place of Sirius XM. What else, if anything, would you do instead of paying for a subscription to Sirius XM?" (Q210.1, bold and underline in original).³⁸ Their options included the selection of all that apply from the following: "I would purchase CDs

³⁶ The order of the Continue and Cancel options were randomized across respondents. Half of the respondents always saw "continue" first, and half always saw "cancel" first.

³⁷ When answering this question, respondents could click on a link that said "Click here if you want to review the music services definitions" (bold in original).

³⁸ Respondents who said they would subscribe to an On-Demand service, or a Not-On-Demand service (as well as those who said they were unsure or did not know) were thanked for their time and completed the survey.

and/or music downloads”, “I would listen to free music”, “Other (Please specify—you will not be constrained by the size of the box).”

60. Lastly, those who said they would listen to free music were asked “How would you listen to free music instead of Sirius XM Satellite Radio” (Q210.2), and asked to pick all that apply from the following answer options, which were presented in randomized order.

- Free Not-On-Demand internet radio with ads (*e.g.*, Pandora; or AM/FM radio stations over the internet)
- Free On-Demand music services with ads (*e.g.*, free, ad-supported Spotify)
- Free On-Demand music video sites with ads (*e.g.*, YouTube)
- Music channels included in an existing cable or satellite TV subscription (*e.g.*, Music Choice)³⁹
- AM/FM radio or AM/FM HD radio
- Music obtained through Peer-to-Peer file sharing or free download sites
- Borrow CDs, vinyl or tapes from friends or a library
- Continue listening to the music collection I already own
- Other (Please specify—you will not be constrained by the size of the box) _____
- Don’t know/unsure

B. SIRIUS XM FREE TRIAL PERIOD SUBSCRIBERS

61. Free Trial Period Sirius XM subscribers started the main questionnaire by being asked how long they have had their Trial Period subscriptions to Sirius XM Satellite Radio (Q500.1). Respondents who reported having a trial subscription for over 12 months were terminated from the survey.⁴⁰

³⁹ Services like Music Choice were included among the free music options both here and below, even though one might view the service as paid for as a small part of the respondent’s cable or satellite television subscription payment, because these services could be accessed by the respondent for no incremental charge.

⁴⁰ As noted in Footnote 3, the length of time of trial subscriptions ranged from three to 12 months.

62. Respondents were then introduced to definitions of music services (Q500.2), and were asked to confirm that they understood the descriptions of all three of these services (Q501). The exact text read by the respondent is as follows (bold in original):

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Only those who answered affirmatively proceeded to be asked the next set of questions.

63. Respondents were then informed that “The next few questions will be about what interest, if any, you may have in purchasing a paid subscription to **Sirius XM** Satellite Radio at the end of your **Trial Period** subscription to **Sirius XM** Satellite Radio. You will be presented with several different monthly prices for a paid subscription to **Sirius XM** Satellite Radio” (Q502, bold in original).
64. Next, respondents were asked a set of up to seven questions about whether they would convert their Sirius XM subscription at certain monthly subscription prices when their trial period ends (Q503 through Q503.6). These monthly prices started at

thirty percent below the standard price for a Select package subscription, and increased in 10% increments, as outlined in Table 3.

Table 3: Prices Offered to Sirius XM Trial Subscribers

Sirius XM (Select Package)		
Question	Relative to Standard Price	Monthly Price
Q503	30% below standard price	\$11.49
Q503.1	20% below standard price	\$12.99
Q503.2	10% below standard price	\$14.49
Q503.3	standard price	\$15.99
Q503.4	10% above standard price	\$17.49
Q503.5	20% above standard price	\$18.99
Q503.6	30% above standard price	\$20.49

65. Specifically, they were asked in Q503 “At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of \$11.49 per month, would you or would you not subscribe to the service” (bold in original). Answer options included: “Yes, I would subscribe to the service,” “No, I would not subscribe to the service”, or “Don’t know/unsure” (underline in original).⁴¹ Respondents who answered they would subscribe or chose the “Don’t know/unsure” option were asked the next in the series of questions, and continued to be asked Q503.1, a parallel question with a monthly price of \$12.99, and so forth until they chose the “No, I would not subscribe” option or until they were asked Q503.6, whether they would subscribe to Sirius XM if the subscription price were \$20.49 per month.
66. For the price level at which a respondent selected “No, I would not subscribe” option, a respondent was then asked, “You mentioned that you would not subscribe to **Sirius XM** at the end of your trial period if you were charged [**PRICE AT WHICH THE RESPONDENT CHOSE NOT TO SUBSCRIBE**] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of your trial subscription to **Sirius XM**? This would only include a new

⁴¹ The order of the Continue and Cancel options were randomized across respondents. Half of the respondents always saw “continue” first, and half always saw ‘cancel’ first.

subscription, and would not include a music service that you currently subscribe to” (Q510, bold and underline in original). The response options were randomized and included the following: “Yes, I would subscribe to an **On-Demand** music streaming service like Apple Music or Spotify at **\$9.99** per month”, “Yes, I would subscribe to a **Not-On-Demand** music streaming service like Pandora One at **\$4.99** per month”, “No, I would not subscribe to a paid music service in place of Sirius XM when my trial period ends”, and “Don’t know/unsure” (Q510, bold and underline in original).⁴²

67. Those respondents who said they would not subscribe to a paid music service in place of their Trial Period subscription were asked “You mentioned that you would not subscribe to a paid music service in place of your Trial Period subscription to Sirius XM Satellite Radio. What else, if anything, would you do instead of paying for a subscription to Sirius XM Satellite Radio?” (Q510.1, bold and underline in original.)⁴³ Their response options were randomized and included the selection of all that apply from the following: “I would purchase CDs and/or music downloads”, “I would listen to free music”, “Other (Please specify—you will not be constrained by the size of the box)”, “None of the Above”, and “Don’t know/unsure”.
68. Lastly, those who said they would listen to free music were asked “How would you listen to free music instead of paying for a subscription to Sirius XM Satellite Radio?” (Q510.2, bold in original), and asked to pick all that apply from the following answer options, which were presented in randomized order.
- Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
 - Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
 - Free On-Demand music video sites with ads (e.g., YouTube)

⁴² When answering this question, respondents who wanted to see the definitions of the services again could click on a link that said “Click here if you want to review the music services definitions” (bold in original).

⁴³ Respondents who said that they would subscribe to an On-Demand service, or a Not-On-Demand service (as well as those who said they were unsure or did not know) were thanked for their time and completed the survey.

- Music channels included in an existing cable or satellite TV subscription (*e.g.*, Music Choice)
- AM/FM radio or AM/FM HD radio
- Music obtained through Peer-to-Peer file sharing or free download sites
- Borrow CDs, vinyl or tapes from friends or a library
- Continue listening to the music collection I already own
- Other (Please specify—you will not be constrained by the size of the box) _____
- Don't know/unsure

C. PAID ON-DEMAND MUSIC STREAMING SERVICE SUBSCRIBERS

69. Subscribers to paid subscriptions to On-Demand music streaming services (specifically, Apple Music or Spotify Premium) started the main questionnaire by being introduced to definitions of music services (Q300), and were asked to confirm that they understood the descriptions of all three of these services (Q301). The exact text read by the respondent is as follows (bold in original):

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the

listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Only those who answered affirmatively proceeded and be asked the next set of questions.

70. Respondents were then informed that “The next few questions will be about your **[Apply Music or Spotify Premium]** streaming service subscription,” (bold in original) and told “You will be presented with several different monthly prices for a subscription to **[Apply Music or Spotify Premium]**. **This amount may be higher or lower than the amount you currently pay for your subscription to [Apply Music or Spotify Premium]**” (Q302, bold in original).
71. Next, respondents were asked a set of up to seven questions about whether they would continue their current subscription to Apple Music or Spotify Premium at certain monthly subscription prices (Q303 through Q303.6). These monthly prices started at thirty percent below the standard price for the subscription, and increased in 10% increments, as outlined in Table 4.

Table 4: Prices Offered to On-Demand Music Streaming Services

Apple Music/Spotify Premium		
Question	Relative to Standard Price	Monthly Price
Q303	30% below standard price	\$6.99
Q303.1	20% below standard price	\$7.99
Q303.2	10% below standard price	\$8.99
Q303.3	standard price	\$9.99
Q303.4	10% above standard price	\$10.99
Q303.5	20% above standard price	\$11.99
Q303.6	30% above standard price	\$12.99

72. Specifically, they were asked in Q303 “If right now you were to be charged \$6.99 per month for the same **[Apple Music or Spotify Premium]** subscription you currently have, and you knew that all other On-Demand music streaming service subscriptions were also \$6.99 per month, would you ...? Continue to subscribe to **[Apple Music or Spotify Premium]**, Cancel your subscription to **[Apple Music or Spotify Premium]**, or

Don't know/unsure" (bold and underline in original).⁴⁴ Respondents who answered they would continue to subscribe or chose the "Don't know/unsure" option were asked Q303.1, a parallel question with a monthly price of \$7.99, and so forth, until they chose the "Cancel your subscription" option, or until they were asked Q303.6, whether they would continue to subscribe to that service if the subscription price were \$12.99 per month.

73. For the price level at which a respondent selected "Cancel your subscription" option, a respondent was then asked, "You mentioned that you would cancel your subscription to **[Apple Music or Spotify Premium]** if you were charged **[PRICE AT WHICH THE RESPONDENT CHOSE TO CANCEL THE SERVICE]** per month, and you knew that all other **On-Demand** music streaming services were also **[PRICE AT WHICH THE RESPONDENT CHOSE TO CANCEL THE SERVICE]** per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music services in place of **[Apple Music or Spotify Premium]**? This would only include a new subscription, and would not include a music service that you currently subscribe to" (Q310, bold and underline in original). The response options included the following: "Yes, I would subscribe to a **Not-On-Demand** music streaming service like Pandora One at **\$4.99** per month", "Yes, I would subscribe to **Sirius XM** satellite radio at **\$15.99** per month", "No, I would not subscribe to a paid music service in place of [Apple Music or Spotify Premium]", and "Don't know/unsure" (Q310, bold in original).⁴⁵
74. Those who said they would not subscribe to a paid music service in place of [Apple Music or Spotify Premium] were asked "You mentioned that you would not subscribe to a paid music service in place of **[Apple Music or Spotify Premium]**. What else, if anything, would you do instead of paying for a subscription to **[Apple Music or Spotify**

⁴⁴ The order of the Continue and Cancel options were randomized across respondents. Half of the respondents always saw "continue" first, and half always saw "cancel" first.

⁴⁵ When answering this question, respondents could click on a link that said "**Click here if you want to review the music services definitions**" (bold in original).

Premium]?” (Q310.1, bold and underline in original.)⁴⁶ Their options included the selection of all that apply from the following: “I would purchase CDs and/or music downloads”, “I would listen to free music”, “Other (Please specify—you will not be constrained by the size of the box)”, “None of the Above”, and “Don’t know/unsure”.

75. Lastly, those who said they would listen to free music were asked “How would you listen to free music instead of [Apple Music or Spotify Premium]” (Q310.2, bold in original) and asked to pick all that apply from the following answer options, which were presented in randomized order.

- Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
- Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
- Free On-Demand music video sites with ads (e.g., YouTube)
- Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
- AM/FM radio or AM/FM HD radio
- Music obtained through Peer-to-Peer file sharing or free download sites
- Borrow CDs, vinyl or tapes from friends or a library
- Continue listening to the music collection I already own
- Other (Please specify—you will not be constrained by the size of the box) _____
- Don’t know/unsure

D. PAID NOT ON-DEMAND MUSIC STREAMING SERVICE SUBSCRIBERS

76. Respondents who were paid subscriptions to Not-On-Demand music streaming services (specifically, Pandora One) started the main questionnaire by being introduced to definitions of music services (Q400), and were asked to confirm that

⁴⁶ Respondents who said they would subscribe to an On-Demand service, or a Not-On-Demand service (as well as those who said they were unsure or did not know) were thanked for their time and completed the survey.

they understood the descriptions of all three of these services (Q401). The exact text read by the respondent is as follows (bold in original):

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Only those who answered affirmatively proceeded to be asked the next set of questions.

77. Respondents were then informed that “The next few questions will be about your **Pandora One** streaming service subscription.” And then told “You will be presented with several different monthly prices for a subscription to **Pandora One**. This amount may be higher or lower than the amount you currently pay for your subscription to **Pandora One**” (Q402, bold in original).
78. Next, respondents were asked a set of up to seven questions about whether they would continue their current subscription to **Pandora One** at certain monthly subscription prices (Q403 through Q403.6, bold in original). These monthly prices

started at thirty percent below the standard price for the subscription, and increased in 10% increments, as outlined in Table 5.

Table 5: Prices Offered to Not-On-Demand Music Streaming Services

Pandora One		
Question	Relative to Standard Price	Monthly Price
Q403	30% below standard price	\$3.49
Q403.1	20% below standard price	\$3.99
Q403.2	10% below standard price	\$4.49
Q403.3	standard price	\$4.99
Q403.4	10% above standard price	\$5.49
Q403.5	20% above standard price	\$5.99
Q403.6	30% above standard price	\$6.49

79. Specifically, they were asked in Q403 “If right now you were to be charged \$3.49 per month for the same **Pandora One** subscription you currently have, and you knew that all other **Not-On-Demand** music streaming service subscriptions were also \$3.49 per month, would you ...? Continue to subscribe to **Pandora One**, Cancel your subscription to **Pandora One**, or Don’t know/unsure” (bold and underline in original).⁴⁷ Respondents who answered they would continue to subscribe or chose the “Don’t know/unsure” option were asked Q403.1, a parallel question with a monthly price of \$3.99, and so forth until they chose the “Cancel your subscription” option, or until they were asked Q403.6, whether they would continue to subscribe to Pandora One if the subscription price were \$6.49 per month.
80. For the price level at which a respondent selected “Cancel your subscription” option, a respondent was then asked, “You mentioned that you would cancel your subscription to **Pandora One** if you were charged [PRICE AT WHICH THE RESPONDENT CHOSE TO CANCEL THE SERVICE] per month, and you knew that all other **Not-On-Demand** music streaming services subscriptions were also [PRICE AT WHICH THE RESPONDENT CHOSE TO CANCEL THE SERVICE] per month. Keeping in mind all other

⁴⁷ The order of the Continue and Cancel options were randomized across respondents. Half of the respondents always saw “continue” first, and half always saw ‘cancel” first.

music services you subscribe to, would you or would you not subscribe to a paid music service in place of **Pandora One**? This would only include a new subscription, and would not include a music service that you currently subscribe to” (Q410, bold and underline in original). The response options included the following: “Yes, I would subscribe to an **On-Demand** music streaming service like Apple Music or Spotify at **\$9.99** per month”, “Yes, I would subscribe to **Sirius XM** satellite radio at **\$15.99** per month”, “No, I would not subscribe to a paid music service in place of **Pandora One**”, and “Don’t know/unsure” (Q410, bold and underline in original).⁴⁸

81. Those who said they would not subscribe to a paid music service in place of Pandora One were asked “You mentioned that you **would not subscribe** to a paid music service in place of **Pandora One**. What else, if anything, would you do instead of paying for a subscription to **Pandora One**” (Q410.1, bold and underline in original.)⁴⁹ Their options included the selection of all that apply from the following: “I would purchase CDs and/or music downloads”, “I would listen to free music”, “Other (Please specify—you will not be constrained by the size of the box)”, “None of the Above”, and “Don’t know/unsure”.
82. Lastly, those who said they would listen to free music were asked “How would you listen to free music instead of **Pandora One**” (Q410.2, bold in original), and asked to pick all that apply from the following answer options, which were presented in randomized order.
- Free Not-On-Demand internet radio with ads (*e.g.*, Pandora; or AM/FM radio stations over the internet)
 - Free On-Demand music services with ads (*e.g.*, free, ad-supported Spotify)
 - Free On-Demand music video sites with ads (*e.g.*, YouTube)

⁴⁸ When answering this question, respondents could click on a link that said “**Click here if you want to review the music services definitions**” (bold in original).

⁴⁹ Respondents who said they would subscribe to an On-Demand service, or a Not-On-Demand service (as well as those who said they were unsure or did not know) were then thanked for their time and completed the survey.

- Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
- AM/FM radio or AM/FM HD radio
- Music obtained through Peer-to-Peer file sharing or free download sites
- Borrow CDs, vinyl or tapes from friends or a library
- Continue listening to the music collection I already own
- Other (Please specify—you will not be constrained by the size of the box) _____
- Don't know/unsure

E. FREE AD-SUPPORTED USERS OF ON-DEMAND OR NOT ON DEMAND MUSIC STREAMING SERVICES (SPOTIFY/PANDORA)

83. Respondents who reported using free, ad-supported music streaming services (Pandora and Spotify) started the main questionnaire by being screened on time spent listening to the service each week (600.1). Respondents who listened for less than an hour per week were not included in the survey as “users” of the service because they may have signed up for an account at some point in the past, but were not likely to be current and/or active users of the service.
84. Respondents using the free version of Pandora were then told that “The next few questions will be about what interest, if any, you may have in purchasing a paid subscription to **Pandora**. A paid subscription to **Pandora** would allow you to listen to music **ad-free, with more skips, and with fewer timeouts**. You will be presented with several different monthly prices for a paid subscription to **Pandora**” (Q603, bold in original).⁵⁰
85. Respondents were then instructed that “The next few questions will be about what interest, if any, you may have in purchasing a paid subscription to **Spotify**. A paid

⁵⁰ Respondents who indicated that they had both a paid subscription to Pandora One and a free Pandora account were not asked questions about Pandora. Only 5% of respondents that completed the survey indicated that they had both free and paid Pandora.

subscription to **Spotify** would allow you to listen to music **ad-free, with unlimited skips, offline, with high quality audio, and to play any track**. You will be presented with several different monthly prices for a paid subscription to **Spotify**” (Q603, bold in original).⁵¹

86. Next, respondents were asked a set of up to three questions about their willingness to subscribe to a paid subscription to **[Pandora or Spotify]** at certain monthly prices (Q603.1 through Q603.3, bold in original). These monthly prices started at ten percent below the standard price for the subscription, and decreased in 10% increments, as outlined in Table 6.

Table 6: Prices Offered to Free Ad Supported Music Streaming Services

Question	Relative to Standard Price	Amount
Pandora		
Q603.1	10% below standard price	\$4.49
Q603.2	20% below standard price	\$3.99
Q603.3	30% below standard price	\$3.49
Spotify		
Q603.1	10% below standard price	\$8.99
Q603.2	20% below standard price	\$7.99
Q603.3	30% below standard price	\$6.99

87. Specifically, they were asked in Q603.1 “If right now you were offered a paid subscription to **[Spotify or Pandora]** at **[INSERT “Monthly price with 10% discount” FROM CHART]**, would you or would you not subscribe to the service” (bold in original).⁵² Respondents who answered they would not subscribe, or chose the “Don’t know/unsure” option were asked Q603.2, a parallel question with a monthly price 20% below the standard price for the subscription; respondents who still answered they would not subscribe, or chose the “Don’t know/unsure” option were asked

⁵¹ Respondents who indicated that they had both a paid subscription to Spotify Premium and a free Spotify account were not asked questions about Spotify. Only 5.7 percent of respondents that completed the survey indicated that they had both free and paid Spotify.

⁵² The order of the Subscribe and Not Subscribe options were randomized across respondents. Half of the respondents always saw “subscribe” first and half always say “not subscribe” first.

Q603.3 a parallel question with a monthly price 30% below the standard price for the subscription. Respondents who answered that they would subscribe at any price offered were thanked for their time and completed the survey.

IX. SURVEY RESULTS

88. In this section, I summarize the key findings of my survey. The findings report (i) the prices as which various consumers would choose to cancel their music service subscriptions and (ii) their preference to subscribe to another music service for those who would choose to cancel a given music service subscription.
89. In addition to reporting the number (or percentage) of respondents who responded to the questions in the survey, to ensure accurate representation of the U.S. adult population, the survey responses were also weighted by these three variables: age, gender, and Census region. Applying these weights did not affect my conclusions. A description of the weighting methods and the weighted survey responses are presented in Appendix G.
90. A bootstrapping procedure was used to estimate the precision of, and create a confidence interval around, each one of the reported survey results.⁵³ A set of 1,000 independent “resamples” were generated by randomly selecting respondents with replacement from the original, full-sample of survey respondents. Sampling weights were adjusted by age, gender, and Census region for the resampling. The variation in these 1,000 weighted estimates derived from each of the 1,000 “resamples” forms the basis of the standard error calculations for results reported below.⁵⁴

⁵³ This approach follows the recommendations of the American Association for Public Opinion Research. The text follows closely American Association for Public Opinion Research, “AAPOR Guidance on Reporting Precision for Nonprobability Samples,” 2016, p. 1-2.

⁵⁴ As noted by the American Association for Public Opinion Research, the confidence interval assumes that the weighted estimates are approximately unbiased, which is based on the assertion that any differences between the survey sample and the target population on key survey outcomes are corrected by the sampling weight. *See* American Association for Public

A. SIRIUS XM SIRIUS SELECT SUBSCRIBERS

91. Of the 509 paid subscribers to Sirius XM Select, 388 (76% of the sample) indicated that they would cancel their Sirius XM subscription at various price points between \$11.49 and \$20.49 per month. 92 respondents (18% of the sample) indicated that they would continue their subscription to Sirius XM Sirius Select at a price of \$20.49 per month. The remaining 29 respondents (6% of the sample) did not report a preference. The distribution of responses is shown in Table 7.⁵⁵

Table 7: Sirius XM Sirius Select Subscribers

Price	Number of Respondents	Continue	Cancel
\$ 11.49	509	390	82
\$ 12.99	427	343	43
\$ 14.49	384	259	71
\$ 15.99	313	209	50
\$ 17.49	263	140	80
\$ 18.99	183	122	24
\$ 20.49	159	92	38

Opinion Research, "AAPOR Guidance on Reporting Precision for Nonprobability Samples," 2016 p. 2.

⁵⁵ I note that 196 respondents (39%) indicated that they would cancel their subscription to Sirius XM when the price was below the \$15.99 standard price of Sirius Select. This result is consistent with the marketplace practice of offering discounts to subscribers from the "sticker price" for a number of reasons, including to subscribers who purchase longer-term subscription plans, subscribers who have multiple subscriptions, and for customer acquisition and customer retention.]

92. Of the 388 respondents who indicated that they would cancel their Sirius XM subscription, 110 (22% of the sample) indicated that they would instead switch to an On-Demand music streaming service, while 54 (11% of the sample) indicated that they would instead switch to a Not-On-Demand music streaming service. The distribution of responses for this set of respondents is presented in Table 8.

Table 8: Sirius XM Sirius Select Subscribers Switching to On-Demand and Not-On-Demand

Price	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand
\$11.49	82	17	11
\$12.99	43	11	7
\$14.49	71	25	10
\$15.99	50	22	8
\$17.49	80	17	8
\$18.99	24	5	5
\$20.49	38	13	5

93. The estimated proportion of the Sirius XM Sirius Select subscribers who indicated that they would cancel their Sirius XM subscription, and instead switch to an On-Demand music streaming service, is between 21.6% and 22.2% when survey responses are weighted using alternative weighting methods. Similarly, the estimated proportion of those who indicated they would cancel their Sirius XM subscription and instead switch to a Not-On-Demand music streaming service is between 10.3% and 10.7% when survey responses are weighted using alternative methods. Table 9 presents estimated proportions and their respective 95% confidence intervals.

Table 9: Sirius XM Sirius Select Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services – Estimated Proportions and Confidence Intervals

	Baseline	95% CI	Weighted	95% CI	Raked	95% CI	Bootstrap	95% CI
Cancel	76.2%	72.5% - 79.9%	77.0%	73.3% - 80.7%	76.3%	72.7% - 80.0%	76.9%	73.2% - 80.5%
Cancel and Switch To On-Demand	21.6%	18.0% - 25.2%	22.1%	18.5% - 25.8%	21.8%	18.3% - 25.4%	22.2%	18.7% - 25.7%
Cancel and Switch To Not-On-Demand	10.6%	7.9% - 13.3%	10.4%	7.7% - 13.0%	10.7%	8.0% - 13.4%	10.3%	7.6% - 12.9%

B. SIRIUS XM TRIAL SUBSCRIBERS

94. Of the 503 respondents who reported having a trial subscription to Sirius XM, 379 (75% of the sample) indicated that they would not purchase a paid subscription to Sirius XM at various price points between \$11.49 and \$20.49 per month. 108 respondents (21% of the sample) indicated that they would purchase a paid subscription to Sirius XM at a price of \$20.49 per month. The remaining 16 respondents (3% of the sample) did not report a preference.⁵⁶ The distribution of responses for Sirius XM Trial Subscriber sample is presented in Table 10.

Table 10: Sirius XM Trial Subscribers

Price	Number of Respondents	Subscribe	Not Subscribe
\$ 11.49	503	280	151
\$ 12.99	352	246	42
\$ 14.49	310	184	85
\$ 15.99	225	165	40
\$ 17.49	185	135	27
\$ 18.99	158	122	18
\$ 20.49	140	108	16

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95. Of the 379 respondents who indicated that they would not purchase a subscription to Sirius XM, 87 (17% of the sample) indicated that they would instead subscribe to an On-Demand music streaming service, while 53 (11%) indicated that they would instead subscribe to a Not-On-Demand music streaming service. The distribution of responses for this set of respondents is presented in Table 11.

Table 11: Sirius XM Trial Subscribers Switching to On-Demand and Not-On-Demand

Price	Not Subscribe	Not Subscribe and Switch to On-Demand	Not Subscribe and Switch to Not-On-Demand
\$11.49	151	7	15
\$12.99	42	6	7
\$14.49	85	30	9
\$15.99	40	18	8
\$17.49	27	11	7
\$18.99	18	8	5
\$20.49	16	7	2

96. The estimated proportion of the Sirius XM Trial Subscribers who indicated that they would not purchase a subscription to Sirius XM, and instead switch to an On-Demand music streaming service is between 17.3% and 18.5% when survey responses are weighted using alternative weighting methods. Similarly, the estimated proportion of those who indicated they would not purchase a subscription to Sirius XM, and instead switch to a Not-On-Demand music streaming service, is between 10.5% and 11.1% when survey responses are weighted using alternative methods. Table 12 presents estimated proportions and their respective 95% confidence intervals.

Table 12: Sirius XM Trial Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services – Estimated Proportions and Confidence Intervals

	Baseline	95% CI	Weighted	95% CI	Raked	95% CI	Bootstrap	95% CI
Cancel	75.3%	71.6% - 79.1%	76.2%	72.5% - 79.9%	75.1%	70.6% - 79.6%	75.9%	72.1% - 79.7%
Cancel and Switch To On-Demand	17.3%	14.0% - 20.6%	18.3%	14.9% - 21.6%	17.7%	14.4% - 21.0%	18.5%	15.0% - 22.0%
Cancel and Switch To Not-On-Demand	10.5%	7.9% - 13.2%	10.6%	7.9% - 13.3%	10.6%	7.9% - 13.3%	11.1%	8.3% - 13.9%

C. ON-DEMAND PAID SUBSCRIBERS (APPLE MUSIC AND SPOTIFY PREMIUM)

97. Of the 504 respondents who reported being paid subscribers to On-Demand music services, 246 (49% of the sample) indicated that they would cancel their On-Demand music service subscription at various price points between \$6.99 and \$12.99 per month. 221 respondents (44% of the sample) indicated that they would continue their subscription to their On-Demand music service at a price of \$12.99 per month. The remaining 37 respondents (7% of the sample) did not report a preference. The distribution of responses is shown in Table 13.⁵⁷

Table 13: On-Demand Paid Subscribers (Apple Music and Spotify Premium)

Price	Number of Respondents	Continue	Cancel
\$ 6.99	504	474	20
\$ 7.99	484	432	29
\$ 8.99	455	385	33
\$ 9.99	422	358	31
\$ 10.99	391	274	67
\$ 11.99	324	245	37
\$ 12.99	287	221	29

98. Of the 246 respondents who indicated that they would cancel their On-Demand subscription, 95 (19% of the sample) indicated that they would instead switch to a

⁵⁷ I analyzed the responses of Apple Music subscribers and Spotify subscribers separately. Their responses to questions related to canceling their subscriptions and to questions about whether they would switch to another subscription service were similar across the two services.

Not-On-Demand music streaming service, while 69 (14% of the sample) indicated that they would instead switch to a Sirius XM paid subscription. The distribution of responses for On-Demand Paid Subscriber sample is presented in Table 14.

Table 14: On-Demand Paid Switching to Not-On-Demand and Sirius XM

Price	Cancel	Cancel and Switch to Not-On-Demand	Cancel and Switch to Sirius XM
\$6.99	20	6	11
\$7.99	29	12	7
\$8.99	33	12	11
\$9.99	31	9	13
\$10.99	67	28	12
\$11.99	37	18	7
\$12.99	29	10	8

99. The estimated proportion of respondents who reported being paid subscribers to On-Demand music services and indicated that they would cancel their On-Demand music service subscription, and instead switch to a Not-On-Demand music streaming service, is between 18.8% and 18.9% when survey responses are weighted using alternative weighting methods. Similarly, the estimated proportion of those who indicated they would cancel their On-Demand music streaming service and instead switch to Sirius XM is between 13.3% and 13.7% when survey responses are weighted using alternative methods. Table 15 presents estimated proportions and their respective 95% confidence intervals.

Table 15: On-Demand Subscribers Switching to Not-On-Demand Music Streaming Services and Sirius XM – Estimated Proportions and Confidence Intervals

	Baseline	95% CI	Weighted	95% CI	Raked	95% CI	Bootstrap	95% CI
Cancel	48.8%	44.4% - 53.2%	49.6%	45.3% - 54.0%	48.7%	44.4% - 53.0%	49.8%	45.3% - 54.2%
Cancel and Switch To Not-On-Demand	18.8%	15.4% - 22.3%	18.9%	15.5% - 22.3%	18.9%	15.5% - 22.2%	18.8%	15.3% - 22.3%
Cancel and Switch To Sirius XM	13.7%	10.7% - 16.7%	13.4%	10.4% - 16.3%	13.6%	10.7% - 16.6%	13.3%	10.3% - 16.3%

D. NOT-ON-DEMAND PAID SUBSCRIBERS (PANDORA ONE)

100. Of the 499 respondents who reported being paid subscribers to the Not-On-Demand music service Pandora One, 209 respondents (42% of the sample) indicated that they would cancel their Not-On-Demand music service subscription at various price points between \$3.49 and \$6.49 per month 254 respondents (51% of the sample) indicated that they would continue their subscription to Pandora One at a price of \$6.49 per month. The remaining 36 respondents (7% of the sample) did not report a preference. The distribution is shown in Table 16.

Table 16: Not-On-Demand Paid Subscribers (Pandora One)

Price	Number of Respondents	Continue	Cancel
\$ 3.49	499	461	22
\$ 3.99	477	446	18
\$ 4.49	459	382	42
\$ 4.99	417	362	21
\$ 5.49	396	303	50
\$ 5.99	346	296	21
\$ 6.49	325	254	35

101. Of the 209 respondents who indicated that they would cancel their Not-On-Demand subscription, 80 (16% of the sample) indicated that they would instead switch to an On-Demand music streaming service, and 49 (10% of the sample) indicated that they would switch instead to a Sirius XM paid subscription. The distribution of responses for On-Demand Paid Subscriber sample is presented in Table 17.

Table 17: Not-On-Demand Paid Switching to On-Demand and Sirius XM

Price	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM
\$3.49	22	6	9
\$3.99	18	6	4
\$4.49	42	16	10
\$4.99	21	14	3
\$5.49	50	16	7
\$5.99	21	6	5
\$6.49	35	16	11

102. The estimated proportion of respondents who reported being paid subscribers to the Not-On-Demand music streaming service Pandora One and indicated that they would cancel their Not-On-Demand music streaming service subscription, and instead switch to an On-Demand music streaming service subscription, is between 16.0% and 16.6% when survey responses are weighted using alternative weighting methods. Similarly, the estimated proportion of those who indicated they would cancel their Not-On-Demand music streaming service subscription and instead switch to Sirius XM is between 9.4% and 9.9% when survey responses are weighted using alternative methods. Table 18 presents estimated proportions and their respective 95% confidence intervals.

Table 18: Not-On-Demand Subscribers Switching to On-Demand Music Streaming Services and Sirius XM – Estimated Proportions and Confidence Intervals

	Baseline	95% CI	Weighted	95% CI	Raked	95% CI	Bootstrap	95% CI
Cancel	41.9%	37.6% - 46.2%	42.6%	38.2% - 46.9%	41.8%	37.6% - 46.1%	42.4%	38.1% - 46.8%
Cancel and Switch To On-Demand	16.0%	12.8% - 19.3%	16.4%	13.1% - 19.6%	16.1%	12.9% - 19.3%	16.6%	13.2% - 20.0%
Cancel and Switch To Sirius XM	9.8%	7.2% - 12.4%	9.9%	7.3% - 12.5%	9.9%	7.3% - 12.4%	9.4%	6.9% - 12.0%

E. SUBSCRIBERS TO FREE ON-DEMAND OR NOT ON-DEMAND MUSIC SERVICES (SPOTIFY OR PANDORA)

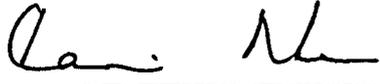
103. Of the 501 respondents who reported being users of free, ad-supported On-Demand or Not-On-Demand music services, 190 (38% of the sample) indicated that they would purchase a paid subscription if the price was discounted between 10% and 30% below the standard price for the subscription. Of the remaining 311 respondents, 257 (51% of the sample) indicated that they would not purchase a paid subscription if the price was discounted between 10% and 30%. The remaining 54 respondents (11% of the sample) did not report a preference. The distribution of responses for On-Demand or Not-On-Demand Free Subscriber sample is presented in Table 19.

Table 19: On-Demand/Not-On-Demand Free Subscribers

Percent Discount	Number of Respondents	Subscribe	Continue with Free
10%	501	154	285
20%	347	25	268
30%	322	11	257

I declare under penalty of perjury that the foregoing testimony is true and correct.

Date: 10/18/16


Ravi Dhar

Appendix A: Curriculum Vitae of Ravi Dhar

March 2016

RAVI DHAR
 Yale School of Management
 165 Whitney Avenue
 Yale University
 New Haven, CT 06520
 (203) 432-5947

Employment

George Rogers Clark Professor of Management	2005 - Present
Professor of Psychology (<i>joint appointment</i>)	2003 – Present
Director, Yale Center for Customer Insights	2004 – Present
Professor of Marketing,	2000 – Present
Associate Professor of Marketing,	1997 - 2000
Assistant Professor of Marketing	1992 - 1997
Yale School of Management	

Other Appointments

Visiting Faculty, HEC Paris	Summer 1996
Visiting Associate Professor, Stanford University	Spring 1998
Visiting Professor, Erasmus University	Summer 2000, 2001
Visiting Professor, New York University	Spring 2005, Spring 2010

Education

Haas School of Business, UC Berkeley	1988-1992
Ph. D. (Business Administration)	1992
M.S. (Business Administration)	1990
Indian Institute of Management	1987
M.B.A.	
Indian Institute of Technology	1985
B.Technology	

Academic Honors and Fellowships

Distinguished Alumnus Award, Indian Institute of Management, 2013
 Distinguished Scientific Contribution Award, SCP, 2012
 Yale SOM Alumni Association Teaching Award, 2012
 Finalist, O'Dell Award, 2012
 Finalist, O'Dell Award, 2008
 Winner, O'Dell Award, 2005
 Finalist, O'Dell Award, 2004
 Finalist, Paul Green Award, 2004
 AMA Consortium Faculty Fellow, 2003- 2009, 2010, 2012, 2013

INFORMS Doctoral Consortium Faculty – Multiple Years
ACR Doctoral Consortium Faculty – Multiple Years
John A. Howard Doctoral Dissertation Award (Honorable Mention), 1993
AMA Doctoral Consortium Fellow, 1991

Research Interests

Consumer Behavior	Marketing Strategy
Judgment and Decision Making	Branding
E-Commerce	Behavioral Finance

Teaching Interests

Marketing Management	Consumer Behavior
Marketing Strategy	Behavioral Decision Theory
Financial Services	E-Commerce Marketing

Professional Affiliation (Member)

American Marketing Association
Association for Consumer Research
Society of Judgment and Decision Making

Professional Activities

Editorial Board, *Journal of Consumer Research*, 1997 – Present, Past Associate Editor
Journal of Consumer Psychology, 1997 – 2002, 2005 – Present
Journal of Marketing Research, 2001 – Present, Associate Editor
Journal of Marketing, 2005 - Present
Marketing Letters, 2000 - Present
Marketing Science, 2002- 2011, Past Area Editor

Occasional Reviewer, *Marketing, Management, Psychology Journals, NSF, etc.*

Publications in Journals

Approximate Number of Citations in Google Scholar: 10,000+

1. Proximity of Snacks to Beverages Increases Food Consumption in the Workplace: A Field Study (with E. Baskin, M. Gorlin, Z. Chance, N. Novemsky, K Huskey, M. Hatzis), *Appetite*, *forthcoming*.
2. “Mental Representation Changes the Evaluation of Green Product Benefits,” (with Kelly Goldsmith and George Newman), *Nature Climate Change*, *forthcoming*.

3. "Closer to the Creator: Temporal Contagion Explains The Preference for Earlier Serial Numbers," (with R. Smith and G. Newman), *Journal of Consumer Research*, 2016.
4. "Sophisticated by Design: the Nonconscious Influences of Primed Concepts and Atmospheric Variables on Consumer Preferences," (with T. Andrew Poehlman and John A. Bargh), *Customer Needs and Solutions*, 2015.
5. "Positive Consequences Of Conflict On Decision Making," (with J. Savary, T. Kleiman, and R. Hassin), *Journal of Experimental Psychology: General*, 2015.
6. "The Technological Conundrum: How Rapidly Advancing Technology Can Lead To Commoditization," (with T. Chan and W. Putsis), *Customer Needs and Solutions*, 2015.
7. "When Going Green Backfires: How firm Intentions Shape the Evaluation of Socially Beneficial Product Enhancements," (with G. Newman and M. Gorlin), *Journal of Consumer Research*, 2014.
8. "Why Choosing Healthy Foods Is Hard, and How to Help: Presenting 4P's Framework for Behavior Change," (with Z. Chance and M. Gorlin), *Customer Needs and Solutions*, 2014.
9. "Giving Against the Odds: When Tempting Alternatives Increase Willingness to Donate," (with J. Savary and K. Goldsmith), *Journal of Marketing Research*, 2014.
10. "Authenticity is Contagious: Brand Essence and the Original Source of Production," (with George Newman), *Journal of Marketing Research*, 2014.
11. "A Dual System Framework to Understand Preference Construction Processes in Choice," (with M. Gorlin), *Journal of Consumer Psychology*, 2013.
12. "Refining the dual-process theory of preference construction: A reply to Gawronski, Martin and Sloman, Stanovich, and Wegener and Chien," (with M. Gorlin), *Journal of Consumer Psychology*, 2013.
13. "Negativity Bias and Task Motivation: Testing the Effectiveness of Positively Versus Negatively Framed Incentives," (with K. Goldsmith), *Journal of Experimental Psychology: Applied*, 2013.
14. "Representation and Perceived Similarity: How Abstract Mindset Aids Choice from Large Assortments," (with J. Xu and Z. Jiang), *Journal of Marketing Research*, 2013.
15. "Comparing Apples to Apples or Apples to Oranges: The Role of Mental Representation in Choice Difficulty," (with U. Khan and E. Kim), *Journal of Marketing Research*, 2013.

16. "Adding small differences can increase similarity and choice," (with J. Kim and N. Novemsky), *Psychological Science*, 2013.
17. "When Guilt Begets Pleasure: The Positive Effect of a Negative Emotion," (with K. Goldsmith and E. Kim), *Journal of Marketing Research*, 2012.
18. "Bridging the Gap Between Joint and Individual Decisions: Deconstructing Preferences in Relationships," (with M. Gorlin), *Journal of Consumer Psychology*, 2012.
19. "The Importance of the Context in Brand Extension: How Pictures and Comparisons Shift Consumers' Focus from Fit to Quality," (with T. Meyvis and K. Goldsmith), *Journal of Marketing Research*, 2012.
20. "Self-Signaling and the Costs and Benefits of Temptation in Consumer Choice," (with K. Wertenbroch), *Journal of Marketing Research*, 2012.
21. "Price Framing Effects on Purchase of Hedonic and Utilitarian Bundles," (with U. Khan), *Journal of Marketing Research*, 2010.
22. "Making Products Feel Special: When Metacognitive Difficulty Enhances Evaluation," (with A. Pocheptsova and A. Labroo), *Journal of Marketing Research*, 2010.
23. "Modeling the Under Reporting Bias in Panel Survey Data," (with Sha Yang and Yi Zhao) *Marketing Science*, 2010.
24. "The Effect of Decision Order on Purchase Quantity Decisions," (with I. Simonson and S. M. Nowlis), *Journal of Marketing Research*, 2010.
25. "Tradeoffs and Depletion in Choice," (with N. Novemsky, J. Wang, R. Baumeister), *Journal of Marketing Research*, 2010.
26. "Opportunity Cost Neglect," (with S. Frederick, N. Novemsky, J. Wang, and S. Nowlis), *Journal of Consumer Research*, 2009.
27. "Anticipating Adaptation to Products" (with J. Wang and N. Novemsky), *Journal of Consumer Research*, 2009.
28. "Deciding Without Resources: Psychological Depletion and Choice in Context," (with O. Amir, A. Pocheptsova, and R. Baumeister), *Journal of Marketing Research*, 2009.
29. "Customization Procedures and Customer Preferences," (with A. Valenzuela and F. Zettelmeyer), *Journal of Marketing Research*, 2009.
30. "Beyond Rationality: The Content of Preferences," (with N. Novemsky), *Journal of Consumer Psychology*, 2008.

31. "Of Frog Wines and Frowning Watches: Semantic Priming of Perceptual Features and Brand Evaluation," (with A. Labroo and N. Schwarz), *Journal of Consumer Research*, 2008.
32. "When Thinking Beats Doing: The Role of Optimistic Expectations in Goal-Based Choice," (with A. Fishbach and Y. Zhang), 2007, *Journal of Consumer Research*.
33. "Seeing The Forest Or The Trees: Implications of Construal Level Theory for Consumer Choice," (with E. Kim), *Journal of Consumer Psychology*, 2007
34. "Where There Is a Way, Is There a Will? The Effect of Future Choices on Self-Control" (with U. Khan), *Journal of Experimental Psychology: General*, 2007
35. "Preference Fluency in Choice," (with N. Novemsky, N. Schwarz, and I. Simonson), 2007, *Journal of Marketing Research*.
36. "The Shopping Momentum Effect," (with J. Huber and U. Khan), 2007, *Journal of Marketing Research*.
37. "Institutional Perspectives in Real Estate Investing," (with W. Goetzmann), 2006, *Journal of Portfolio Management*.
38. "Are Rheumatologists' Treatment Decisions Influenced by Patients Age?," (with L. Fraenkel and N. Rabidou)," 2006, *Rheumatology*.
39. "Sub-goals as Substitutes or Complements: The Role of Goal Accessibility," (with A. Fishbach and Y. Zhang), 2006, *Journal of Personality & Social Psychology*.
40. "Up Close and Personal: A Cross Sectional Study of the Disposition Effect" (with N. Zhu), *Management Science*, 2006.
41. "Licensing Effect in Consumer Choice," (with U. Khan), *Journal of Marketing Research*, 2006.
42. "Goals as excuses or guides: The liberating effect of perceived goal progress on choice," (with A. Fishbach), *Journal of Consumer Research*, 2005.
43. "Goal Fulfillment and Goal Targets in Sequential Choice," (with N. Novemsky), *Journal of Consumer Research*, 2005.
44. "Towards extending the Compromise Effect to Complex Buying Contexts," (with Anil Menon and Bryan Maach), *Journal of Marketing Research*, 2004.
45. "To Buy or Not to Buy: Response Mode Effects on Consumer Choice," (with S. Nowlis), *Journal of Marketing Research*, 2004.

46. "Hedging Customers," (with R. Glazer), *Harvard Business Review*, 2003.
47. "The Effect of Forced Choice on Choice," (with I. Simonson), *Journal of Marketing Research*, 2003.
48. "Coping with Ambivalence: The Effect of removing a "fence sitting" option on Consumer Attitude and Preference Judgments (with B. Kahn and S. Nowlis), *Journal of Consumer Research*, 2002.
49. "Consumer Psychology: In Search of Identity," (with Z. Carmon, A. Drolet, S. Nowlis, and I. Simonson), *Annual Review of Psychology*, 2001.
50. "An Empirical Analysis of the Determinants of Category Expenditure," (with W. Putsis), *Journal of Business Research*, 2001.
51. "Trying Hard or Hardly Trying: An Analysis of Context Effects in Choice," (with S. Nowlis and S. Sherman), *Journal of Consumer Psychology*, September 2000.
52. "Consumer Choice between Hedonic and Utilitarian Goods," (with K. Wertenbroch), *Journal of Marketing Research*, February 2000.
53. "Assessing the Competitive Interaction Between Private Labels and National Brands," (with R. Cotterill and W. Putsis), *Journal of Business*, January 2000.
54. "Comparison Effects on Preference Construction," (with S. Nowlis and S. Sherman), *Journal of Consumer Research*, December 1999.
55. "The Effect of Time Pressure on Consumer Choice Deferral," (with S. Nowlis), *Journal of Consumer Research*, March, 1999.
56. "Making complementary choices in consumption episodes: Highlighting Versus Balancing," (with I. Simonson), *Journal of Marketing Research*, February, 1999.
57. "The Many Faces of Competition," (with W. Putsis), *Marketing Letters*, July, 1998.
58. "Consumer Preference for a No-Choice Option," *Journal of Consumer Research*, September, 1997.
59. "Context and Task Effects on Choice Deferral," *Marketing Letters*, January, 1997.
60. "The Effect of Decision Strategy on the Decision to Defer Choice," *Journal of Behavioral Decision Making*, December, 1996.
61. "The Effect of Common and Unique features in Consumer Choice," (with S. J. Sherman), *Journal of Consumer Research*, December, 1996.

62. "Similarity in Context: Cognitive Representation and the Violation of Preference Invariance in Consumer Choice," (with R. Glazer), *Organizational Behavior and Human Decision Processes*, September, 1996.
63. "The Effect of the focus of comparison on consumer preferences," (with I. Simonson), *Journal of Marketing Research*, November, 1992.

Publications in Book Chapters / Managerial Summary

1. "How Google Optimized Office Snacks," (with Zoe Chance, Michelle Hatzis, and Michiel Bakker," Harvard Business Review, 2016.
2. "Nudging Individuals Toward Healthier Food Choices with the 4Ps Framework for Behavior Change", (with Chance, Zoë, Michelle Hatzis, and Kim Huskey. in *Behavioral Economics and Public Health*, ed. C. Roberto and I. Kawachi. 2015.
3. "The Power of Customer's Mindset," (with Kelly Goldsmith and Jing Xu), *Sloan Management Review*, 2010.
4. "Giving Consumers License to Enjoy Luxury," (with U. Khan and S. Schmidt), *Sloan Management Review*, 2010.
5. "Brand Permission: A Conceptual and Managerial Framework," (with Tom Meyvis), In *Handbook on Brand and Experience Management*, Bernd H.Schmitt and David L. Rogers (Eds.), Elgar Publishing, Northampton, MA, 2008.
6. "Dynamics of goal-based choice," (with A. Fishbach), In *Handbook of Consumer Psychology*, (eds. C. P. Haugtvedt, P.M. Herr & F. R. Kardes), Erlbaum Press, 2007.
7. "A Behavioral Decision Theoretic Perspective on Hedonic and Utilitarian Choice,"(with U. Khan and K. Wertenbroch) in *Inside Consumption: frontiers of Research on Consumer Motives, Goals, and Desires*, (eds. S. Ratneshwar and David Glen Mick), London: Routledge, 2005.
8. "Customer Relations Online," in *Wiley Next Generation of Business Thinkers*, (ed. Subir Chowdhury), 2004.
9. "Defining Customers' Needs and Values for Marketing Success," in *Inside the Minds: Textbook Marketing*, Aspatore Press, 2003.
10. "The Online Store," (with D. R. Wittink), in *Managing Customer Relationships* (eds. Martha Rogers and Don Peppers), Wiley, 2003.

11. "Choice Deferral," in *The Elgar Companion to Consumer Research and Economic Psychology* (eds. P. Earl and S. Kemp), 1999.

Select Working Papers / Papers Under Review

1. "Ironic Effects of Goal Activation on Choice," (with K. Goldsmith), under first review.
2. "The Effect of Goal Breadth on Consumer Preferences," (with E. Kim), under first review.
3. "Can Investors Multiply and Divide: Investors' response to Stock Splits," (with N. Zhu and Dan Ariely).
4. "Category Expenditure and Promotion: Can Private Labels Expand the Pie," (with W. Putsis), Working Paper.
5. "Mindset over Matter: The Interplay between Goals and Preferences," (with A. Pochepstova), Working Paper.

Conference Proceedings Publications

1. "Constructing preferences: The role of comparisons in consumer judgment and choice," (with S. Zhang), *Proceedings of the Association for Consumer Research*, University of Chicago Press (1999).
2. "Sequential Choices and Uncertain Preferences," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1997).
3. "Causes and Effects of Reference Effects in Choice," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1997).
4. "New Directions in Mental Accounting," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1995).
5. "Decision Difficulty and Uncertain Preferences: Implications for Consumer Choice," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1994).
6. "Behavioral Decision Research: Theory and Applications," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1993).
7. "To Choose Or Not To Choose: This is the Question," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1992).

Invited and Conference Presentations**Invited Academic Presentations (* denotes multiple presentations)**

Boston College
Carnegie-Mellon University
Chinese University, Hong Kong
*Columbia University**
*Cornell University**
*Duke University**
Harvard University
Hong Kong University of Science and Technology
*IIPM**
*INSEAD**
Indiana University
Korea University
*London Business School**
*MIT**
National University of Singapore
*New York University**
*Northwestern University**
Ohio State University
Pennsylvania State University
*Stanford University**
Texas A&M University
Tilburg University
Tulane University
University of Alberta
University of British Columbia (planned)
*University of California, Berkeley**
*University of California, Los Angeles**
University of California, San Diego
*University of Chicago**
University of Delaware
University of Colorado
University of Florida
University of Houston
*University of Illinois, Urbana-Champaign**
University of Miami
University of Maryland
University of Massachusetts, Amherst
*University of Michigan**
*University of North Carolina**
*University of Peking**
*University of Pennsylvania**

*University of Rotterdam**
University of Texas, Austin
University of Utah
*University of Toronto**
University of Vienna
*Washington University, St. Louis**

Conference Presentations (Over 150 presentations at conferences, consortiums, keynotes, symposiums, workshops, etc.) Recent presentations include:

Keynote Addresses to Practitioners, Various Events
Choice Symposium
CEO Roundtables, New York and New Haven
CMO Roundtables, Various Organizations
ACR
Informs
Judgment and Decision Making
Behavioral Decision Research in Management
Society of Consumer Psychology

Appendix B: Testimony in Past Four Years

1. Moab Industries, LLC v. Chrysler Group, LLC (Deposition and Trial)
2. In Re: Tropicana Orange Juice Marketing and Sales Practices Litigation (Deposition)
3. FTC v. Amazon.com, Inc. (Deposition)
4. Ericsson, et al. v. TCL Communication Technology Holdings, Ltd., et al. (Deposition)
5. Parallel Network Licensing v. International Business Machines Corporation (Deposition)
6. Select Comfort Corp. v. Tempur Sealy and Mattress Firm Holding Corp. (Deposition)
7. Exxon Mobil Corporation v. FX Networks LLC et al. (Deposition)
8. Playtex Products, LLC v. Munchkin, Inc. (Deposition)
9. Francisco Marty, et al. v. Anheuser-Busch Cos., LLC (Deposition)
10. Smartflash LLC, et al. v. Apple Inc., et al. (Deposition and Trial)
11. Suarez v. Anheuser-Busch Cos., LLC (Deposition)
12. SIMPLEAIR, INC., vs. Google et al. (Deposition and Trial)
13. *Johnathan and Trude Yarger v. ING Bank, fsb d/b/a/ ING DIRECT* (Deposition)
14. Laplant v. The Northwestern Mutual Life Insurance Company (Deposition)
15. MobileMedia Ideas LLC v. HTC Corporation and HTC America, Inc. (Deposition)
16. Johns v. Bayer Corporation and Bayer Healthcare LLC (Deposition)
17. FTC, et al. v. Russell T. Dalbey, et al. (Deposition)
18. Finjan Inc. v. McAfee, Inc., et al (Deposition)
19. Sexy Hair Concepts, LLC v. Conair Corporation (Deposition)
20. In Re: POM Wonderful LLC Marketing and Sales Practices Litigation (Deposition)
21. Paone v. Microsoft Corporation (Deposition)
22. USA v. H&R Block, Inc. (Deposition)
23. Mattel vs. MGA (Deposition)

24. Pandora Jewelers 1995 v. Pandora Jewelry, et al (Deposition)
25. Hansen Beverage Company v. Cytosport, Inc (Deposition)
26. Autodesk, Inc. v. Dassault Systemes SolidWorks Corporation (Deposition)

Appendix C: Materials Reviewed

American Association for Public Opinion Research, "AAPOR Guidance on Reporting Precision for Nonprobability Samples," 2016.

Blumberg, Stephen J., and Luke, Julian V. "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2015," National Center for Health Statistics, May 2016.

CAPTCHA, "CAPTCHA: Telling Humans and Computers Apart Automatically," <http://www.captcha.net>, visited on September 28, 2016.

Diamond, Shari Seidman, "Reference Guide on Survey Research," *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011.

Dolan, Robert J. and Gourville, John T., "Principles of Pricing," Harvard Business School Case 9-506-021, April 3, 2009.

Federal Judicial Center, *Manual for Complex Litigation*, Fourth Edition, Section 11.493.

Gelb G. and Gelb, B., "Internet Surveys for Trademark Litigation: Ready or Not, Here They Come," *The Trademark Reporter*, Vol. 97, 2007.

Isaacson, B., et al., "Why Online Surveys Can Be A Smart Choice in Intellectual Property Litigation," *IPL Newsletter* (ABA Section of Intellectual Property Law) Vol. 26, No. 3, 2008.

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Pandora, "Pandora 2016 Annual Report for the Fiscal Year Ended December 31, 2015," accessed October 11, 2016, <http://investor.pandora.com/phoenix.zhtml?c=227956&p=proxy>.

Poret, H., "A Comparative Empirical Analysis of Online versus Mail and Phone Methodologies for Trademark Surveys," *The Trademark Reporter*, Vol. 100, 2010.

Seitz, Patrick, "Streaming Music Leader Spotify Challenged by Apple, Amazon, Pandora," *Investor's Business Daily*, June 29, 2016, accessed October 11, 2016, <http://www.investors.com/news/technology/click/streaming-music-leader-spotify-challenged-by-apple-amazon-pandora/?ven=YahooCP&src=AURLLED&ven=yahoo>:

Simson, A., "Online Interviewing for Use in Lanham Act Litigation," *Intellectual Property Strategist*, Vol. 14, 2007.

Sirius XM "2015 Customer Experience Survey Presentation Deck," (SXM_DIR_00023611-SXM_DIR_00023667, at 3614 and 3615).

Sirius XM "2015 Customer Experience Survey Report," (SXM_DIR_00023890-SXM_DIR_00024062)

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Sirius XM, "2015 Results & 2016 Budget," January 26, 2015 (SXM_DIR_00021472-SXM_DIR_00021524).

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Survey Sampling International, LLC, <https://www.surveysampling.com/knowledge-center/panels-respondent-experience/>, Accessed September 27, 2016.

U.S. Census Bureau, "Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015," Population Division, June 2016.

United States Internet Users <http://www.internetlivestats.com/internet-users/us/>, Accessed October 14, 2016.

Appendix D: Survey Questionnaire
#16075 MUSIC SERVICE STUDY

SPECS

CELL 1: Sirius XM paid subscribers (max N=500)

CELL 2: Apple Music : Interactive music streaming service paid subscribers

Max N=500

CELL 3: Spotify Premium : Interactive music streaming service paid subscribers

CELL 4: Pandora One: Non-interactive music streaming service paid subscribers (max N=500)

CELL 5: Free Pandora:

Max N=500

CELL 6: Free Spotify

CELL 7: Free trial subscription to Sirius XM (e.g., new car buyers) (max N=500)

**NOTE: QUESTIONNAIRE WILL BE PROGRAMMED.
INTERVIEWING WILL BE SELF-ADMINISTERED ON-LINE.
ALL INSTRUCTIONS SHOULD BE LEFT JUSTIFIED ON SCREEN.**

- SCREENER -

INTRODUCTION

(QUESTION 10)

Thank you for your willingness to participate in this study. The responses you give to these questions are very important to us. If you don't know an answer to a question or if you are unsure, please indicate this in your response. It is very important that you do not guess.

Your answers will be kept in confidence. The results of this study will not be used to try to sell you anything.

When you are ready to get started, please click on the arrow below. This survey should take between 5 and 7 minutes to complete.

CAPTCHA SEQUENCE

***{PROGRAMMER: PIPE IN ONE RANDOMLY SELECTED WORD FROM LIST.
CONFIRM THAT WHAT THE RESPONDENT TYPES IN MATCHES THE
PIPED-IN WORD FOR SPELLING AND CASE.}***

(QUESTION 15)

So that we can confirm that you are actually a person, please type the following word into the text box below. Please enter it exactly as shown, including upper and lower case letters.

TEXT BOX: _____

***{PROGRAMMER: IF THE WORD DOES NOT MATCH ON THE FIRST TRY,
ASK Q.20.}***

{PIPE IN A DIFFERENT RANDOMLY-SELECTED WORD. CONFIRM THAT WHAT THE RESPONDENT TYPES IN MATCHES THE PIPED-IN WORD FOR SPELLING AND CASE.}

(QUESTION 20)

Please type the following word in the text box below. Please enter it exactly as shown, including upper and lower case letters.

TEXT BOX: _____

{PROGRAMMER: IF THE WORD DOES NOT MATCH, TERMINATE.}

SCREENING SECTION

(QUESTION 25)

In what state do you live?

Please select one answer.

{INSERT DROP DOWN LIST OF 50 STATES}

{PROGRAMMER: GENDER DESIGNATION MUST MATCH PANEL DATA—IF NOT, TERMINATE}

(QUESTION 30)

Are you...

Please select one answer.

- 1: Male
- 2: Female

{PROGRAMMER: AGE DESIGNATION MUST MATCH PANEL DATA—IF NOT, TERMINATE}

(QUESTION 35)

Which of the following includes your age?

Please select one answer.

- 1: Under 18 **{TERMINATE}**
- 2: 18-34
- 3: 35-44
- 4: 45-54
- 5: 55+
- 6: Prefer not to answer **{TERMINATE}**

{PROGRAMMER: RANDOMIZE FIRST FOUR CHOICES}

(QUESTION 40)

What type of electronic device are you using to complete this survey?

Please select one answer.

- 1: Desktop computer **{SKIP TO Q.50}**

- 2: Laptop computer **{SKIP TO Q.50}**
- 3: Tablet computer (e.g., Apple iPad, Kindle Fire, Samsung Galaxy Tab, Motorola Xoom) **{SKIP TO Q.50}**
- 4: Smartphone (e.g., Apple iPhone, Samsung Galaxy S4, HTC One) **{ASK Q.45}**
- 5: Other mobile or electronic device **{ASK Q.45}**

{IF "SMARTPHONE" (PUNCH 4) OR OTHER MOBILE OR ELECTRONIC DEVICE" (PUNCH 5) SELECTED IN Q.40, PIPE:}

(QUESTION 45)

This survey is not formatted for viewing on smartphones and other mobile or electronic devices. Please return to the survey, using the same link, from a desktop, laptop or tablet computer.

{PROGRAMMER: RANDOMIZE CHOICES 1-6; IF ANY ITEM 1-5 SELECTED, TERMINATE. RESPONSE MUST BE EITHER PUNCH 7 "NONE OF THE ABOVE" OR PUNCH 6 SELECTED EXCLUSIVELY TO CONTINUE}

(QUESTION 50)

Do you or does anyone in your household work in any of the following areas?
Please select all that apply.

- 1: For a Satellite Radio company?
- 2: For a Streaming Music company, such as Pandora or Spotify?
- 3: For Apple, Google or Amazon?
- 4: For a company that creates music such as a Recording Studio, Record Company, or a Music Publisher?
- 5: For a Market Research Company or Public Relations Agency?
- 6: For an Internet Service Provider?
- 7: None of the above **{SINGLE RESPONSE}**

{PROGRAMMER: ROTATE CHOICES 1, 2, AND 3, ANCHOR CHOICES 4 AND 5}

{PROGRAMMER: IF CHOICE 1 IS NOT SELECTED, SKIP TO Q54}

{PROGRAMMER: IF CHOICE 3 IS ONLY CHOICE SELECTED, TERMINATE}

(QUESTION 51)

Which, if any, of the following services do you currently have? This includes all subscriptions – free, trial or introductory, or paid. Please select all that apply.

- 1: Satellite Radio (Sirius XM)
- 2: Music Streaming Service (e.g., Apple Music, Spotify or Pandora)
- 3: Broadband Internet (e.g., cable, fiber optic or DSL)
- 4: None of the above **[TERMINATE]**
- 5: Don't know/unsure **[TERMINATE]**

**{PROGRAMMER: ASK Q52 IF OPTION 1 SELECTED IN Q51}
{PROGRAMMER: AFTER ASKING Q52, SKIP TO Q52.1 IF ONLY OPTION 1
SELECTED IN Q52}**

(QUESTION 52)

Which of the following Sirius XM satellite radio subscriptions do you currently have? Please select all that apply.

- 1: A paid subscription to Sirius XM satellite radio —Cell 1
- 2: A subscription to Sirius XM as part of package from DISH network
[TERMINATE FROM CELL 1 IF ONLY OPTION CHOSEN IN Q52 AND
OPTION #2 NOT CHOSEN IN Q51]
- 3: A free Trial Period subscription to Sirius XM satellite radio (e.g., available with the purchase of some new cars)—Cell 7 [IF ONLY OPTION CHOSEN, SKIP TO Q54]
- 4: Don't know/unsure [TERMINATE FROM CELLS 1 AND 7]

{PROGRAMMER: ASK Q52.1 IF OPTION 1 SELECTED IN Q52}

(QUESTION 52.1)

If you have more than one paid subscription to Sirius XM satellite radio, please answer the following questions based on the one you have the longest.

{PROGRAMMER: INCLUDE IMAGE FROM

<http://www.siriusxm.com/ourmostpopularpackages>

TOGETHER WITH Q52.2}

(QUESTION 52.2)

Which of the following is your Sirius XM Satellite Radio subscription package?
Please select one answer.

- 1: Select
- 2: All Access [TERMINATE FROM CELL 1]
- 3: Mostly Music [TERMINATE FROM CELL 1]
- 4: Other (Please specify—you will not be constrained by the size of the box)
[TERMINATE FROM CELL 1]
- 5: Don't know/unsure [TERMINATE FROM CELL 1]

{PROGRAMMER: ASK Q53 IF OPTION 1 SELECTED IN Q52.2}

(QUESTION 53)

Who made the decision to get this paid subscription to Sirius XM satellite radio?
Please select one answer.

- 1: I made the decision myself—Cell 1

- 2: I played a major role in the decision—Cell 1
- 3: I played a minor role in the decision [TERMINATE FROM CELL 1]
- 4: I was not involved in the decision at all [TERMINATE FROM CELL 1]
- 5: Don't know/unsure [TERMINATE FROM CELL 1]

***{PROGRAMMER: ASK Q54 IF OPTION 2 SELECTED IN Q51}
{TERMINATE IF OPTION 2 ONLY SELECTED IN Q51 AND OPTIONS 6-7
SELECTED IN Q54} {ROTATE SPOTIFY, APPLE AND PANDORA, BUT KEEP
PAID AND FREE IN TANDEM, ANCHOR 6 AND 7}
{IF OPTIONS 2 AND 3 BOTH CHOSEN, TERMINATE FROM CELLS 3 AND 6
AND DO NOT ASK Q55}
{IF OPTIONS 4 AND 5 BOTH CHOSEN, TERMINATE FROM CELLS 4 AND 5
AND DO NOT ASK Q55}***

(QUESTION 54)

Which, if any, of the following streaming music services do you currently have?
Please select all that apply.

- 1: Paid subscription to Apple Music—Cell 2
- 2: Paid subscription to Spotify Premium—Cell 3
- 3: Free version of Spotify—Cell 6
- 4: Paid subscription to Pandora One—Cell 4
- 5: Free version of Pandora—Cell 5
- 6: Other (Please specify—you will not be constrained by the size of the box)
_____ [TERMINATE FROM CELLS 2-6]
- 7: Don't know/unsure [TERMINATE FROM CELLS 2-6]

***{PROGRAMMER: ASK Q55 FOR EACH OPTION 1, 2, 4 IF SELECTED IN
Q54}***

(QUESTION 55)

Who made the decision to get a (INSERT SELECTED OPTION FROM Q54)?
Please select one answer.

- 1: I made the decision myself
- 2: I played a major role in the decision
- 3: I played a minor role in the decision [TERMINATE FROM CELLS 2-4]
- 4: I was not involved in the decision at all [TERMINATE FROM CELLS 2-4]
- 5: Don't know/unsure [TERMINATE FROM CELLS 2-4]

(QUESTION 140)

Before continuing, please carefully read these instructions.

- Please take the survey in one session without interruption.

- While taking the survey, please do not consult any other websites or other electronic or written materials.
- Please answer all questions on your own without consulting any other person.
- If you normally wear glasses or contact lenses when viewing a computer screen, please wear them for the survey.

Select one answer.

- 1: I understand and agree to the above instructions
- 2: I do not understand or do not agree to the above instructions
{TERMINATE}

<u>QUALIFICATIONS FOR EACH CELL:</u>
CELL 1: Sirius XM paid subscribers [PUNCH 1 OR 2 IN Q55 FOR OPTION 1 IN Q52.2]
CELL 2: Apple Music : <u>Interactive</u> music streaming service paid subscribers [PUNCH 1 OR 2 IN Q55 FOR OPTION 1 IN Q54]
CELL 3: Spotify Premium : <u>Interactive</u> music streaming service paid subscribers [PUNCH 1 OR 2 IN Q55 FOR OPTION 2 IN Q54]
CELL 4: Pandora One: <u>Non-interactive</u> music streaming service paid subscribers [PUNCH 1 OR 2 IN Q55 FOR OPTION 4 IN Q54]
CELL 5: Free Pandora: [OPTION 5 SELECTED IN Q54]
CELL 6: Free Spotify [OPTION 3 SELECTED IN Q54]
CELL 7: Free trial subscription to Sirius XM (e.g., new car buyers) [OPTION 3 SELECTED IN Q52]

(QUESTION 150—CELL ASSIGNMENT CRITERIA FOR INCLUSION)

IF ONLY ONE CELL QUALIFIED FOR, APPLY TO THAT CELL.

IF MORE THAN ONE CELL QUALIFIED FOR, APPLY RANDOMLY TO A CELL QUOTA.

IF THE RANDOMIZATION ASSIGNS A CELL THAT IS ALREADY FILLED/CLOSED, THEN ASSIGN RANDOMLY TO ANOTHER OPEN CELL THAT RESPONDENT IS ALSO QUALIFIED FOR.

ONCE A CELL IS FILLED/CLOSED, IT SHOULD BE REMOVED FROM THE RANDOMIZATION ASSIGNMENT.

IF DO NOT QUALIFY FOR ANY OF THE 7 CELLS, TERMINATE.

Music Survey

CELL 1: SXM subscribers--ASK Q200 THROUGH Q220

(QUESTION 200)

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

(QUESTION 201)

Do you understand the descriptions of all three of these services described above? Please select one answer.

- 1: Yes, I do understand the descriptions of all three services → **(ASK Q202)**
- 2: No, I do not understand the descriptions of all three services → **(TERMINATE)**
- 3: Don't know/unsure → **(TERMINATE)**

(QUESTION 202)

The next few questions will be about your Satellite Radio subscription. If you have more than one paid subscription to Sirius XM Satellite Radio, please answer the following questions based on the one you have the **longest**.

You will be presented with several different monthly prices for a single Sirius XM Satellite Radio subscription. This amount may be higher or lower than the amount you currently pay for your Sirius XM Satellite Radio subscription.

SERVICE	PRICE	AMOUNT
Sirius XM	1	\$11.49
	2	\$12.99
	3	\$14.49
	4	\$15.99
	5	\$17.49
	6	\$18.99
	7	\$20.49

{PROGRAMMER: RANDOMIZE ANSWER CHOICES 1 AND 2. ANCHOR OPTION 3. KEEP THIS ORDER FOR ALL "CONTINUE/CANCEL" QUESTIONS}

(QUESTION 203)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 1 FROM CHART BEFORE Q203] per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio →(ASK Q203.1)
- 2: Cancel your subscription to Sirius XM Satellite Radio→ (SKIP TO Q210) {SET SWITCH PRICE=PRICE 1}
- 3: Don't know/unsure →(ASK Q203.1)

(QUESTION 203.1)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 2 FROM CHART BEFORE Q203] per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→(ASK Q203.2)
- 2: Cancel your subscription to Sirius XM Satellite Radio→ (SKIP TO Q210) {SET SWITCH PRICE=PRICE 2}
- 3: Don't know/unsure →(ASK Q203.2)

(QUESTION 203.2)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 3 FROM CHART BEFORE Q203] per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→(ASK Q203.3)
- 2: Cancel your subscription to Sirius XM Satellite Radio→ (SKIP TO Q210) {SET SWITCH PRICE=PRICE 3}
- 3: Don't know/unsure →(ASK Q203.3)

(QUESTION 203.3)

If right now you were to be charged **[INSERT AMOUNT CORRESPONDING TO PRICE 4 FROM CHART BEFORE Q203]** per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→**(ASK Q203.4)**
- 2: Cancel your subscription to Sirius XM Satellite Radio→ **(SKIP TO Q210) {SET SWITCH PRICE=PRICE 4}**
- 3: Don't know/unsure →**(ASK Q203.4)**

(QUESTION 203.4)

If right now you were to be charged **[INSERT AMOUNT CORRESPONDING TO PRICE 5 FROM CHART BEFORE Q203]** per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→**(ASK Q203.5)**
- 2: Cancel your subscription to Sirius XM Satellite Radio→ **(SKIP TO Q210) {SET SWITCH PRICE=PRICE 5}**
- 3: Don't know/unsure →**(ASK Q203.5)**

(QUESTION 203.5)

If right now you were to be charged **[INSERT AMOUNT CORRESPONDING TO PRICE 6 FROM CHART BEFORE Q203]** per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→**(ASK Q203.6)**
- 2: Cancel your subscription to Sirius XM Satellite Radio→ **(SKIP TO Q210) {SET SWITCH PRICE=PRICE 6}**
- 3: Don't know/unsure →**(ASK Q203.6)**

(QUESTION 203.6)

If right now you were to be charged **[INSERT AMOUNT CORRESPONDING TO PRICE 7 FROM CHART BEFORE Q203]** per month for the same Sirius XM Satellite Radio subscription you currently have, would you...? Please select one answer.

- 1: Continue to subscribe to Sirius XM Satellite Radio→**(SKIP TO Q220)**
- 2: Cancel your subscription to Sirius XM Satellite Radio→ **(ASK Q210) {SET SWITCH PRICE=PRICE 7}**
- 3: Don't know/unsure →**(SKIP TO Q220)**

{PROGRAMMER: FIRST ROTATE, THEN GROUP OPTIONS 1 AND 2. THEN ROTATE GROUPED OPTIONS 1 AND 2, AND OPTION 3 IN THE SAME

SEQUENCE AS OTHER "YES – NO" QUESTIONS IN THE SURVEY.**ANCHOR OPTION 4}**

{INSERT link to definitions provided in Q200. It should say, "Click here if you want to review the music services definitions."}

(QUESTION 210)

You mentioned that you would cancel your subscription to **Sirius XM** if you were charged [INSERT SWITCH PRICE] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of **Sirius XM**? This would only include a new subscription, and would not include a music service that you currently subscribe to. **Please select one answer.**

- 1: Yes, I would subscribe to an **On-Demand** music streaming service like Apple Music or Spotify at **\$9.99** per month →(SKIP TO **Q220**)
- 2: Yes, I would subscribe to a **Not-On-Demand** music streaming service like Pandora One at **\$4.99** per month →(SKIP TO **Q220**)
- 3: No, I would not subscribe to a paid music service in place of **Sirius XM**→(SKIP TO **Q210.1**):
- 4: Don't know/unsure →(SKIP TO **Q220**)

{PROGRAMMER: ROTATE OPTIONS 1 AND 2. ANCHOR OPTIONS 4 AND 5. KEEP OPTIONS 4 AND 5 EXCLUSIVE}

(QUESTION 210.1)

You mentioned that you would not subscribe to a paid music service in place of **Sirius XM**. What else, if anything, would you do instead of paying for a subscription to **Sirius XM**? **Please select all that apply.**

- 1: I would purchase CDs and/or music downloads→(SKIP TO **Q220** IF CHECKED WITHOUT 2)
- 2: I would listen to free music →(ASK **Q210.2**)
- 3: Other (Please specify—you will not be constrained by the size of the box)

(SKIP TO **Q220** IF CHECKED WITHOUT 2)

- 4: None of the Above →(SKIP TO **Q220**)
- 5: Don't know/unsure →(SKIP TO **Q220**)

{PROGRAMMER: RANDOMIZE OPTIONS 1-8. ANCHOR 9 AND 10. KEEP OPTION 10 EXCLUSIVE}

(QUESTION 210.2)

You said that you would listen to free music. How would you listen to free music instead of **Sirius XM** Satellite Radio? **Please select all that apply.**

1. Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
2. Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
3. Free On-Demand music video sites with ads (e.g., YouTube)

4. Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
 5. AM/FM radio or AM/FM HD radio
 6. Music obtained through Peer-to-Peer file sharing or free download sites
 7. Borrow CDs, vinyl or tapes from friends or a library
 8. Continue listening to the music collection I already own
 9. Other (Please specify—you will not be constrained by the size of the box)
-
10. Don't know/unsure

(QUESTION 220)

Those are all the questions I have. Thank you for your time.

Cells 2 AND 3: ON-DEMAND (INTERACTIVE) SUBSCRIBERS (SPOTIFY PREMIUM OR APPLE MUSIC)--ASK Q300 THROUGH Q320

(QUESTION 300)

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

(QUESTION 301)

Do you understand the descriptions of all three of these services described above? **Please select one answer.**

- 1: Yes, I do understand the descriptions of all three services → **(ASK Q302)**
- 2: No, I do not understand the descriptions of all three services → **(TERMINATE)**
- 3: Don't know/unsure → **(TERMINATE)**

(QUESTION 302)

The next few questions will be about your **[INSERT SERVICE]** streaming service subscription. You will be presented with several different monthly prices for a subscription to **[INSERT SERVICE]**. This amount may be higher or lower than the amount you currently pay for your subscription to **[INSERT SERVICE]**.

SERVICE	PRICE	AMOUNT
Spotify Premium	1	\$6.99
	2	\$7.99
	3	\$8.99
	4	\$9.99
	5	\$10.99
	6	\$11.99
	7	\$12.99
Apple Music	1	\$6.99
	2	\$7.99
	3	\$8.99
	4	\$9.99
	5	\$10.99
	6	\$11.99
	7	\$12.99

{PROGRAMMER: RANDOMIZE ANSWER CHOICES 1 AND 2. ANCHOR OPTION 3. KEEP THIS ORDER FOR ALL "CONTINUE/CANCEL" QUESTIONS}

(QUESTION 303)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 1 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that **all** other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 1 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.1)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 1}
- 3: Don't know/unsure →(ASK Q303.1)

(QUESTION 303.1)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 2 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that **all** other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 2 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.2)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 2}

3: Don't know/unsure →(ASK Q303.2)

(QUESTION 303.2)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 3 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that all other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 3 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.3)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 3}
- 3: Don't know/unsure →(ASK Q303.3)

(QUESTION 303.3)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 4 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that all other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 4 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.4)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 4}
- 3: Don't know/unsure →(ASK Q303.4)

(QUESTION 303.4)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 5 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that all other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 5 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.5)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 5}
- 3: Don't know/unsure →(ASK Q303.5)

(QUESTION 303.5)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 6 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that all other On-Demand music streaming service subscriptions were also [INSERT AMOUNT

CORRESPONDING TO PRICE 6 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(ASK Q303.6)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 6}
- 3: Don't know/unsure →(ASK Q303.6)

(QUESTION 303.6)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 7 FROM CHART BEFORE Q303] per month for the same [INSERT SERVICE] subscription you currently have, and you knew that **all** other On-Demand music streaming service subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 7 FROM CHART BEFORE Q303] per month, would you...? Please select one answer.

- 1: Continue to subscribe to [INSERT SERVICE] →(SKIP TO Q320)
- 2: Cancel your subscription to [INSERT SERVICE] → (SKIP TO Q310) {SET SWITCH PRICE=PRICE 7}
- 3: Don't know/unsure →(SKIP TO Q320)

{PROGRAMMER: FIRST ROTATE, THEN GROUP OPTIONS 1 AND 2. THEN ROTATE GROUPED OPTIONS 1 AND 2, AND OPTION 3 IN THE SAME SEQUENCE AS OTHER "YES – NO" QUESTIONS IN THE SURVEY. ANCHOR OPTION 4}

{INSERT link to definitions provided in Q300. It should say, "Click here if you want to review the music services definitions."

(QUESTION 310)

You mentioned that you would cancel your subscription to [INSERT SERVICE] if you were charged [INSERT SWITCH PRICE] per month, and you knew that **all** other On-Demand music streaming service subscriptions were also [INSERT SWITCH PRICE] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of [INSERT SERVICE]? This would only include a new subscription, and would not include a music service that you currently subscribe to. Please select one answer.

- 1: Yes, I would subscribe to a Not-On-Demand music streaming service like Pandora One at \$4.99 per month →(SKIP TO Q320)
- 2: Yes, I would subscribe to Sirius XM satellite radio at \$15.99 per month →(SKIP TO Q320)
- 3: No, I would not subscribe to a paid music service in place of [INSERT SERVICE]→(SKIP TO Q310.1):
- 4: Don't know/unsure →(SKIP TO Q320)

{PROGRAMMER: ROTATE OPTIONS 1 AND 2. ANCHOR OPTIONS 4 AND 5. KEEP OPTIONS 4 AND 5 EXCLUSIVE}

(QUESTION 310.1)

You mentioned that you would not subscribe to a paid music service in place of [INSERT SERVICE]. What else, if anything, would you do instead of paying for a subscription to [INSERT SERVICE]? Please select all that apply.

- 1: I would purchase CDs and/or music downloads→(SKIP TO Q320 IF CHECKED WITHOUT 2)
- 2: I would listen to free music →(ASK Q310.2)
- 3: Other (Please specify—you will not be constrained by the size of the box)

(SKIP TO Q320 IF CHECKED WITHOUT 2)

- 4: None of the Above →(SKIP TO Q320)
- 5: Don't know/unsure →(SKIP TO Q320)

{PROGRAMMER: RANDOMIZE OPTIONS 1-8. ANCHOR 9 AND 10. KEEP OPTION 10 EXCLUSIVE}

(QUESTION 310.2)

You said that you would listen to free music. How would you listen to free music instead of (INSERT SERVICE FROM Q302)? Please select all that apply.

1. Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
2. Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
3. Free On-Demand music video sites with ads (e.g., YouTube)
4. Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
5. AM/FM radio or AM/FM HD radio
6. Music obtained through Peer-to-Peer file sharing or free download sites
7. Borrow CDs, vinyl or tapes from friends or a library
8. Continue listening to the music collection I already own
9. Other (Please specify—you will not be constrained by the size of the box)

10. Don't know/unsure

(QUESTION 320)

Those are all the questions I have. Thank you for your time.

Cell 4: NON-INTERACTIVE SUBSCRIBERS (PANDORA ONE)--ASK Q400 THROUGH Q420

(QUESTION 400)

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

(QUESTION 401)

Do you understand the descriptions of all three of these services described above? Please select one answer.

- 1: Yes, I do understand the descriptions of all three services → **(ASK Q402)**
- 2: No, I do not understand the descriptions of all three services → **(TERMINATE)**
- 3: Don't know/unsure → **(TERMINATE)**

(QUESTION 402)

The next few questions will be about your **Pandora One** streaming service subscription. You will be presented with several different monthly prices for a subscription to **Pandora One**. This amount may be higher or lower than the amount you currently pay for your subscription to **Pandora One**.

SERVICE	PRICE	AMOUNT
Pandora One	1	\$3.49
	2	\$3.99
	3	\$4.49
	4	\$4.99
	5	\$5.49
	6	\$5.99
	7	\$6.49

{PROGRAMMER: RANDOMIZE ANSWER CHOICES 1 AND 2. ANCHOR OPTION 3. KEEP THIS ORDER FOR ALL "CONTINUE/CANCEL" QUESTIONS}

(QUESTION 403)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 1 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 1 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.1)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 1}
- 3: Don't know/unsure →(ASK Q403.1)

(QUESTION 403.1)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 2 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 2 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.2)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 2}
- 3: Don't know/unsure →(ASK Q403.2)

(QUESTION 403.2)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 3 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT

CORRESPONDING TO PRICE 3 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.3)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 3}
- 3: Don't know/unsure →(ASK Q403.3)

(QUESTION 403.3)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 4 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 4 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.4)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 4}
- 3: Don't know/unsure →(ASK Q403.4)

(QUESTION 403.4)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 5 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 5 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.5)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 5}
- 3: Don't know/unsure →(ASK Q403.5)

(QUESTION 403.5)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 6 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 6 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(ASK Q403.6)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 6}
- 3: Don't know/unsure →(ASK Q403.6)

(QUESTION 403.6)

If right now you were to be charged [INSERT AMOUNT CORRESPONDING TO PRICE 7 FROM CHART BEFORE Q403] per month for the same Pandora One subscription you currently have, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT AMOUNT CORRESPONDING TO PRICE 7 FROM CHART BEFORE Q403] per month, would you...? Please select one answer.

- 1: Continue to subscribe to Pandora One →(SKIP TO Q420)
- 2: Cancel your subscription to Pandora One → (SKIP TO Q410) {SET SWITCH PRICE=PRICE 7}
- 3: Don't know/unsure →(SKIP TO Q420)

{PROGRAMMER: FIRST ROTATE, THEN GROUP OPTIONS 1 AND 2. THEN ROTATE GROUPED OPTIONS 1 AND 2, AND OPTION 3 IN THE SAME SEQUENCE AS OTHER "YES – NO" QUESTIONS IN THE SURVEY.

ANCHOR OPTION 4}

{INSERT link to definitions provided in Q400. It should say, "Click here if you want to review the music services definitions."}

(QUESTION 410)

You mentioned that you would cancel your subscription to Pandora One if you were charged [INSERT SWITCH PRICE] per month, and you knew that all other Not-On-Demand music streaming services subscriptions were also [INSERT SWITCH PRICE] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of Pandora One? This would only include a new subscription, and would not include a music service that you currently subscribe to. Please select one answer.

- 1: Yes, I would subscribe to an On-Demand music streaming service like Apple Music or Spotify at \$9.99 per month →(SKIP TO Q420)
- 2: Yes, I would subscribe to Sirius XM satellite radio at \$15.99 per month →(SKIP TO Q420)
- 3: No, I would not subscribe to a paid music service in place of Pandora One→(SKIP TO Q410.1):
- 4: Don't know/unsure →(SKIP TO Q420)

{PROGRAMMER: ROTATE OPTIONS 1 AND 2. ANCHOR OPTIONS 4 AND 5. KEEP OPTIONS 4 AND 5 EXCLUSIVE}

(QUESTION 410.1)

You mentioned that you would not subscribe to a paid music service in place of Pandora One. What else, if anything, would you do instead of paying for a subscription to Pandora One? Please select all that apply.

1: I would purchase CDs and/or music downloads → (SKIP TO 420 IF CHECKED WITHOUT 2)

2: I would listen to free music → (ASK Q410.2)

3: Other (Please specify—you will not be constrained by the size of the box)

(SKIP TO Q420 IF CHECKED WITHOUT 2)

4: None of the Above → (SKIP TO Q420)

5: Don't know/unsure → (SKIP TO Q420)

{PROGRAMMER: RANDOMIZE OPTIONS 1-8. ANCHOR 9 AND 10. KEEP OPTION 10 EXCLUSIVE}

(QUESTION 410.2)

You said that you would listen to free music. How would you listen to free music instead of Pandora One? Please select all that apply.

1. Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
2. Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
3. Free On-Demand music video sites with ads (e.g., YouTube)
4. Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
5. AM/FM radio or AM/FM HD radio
6. Music obtained through Peer-to-Peer file sharing or free download sites
7. Borrow CDs, vinyl or tapes from friends or a library
8. Continue listening to the music collection I already own
9. Other (Please specify—you will not be constrained by the size of the box) _____
10. Don't know/unsure

(QUESTION 420)

Those are all the questions I have. Thank you for your time.

CELLS 5 AND 6: FREE AD-SUPPORTED MUSIC STREAMING SERVICE USERS (PANDORA OR SPOTIFY--ASK Q600 THROUGH Q620)

(QUESTION 600)

The next few questions will be about your free [INSERT SERVICE] streaming service subscription.

(QUESTION 600.1)

You indicated that you currently use the free version of [INSERT SERVICE] to listen to music. This free version is ad-supported and limits your ability to skip songs.

How often, on average, do you use the free version of [INSERT SERVICE] to listen to music? Please select one answer.

- 1: less than an hour a week [TERMINATE]
- 2: 1-5 hours per week
- 3: More than 5 hours per week
- 4: Don't know/unsure

SERVICE	Monthly price with 10% discount	Monthly price with 20% discount	Monthly price with 30% discount	Paid version features
Pandora	\$4.49 per month	\$3.99 per month	\$3.49 per month	ad-free, with more skips, and with fewer timeouts.
Spotify	\$8.99 per month	\$7.99 per month	\$6.99 per month	ad-free, with unlimited skips, offline, with high quality audio, and to play any track.

(QUESTION 603)

The next few questions will be about what interest, if any, you may have in purchasing a paid subscription to [INSERT SERVICE]. A paid subscription to [INSERT SERVICE] would allow you to listen to music [INSERT "Paid Version Features" FROM CHART BEFORE Q603.1]. You will be presented with several different monthly prices for a paid subscription to [INSERT SERVICE].

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}

(QUESTION 603.1)

If right now you were offered a paid subscription to [INSERT SERVICE] at [INSERT "Monthly price with 10% discount" FROM CHART BEFORE Q603], would you or would you not subscribe to the service? Please select one answer.

- 1: Yes, I would subscribe to the paid service →(SKIP TO Q620)
- 2: No, I would continue using the free service only → (ASK Q603.2)

3: Don't know/unsure →(ASK Q603.2)

**{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
(QUESTION 603.2)**

If right now you were offered a paid subscription to [INSERT SERVICE] at [INSERT "Monthly price with 20% discount" FROM CHART BEFORE Q603], would you or would you not subscribe to the service? Please select one answer.

1: Yes, I would subscribe to the paid service →(SKIP TO Q620)

2: No, I would continue using the free service only → (ASK Q603.3)

3: Don't know/unsure →(ASK Q603.3)

**{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
(QUESTION 603.3)**

If right now you were offered a paid subscription to [INSERT SERVICE] at [INSERT "Monthly price with 30% discount" FROM CHART BEFORE Q603], would you or would you not subscribe to the service? Please select one answer.

1: Yes, I would subscribe to the paid service →(SKIP TO Q620)

2: No, I would continue using the free service only → (SKIP TO Q620)

3: Don't know/unsure →(SKIP TO Q620)

(QUESTION 620)

Those are all the questions I have. Thank you for your time.

Cell 7: SXM Trial Subscription holders--ASK Q500 THROUGH Q520

(QUESTION 500)

The next few questions will be about your Trial Period subscription to Sirius XM Satellite Radio.

(QUESTION 500.1)

You indicated that you currently have a Trial Period subscription to Sirius XM Satellite Radio. How long have you had your Trial Period subscription to Sirius XM Satellite Radio? Please select one answer.

- 1: Less than 1 month
- 2: More than 1 month but less than 3 months
- 3: More than 3 months but less than 6 months
- 4: More than 6 months but less than 12 months
- 5: More than 12 months [TERMINATE]
- 6: Don't know/unsure

(QUESTION 500.2)

There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

Satellite Radio (Sirius XM) which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.

On-Demand music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**

Not-On-Demand music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

(QUESTION 501)

Do you understand the descriptions of all three of these services described above? Please select one answer.

- 1: Yes, I do understand the descriptions of all three services →(ASK Q502)
 2: No, I do not understand the descriptions of all three services→ (TERMINATE)
 3: Don't know/unsure → (TERMINATE)

(QUESTION 502)

The next few questions will be about what interest, if any, you may have in purchasing a paid subscription to **Sirius XM** Satellite Radio at the end of your **Trial Period** subscription to **Sirius XM** Satellite Radio. You will be presented with several different monthly prices for a paid subscription to **Sirius XM** Satellite Radio.

SERVICE	Price	AMOUNT
Sirius XM	1	\$11.49
	2	\$12.99
	3	\$14.49
	4	\$15.99
	5	\$17.49
	6	\$18.99
	7	\$20.49

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}

(QUESTION 503)

At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of **[INSERT Price 1 FROM CHART BEFORE Q503]** per month, would you or would you not subscribe to the service? **Please select one answer.**

- 1: Yes, I would subscribe to the service →(ASK Q503.1)
 2: No, I would not subscribe to the service→ (SKIP TO Q510) {SET SWITCH PRICE=PRICE 1}
 3: Don't know/unsure →(ASK Q503.1)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}

(QUESTION 503.1)

At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of **[INSERT Price 2 FROM CHART BEFORE Q503]** per month, would you or would you not subscribe to the service? **Please select one answer.**

- 1: Yes, I would subscribe to the service →(ASK Q503.2)

- 2: No, I would not subscribe to the service → (SKIP TO Q510) {SET SWITCH PRICE=PRICE 2}
3: Don't know/unsure →(ASK Q503.2)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
{QUESTION 503.2}

At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of **[INSERT Price 3 FROM CHART BEFORE Q503]** per month, would you or would you not subscribe to the service? **Please select one answer.**

- 1: Yes, I would subscribe to the service →(ASK Q503.3)
2: No, I would not subscribe to the service → (SKIP TO Q510) {SET SWITCH PRICE=PRICE 3}
3: Don't know/unsure →(ASK Q503.3)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
{QUESTION 503.3}

At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of **[INSERT Price 4 FROM CHART BEFORE Q503]** per month, would you or would you not subscribe to the service? **Please select one answer.**

- 1: Yes, I would subscribe to the service →(ASK Q503.4)
2: No, I would not subscribe to the service → (SKIP TO Q510) {SET SWITCH PRICE=PRICE 4}
3: Don't know/unsure →(SKIP TO Q503.4)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
{QUESTION 503.4}

At the end of your trial period, if you were offered a subscription to **Sirius XM Satellite Radio** at the price of **[INSERT Price 5 FROM CHART BEFORE Q503]** per month, would you or would you not subscribe to the service? **Please select one answer.**

- 1: Yes, I would subscribe to the service →(ASK Q503.5)
2: No, I would not subscribe to the service → (SKIP TO Q510) {SET SWITCH PRICE=PRICE 5}
3: Don't know/unsure →(SKIP TO Q503.5)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
(QUESTION 503.5)

At the end of your trial period, if you were offered a subscription to Sirius XM Satellite Radio at the price of [INSERT Price 6 FROM CHART BEFORE Q503] per month, would you or would you not subscribe to the service? Please select one answer.

- 1: Yes, I would subscribe to the service →(ASK Q503.6)
- 2: No, I would not subscribe to the service→ (SKIP TO Q510) {SET SWITCH PRICE=PRICE 6}
- 3: Don't know/unsure →(SKIP TO Q503.6)

{PROGRAMMER: ROTATE ORDER OF OPTIONS 1 AND 2, BASED ON ORDER OF PRIOR "YES/NO" QUESTIONS}
(QUESTION 503.6)

At the end of your trial period, if you were offered a subscription to Sirius XM Satellite Radio at the price of [INSERT Price 7 FROM CHART BEFORE Q503] per month, would you or would you not subscribe to the service? Please select one answer.

- 1: Yes, I would subscribe to the service →(ASK Q520)
- 2: No, I would not subscribe to the service→ (SKIP TO Q510) {SET SWITCH PRICE=PRICE 7}
- 3: Don't know/unsure →(SKIP TO Q520)

{PROGRAMMER: ROTATE CHOICES 1 AND 2, AND THEN ROTATE 1 AND 2 SEQUENCE WITH 3. ANCHOR 4}

{INSERT link to definitions provided in Q500. It should say, "Click here if you want to review the music services definitions."}

(QUESTION 510)

You mentioned that you would not subscribe to Sirius XM at the end of your trial period if you were charged [INSERT SWITCH PRICE] per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of your trial subscription to Sirius XM? This would only include a new subscription, and would not include a music service that you currently subscribe to. Please select one answer.

- 1: Yes, I would subscribe to an On-Demand music streaming service like Apple Music or Spotify at \$9.99 per month → (SKIP TO Q520)
- 2: Yes, I would subscribe to a Not-On-Demand music streaming service like Pandora One at \$4.99 per month → (SKIP TO Q520)
- 3: No, I would not subscribe to a paid music service in place of Sirius XM when my trial period ends→ (SKIP TO Q510.1):
- 4: Don't know/unsure → (SKIP TO Q520)

{PROGRAMMER: ROTATE OPTIONS 1 AND 2. ANCHOR OPTIONS 4 AND 5. KEEP OPTIONS 4 AND 5 EXCLUSIVE}

(QUESTION 510.1)

You mentioned that you would not subscribe to a paid music service in place of your Trial Period subscription to **Sirius XM Satellite Radio**. What else, if anything, would you do instead of paying for a subscription to **Sirius XM Satellite Radio**? Please select all that apply.

1: I would purchase CDs and/or music downloads→ **(SKIP TO Q520 IF CHECKED WITHOUT 2)**

2: I would listen to free music → **(ASK Q510.2)**

3: Other (Please specify—you will not be constrained by the size of the box)

(SKIP TO Q520 IF CHECKED WITHOUT 2)

4: None of the Above → **(SKIP TO Q520)**

5: Don't know/unsure→ **(SKIP TO Q520)**

{PROGRAMMER: RANDOMIZE OPTIONS 1-8. ANCHOR 9 AND 10. KEEP OPTION 10 EXCLUSIVE}

(QUESTION 510.2)

You said that you would listen to free music. How would you listen to free music instead of paying for a subscription to **Sirius XM Satellite Radio**? Please select all that apply.

1. Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
2. Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
3. Free On-Demand music video sites with ads (e.g., YouTube)
4. Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
5. AM/FM radio or AM/FM HD radio
6. Music obtained through Peer-to-Peer file sharing or free download sites
7. Borrow CDs, vinyl or tapes from friends or a library
8. Continue listening to the music collection I already own
9. Other (Please specify—you will not be constrained by the size of the box)

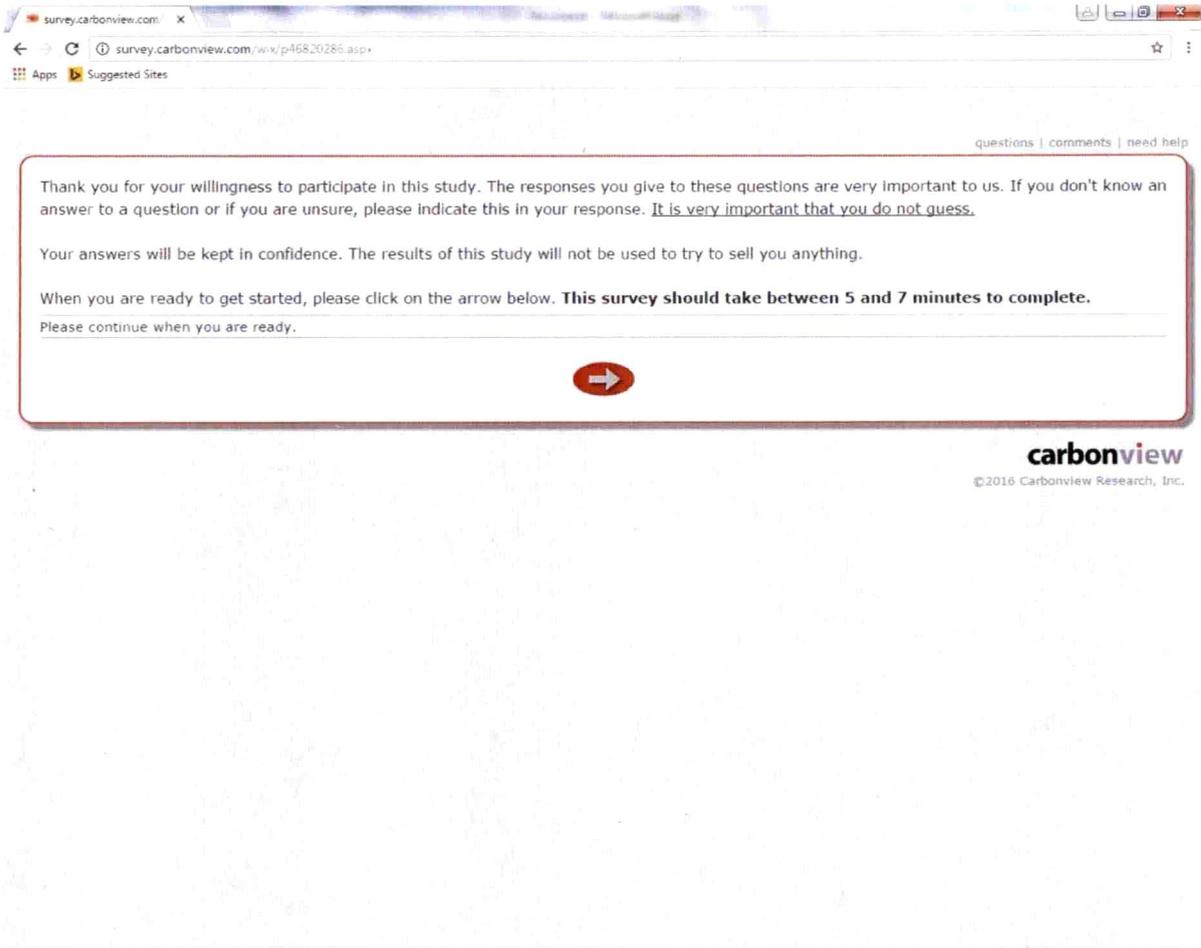
10. Don't know/unsure

(QUESTION 520)

Those are all the questions I have. Thank you for your time.

Appendix E: Survey Screenshots

The following screenshots show the sequence of questions a respondent who is asked about a paid subscription to Sirius XM Sirius Select and who would continue to subscribe at all price points between \$11.49 and \$20.49.





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o N N I u B R I

So that we can confirm that you are actually a person, please type the following word into the text box below. Please enter it exactly as shown, including upper and lower case letters.

Please type the code above.



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In which state do you live?

Please select one answer.

- Please select your answer
- Please select your answer
- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana



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Are you...

Please select one answer.

- Male
- Female



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Which of the following includes your age?

Please select one answer.

- Under 18
- 18-34
- 35-44
- 45-54
- 55+
- Prefer not to answer



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What type of electronic device are you using to complete this survey?

Please select one answer.

- Tablet computer (e.g., Apple iPad, Kindle Fire, Samsung Galaxy Tab, Motorola Xoom)
- Desktop computer
- Laptop computer
- Smartphone (e.g., Apple iPhone, Samsung Galaxy S4, HTC One)
- Other mobile or electronic device



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Do you or does anyone in your household work in any of the following areas?

Please select all that apply.

- For a company that creates music such as a Recording Studio, Record Company, or a Music Publisher?
- For a Streaming Music company, such as Pandora or Spotify?
- For a Market Research Company or Public Relations Agency?
- For Apple, Google or Amazon?
- For a Satellite Radio company?
- For an Internet Service Provider?
- None of the above



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Which, if any, of the following services do you currently have? This includes all subscriptions - free, trial or introductory, or paid.

Please select all that apply.

- Music Streaming Service (e.g., Apple Music, Spotify or Pandora)
- Satellite Radio (Sirius XM)
- Broadband Internet (e.g., cable, fiber optic or DSL)
- None of the above
- Don't know/unsure



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Which of the following Sirius XM satellite radio subscriptions do you currently have?

Please select all that apply.

- A paid subscription to Sirius XM satellite radio
- A subscription to Sirius XM as part of package from DISH network
- A free trial subscription to Sirius XM satellite radio (e.g., available with the purchase of some new cars)
- Don't know/unsure



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If you have more than one **paid** subscription to Sirius XM satellite radio, please answer the following questions based on the one you have the **longest**.

Please continue when you are ready.



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Which of the following is your Sirius XM Satellite Radio subscription package?

<p>Select MONTHLY 15⁹⁹</p> <p>See OFFER DETAILS below</p> <p>140+ channels SELECT Premium channels Internet</p> <p>View Select Channel Lineup</p> <p>140+ Channels</p> <p>Commercial-Free Music Channels</p> <p>Howard Stern</p> <p>Exclusive Artist-Dedicated Music Channels</p> <p>24/7 Comedy Channels</p> <p>Every NFL Game</p> <p>Every NASCAR® Race</p>	<p>All Access MONTHLY 19⁹⁹</p> <p>See OFFER DETAILS below</p> <p>150+ channels ALL Premium channels Internet LISTENING</p> <p>View All Access Channel Lineup</p> <p>150+ Channels</p> <p>Listen Online + On the App</p> <p>Commercial-Free Music Channels</p> <p>Howard Stern</p> <p>Exclusive Artist-Dedicated Music Channels</p> <p>24/7 Comedy Channels</p> <p>Every NFL Game</p> <p>Every NASCAR® Race</p> <p>MLB®, NBA, and NHL® Games</p> <p>PGA TOUR® Coverage</p>	<p>Mostly Music MONTHLY 10⁹⁹</p> <p>See OFFER DETAILS below</p> <p>80+ channels Premium Internet ADD-ON</p> <p>View Mostly Music Channel Lineup</p> <p>80+ Channels</p> <p>Listen Online + On the App (add \$4/mo)</p> <p>Commercial-Free Music Channels</p>
--	--	---

Please select one answer.

Select

All Access

Mostly Music

Other (Please specify-you will not be constrained by the size of the box)



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Who made the decision to get this paid subscription to Sirius XM satellite radio?

Please select one answer.

- I made the decision myself
- I played a major role in the decision
- I played a minor role in the decision
- I was not involved in the decision at all
- Don't know/unsure





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Before continuing, please carefully read these instructions.

- Please take the survey in one session without interruption.
- While taking the survey, please do not consult any other websites or other electronic or written materials.
- Please answer all questions on your own without consulting any other person.
- If you normally wear glasses or contact lenses when viewing a computer screen, please wear them for the survey.

Please select one answer.

- I understand and agree to the above instructions
- I do not understand or do not agree to the above instructions



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There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

- **Satellite Radio (Sirius XM)** which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.
- **On-Demand** music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**
- **Not-On-Demand** music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Do you understand the descriptions of all three of these services described above?

Please select one answer.

- Yes, I do understand the descriptions of all three services
- No, I do not understand the descriptions of all three services
- Don't know/unsure





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The next few questions will be about your Satellite Radio subscription. If you have more than one paid subscription to Sirius XM Satellite Radio, please answer the following questions based on the one you have the **longest**.

You will be presented with several different monthly prices for a single Sirius XM Satellite Radio subscription. **This amount may be higher or lower than the amount you currently pay for your Sirius XM Satellite Radio subscription.**

Please continue when you are ready.



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If right now you were to be charged **\$11.49** per month for the same Sirlus XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$12.99** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$14.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$15.99** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$17.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$18.99** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$20.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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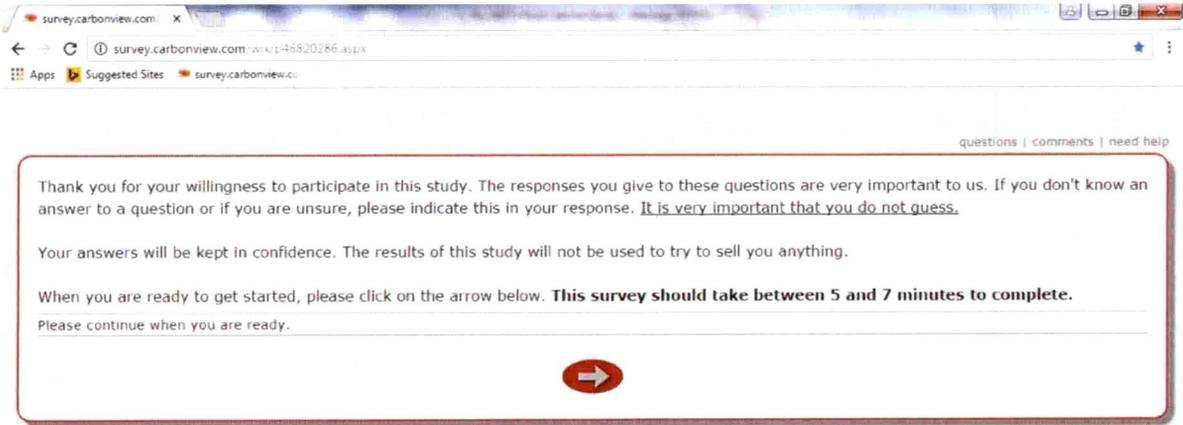
Those are all the questions I have. Thank you for your time.
Please continue when you are ready.



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The following screenshots show the sequence of questions a respondent who is asked about a paid subscription to Sirius XM Sirius Select and who would choose to cancel at \$15.99.





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8 1 8 c 2 o k v

So that we can confirm that you are actually a person, please type the following word into the text box below. Please enter it exactly as shown, including upper and lower case letters.
Please type the code above.



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The image is a screenshot of a web browser displaying a survey. The browser's address bar shows the URL `survey.carbonview.com/rwx/p46820256.aspx`. The survey question is "In which state do you live?" with the instruction "Please select one answer." Below the question is a dropdown menu with the text "Please select your answer" and a list of US states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, and Louisiana. A red arrow icon is positioned to the right of the dropdown menu. In the top right corner of the survey area, there are links for "questions", "comments", and "need help". The Carbonview logo and copyright notice "©2016 Carbonview Research, Inc." are located in the bottom right corner of the survey area.



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Are you...

Please select one answer.

Male

Female



A survey question box with a red border. It contains the text 'Are you...' followed by a horizontal line. Below that is the instruction 'Please select one answer.' followed by another horizontal line. There are two radio button options: 'Male' and 'Female'. At the bottom center of the box is a red circular button with a white right-pointing arrow.

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Which of the following includes your age?

Please select one answer.

- Under 18
- 18-34
- 35-44
- 45-54
- 55+
- Prefer not to answer



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What type of electronic device are you using to complete this survey?

Please select one answer.

- Laptop computer
- Desktop computer
- Tablet computer (e.g., Apple iPad, Kindle Fire, Samsung Galaxy Tab, Motorola Xoom)
- Smartphone (e.g., Apple iPhone, Samsung Galaxy S4, HTC One)
- Other mobile or electronic device



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Do you or does anyone in your household work in any of the following areas?
Please select all that apply.

- For Apple, Google or Amazon?
- For an Internet Service Provider?
- For a company that creates music such as a Recording Studio, Record Company, or a Music Publisher?
- For a Satellite Radio company?
- For a Market Research Company or Public Relations Agency?
- For a Streaming Music company, such as Pandora or Spotify?
- None of the above



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Which, if any, of the following services do you currently have? This includes all subscriptions - free, trial or introductory, or paid.

Please select all that apply.

- Broadband Internet (e.g., cable, fiber optic or DSL)
- Satellite Radio (Sirius XM)
- Music Streaming Service (e.g., Apple Music, Spotify or Pandora)
- None of the above
- Don't know/unsure



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Which of the following Sirius XM satellite radio subscriptions do you currently have?

Please select all that apply.

- A paid subscription to Sirius XM satellite radio
- A subscription to Sirius XM as part of package from DISH network
- A free trial subscription to Sirius XM satellite radio (e.g., available with the purchase of some new cars)
- Don't know/unsure



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If you have more than one paid subscription to Sirius XM satellite radio, please answer the following questions based on the one you have the longest.

Please continue when you are ready.



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survey.carbonview.com: x
survey.carbonview.com/vnx/p-46820286.aspx
Apps Suggested Sites survey.carbonview.co

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Which of the following is your Sirius XM Satellite Radio subscription package?

Select MONTHLY **15⁹⁹**

See OFFER DETAILS below

140+ channels
SELECT Premium channels
Internet

View Select Channel Lineup

- 140+ Channels
- Commercial-Free Music Channels
- Howard Stern
- Exclusive Artist-Dedicated Music Channels
- 24/7 Comedy Channels
- Every NFL Game
- Every NASCAR® Race

All Access MONTHLY **19⁹⁹**

See OFFER DETAILS below

150+ channels
ALL Premium channels
Internet LISTENING

View All Access Channel Lineup

- 150+ Channels
- Listen Online + On the App
- Commercial-Free Music Channels
- Howard Stern
- Exclusive Artist-Dedicated Music Channels
- 24/7 Comedy Channels
- Every NFL Game
- Every NASCAR® Race
- MLB®, NBA, and NHL® Games
- PGA TOUR® Coverage

Mostly Music MONTHLY **10⁹⁹**

See OFFER DETAILS below

80+ channels
Premium channels
Internet ADD-ON

View Mostly Music Channel Lineup

- 80+ Channels
- Listen Online + On the App (add \$4/mo)
- Commercial-Free Music Channels

Please select one answer.

- Select
- All Access
- Mostly Music
- Other (Please specify-you will not be constrained by the size of the box) _____



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Who made the decision to get this paid subscription to Sirius XM satellite radio?

Please select one answer.

- I made the decision myself
- I played a major role in the decision
- I played a minor role in the decision
- I was not involved in the decision at all
- Don't know/unsure



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Before continuing, please carefully read these instructions.

- Please take the survey in one session without interruption.
- While taking the survey, please do not consult any other websites or other electronic or written materials.
- Please answer all questions on your own without consulting any other person.
- If you normally wear glasses or contact lenses when viewing a computer screen, please wear them for the survey.

Please select one answer.

- I understand and agree to the above instructions
- I do not understand or do not agree to the above instructions



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There are three types of music services you can subscribe to which are defined below. Please keep these definitions in mind when responding to questions in this survey.

- **Satellite Radio (Sirius XM)** which is broadcast nationwide via satellite, thus allowing the listeners to hear the same stations anywhere in the country. It is available by subscription, offers commercial free music as well as sports, news, talk, and other programming, and offers subscribers more stations and a wider variety of programming options than AM/FM radio. Satellite radio can be listened to through receivers built into a vehicle or portable receivers.
- **On-Demand** music streaming services which allow listeners to choose the specific song, artist, or playlist they wish to hear, in addition to playlists provided by the service. **On-Demand music streaming services include Apple Music, Google Play, Rhapsody/Napster, Spotify, Tidal, and others.**
- **Not-On-Demand** music streaming services which do not allow listeners to choose the specific song or artist they wish to hear, but instead provide a pre-programmed list of songs based on listener preferences. The specific selection and order of songs remains unknown to the listener (i.e. no pre-published playlist). **Not-On-Demand music streaming services include Pandora One, Slacker Radio, and Rhapsody UnRadio.**

Do you understand the descriptions of all three of these services described above?

Please select one answer.

Yes, I do understand the descriptions of all three services

No, I do not understand the descriptions of all three services

Don't know/unsure





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The next few questions will be about your Satellite Radio subscription. If you have more than one paid subscription to Sirius XM Satellite Radio, please answer the following questions based on the one you have the **longest**.

You will be presented with several different monthly prices for a single Sirius XM Satellite Radio subscription. **This amount may be higher or lower than the amount you currently pay for your Sirius XM Satellite Radio subscription.**

Please continue when you are ready.



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If right now you were to be charged **\$11.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?
Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$12.99** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$14.49** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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If right now you were to be charged **\$15.99** per month for the same Sirius XM Satellite Radio subscription you currently have, would you... ?

Please select one answer.

- Continue to subscribe to Sirius XM Satellite Radio
- Cancel your subscription to Sirius XM Satellite Radio
- Don't know/unsure



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You mentioned that you would cancel your subscription to **Sirius XM** if you were charged **\$15.99** per month. Keeping in mind all other music services you subscribe to, would you or would you not subscribe to a paid music service in place of **Sirius XM**? This would only include a new subscription, and would not include a music service that you currently subscribe to.

Click [here](#) if you want to review the music services definitions.

Please select one answer.

- Yes, I would subscribe to an **On-Demand** music streaming service like Apple Music or Spotify at **\$9.99** per month
- Yes, I would subscribe to a **Not-On-Demand** music streaming service like Pandora One at **\$4.99** per month
- No, I would not subscribe to a paid music service in place of **Sirius XM**
- Don't know/unsure



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You mentioned that you **would not subscribe** to a paid music service in place of **Sirius XM**. What else, if anything, would you do **instead of paying for** a subscription to **Sirius XM**?

Please select all that apply.

- I would purchase CDs and/or music downloads
- I would listen to free music
- Other (Please specify-you will not be constrained by the size of the box)
- None of the Above
- Don't know/unsure



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You said that you would listen to free music. How would you listen to free music instead of Sirius XM Satellite Radio?

Please select all that apply.

- Borrow CDs, vinyl or tapes from friends or a library
- Music obtained through Peer-to-Peer file sharing or free download sites
- Free On-Demand music video sites with ads (e.g., YouTube)
- Continue listening to the music collection I already own
- Free On-Demand music services with ads (e.g., free, ad-supported Spotify)
- Free Not-On-Demand internet radio with ads (e.g., Pandora; or AM/FM radio stations over the internet)
- AM/FM radio or AM/FM HD radio
- Music channels included in an existing cable or satellite TV subscription (e.g., Music Choice)
- Other (Please specify-you will not be constrained by the size of the box)
- Don't know/unsure



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Those are all the questions I have. Thank you for your time.
Please continue when you are ready.



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Appendix F: Screening Statistics

Question	Description	Total
Q25	CAPTCHA	2,092
Q30	Gender - Panel Gender Mis-Match	225
Q35	Age: Panel Age Mis-Match or Under 18/Refused	528
Q50	Industry Security Question	388
Q51	Service Subscription Question (i.e. no subscriptions)	5,811
Q52	Sirius XM Subscription (Trial from Dish and no other subscription)	55
	No Cells Qualified ("NOC")	11
Q52.2	NOC, Respondent had other Sirius Subscription Type	729
Q52.2, Q54	NOC, Respondent had other Sirius Subscription Type, "Other" Streaming Service	25
Q52.2, Q54	NOC, Respondent had other Sirius Subscription Type, "Don't Know/Unsure" Streaming Service	11
Q52.2, Q54	NOC, Respondent had other Sirius Subscription Type, Checked both Free and Paid Spotify	9
Q52.2, Q54	NOC, Respondent had other Sirius Subscription Type, Checked both Free and Paid Pandora	4
Q52.2, Q54	NOC, Respondent had other Sirius Subscription Type, Checked both Free and Paid Spotify and Pandora	2
Q52.2, Q55_2	NOC, Respondent had other Sirius Subscription Type, Did not make decision for Spotify Premium	2
Q52p2, Q55_4	NOC, Respondent had other Sirius Subscription Type, Did not make decision for Pandora One	1
Q54	NOC, Checked Both Free and Paid Spotify	21
Q54	NOC, Checked Both Free and Paid Pandora	24
Q54	NOC, Checked Both Free and Paid Spotify and Pandora	3
Q54	NOC, "Other" Streaming Service	159
Q54	NOC, "Don't Know/Unsure" Streaming Service	40
Q53	NOC, Respondent did not make decision for Sirius XM	24
Q53, Q54	NOC, Respondent did not make decision for Sirius XM, "Don't Know/Unsure" Streaming Service	1
Q55_1	NOC, Respondent did not make decision for Apple Music	7
Q55_1, Q54	NOC, Respondent did not make decision for Apple Music, Checked both Free and Paid Pandora	1
Q55_2	NOC, Respondent did not make decision for Spotify Premium	12
Q55_2, Q54	NOC, Respondent did not make decision for Spotify Premium, "Other" Streaming Service	1
Q55_4	NOC, Respondent did not make decision for Pandora One	7
	Qualified Cells Filled	2,350
Q140	Non-Agreement with Survey Instructions	4
Q201	Did Not Understand Service Descriptions - Cell 1	2
Q301	Did Not Understand Service Descriptions - Cell 2/3	3
Q401	Did Not Understand Service Descriptions - Cell 4	0
Q600	Listen to Free Pandora/Spotify Less than an Hour per Week (Cells 5/6)	129
Q500	Sirius XM Trial Period has been More than 12 Months	16
Q501	Did Not Understand Service Descriptions - Cell 7	11
Total Terminates		12,708

Note: Gender and age categories are based on panel gender and age fields. One respondent was terminated because the panel gender and age were both NA.

Appendix G: Survey Weighting

1. To ensure accurate representation of the U.S. adult population, the survey responses were weighted by age, gender and the U.S. Census region.
2. The first weighting procedure involved calculating the proportion of each age-gender-region group in the U.S. Census⁵⁸ and in the survey sample.⁵⁹ The ratio of these two proportions was then used to construct weights for each age-gender-region group, and adjust the survey sample for discrepancies with the U.S. Census. Each respondent was assigned a weight based on the age-gender-region group he or she belonged to, and these weighted responses were then aggregated and analyzed. The weighted survey responses are presented in the middle panels of Table 20 through Table 28.
3. The second weighting procedure used in this survey is generally referred to as “raking” or calibration. Rather than calculating the individual weights for each age-gender-region group, a set of independent weights for each category was calculated: one for age groups, one for gender groups and one for region groups. The weights were then used to adjust the survey sample. After initial adjustment, the modified survey sample was again compared with the U.S. Census, and the new set of category weights was calculated. These new weights were then compared with the previous set of weights, and if deemed sufficiently close, the process was stopped. Otherwise, the adjustment and re-weighting process continued, until weight convergence was achieved. After the final set of weights was calculated and the survey sample was adjusted, weighted survey responses were aggregated and analyzed. The weighted survey responses are presented in the right panels of Table 20 through Table 28.

⁵⁸ For the U.S. residents aged 18 and over. See U.S. Census Bureau, “Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2015,” Population Division, June 2016.

⁵⁹ Survey sample refers to the 15,903 respondents that clicked into the survey.

Table 20: Weighted Responses for Sirius XM Sirius Select Subscribers

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 11.49	509	390	82	502.8	387.3	76.9	513.1	395.0	81.4
\$ 12.99	427	343	43	425.9	343.5	41.9	431.6	348.2	42.8
\$ 14.49	384	259	71	384.0	257.4	70.9	388.8	263.5	70.8
\$ 15.99	313	209	50	313.1	207.6	49.4	318.1	212.1	51.2
\$ 17.49	263	140	80	263.7	134.1	85.9	266.8	143.2	80.9
\$ 18.99	183	122	24	177.8	117.1	23.9	186.0	124.6	24.6
\$ 20.49	159	92	38	153.9	87.2	38.2	161.4	94.1	38.0

Table 21: Weighted Responses for Sirius XM Sirius Select Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services

Price	Unweighted			Age-gender-region weighted			Rate-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand
\$ 11.49	82	17	11	76.9	15.3	9.9	81.4	17.4	11.3
\$ 12.99	43	11	7	41.9	11.0	6.4	42.8	11.1	6.8
\$ 14.49	71	25	10	70.9	25.4	9.2	70.8	25.5	10.0
\$ 15.99	50	22	8	49.4	21.3	7.6	51.2	22.5	8.1
\$ 17.49	80	17	8	85.9	18.8	9.8	80.9	17.3	8.5
\$ 18.99	24	5	5	23.9	4.9	4.5	24.6	5.2	5.0
\$ 20.49	38	13	5	38.2	14.6	4.8	39.0	13.0	5.0

Table 22: Weighted Responses for Sirius XM Trial Subscribers

Price	Unweighted			Age-gender-region weighted			Rate-weighted		
	Number of Respondents	Subscribe	Not Subscribe	Number of Respondents	Subscribe	Not Subscribe	Number of Respondents	Subscribe	Not Subscribe
\$ 11.49	503	280	151	502.9	278.3	152.5	506.6	285.4	149.8
\$ 12.99	352	246	42	350.3	243.1	44.5	356.8	251.9	42.5
\$ 14.49	310	184	85	305.8	181.4	83.7	314.3	188.6	85.1
\$ 15.99	225	165	40	222.1	161.3	40.9	229.2	169.0	40.7
\$ 17.49	185	135	27	181.2	131.4	27.2	188.5	138.6	27.4
\$ 18.99	158	122	18	153.9	117.0	19.6	161.1	125.3	18.3
\$ 20.49	140	108	16	134.3	104.6	14.7	142.8	111.1	15.6

Table 23: Weighted Responses for Sirius XM Trial Subscribers Switching to On-Demand and Not-On-Demand Music Streaming Services

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Not-On-Demand
\$ 11.49	151	7	15	152.5	8.2	14.7	149.8	7.4	14.9
\$ 12.99	42	6	7	44.5	7.8	7.4	42.5	6.3	7.1
\$ 14.49	85	30	9	83.7	28.1	10.4	85.1	30.7	9.4
\$ 15.99	40	18	8	40.9	19.8	7.5	40.7	18.5	8.4
\$ 17.49	27	11	7	27.2	11.9	6.7	27.4	11.5	6.9
\$ 18.99	18	8	5	19.6	9.4	5.2	18.3	8.3	5.2
\$ 20.49	16	7	2	14.7	6.8	1.7	15.6	7.0	2.0

Table 24: Weighted Responses for On-Demand Paid Subscribers (Apple Music and Spotify Premium)

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 6.99	504	474	20	512.0	480.4	21.8	519.1	488.1	20.6
\$ 7.99	484	432	29	490.2	437.4	28.7	498.5	445.0	29.8
\$ 8.99	455	385	33	461.6	387.5	33.2	468.6	396.3	34.0
\$ 9.99	422	358	31	428.3	359.9	32.9	434.6	369.1	31.7
\$ 10.99	391	274	67	395.4	275.0	65.6	402.9	282.6	68.6
\$ 11.99	324	245	37	329.8	242.7	41.4	334.3	252.5	37.9
\$ 12.99	287	221	29	288.3	218.2	30.5	296.3	227.9	29.8

Table 25: Weighted Responses for On-Demand Paid Switching to Not-On-Demand Music Streaming Services and Sirius XM

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM
\$ 6.99	20	6	11	21.8	6.5	11.4	20.6	6.1	11.3
\$ 7.99	29	12	7	28.7	11.6	6.7	29.8	12.3	7.0
\$ 8.99	33	12	11	33.2	11.9	11.4	34.0	12.4	11.4
\$ 9.99	31	9	13	32.9	9.5	13.2	31.7	9.2	13.2
\$ 10.99	67	28	12	65.6	26.9	11.8	68.6	29.1	12.3
\$ 11.99	37	18	7	41.4	20.3	5.9	37.9	18.5	7.3
\$ 12.99	29	10	8	30.5	10.2	7.9	29.8	10.3	8.3

Table 26: Weighted Responses for Not-On-Demand Paid Subscribers (Pandora One)

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel	Number of Respondents	Continue	Cancel
\$ 3.49	499	461	22	504.1	465.8	23.1	512.5	473.3	22.9
\$ 3.99	477	446	18	481.0	450.1	18.4	489.6	458.0	18.4
\$ 4.49	459	382	42	462.6	382.8	43.6	471.2	392.1	43.0
\$ 4.99	417	362	21	419.0	362.1	21.8	428.2	371.7	21.5
\$ 5.49	396	303	50	397.2	303.8	49.8	406.6	310.7	51.5
\$ 5.99	346	296	21	347.4	297.2	21.4	355.2	303.5	21.6
\$ 6.49	325	254	35	326.0	253.6	36.4	333.6	260.6	35.9

Table 27: Weighted Responses for Not-On-Demand Paid Switching to On-Demand Music Streaming Services and Sirius XM

Price	Unweighted			Age-gender-region weighted			Rake-weighted		
	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM	Cancel	Cancel and Switch to On-Demand	Cancel and Switch to Sirius XM
\$ 3.49	22	6	9	23.1	6.3	9.5	22.9	6.3	9.4
\$ 3.99	18	6	4	18.4	6.9	3.1	18.4	6.0	4.3
\$ 4.49	42	16	10	43.6	16.1	10.6	43.0	16.6	10.1
\$ 4.99	21	14	3	21.8	14.8	2.7	21.5	14.4	3.0
\$ 5.49	50	16	7	49.8	14.9	7.4	51.5	16.7	7.3
\$ 5.99	21	6	5	21.4	6.8	4.8	21.6	6.1	5.1
\$ 6.49	35	16	11	36.4	16.7	11.7	35.9	16.4	11.4

Table 28: Weighted Responses for On-Demand/Not-On-Demand Free Subscribers

Percent Discount	Unweighted			Age-gender-region weighted			Rake-weighted		
	Number of Respondents	Subscribe	Continue with Free	Number of Respondents	Subscribe	Continue with Free	Number of Respondents	Subscribe	Continue with Free
10%	501	154	285	524.5	159.3	300.8	510.1	157.5	289.9
20%	347	25	268	365.2	24.6	281.5	352.6	25.3	271.9
30%	322	11	257	340.6	11.7	269.0	327.3	10.9	261.5

Exhibits Sponsored by Ravi Dhar

Exhibit No.	Description	Designation*
SX Ex. 034	[Redacted]	Restricted
SX Ex. 035	[Redacted]	Restricted
SX Ex. 036	[Redacted]	Restricted
SX Ex. 037	[Redacted]	Restricted
SX Ex. 038	[Redacted]	Restricted
SX Ex. 039	[Redacted]	Restricted

*Exhibits designated Restricted are omitted from this public version in their entirety.

Attachment C

**Attachment C is restricted in its entirety
and is therefore omitted from this public version.**