

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

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

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

In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING
AND DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

**INTRODUCTORY MEMORANDUM TO THE WRITTEN
DIRECT STATEMENT OF AMAZON DIGITAL SERVICES LLC**

Participant Amazon Digital Services LLC (together with its affiliated entities, “Amazon”), respectfully submits its Written Direct Statement to the Copyright Royalty Judges (the “Panel”) pursuant to 37 C.F.R. § 351.4.

INTRODUCTION

At a high level, Amazon’s Written Direct Statement (“WDS”) demonstrates that the existing service categories and rate structures should largely be preserved. Amazon’s WDS also suggests that a few minor changes to Subparts B and C are necessary in order to fine tune the current regulatory scheme. First, language should be added to make clear that the per subscriber minimum and/or subscriber-based royalty floor for family plans applies on an account level (and does not apply to each individual user associated with the family plan subscription). Given market pricing, the per subscriber minimum and/or subscriber-based royalty floor for a family account should be equal to 150% of the per subscriber minimum and/or subscriber-based royalty floor for an individual account. Second, discounts to the per-subscriber minima and subscriber-based royalty floors for student and annual subscription plans should be applied at 50% for student plans and at 16.67% for annual plans. Third, Amazon seeks the addition of language to

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make clear that royalty calculations may be reduced by the amount of certain app store and carrier billing related fees. Finally, Amazon's WDS establishes that, to the degree rates are to be altered, they must be decreased, not increased.

In addition to this memorandum, Amazon's WDS consists of the following submissions: (1) a statement of Amazon's proposed rates and terms, together with a markup of the existing regulations proposing language intended to effectuate Amazon's desired changes; (2) the written direct testimony of Rishi Mirchandani, Amazon's Head of Content Acquisition and Catalog; (3) the written direct testimony of Kelly Brost, Amazon's Director of Finance, (4) an economic expert report from Dr. Glenn Hubbard, the Dean and Russell L. Carson Professor of Finance and Economics at the Columbia University Graduate School of Business; and (5) a music industry expert report from David Pakman, a Partner at Venrock.

SUMMARY OF TESTIMONY

Rishi Mirchandani

Rishi Mirchandani is the Head of Content Acquisition and Catalog for Amazon's digital music business. Mr. Mirchandani has extensive experience in the music industry, and a long personal history as both a music fan and a musician.

Mr. Mirchandani's testimony begins by detailing Amazon's history in the music business, charting its course first as a pioneer in online physical music sales, later to a leader in the era of digital downloads and cloud storage, and finally to an innovator of unique and industry-expanding streaming services and related technologies. Mr. Mirchandani then describes how Amazon's unique, customer-centric corporate ethos—and in particular, the core principals of customer obsession, innovation, long-term thinking, and operational excellence—led Amazon to develop a music business designed to serve as many different types of customers as possible.

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As Mr. Mirchandani explains, the current regulatory structure was expressly designed to foster a diverse array of service offerings, and Amazon expressly relied on the existing service categories and rates to build a digital-music business predicated on differentiated offerings that allow it to serve multiple segments of customers.

Next, Mr. Mirchandani turns his focus to the statutory objectives set forth in Section 803(b)(1), arguing that preserving the existing service categories and rate structures is the surest way to maximize the availability of creative works to the public, provide rightsholders a fair return and copyright users a fair income, reflect the relative roles of rightsholders and copyright users, and minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

In particular, Mr. Mirchandani explains that preserving the existing service categories and rate structures will maximize the availability of creative works to the public by encouraging digital service providers (“DSPs”) like Amazon to continue to offer diverse digital music services that appeal to an array of customers. Mr. Mirchandani also explains that collapsing the existing service categories would, on the other hand, reduce the diversity of digital music service offerings, discourage investment, and slow innovation, thereby limiting the availability of creative works to the public.

Mr. Mirchandani also contends that preserving the existing service categories and rate structures will afford rightsholders a fair return and DSPs a fair income under existing economic conditions. As Mr. Mirchandani’s testimony demonstrates, the existing regulatory scheme is serviceable, and has been working to grow the digital music industry over the past handful of years. However, as Mr. Mirchandani explains, DSPs costs are already sufficiently high that increasing rates would threaten to deny DSPs a fair income (and rightsholders a fair return)

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under existing economic conditions. As such, Mr. Mirchandani maintains that if there are to be any changes to the current rates, they should be decreased, not increased.

Mr. Mirchandani further explains that the current scheme was born by carefully negotiated agreement among the interested parties, and accordingly, that existing service categories and rate structures already roughly reflect the relative roles of rightsholders and DSPs with respect to creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets and media. However, Mr. Mirchandani recognizes that if the existing regulatory scheme is to be altered to more accurately reflect the relative roles of rightsholders and DSPs, rates should be decreased to reflect the significantly higher costs borne by DSPs in the streaming era.

In addition, Mr. Mirchandani testifies that preserving the existing service categories and rate structures will minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices. As he details, Amazon (and other DSPs) built services designed to function within the current regulatory scheme, and a significant departure therefrom would be seriously disruptive to DSPs' businesses, to the customers who have come to rely on their services, and to the broader digital music industry.

Finally, Mr. Mirchandani discusses the justifications for Amazon's proposed alterations to the existing regulatory scheme. In particular, Mr. Mirchandani's testimony demonstrates how clarification of payment obligations for family subscription plans will ensure that both DSPs and rightsholders receive their fair share of any additional revenue generated by such plans. Similarly, he proposes that discounted per subscriber minima and/or subscriber-based royalty floors for student and annual subscription plans, along with royalty deductions for app

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store and carrier billing-related fees, will ensure that the costs associated with these important industry expanding tools are shared among DSPs and rightsholders alike.

Kelly Brost

Kelly Brost is the Director of Finance for Amazon's Digital Music Business. He has worked at Amazon since 2009 and is responsible for strategic planning, budgeting, financial advising, reporting, and financial processes for Amazon's Digital Music Business. Mr. Brost's testimony introduces a handful of financial reports and analyses in support of Mr. Mirchandani's testimony, analyzing the music-listening and consumption patterns of Amazon's customers and detailing Amazon's investments over the last five years to offer its digital music services.

Glenn Hubbard

Dr. Glenn Hubbard, the Russell L. Carson Professor of Finance and Economics at the Graduate School of Business of Columbia University, presents testimony supporting the economic basis for Amazon's rate proposal. Dr. Hubbard demonstrates that digital service providers have utilized the current statutory framework to develop different business models, each of which serves a distinct audience. This diversity is essential as the music industry serves many consumer segments, measured in terms of willingness and ability to pay for music, or in terms of preferences for particular features embodied in each service. Through these various models, which include product differentiation, Dr. Hubbard shows that DSPs have successfully targeted multiple customer segments to expand overall market penetration.

Dr. Hubbard further demonstrates that Amazon's varied product offerings and pricing tiers appeal to a broader set of users than could be served with a single product offered at a single price point. As Dr. Hubbard explains, a structure that includes alternative royalty calculations

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and differentiated royalty rates for distinct product categories provides general flexibility to support the diverse music offerings that reach a wide array of music consumers. Dr. Hubbard believes that the current mechanical licensing regime is a framework that provides this general flexibility for Amazon's various product offerings.

David B. Pakman¹

David Pakman is a partner at the venture capital firm Venrock. Relying on nearly a quarter of a century of experience in the digital music industry, first as an executive and now as an investor, Mr. Pakman describes why digital music services, specifically on-demand streaming services, have fared poorly. Mr. Pakman explains that the primary reason for this is the high music licensing royalty rates, including payments made to music publishers. High music royalty payments, which constitute the principal expense for digital music services, have led to dismally high failure rates for digital music services and low investment in the industry, as compared to other digital businesses. Mr. Pakman explains that lower royalty rates would lead to more investment, more innovation, more growth, and ultimately higher total dollars in royalty payments for music rightsholders.

November 1, 2016

Respectfully submitted,



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¹ Amazon Digital Services, LLC, Google Inc., Spotify USA Inc., and Pandora are jointly presenting the expert testimony of David Pakman.

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

In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING
AND DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

AMAZON DIGITAL SERVICES LLC'S PROPOSED RATES AND TERMS

Pursuant to 37 C.F.R. § 351.4(b)(3), Participant Amazon Digital Services LLC (“Amazon”) proposes the following rates and terms for making and distributing phonorecords under the statutory license provided by 17 U.S.C. § 115 during the period January 1, 2018 through December 31, 2022:

I. Proposed Rates

Amazon proposes that any rates or terms not specifically addressed below shall roll-over as they are currently codified in the applicable regulations, including a rollover of the current rate for all service revenue categories that are currently set at 10.5%. Amazon takes no position as to rates governed by 37 C.F.R. § 385 Subpart A.

II. Proposed Terms

As discussed in the testimony of Rishi Mirchandani, Amazon proposes the following modifications to the current rates and terms set forth in 37 C.F.R. 385 Subparts B and C:

Family Plans. The regulations should include language to make clear that the per subscriber minimum and/or subscriber-based royalty floor for family plans applies on an account level (and does not apply to each individual user associated with the family plan subscription). Because the regulations are not completely clear on this point, given market pricing, the per

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subscriber minimum and/or subscriber-based royalty floor for a family account should be equal to 150% of the per subscriber minimum and/or subscriber-based royalty floor for an individual account.

Student Subscription Discounts. The regulations should include a discount to the per subscriber minimum and subscriber-based royalty floor of 50%.

Annual Subscription Discounts. The regulations should include a discount to the per subscriber minimum and subscriber-based royalty floor of 16.67%.

Royalty Deductions for App Store and Carrier Billing Fees. The regulations should be revised to permit royalty calculations to be reduced by the amount of app store and carrier billing fees, with each capped at 15%.

Other than these proposed changes, which have been implemented and shown below in redline, Amazon proposes that the terms currently set forth in 37 C.F.R. § 385 be continued.

37 C.F.R. Part 385
[PROPOSED CHANGES IN REDLINE]

SUBPART B—INTERACTIVE STREAMING AND LIMITED DOWNLOADS

§385.11 Definitions.

For purposes of this subpart, the following definitions shall apply:

Actual app store billing cost means the sum of amounts paid by the service provider to the applicable app store proprietor (or retained by such app store proprietor as the case may be) during the applicable month for providing an integrated billing system for a particular customer utilizing such applicable service integrated billing system to access a service during such month. The actual app store billing cost shall in no event be deemed to exceed 15% of the applicable service retail price.

...

Actual carrier billing cost means the sum of amounts paid by the service provider to the applicable wireless carrier (or retained by such wireless carrier as the case may be) during the applicable month for providing an integrated billing system for a particular customer utilizing such applicable service integrated billing system to access a service during such month. The actual carrier billing cost shall in no event be deemed to exceed 15% of the applicable service retail price.

...

Annual subscription means an individual or family account that purchases a 12 consecutive-month subscription through a service provider.

...

Family account means a subscription service account that provides access to licensed activity for up to six individuals, for a single price and marketed as a “family plan” subscription, where any particular individual may only be part of a single family account at any point in time. For avoidance of doubt, any reference to “subscriber” includes a family account as a single subscriber for purposes of computing the applicable royalty rate, regardless of category of licensing activity.

...

Individual account means a subscription service account that is associated with only one person and shall correlate with one customer account.

...

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Service revenue. (1) Subject to paragraphs (2) through (5) of the definition of “Service revenue,” and subject to GAAP, *service revenue* shall mean the following:

- (i) All revenue recognized by the service provider from end users from the provision of licensed activity;
- (ii) All revenue recognized by the service provider by way of sponsorship and commissions as a result of the inclusion of third-party “in-stream” or “in-download” advertising as part of licensed activity (*i.e.*, advertising placed immediately at the start, end or during the actual delivery, by way of interactive streaming or limited downloads, as applicable, of a musical work); and
- (iii) All revenue recognized by the service provider, including by way of sponsorship and commissions, as a result of the placement of third-party advertising on a relevant page of the service or on any page that directly follows such relevant page leading up to and including the limited download or interactive streaming, as applicable, of a musical work; provided that, in the case where more than one service is actually available to end users from a relevant page, any advertising revenue shall be allocated between such services on the basis of the relative amounts of the page they occupy.

(2) In each of the cases identified in paragraph (1) of the definition of “Service revenue,” such revenue shall, for the avoidance of doubt,

(i) Include any such revenue recognized by the service provider, or if not recognized by the service provider, by any associate, affiliate, agent or representative of such service provider in lieu of its being recognized by the service provider;

(ii) Include the value of any barter or other nonmonetary consideration;

(iii) Not be reduced by credit card commissions or similar payment process charges; and

(iv) Except as expressly set forth in this subpart, not be subject to any other deduction or set-off other than the following: (1) refunds to end users for licensed activity that they were unable to use due to technical faults in the licensed activity or other bona fide refunds or credits issued to end users in the ordinary course of business; and (2) deductions for the transaction costs associated with app store cost or actual carrier billing cost, as defined in §385.11, that are derived from the licensed activity.

(3) In each of the cases identified in paragraph (1) of the definition of “Service revenue,” such revenue shall, for the avoidance of doubt, exclude revenue derived solely in connection with services and activities other than licensed activity, provided that advertising or sponsorship revenue shall be treated as provided in paragraphs (2) and (4) of the definition of “Service revenue.” By way of example, the following kinds of revenue shall be excluded:

(i) Revenue derived from non-music voice, content and text services;

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(ii) Revenue derived from other non-music products and services (including search services, sponsored searches and click-through commissions); and

(iii) Revenue derived from music or music-related products and services that are not or do not include licensed activity.

(4) For purposes of paragraph (1) of the definition of “Service revenue,” advertising or sponsorship revenue shall be reduced by the actual cost of obtaining such revenue, not to exceed 15%.

(5) Where the licensed activity is provided to end users as part of the same transaction with one or more other products or services that are not a music service engaged in licensed activity, then the revenue deemed to be recognized from end users for the service for the purpose of the definition in paragraph (1) of the definition of “Service revenue” shall be the revenue recognized from end users for the bundle less the standalone published price for end users for each of the other component(s) of the bundle; provided that, if there is no such standalone published price for a component of the bundle, then the average standalone published price for end users for the most closely comparable product or service in the U.S. shall be used or, if more than one such comparable exists, the average of such standalone prices for such comparables shall be used.

...

Student account means an individual subscription that meets at least the following criteria: the individual is enrolled in at least one course at a college geographically located in the United States.

...

§385.13 Minimum royalty rates and subscriber-based royalty floors for specific types of services.

(a) *In general.* The following minimum royalty rates and subscriber-based royalty floors shall apply to the following types of licensed activity:

(1) *Standalone non-portable subscription—streaming only.* Except as provided in paragraph (a)(4) of this section, in the case of a subscription service through which an end user can listen to sound recordings only in the form of interactive streams and only from a non-portable device to which such streams are originally transmitted while the device has a live network connection, the minimum for use in step 1 of §385.12(b)(1)(ii) is the lesser of subminimum II as described in paragraph (c) of this section for the accounting period and the aggregate amount of 50 cents per ~~subscriber~~ individual account per month and 75 cents per family account per month. The

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subscriber-based royalty floor for use in step 3 of §385.12(b)(3)(ii) is the aggregate amount of 15 cents per ~~subscriber~~individual account per month and 22.5 cents per family account per month.

(2) *Standalone non-portable subscription—mixed*. Except as provided in paragraph (a)(4) of this section, in the case of a subscription service through which an end user can listen to sound recordings either in the form of interactive streams or limited downloads but only from a non-portable device to which such streams or downloads are originally transmitted, the minimum for use in step 1 of §385.12(b)(1)(ii) is the lesser of the subminimum I as described in paragraph (b) of this section for the accounting period and the aggregate amount of 50 cents per ~~subscriber~~individual account per month and 75 cents per family account per month. The subscriber-based royalty floor for use in step 3 of §385.12(b)(3)(ii) is the aggregate amount of 30 cents per ~~subscriber~~individual account per month and 45 cents per family account per month.

(3) *Standalone portable subscription service*. Except as provided in paragraph (a)(4) of this section, in the case of a subscription service through which an end user can listen to sound recordings in the form of interactive streams or limited downloads from a portable device, the minimum for use in step 1 of §385.12(b)(1)(ii) is the lesser of subminimum I as described in paragraph (b) of this section for the accounting period and the aggregate amount of 80 cents per ~~subscriber~~individual account per month and \$1.20 per family account per month. The subscriber-based royalty floor for use in step 3 of §385.12(b)(3)(ii) is the aggregate amount of 50 cents per ~~subscriber~~individual account per month and 75 cents per family account per month.

(4) *Bundled subscription services*. In the case of a subscription service providing licensed activity that is made available to end users with one or more other products or services (including products or services subject to other subparts) as part of a single transaction without pricing for the subscription service providing licensed activity separate from the product(s) or service(s) with which it is made available (e.g., a case in which a user can buy a portable device and one-year access to a subscription service providing licensed activity for a single price), the minimum for use in step 1 of §385.12(b)(1)(ii) is subminimum I as described in paragraph (b) of this section for the accounting period. The subscriber-based royalty floor for use in step 3 of §385.12(b)(3)(ii) is the aggregate amount of 25 cents per month for each end user who has made at least one play of a licensed work during such month (each such end user to be considered an “active subscriber”).

(5) *Free nonsubscription/ad-supported services*. In the case of a service offering licensed activity free of any charge to the end user, the minimum for use in step 1 of §385.12(b)(1)(ii) is subminimum II described in paragraph (c) of this section for the accounting period. There is no subscriber-based royalty floor for use in step 3 of §385.12(b)(3)(ii).

...

(e) *Computation of subscriber-based royalty rates*. For purposes of paragraph (a) of this section, to determine the minimum or subscriber-based royalty floor, as applicable to any particular

offering, the total number of subscriber-months for the accounting period, shall be calculated taking into account all end users who were subscribers for complete calendar months, prorating in the case of end users who were subscribers for only part of a calendar month, and deducting on a prorated basis for end users covered by a free trial period subject to the promotional royalty rate as described in §385.14(b)(2), except that in the case of a bundled subscription service, subscriber-months shall instead be determined with respect to active subscribers as defined in paragraph (a)(4) of this section. The product of the total number of subscriber-months for the accounting period and the specified number of cents per subscriber (whether an individual account, family account, or active subscriber, as the case may be) shall be used as the subscriber-based component of the minimum or subscriber-based royalty floor, as applicable, for the accounting period.

§385.15 [~~Reserved~~]-Discounts

(a) In general. In calculating the royalty payments for licensed activity in §385.12, the following discounts may be taken from the minimum royalty rates and subscriber-based royalty floors as set forth in §385.13:

(1) Student subscription discount. For each qualified student account, as defined in §385.11, a service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.13 by 50%.

(2) Annual subscription discounts. For each qualifying annual subscription, as defined in §385.11, a service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.13 by 16.67%.

(3) App store and carrier billing. A service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.13 commensurate with its actual app store and carrier billing costs as defined in §385.11, not to exceed 15% for each.

...

SUBPART C—LIMITED OFFERINGS, MIXED SERVICE BUNDLES, MUSIC BUNDLES, PAID LOCKER SERVICES AND PURCHASED CONTENT LOCKER SERVICES

§385.21 Definitions.

For purposes of this subpart, the following definitions shall apply:

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Actual app store billing cost means the sum of amounts paid by the service provider to the applicable app store proprietor (or retained by such app store proprietor as the case may be) during the applicable month for providing an integrated billing system for a particular customer utilizing such applicable service integrated billing system to access a service during such month. The actual app store billing cost for any particular customer shall in no event be deemed to exceed 15% of the applicable service retail price.

...

Actual carrier billing cost means the sum of amounts paid by the service provider to the applicable wireless carrier (or retained by such wireless carrier as the case may be) during the applicable month for providing an integrated billing system for a particular customer utilizing such applicable service integrated billing system to access a service during such month. The actual carrier billing cost for any particular customer shall in no event be deemed to exceed 15% of the applicable service retail price.

...

Family account means a subscription service account that provides access to licensed activity for up to six individuals, for a single price and marketed as a “family plan” subscription, where any particular individual may only be part of a single family account at any point in time. For avoidance of doubt, any reference to “subscriber” includes a family account as a single subscriber for purposes of computing the applicable royalty rate, regardless of category of licensing activity.

...

Individual account means a subscription service account that is associated with only one person and shall correlate with one customer account.

...

Subpart C service revenue. (1) Subject to paragraphs (2) through (6) of the definition of “Subpart C service revenue,” as defined in this section, and subject to GAAP, subpart C service revenue shall mean, referring to subpart C of this part, the following:

- (i) All revenue recognized by the service provider from end users from the provision of licensed subpart C activity, as defined in this section;
- (ii) All revenue recognized by the service provider by way of sponsorship and commissions as a result of the inclusion of third-party “in-stream” or “in-download” advertising as part of licensed subpart C activity, as defined in this section, (i.e., advertising placed immediately at the start, end or during the actual delivery, by way of transmissions of a musical work that constitute licensed subpart C activity, as defined in this section); and

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(iii) All revenue recognized by the service provider, including by way of sponsorship and commissions, as a result of the placement of third-party advertising on a subpart C relevant page, as defined in this section, of the service or on any page that directly follows such subpart C relevant page, as defined in this section, leading up to and including the transmission of a musical work that constitutes licensed subpart C activity, as defined in this section; provided that, in the case where more than one service is actually available to end users from a subpart C relevant page, as defined in this section, any advertising revenue shall be allocated between such services on the basis of the relative amounts of the page they occupy.

(2) In each of the cases identified in paragraph (1) of the definition of “Subpart C service revenue,” of this section such revenue shall, for the avoidance of doubt,

(i) Include any such revenue recognized by the service provider, or if not recognized by the service provider, by any associate, affiliate, agent or representative of such service provider in lieu of its being recognized by the service provider;

(ii) Include the value of any barter or other nonmonetary consideration;

(iii) Not be reduced by credit card commissions or similar payment process charges; and

(iv) Except as expressly set forth in this subpart, not be subject to any other deduction or set-off other than the following: (1) refunds to end users for licensed subpart C activity, as defined in this section, that they were unable to use due to technical faults in the licensed subpart C activity, as defined in this section, or other bona fide refunds or credits issued to end users in the ordinary course of business and (2) deductions for the transaction costs associated with actual app store cost or actual carrier billing cost, as defined in §385.21, that are derived from the licensed subpart C activity, as defined in this section.

(3) In each of the cases identified in paragraph (1) of the definition of “Subpart C service revenue” of this section, such revenue shall, for the avoidance of doubt, exclude revenue derived solely in connection with services and activities other than licensed subpart C activity, as defined in this section, provided that advertising or sponsorship revenue shall be treated as provided in paragraphs (2) and (4) of the definition of “Subpart C service revenue” of this section. By way of example, the following kinds of revenue shall be excluded:

(i) Revenue derived from non-music voice, content and text services;

(ii) Revenue derived from other non-music products and services (including search services, sponsored searches and click-through commissions);

(iii) Revenue generated from the sale of actual locker service storage space to the extent that such storage space is sold at a separate retail price;

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(iv) In the case of a locker service, revenue derived from the sale of permanent digital downloads or ringtones; and

(v) Revenue derived from other music or music-related products and services that are not or do not include licensed subpart C activity, as defined in this section.

(4) For purposes of paragraph (1) of the definition of “Subpart C service revenue” of this section, advertising or sponsorship revenue shall be reduced by the actual cost of obtaining such revenue, not to exceed 15%.

(5) In the case of a mixed service bundle, the revenue deemed to be recognized from end users for the service for the purpose of the definition in paragraph (1) of the definition of “Subpart C service revenue” of this section shall be the greater of—

(i) The revenue recognized from end users for the mixed service bundle less the standalone published price for end users for each of the non-music product or non-music service components of the bundle; provided that, if there is no such standalone published price for a non-music component of the bundle, then the average standalone published price for end users for the most closely comparable non-music product or non-music service in the U.S. shall be used or, if more than one such comparable exists, the average of such standalone prices for such comparables shall be used; and

(ii) Either—

(A) In the case of a mixed service bundle that either has 750,000 subscribers or other registered users, or is reasonably expected to have 750,000 subscribers or other registered users within 1 year after commencement of the mixed service bundle, 40% of the standalone published price of the licensed music component of the bundle (i.e., the permanent digital downloads, ringtones, locker service or limited offering); provided that, if there is no such standalone published price for the licensed music component of the bundle, then the average standalone published price for end users for the most closely comparable licensed music component in the U.S. shall be used or, if more than one such comparable exists, the average of such standalone prices for such comparables shall be used; and further provided that in any case in which royalties were paid based on this paragraph due to a reasonable expectation of reaching 750,000 subscribers or other registered users within 1 year after commencement of the mixed service bundle and that does not actually happen, applicable payments shall, in the accounting period next following the end of such 1-year period, retroactively be adjusted as if paragraph (5)(ii)(B) of the definition of “Subpart C service revenue” of this section applied; or

(B) Otherwise, 50% of the standalone published price of the licensed music component of the bundle (i.e., the permanent digital downloads, ringtones, locker service or limited offering); provided that, if there is no such standalone published price for the licensed music component of the bundle, then the average standalone published price for end users for the most closely

comparable licensed music component in the U.S. shall be used or, if more than one such comparable exists, the average of such standalone prices for such comparables shall be used.

(6) In the case of a music bundle containing a physical phonorecord, where the music bundle is distributed by a record company for resale and the record company is the compulsory licensee—

(i) Service revenue shall be 150% of the record company's wholesale revenue from the music bundle; and

(ii) The times at which distribution and revenue recognition are deemed to occur shall be in accordance with §201.19 of this title.

...

Student account means an individual subscription that meets at least the following criteria: the individual is enrolled in at least one course at a college geographically located in the United States.

§385.23 Royalty rates and subscriber-based royalty floors for specific types of services.

(a) *In general.* The following royalty rates and subscriber-based royalty floors shall apply to the following types of licensed subpart C activity, as defined in §385.21:

(1) *Mixed service bundle.* In the case of a mixed service bundle, the percentage of subpart C service revenue, as defined in §385.21, applicable in step 1 of §385.22(b)(1)(i) is 11.35%. The minimum for use in step 1 of §385.22(b)(1)(ii) is the appropriate subminimum as described in paragraph (b) of this section for the accounting period, where the all-in percentage applicable to §385.23(b)(1) is 17.36%, and the sound recording-only percentage applicable to §385.23(b)(2) is 21%.

(2) *Music bundle.* In the case of a music bundle, the percentage of subpart C service revenue, as defined in §385.21, applicable in step 1 of §385.22(b)(1)(i) is 11.35%. The minimum for use in step 1 of §385.22(b)(1)(ii) is the appropriate subminimum as described in paragraph (b) of this section for the accounting period, where the all-in percentage applicable to §385.23(b)(1) and (3) is 17.36%, and the sound recording-only percentage applicable to §385.23(b)(2) is 21%.

(3) *Limited offering.* In the case of a limited offering, the percentage of subpart C service revenue, as defined in §385.21, applicable in step 1 of §385.22(b)(1)(i) is 10.5%. The minimum for use in step 1 of §385.22(b)(1)(ii) is the greater of—

(i) The appropriate subminimum as described in paragraph (b) of this section for the accounting period, where the all-in percentage applicable to §385.23(b)(1) is 17.36%, and the sound recording-only percentage applicable to §385.23(b)(2) is 21%; and

(ii) The aggregate amount of 18 cents per subscriber individual account per month and 27 cents per family account per month.

(4) *Paid locker service*. In the case of a paid locker service, the percentage of subpart C service revenue, as defined in §385.21, applicable in step 1 of §385.22(b)(1)(i) is 12%. The minimum for use in step 1 of §385.22(b)(1)(ii) is the greater of—

(i) The appropriate subminimum as described in paragraph (b) of this section for the accounting period, where the all-in percentage applicable to §385.23(b)(1) is 17.11%, and the sound recording-only percentage applicable to §385.23(b)(2) is 20.65%; and

(ii) The aggregate amount of 17 cents per subscriber individual account per month and 25.5 cents per family account per month.

...

(c) *Computation of subscriber-based royalty rates*. For purposes of paragraphs (a)(3) and (4) of this section, to determine the subscriber-based minimum applicable to any particular subpart C offering, as defined in §385.21, the total number of subscriber-months for the accounting period shall be calculated, taking into account all end users who were subscribers (whether an individual account or family account) for complete calendar months, prorating in the case of end users who were subscribers for only part of a calendar month, and deducting on a prorated basis for end users covered by a free trial period subject to the free trial royalty rate as described in §385.24. The product of the total number of subscriber-months for the accounting period and the specified number of cents per subscriber shall be used as the subscriber-based component of the minimum for the accounting period.

...

§385.25 Discounts

(a) In general. In calculating the royalty payments for licensed activity in §385.22, the following discounts may be taken from the minimum royalty rates and subscriber-based royalty floors as set forth in §385.23:

(1) Student subscription discount. For each qualified student account, as defined in §385.21, a service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.23 by 50%.

(2) Annual subscription discounts. For each qualifying annual subscription, as defined in §385.21, a service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.23 by 16.67%.

PUBLIC VERSION

(3) *App store and carrier billing.* A service provider may discount the minimum royalty rate(s) and subscriber-based royalty floor(s) as set forth in §385.23 commensurate with its actual app store and carrier billing costs as defined in §385.21, not to exceed 15% for each.

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

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

INDEX OF AMAZON DIGITAL SERVICES LLC'S WITNESS TESTIMONY

Witness	Title
Rishi Mirchandani	Head of Content Acquisition, Digital Music, Amazon Digital Services LLC
Kelly Brost	Director of Finance, Amazon Digital Services LLC
Glenn Hubbard	Russell L. Carson Professorship in Finance and Economics in the Graduate School of Business of Columbia University, where he is also the Dean.
David B. Pakman	Partner at venture capital firm Venrock

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

<p>In the Matter of</p> <p>DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)</p>	<p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p>	<p>Docket No. 16-CRB-0003-PR (2018-2022)</p>
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INDEX OF AMAZON DIGITAL SERVICES LLC’S EXHIBITS

Exhibit No.	Sponsoring Witness	Description
Amazon Ex. 1	Rishi Mirchandani	Keep on Streaming in the Free World: Results from 4 th Annual RBC Online Music Survey,” <i>RBC Capital Markets</i> , June 30, 2016
Amazon Ex. 2	Rishi Mirchandani	Pogue, David, <i>Amazon’s Echo Brings the ‘Star Trek’ Computer to Your Home</i> (Jul. 16, 2015) https://www.yahoo.com/tech/amazons-echo-brings-the-star-trek-computer-to-124102850474.html
Amazon Ex. 3	Rishi Mirchandani	O’Brien, Elizabeth, <i>Older adults buddy up with Amazon’s Alexa</i> , (Mar. 18, 2016), <i>available at</i> http://www.marketwatch.com/story/older-adults-buddy-up-with-amazons-alexa-2016-03-18
Amazon Ex. 4	Rishi Mirchandani	Rao, Venkat, <i>Amazon Echo: A Great Internet of Things (IOT) Device for People with Disabilities</i> (Feb. 29, 2016) <i>available at</i> http://assistivetechologyblog.com/2016/02/amazon-echo-great-internet-of-things.html
Amazon Ex. 5	Rishi Mirchandani	Friedlander, Joshua P, NEWS AND NOTES ON 2014 RIAA MUSIC INDUSTRY SHIPMENT AND REVENUE STATISTICS, <i>available at</i> http://www.riaa.com/wp-content/uploads/2015/09/2013-2014_RIAA_YearEndShipmentData.pdf

Exhibit No.	Sponsoring Witness	Description
Amazon Ex. 6	Rishi Mirchandani	Friedlander, Joshua P, NEWS AND NOTES ON 2015 RIAA SHIPMENT AND REVENUE STATISTICS, <i>available at</i> https://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf
Amazon Ex. 7	Rishi Mirchandani	Christman, Ed, <i>Two of Three Majors Reach Settlement with Publishers on Digital Sales Rates</i> (Jun. 8, 2016) <i>available at</i> http://www.billboard.com/articles/business/7400362/universal-music-warner-music-nmpa-settlement-mechanical-sales-rate
Amazon Ex. 8	Rishi Mirchandani	Legrand, Emmanuel, <i>Sony Music comes to agreement with US publishers and songwriters on mechanical rates</i> (Oct. 28, 2016) <i>available at</i> http://www.musicweek.com/publishing/read/sony-music-comes-to-agreement-with-us-publishers-and-songwriters-on-mechanical-rates/066382
Amazon Ex. 9	Rishi Mirchandani	Friedlander, Joshua P, NEWS AND NOTES ON 2016 MID-YEAR RIAA MUSIC SHIPMENT AND REVENUE STATISTICS, <i>available at</i> http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf
Amazon Ex. 10	Rishi Mirchandani	2016 Nielsen Music Mid-Year U.S. Report
Amazon Ex. 11	Rishi Mirchandani	IFPI Global Music Report 2016
Amazon Ex. 12	Rishi Mirchandani	Music Business Association, <i>Music Biz/LOOP Study: Millennials Turn from Radio to Embrace Streaming</i> (Jul. 12, 2016)
Amazon Ex. 13	Rishi Mirchandani	Resnikoff, Paul, <i>How Music Piracy is Completely Changing in 2016</i> (May 5, 2016), <i>available at</i> http://www.digitalmusicnews.com/2016/05/05/what-music-piracy-really-looks-like/
Amazon Ex. 14	Kelly Brost	2013 Download Store Revenue per Customer, by Customer Segment
Amazon Ex. 15	Kelly Brost	Prime Music Average Monthly Hours per Listener, by Listener Segment (Oct. 2015 – Sept. 2016)

Exhibit No.	Sponsoring Witness	Description
Amazon Ex. 16	Kelly Brost	Digital Music Publishing Expenditures from 2013– 016 (in millions)
Amazon Ex. 17	Kelly Brost	Digital Music Headcount, Tech Infrastructure, Marketing, and External Services Expenditures 2012 – 2016 (in millions)
Amazon Ex. 18	Kelly Brost	Unlimited for Echo per Subscriber Profit Under Existing Subpart B Standalone Non-Portable Rates and Rights Owners' Proposed Rates
Amazon Ex. 19	Kelly Brost	Spotify Estimated Hours per Month

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

In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING AND
DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

**DECLARATION AND CERTIFICATION OF MICHAEL S. ELKIN REGARDING
RESTRICTED MATERIALS**

(On behalf of Amazon Digital Services LLC)

1. I am counsel for Participant Amazon Digital Services LLC (“Amazon”) in the above-captioned matter. I respectfully submit this declaration pursuant to Rule 350.4(e)(1) of the Copyright Royalty Judges Rules and Procedures, 37 C.F.R. § 350.4(e)(1), and per the terms of the Protective Order issued July 27, 2016 (“Protective Order”). I am authorized by Amazon to submit this Declaration on Amazon’s behalf.

2. I have reviewed the Amazon’s Written Direct Statement, witness written direct testimony, exhibits, appendices, and Redaction Log submitted in this proceeding. I have also reviewed the definitions and terms provided in the Protective Order. After consultation with my client, I have determined to the best of my knowledge, information and belief that portions of Amazon’s introductory memorandum, the written direct testimony of certain Amazon witnesses, and certain exhibits contain information that is “confidential information” as defined by the Protective Order (“Protected Material”). The Protected Material is identified in the Redaction Log, shaded in the printed copies of Amazon’s filing, and described in more detail below.

3. Such Protected Material includes, but is not limited to, testimony and exhibits involving (a) contracts and contractual terms, that are not available to the public, highly competitively sensitive and, at times, subject to express confidentiality provisions with third parties; (b) highly confidential internal business information, financial projections, financial data,

and competitive strategy that are proprietary, not available to the public, and commercially sensitive.

4. If this contractual, strategic, and financial information were to become public, it would place Amazon at a commercial and competitive disadvantage, unfairly advantage other parties to the detriment of Amazon, and jeopardize its business interests. Information related to confidential contracts or relationships with third-party content providers could be used by Amazon's competitors, or by other content providers, to formulate rival bids, bid up Amazon payments, or otherwise unfairly jeopardize Amazon's commercial and competitive interests.

5. With respect to the financial information in the Protected Material, I understand that Amazon has not disclosed to the public or the investment community the financial information that it seeks to restrict here (including spending and investment projections, specific royalty payment information, and the like). As a result, neither Amazon's competitors nor the investing public has been privy to that information, which the Amazon has viewed as highly confidential and sensitive, and has guarded closely. In addition, when Amazon does disclose information about its finances to the market as required by law, Amazon provides accompanying analysis and commentary that contextualizes disclosures by its officers. The information that Amazon seeks to restrict under the Protective Order, while truthful and accurate to the best of each witness's knowledge, was not intended for public release or prepared with that audience in mind, and therefore was not accompanied by the type of detailed explanation and context that usually accompanies such disclosures by a company officer. Moreover, the statements and exhibits containing the information have not been approved by Amazon's Board of Directors, as such sensitive disclosures usually are, or accompanied by the typical disclaimers that usually accompany such disclosures. Amazon could experience negative market repercussions, competitive disadvantage, and even possible legal exposure were this confidential information released publicly without proper context or explanation.

6. The written direct testimony of Rishi Mirchandani, Head of Content Acquisition and Catalog for Amazon's digital-music business, contains material non-public information and

figures concerning Amazon's internal listener metrics, activations of Amazon's various services, Amazon's assembly and maintenance of its music catalog, and investments in infrastructure and technology. Mr. Mirchandani's testimony also contains material non-public information concerning non-public license agreements, financial projections, and recent and anticipated expenditures in connection with Amazon's service offerings. In addition, the exhibits accompanying Mr. Mirchandani's testimony contain non-public, competitively sensitive information. This information is not publicly known or available. Disclosure of this information could, for reasons discussed in paragraphs 4 and 5 above among others, competitively disadvantage Amazon.

7. The written direct testimony of Kelly Brost, Director of Finance at Amazon, contains material non-public information concerning terms of non-public competitively sensitive financial information and use metrics. In addition, the exhibits accompanying Mr. Brost's testimony contain non-public, competitively sensitive information. For the reasons discussed above, disclosure of the details of this financial information would competitively disadvantage Amazon.

8. The written direct testimony of Dr. Glenn Hubbard, the Dean and holder of the Russell L. Carson Professorship in Finance and Economics at the Graduate School of Business of Columbia University, contains material non-public information concerning listener metrics and Amazon's digital services. In addition, the exhibits accompanying Dr. Hubbard's testimony contain non-public, competitively sensitive information. This information is not publicly known or available. Disclosure of this information could, for reasons discussed in paragraph 4 above among others, competitively disadvantage Amazon.

9. The contractual, commercial and financial information described in the paragraphs above and detailed on the accompanying Redaction Log must be treated as Restricted Protected Material in order to prevent business and competitive harm that would result from the disclosure of such information while, at the same time, enabling Amazon to provide the

Copyright Royalty Judges with the most complete record possible on which to base their determination in this proceeding.

Pursuant to 28 U.S.C. § 1746 and 37 C.F.R. § 350.4(e)(1), I hereby declare under the penalty of perjury that, to the best of my knowledge, information and belief, the foregoing is true and correct.

Dated: November 3, 2016
New York, NY



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Counsel for Amazon Digital Services LLC

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

In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING AND
DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

**REDACTION LOG FOR THE WRITTEN DIRECT
STATEMENT OF AMAZON DIGITAL SERVICES LLC**

Pursuant to the requirements of the Protective Order entered by the Judges on July 27, 2016, Amazon Digital Services LLC (“Amazon”) hereby submits the following list of redactions from its Written Direct Statement filed November 1, 2016, and the undersigned certifies, in compliance with 37 C.F.R. § 350.4(e)(1), and based on the Declaration and Certification of Michael S. Elkin submitted herewith, that the listed redacted materials meet the definition of “Restricted” contained in the Protective Order.

Document	Page/Paragraph/Exhibit No.	General Description
Written Direct Testimony of Rishi Mirchandani	Page 9, Paragraph 22	Contains material, non-public financial data concerning customer purchasing trends.
	Page 10, Paragraph 22	Contains material, non-public financial data concerning customer purchasing trends.
	Page 10, Footnote 7	Contains material, non-public proprietary information concerning Amazon’s strategic business planning.
	Page 11, Paragraph 26	Contains material, non-public financial data concerning customer purchasing trends.

	Page 11, Paragraph 28	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 11, Footnote 8	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 14, Paragraph 35	Contains material, non-public financial data concerning customer purchasing trends.
	Page 15, Paragraph 35	Contains material, non-public financial data concerning customer purchasing trends.
	Page 15, Paragraph 36	Contains material, non-public financial data concerning customer usage trends.
	Page 16, Paragraph 37	Contains material, non-public financial data concerning Amazon's mechanical royalty payments.
	Page 17, Heading 2	Contains material designated as Restricted by NMPA/NASI.
	Page 17, Paragraph 39	Contains material designated as Restricted by NMPA/NASI.
	Pages 17-18, Footnote 17	Contains material designated as Restricted by NMPA/NASI.
	Page 18, Paragraph 40	Contains material designated as Restricted by NMPA/NASI.
	Page 18, Paragraph 41	Contains material designated as Restricted by NMPA/NASI.
	Page 19, Paragraph 43	Contains material designated as Restricted by NMPA/NASI.
	Page 19, Heading 3	References material

		designated as Restricted by NMPA/NASI.
	Page 19, Paragraph 44	References material designated as Restricted by NMPA/NASI.
	Page 19, Paragraph 45	References material designated as Restricted by NMPA/NASI and contains material, non-public information concerning Amazon active users.
	Page 20, Paragraph 45	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 20, Footnote 21	Contains material, non-public information concerning Amazon active users.
	Page 24, Paragraph 55	Contains material, non-public financial data concerning Amazon's investments.
	Page 26, Paragraph 65	Contains material, non-public financial data concerning Amazon's investments.
	Page 27, Paragraph 65	Contains material, non-public financial data concerning Amazon's investments.
	Page 28, Paragraph 71	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 28, Paragraph 73	References material designated as Restricted by NMPA/NASI and contains material, non-public proprietary information concerning Amazon's

	Page 29, Paragraph 74	strategic business planning. References material designated as Restricted by NMPA/NASI.
Written Direct Testimony of Glenn Hubbard	Table of Contents, Section 3C	Contains material, non-public information concerning a research report regarding usage trends.
	Page 7, Paragraph 2.7	Contains material, non-public information concerning a music subscriber trends.
	Page 8, Paragraph 2.7	Contains material, non-public information concerning a music subscriber trends.
	Page 8, Paragraph 2.9	Contains material designated as Restricted by Google.
	Page 8, Footnote 16	Contains material, non-public information concerning a music subscriber trends.
	Page 8, Footnote 18	Contains material designated as Restricted by Google.
	Page 8, Footnote 19	Contains material designated as Restricted by Google.
	Page 9, Paragraph 2.9	Contains material designated as Restricted by Google.
	Page 9, Paragraph 2.10	Contains material designated as Restricted by Spotify.
	Page 9, Footnote 20	Contains material designated as Restricted by Google.
Page 9, Footnote 21	Contains material designated as Restricted by Google.	
Page 9, Footnote 22	Contains material designated as Restricted by Spotify.	

	Page 10, Paragraph 2.12	Contains material, non-public information concerning survey regarding consumer preferences.
	Page 10, Footnote 25	Contains material, non-public information concerning survey regarding consumer preferences.
	Page 19, Paragraph 3.12	Contains material, non-public financial data concerning customer purchasing trends.
	Page 20, Heading C	Contains material, non-public proprietary information concerning Prime Music usage trends.
	Page 20, Paragraph 3.14	Contains material, non-public proprietary information concerning Prime Music usage trends.
	Page 20, Footnote 74	Contains material designated as Restricted by Google.
	Page 20, Footnote 75	Contains material, non-public proprietary information concerning Prime Music usage trends.
	Page 22, Paragraph 3.17	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 22, Paragraph 3.18	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 22, Paragraph 3.19	Contains material, non-public proprietary information concerning customer usage

		and material designated as Restricted by Spotify.
	Page 22, Footnote 78	Contains material, non-public proprietary information concerning customer usage and material designated as Restricted by Spotify.
	Page 23, Paragraph 3.21	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 23, Footnote 80	Contains material, non-public proprietary information concerning Amazon's strategic business planning.
	Page 24, Paragraph 4.3	Contains material, non-public proprietary information concerning customer usage and material, non-public financial data concerning Amazon's mechanical royalty payments.
	Page 25, Paragraph 4.3	Contains material, non-public proprietary information concerning customer usage and material, non-public financial data concerning Amazon's mechanical royalty payments.
	Page 25, Footnote 84	Contains material, non-public proprietary information concerning customer usage and material, non-public financial data concerning Amazon's mechanical royalty payments.
	Page 25, Footnote 85	Contains material, non-public proprietary information concerning customer usage.

	Appendix C, Page 1	References material, non-public proprietary information concerning customer usage, material, non-public financial data concerning Amazon's mechanical royalty payments, and material designated as Restricted by Google and Spotify.
Exhibits	Amazon Ex. 1	Contains material, non-public information concerning a research study regarding usage trends and survey results.
	Amazon Ex. 14	Contains material, non-public financial information concerning Amazon's Digital Download Store.
	Amazon Ex. 15	Contains material, non-public proprietary information concerning customer usage.
	Amazon Ex. 16	Contains material, non-public financial data concerning Amazon's mechanical royalty payments.
	Amazon Ex. 17	Contains material, non-public financial data concerning Amazon's investments.
	Amazon Ex. 18	Contains material, non-public financial data concerning Amazon's mechanical royalty payments and material designated as Restricted by NMPA/NASI.
	Amazon Ex. 19	Contains material, non-public information concerning a research report regarding usage trends.

	Hubbard Ex. 4	Contains material, non-public proprietary information concerning customer usage.
	Hubbard Ex. 5	Contains material, non-public proprietary information concerning customer usage.
	Hubbard Ex. 6	Contains material, non-public proprietary information concerning customer usage.

CERTIFICATE OF SERVICE

I, Jennifer Doran, do hereby certify that a copy of the foregoing restricted version of the Witness Direct Statement of Amazon Digital Services LLC has been served on the 1st day of November, 2016 –

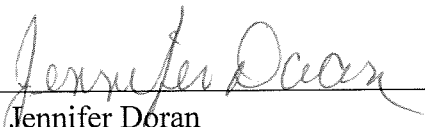
By email only on:

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 Jennifer Doran

PUBLIC VERSION

**Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress**

In the Matter of:

Docket No. 16-CRB-0003-PR (2018-2022)

Determination of Rates and Terms for
Making and Distributing Phonorecords
(Phonorecords III)

TESTIMONY OF RISHI MIRCHANDANI

1. My name is Rishi Mirchandani and I am the Head of Content Acquisition and Catalog for the digital-music business of Amazon Digital Services LLC (together with its affiliated entities, “Amazon”). I submit this testimony in connection with Amazon’s Written Direct Statement in the above-captioned proceeding for setting rates and terms for the making and distribution of digital phonorecord deliveries.

2. At Amazon, I am responsible for developing and executing our content acquisition strategy. This entails securing the necessary sound recording and music publishing rights to operate our various digital music services. In addition, I oversee our digital operations team, which is responsible for receiving music assets and metadata from our content partners and third parties. I have been in this position for over three-and-a-half years.

3. Prior to joining Amazon, I accumulated more than a decade of experience in the music industry. Most recently, I was VP, Operations at Turntable.fm, an online social music service that enabled users to listen to and discuss music in chat rooms, and I was responsible for all business operations, including content licensing. Before that I worked in finance and

PUBLIC VERSION

operating roles at a number of record labels. From 2006 to 2011, I was the VP, Marketing & Operations of the RCA/Jive Label Group at Sony Music Entertainment, where I was responsible for the management of the label's marketing and promotion budget. From 2004 to 2006, I was the GM/CFO at Ultra Records, an independent record label. From 2003 to 2004, I was the Director of Strategy and Finance at Giant Step, a record label and music marketing company. Before joining Giant Step, I worked in private equity for JP Morgan Partners and in investment banking for Credit Suisse First Boston. I obtained a Bachelors of Arts degree in Economics from the University of Pennsylvania, and I have an MBA from Harvard Business School.

4. I have negotiated hundreds of licensing agreements with rightsholders and understand the layers of complexity and risk and the many challenges associated with building innovative digital music services. I have also been involved in the marketing and promotion of hundreds of album releases, and I have experienced the impact that new distribution models have had on the creative process.

5. On a personal level, music has been a true passion of mine since a very early age. As a child, I played both piano and guitar, and I have enjoyed playing classical, jazz, and rock music over the years. To this day, I have vivid memories of purchasing my first record: Michael Jackson's *Thriller*. I was eight years old at the time. Since then, I have seen my music collection grow and transform, from dozens of vinyl albums to thousands of CDs to tens of thousands of MP3s. And of course I am no longer limited to my music collection thanks to the millions of tracks available on today's streaming services—a reality that my eight-year-old self could hardly have fathomed, even in my wildest dreams. Needless to say, through my own experiences as a music fan and consumer, I have witnessed firsthand the incredible impact that

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the intersection of technology and law has had on the way that people discover and consume music.

6. The following testimony is based on my personal knowledge, on information made available to me in the course of performing my duties at Amazon, on my work experience in the music industry, and on my review of the documents attached as exhibits to this written testimony. To the extent that the facts and matters set out in this statement are within my knowledge, they are true. To the extent I have relied upon the information provided by others, it is true to the best of my knowledge, information, and belief.

I. SUMMARY OF TESTIMONY

7. In my testimony, I make the following points:

- **The current regulatory structure was expressly designed to foster a diverse array of service offerings.** Amazon has relied on the existing service categories and rates to build a digital-music business predicated on differentiated offerings that allow it to serve multiple segments of customers.
- **Preserving the existing service categories and rate structures will maximize the availability of creative works to the public.** Collapsing the existing service categories would, on the other hand, reduce the diversity of digital music service offerings, discourage investment, and slow innovation, thereby limiting the availability of creative works to the public.
- **Preserving the existing service categories and rate structures will afford rightsholders a fair return and digital service providers (“DSPs”) a fair income under existing economic conditions.** Though imperfect, the existing regulatory scheme is workable. Increasing rates would threaten to deny DSPs a fair income (and rightsholders a fair return) under existing economic conditions.
- **The existing service categories and rate structures already roughly reflect, at least historically, the relative roles of rightsholders and DSPs with respect to creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets and media.** The existing regulatory scheme was established through carefully negotiated agreements among industry participants. However, if the existing regulatory scheme is to be altered to more accurately reflect the relative roles of rightsholders and DSPs, rates should be decreased to reflect the significantly higher costs borne by DSPs in the streaming era.

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- **Preserving the existing service categories and rate structures will minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.** Amazon (and other DSPs) have built services to fit and function within the current regulatory scheme, and a significant departure therefrom would be seriously disruptive to DSPs' businesses, to the customers who have come to rely on their services, and to the broader digital music industry.
- **Amazon's proposed adjustments to the existing regulatory scheme serve to further the objectives in Section 803(b)(1).** Clarification of DSP payment obligations for family subscription plans will ensure that both DSPs and rightsholders get their fair share of any additional revenue generated by such plans, thereby enabling DSPs to continue to offer family subscription plans. In addition, discounted per subscriber minima and/or subscriber-based royalty floors for student and annual subscription plans and revisions to the Service Revenue definitions will ensure that the costs associated with these important industry expanding tools is shared among DSPs and rightsholders.

II. OVERVIEW OF AMAZON'S MUSIC BUSINESS

8. Amazon.com, Inc. opened for business in July 1995 as the "Earth's Biggest Bookstore." Amazon recognized that the sale of books and other products over the Internet could offer attractive and previously unrealized benefits to customers, including more competitive pricing, enhanced selection, convenience, depth of content, and personalization. In time, Amazon expanded into other categories including music, video, and consumer electronics. In addition to our consumer retail business, Amazon Web Services offers more than 70 cloud-computing enterprise services spanning a wide range of functions, including storage, networking, database, analytics, application services, mobile services, developer tools, and tools for the Internet of things. There are a few core principles that drive every business within Amazon.com: customer obsession, innovation, long-term thinking, and operational excellence.

9. Music was the first category that Amazon expanded into beyond books. Amazon launched its music store in 1998, offering customers a selection of CDs and later adding vinyl and cassettes. As customers' music consumption habits began to change, Amazon remained committed to evolving its music offerings to meet customers' needs. Amazon has invested

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substantial time and money to build a robust digital-music business featuring a diverse array of offerings designed to facilitate the distribution of music to as many customers as possible.

10. Today, Amazon Music's U.S.-based business includes a physical music store, a digital download store, a purchased content locker service, a paid locker service, Prime Music (an interactive streaming service offered with Amazon Prime), Amazon Music Unlimited (a full-catalog subscription music service), and Amazon Music Unlimited for Echo (a full-catalog subscription music service available through a single, Wi-Fi enabled Amazon Echo device). Amazon's music services are accessible through a broad range of applications that enable playback via a variety of platforms.

11. Amazon also offers a number of voice-controlled devices (Amazon Echo, Echo Dot, and Amazon Tap) that have transformed the way users interact with music services. These devices are powered by Alexa, Amazon's voice service, which is an open platform that supports both Amazon and third-party music services.

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Amazon Echo provides hands-free voice control for Amazon Music—just ask for your favorite artist or song, or request a specific genre or mood. You can also search for music by lyrics, when a song or album was released, or let Alexa pick the music for you. Listen to any song with Amazon Music Unlimited. [Learn more.](#)

Amazon Echo also provides hands-free voice control to Pandora, Spotify, iHeartRadio, and TuneIn. Plus, Echo is Bluetooth-enabled so you can stream other popular music services like iTunes from your phone or tablet. Echo has been fine-tuned to deliver crisp vocals with dynamic bass response. Its dual downward-firing speakers produce 360° omni-directional audio to fill any room with immersive sound.

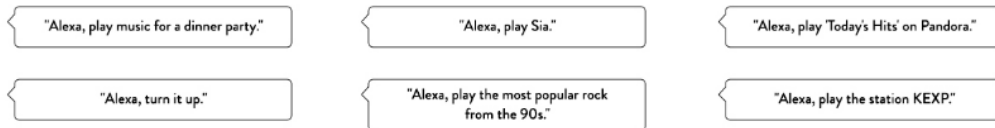


Fig. 1 – Amazon Echo¹

Amazon Music

12. Amazon launched its music store in June 1998 with a CD selection of more than 125,000 titles—10 times the number offered by the average music store at the time. Amazon has continued to expand this selection and today Amazon offers more than 1 million titles in a variety of physical formats.

¹ Screenshot from <https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E> (accessed on Oct. 31, 2016).

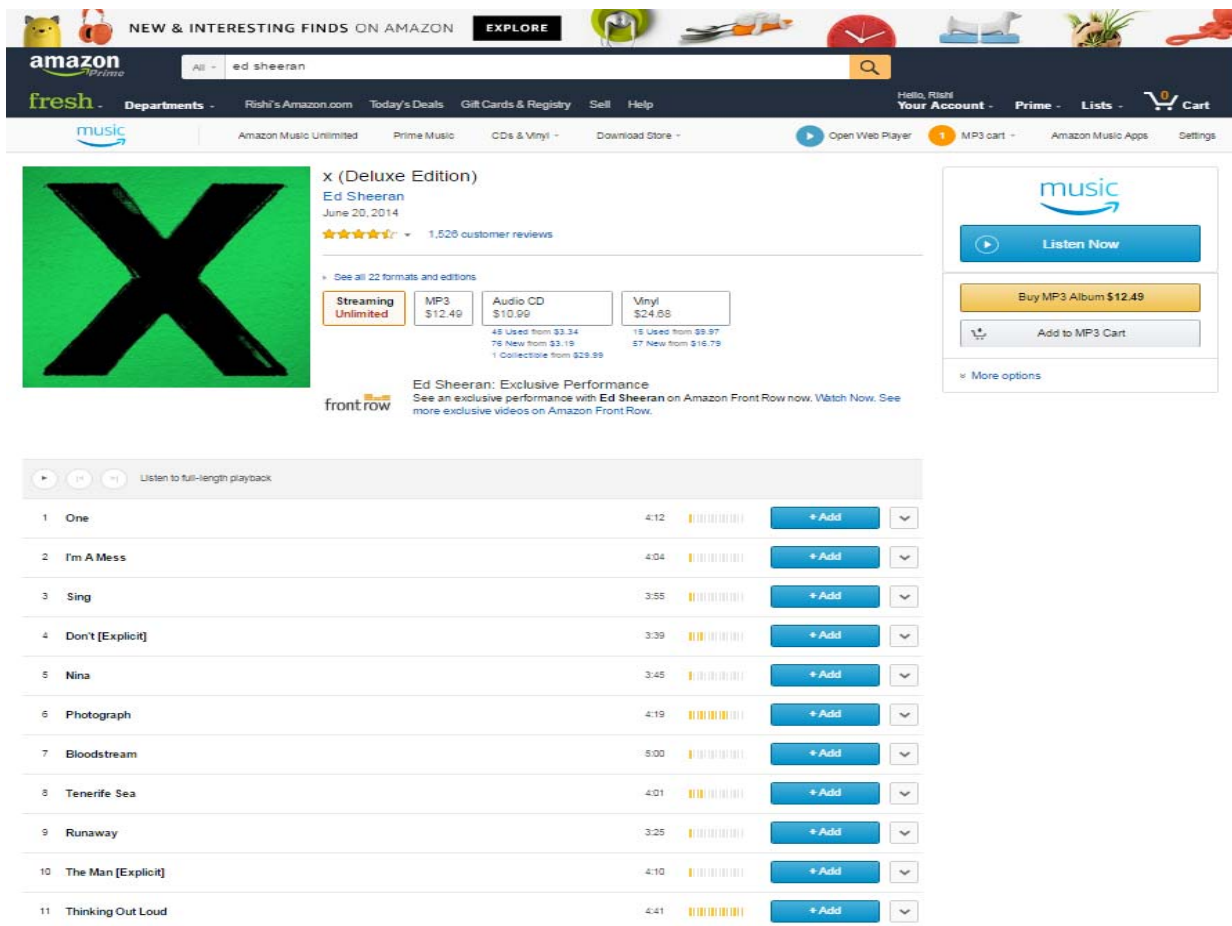
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13. Amazon launched its digital download store (Amazon MP3) in September 2007.

Amazon MP3 launched with a catalog of over 2 million tracks, the largest selection of *a la carte* DRM-free MP3s at the time. Today, Amazon MP3 offers customers access to tens of millions of tracks.

14. In addition, Amazon has now integrated its physical and digital downloads stores.

Thus, when a customer searches for an album, they are conveniently presented with all of the different formats in which an album is available.



The screenshot displays the Amazon Music interface for Ed Sheeran's album 'x (Deluxe Edition)'. The album cover features a large black 'X' on a green background. The page includes a search bar at the top with 'ed sheeran' entered, and navigation links for 'Amazon Music Unlimited', 'Prime Music', 'CDs & Vinyl', and 'Download Store'. The album details section shows a 4.5-star rating from 1,520 reviews and offers the album in four formats: Streaming Unlimited, MP3 (\$12.49), Audio CD (\$10.99), and Vinyl (\$24.98). A 'front row' exclusive performance is also highlighted. The tracklist consists of 11 songs, each with a duration, a progress indicator, and an '+ Add' button.

Track Number	Track Name	Duration	Progress	Action
1	One	4:12	Progress bar	+ Add
2	I'm A Mess	4:04	Progress bar	+ Add
3	Sing	3:55	Progress bar	+ Add
4	Don't [Explicit]	3:39	Progress bar	+ Add
5	Nina	3:45	Progress bar	+ Add
6	Photograph	4:19	Progress bar	+ Add
7	Bloodstream	5:00	Progress bar	+ Add
8	Tenerife Sea	4:01	Progress bar	+ Add
9	Runaway	3:25	Progress bar	+ Add
10	The Man [Explicit]	4:10	Progress bar	+ Add
11	Thinking Out Loud	4:41	Progress bar	+ Add

Fig. 2 – Amazon Music.²

² Screenshot of https://www.amazon.com/x-Deluxe-Ed-Sheeran/dp/B00JLJ0Y2U/ref=sr_1_1?ie=UTF8&qid=1477854709&sr=8-1&keywords=ed+sheeran (accessed on Oct. 30, 2016).

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15. Amazon's pricing generally ranges from \$0.69-\$1.29 per song and \$6.00-\$14.00 per album. Amazon's download store offers consumers the ability to listen to free 30-second previews of songs in the catalog. Amazon also collects and makes available customer reviews of the music in its catalog.

Locker Services

16. In July 2012, Amazon launched a scan-and-match music locker service, providing customers a fast and easy way to import their existing music collections into their Amazon libraries. Amazon's purchased content locker service stores all of a customer's music files purchased from Amazon free of charge. And if customers want to import a significant number of non-Amazon music files, Amazon's paid locker service enables them to import up to 250,000 tracks for a fee of \$24.99 per year.

17. In January 2013, Amazon enhanced its locker services with the launch of AutoRip—an innovative service that gives customers an MP3 version of any physical music that they purchase from Amazon (including purchases going back all the way to 1998). More than 50,000 albums were available for AutoRip at launch. Today, more than 250,000 vinyl, cassettes, and CD titles are AutoRip eligible.

Prime Music

18. Amazon further extended its digital music offerings with the launch of Prime Music in June of 2014. Prime Music was Amazon's first interactive streaming offering. Prime Music is an ad-free bundled subscription service offering on-demand interactive music streaming and limited downloads for offline playback. Prime Music offers a limited catalog of music; it launched with a catalog of more than 1 million songs and hundreds of playlists. Amazon later added algorithmically personalized stations to Prime Music.

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19. Today, Prime Music has a catalog of more than 2 million songs and offers customers thousands of different playlists and stations. Prime Music users can easily search for content by artist or song name, and in addition, users can see the most popular songs and playlists streaming on Prime Music at any given time.

20. Amazon has also invested in programmed content within Prime Music. Amazon curates over 2,000 playlists in Prime Music based on genre, mood, and activity, such as '90s One Hit Wonders, Happy and Upbeat, and Classical for Reading. Each playlist displays a track listing and the total runtime. Amazon also offers thousands of personalized stations in Prime Music.

21. In developing Prime Music, Amazon started by listening to our customers and working backwards to create a product that would meet their needs. Not surprisingly, one thing that almost everybody wants is access to great music. But Amazon also learned that, while people want access to music, most of them are not willing to pay \$10 per month or \$120 per year to get it. In addition, Amazon learned that, with free services, there are many things that get in the way of listening to music, like too many ads, limited playback options, and the fact that many free services are not available on a customer's mobile phone.

22. Thus, with Prime Music, Amazon set out to serve the customer who enjoys music but doesn't need access to a full catalog. This is not the customer who spends hundreds of dollars a year on music. In other words, Amazon built Prime Music for more casual or passive music listeners. This is a broad group, comprising more than [REDACTED] of Amazon's digital music customers who spend [REDACTED] on digital music with Amazon.³ It also includes the

³ Certain of the information reflected in my testimony is derived from various financial reports prepared by Amazon's Director of Finance, Kelly Brost. These reports are reflected in and

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█ of consumers who █

23. In order to serve these customers, Amazon chose to offer Prime Music to existing Amazon Prime members at no additional cost. This enabled Amazon to promote Prime Music to existing Prime members, many of whom were originally drawn to Prime by other valuable benefits, like free two-day shipping, or original video content. By doing so, Amazon reduced the friction for those customers who were unwilling to subscribe to a standalone streaming service or unfamiliar with streaming music altogether.

Amazon Music Unlimited

24. Amazon launched Amazon Music Unlimited (“Unlimited”) in October 2016. Unlimited is a full-catalog subscription service offering on-demand interactive streaming and limited downloads for offline playback. Unlimited has a catalog of tens of millions of songs. Like Prime Music, Unlimited offers customers thousands of curated playlists and personalized stations.

25. Like many other full-catalog subscription service offerings (e.g., Spotify Premium, Apple Music, Google Play All Access), an individual Unlimited subscription is priced at \$9.99 per month. Unlimited also has a discounted Amazon Prime member rate of \$7.99 per month, or \$79.00 per year. There is also a separate Echo plan (“Unlimited for Echo”) for \$3.99 per month that is available on a single Amazon Echo, Echo Dot, or Amazon Tap.

appended to the Written Direct Testimony of Kelly Brost (the “Testimony of Kelly Brost”) submitted concurrently herewith. See Testimony of Kelly Brost at ¶ 5, Exhibit 14.

⁴ Exhibit 1, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, █

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26. Amazon’s strategy in launching Unlimited is to serve music aficionados and more engaged music customers whose needs are not being met by Prime Music’s limited catalog. While these customers likely have a higher willingness to pay for a streaming service, they also represent a small portion of all consumers: [REDACTED]

27. Amazon has also made significant investments in voice capabilities for the Unlimited service, including investments in machine learning and in new types of metadata that enable natural language voice controls. These investments allow customers to request music even when they do not know the exact name of the song. For example, a customer can say “play the new song by Green Day” or “play the song that goes ‘I got my first real string.’” Customers can also make requests like “play happy reggae music” or “play the top rock songs from 1982.” Amazon believes these capabilities increase the audience for streaming services by making it much simpler and more intuitive for customers to interact with the service.

28. Amazon launched Unlimited for Echo to leverage these capabilities and serve more casual and passive music consumers who might not value the portability of the standard Unlimited tier, might not have previously considered subscribing to a standalone service, and likely have less willingness to pay. [REDACTED]

Amazon Apps

29. Amazon has developed multiple applications to allow customers to access all of Amazon’s music services on a wide range of devices. These applications allow customers to

⁵ See Testimony of Kelly Brost at ¶ 5, Exhibit 14.

⁶ Exhibit 1, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, [REDACTED]

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play music from web browsers, desktop applications, mobile phones, tablets, connected speakers, and other platforms, including certain smart TVs.

Alexa-Enabled Devices: Amazon Echo, Echo Dot, and Amazon Tap

30. Alexa is a cloud-based service that powers the Echo (introduced in 2014), the Dot, and the Tap (introduced in 2016). Third parties can also use the Alexa Voice Service to add voice-enabled experiences to connected products (e.g., the Triby).

31. Alexa is capable of voice interaction and music playback, can keep track of shopping and to-do lists, and can report the daily news, weather forecasts, traffic patterns, and sports scores and schedules. It can also define words, identify state capitals, and recite information from many webpages, like Wikipedia. Alexa is compatible with an increasing number of smart-home technology, like switches, power outlets, and thermostats.

32. The natural language interactions that characterize Amazon’s suite of Alexa-enabled devices have broadly increased the appeal and accessibility of digital music services. Asking Alexa to play your favorite song or shuffle a playlist is fun, easy, and engaging. As David Pogue, writing for Yahoo, noted in his review of the Echo: “Music is the killer app. You walk into the kitchen and ask for virtually any band, song, album, genre, or even activity (‘play some cooking music’)—and the music just starts. It’s as close as you’re going to get to owning the Star Trek computer.”⁷ Indeed, for the elderly and the disabled, such technology has streamlined and simplified the process of accessing music (along with many other things),

⁷ Exhibit 2, Pogue, David, *Amazon’s Echo Brings the ‘Star Trek’ Computer to Your Home* (Jul. 16, 2015), available at <https://www.yahoo.com/tech/amazons-echo-brings-the-star-trek-computer-to-124102850474.html>.

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transforming what was once a chore into a simple pleasure.⁸ Ultimately, with Alexa, Amazon is encouraging and enabling more people to listen to more music every day.

III. MAINTAINING THE EXISTING SERVICE CATEGORIES AND RATE STRUCTURES IS THE SUREST WAY TO ACHIEVE THE OBJECTIVES SET FORTH IN SECTION 803(b)(1).

30. I understand that the rates applicable under Section 115 must be calculated to achieve the following four objectives: “(A) to maximize the availability of creative works to the public; (B) to afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions; (C) to reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication; and (D) to minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.”⁹

31. Setting aside the broader need for comprehensive Section 115 reform, in my view preserving the existing service categories and rate structures (with a few minor adjustments) is the surest way to achieve these important objectives.

A. Preserving the existing service categories and rate structures will maximize the availability of creative works to the public.

1. The existing service categories and rate structures promote a diversity of offerings that work to expand the customer base for digital music.

⁸ See, e.g., Exhibit 3, O’Brien, Elizabeth, *Older adults buddy up with Amazon’s Alexa*, (Mar. 18, 2016), available at <http://www.marketwatch.com/story/older-adults-buddy-up-with-amazons-alexa-2016-03-18>; Exhibit 4, Rao, Venkat, *Amazon Echo: A Great Internet of Things (IOT) Device for People with Disabilities* (Feb. 29, 2016), available at <http://assistivetechologyblog.com/2016/02/amazon-echo-great-internet-of-things.html>.

⁹ 17 U.S.C. § 801(b)(1).

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32. In an industry where customers have always had varying consumption preferences, an assortment of offerings at different prices serves to expand the customer base and maximize the availability of fully-licensed digital music to the listening public.

33. In the past, in a retail environment defined by physical, and later, permanent digital download sales, customers with differing consumption preferences could always choose to purchase exactly as much music as they wanted, be it one album or five albums or ten albums. During that time, Amazon was able to serve all customer segments with its retail music store. But with customers now migrating to streaming offerings in droves, Amazon—and the digital music industry broadly—needs diversified, stratified offerings that appeal to customers of all different purchasing preferences.

34. The existing service categories and rate structures are designed to foster just such a diverse array of music offerings. By carving out distinct categories with unique rates (e.g., standalone portable subscription service (§ 385.13(a)(3)), standalone non-portable subscription service – streaming only (§ 385.13(a)(1)), bundled subscription services (§ 385.13(a)(4))), the existing scheme recognizes that different service types enable different value propositions that appeal to unique segments of customers and also provide different returns to rightsholders based on the nature of the offering.

35. Indeed, as Amazon has transitioned from retailer to streaming service provider, it has relied on the existing regulatory scheme as a guide in developing a tiered offering designed to appeal to the full range of customer segments. In particular, Amazon offers the standard Unlimited tier to serve our most engaged music customers—those who value having access to a full catalog on a broad range of devices. [REDACTED]

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[REDACTED]

Amazon also offers two additional streaming services—each with its own distinct approach—to meet the needs of a much broader segment of mainstream music listeners, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] First, Amazon offers Prime Music, which brings a limited catalog to existing Amazon Prime members at no additional cost, reducing the friction for these customers to engage with a streaming service. Second, Amazon offers Unlimited for Echo, which features a full catalog for only \$3.99 per month, providing an entry point into the standalone streaming segment [REDACTED] for those who do not need the portability that comes with the standard tier.

36. Available data shows that Amazon’s diverse offerings are, in fact, appealing to new segments of customers, thereby expanding the universe of digital music listeners. Take Prime Music, for example: the average Prime Music user [REDACTED]

[REDACTED] and the median Prime Music user is [REDACTED]

[REDACTED] By contrast, available data indicates that the average Spotify Premium subscriber [REDACTED]

[REDACTED] In other words, the data indicates that Prime Music is reaching customers that do not listen to enough music to justify the cost of a full-catalog subscription service at \$9.99 per month, but who nevertheless are interested in streaming

¹⁰ See Testimony of Kelly Brost at ¶ 5, Exhibit 14.

¹¹ Exhibit 1, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, p. 7-8.

¹² See Testimony of Kelly Brost at ¶ 6, Exhibit 15.

¹³ See Testimony of Kelly Brost at ¶ 10, Exhibit 19.

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2. [REDACTED]

38. A scheme that collapses the existing service categories, on the other hand—like the one-size-fits-all approach set forth by the National Music Publishers’ Association (“NMPA”) and the Nashville Songwriters Association International (“NSAI”) (together, the “Rights Owners”) in their Initial Rate Proposal—would have a direct impact on the diversity of Amazon’s (and, in all likelihood, other DSPs’) music offerings, resulting in less choice, fewer engaged customers, decreased royalty payments to rightsholders, and ultimately, less music available to the listening public.

39. The Rights Owners paint their Initial Rate Proposal— [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]—as “offering agnostic.” But the better descriptor might be “offering determinative,” as [REDACTED]
[REDACTED] Further, even offering a full-catalog service under this approach would be problematic given the unsustainable rates proposed by the Rights Holders.¹⁷

¹⁷ [REDACTED]

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40. As a practical matter, a service like Amazon’s standalone non-portable subscription – streaming only service offering (Unlimited for Echo)—which retails at \$3.99 per month and which offers significantly reduced functionality relative to a portable subscription service—would simply not be viable without a specific rate structure that reflects the reduced functionality of the offering. [REDACTED]

[REDACTED]

41. Similarly, a service like Amazon’s bundled subscription service offering (Prime Music)—which has a limited catalog that is less than 10% the size of other full-catalog service offerings (2 million songs compared to over 30 million songs)—would also not be viable under the Rights Owners’ proposed scheme. [REDACTED]

[REDACTED]

[REDACTED]

¹⁸ See, Testimony of Kelly Brost at ¶ 9, Exhibit 18.
¹⁹ See, Testimony of Kelly Brost at ¶ 9, Exhibit 18.

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42. Indeed, such a proposal would essentially force all services toward a \$9.99 per month business model. Critically, however, as noted above, there is ample data suggesting that many consumers are simply unwilling to spend \$9.99 per month on music.²⁰

43. Thus, while the existing regulatory scheme recognizes both the economic realities underpinning the diverse array of services that currently populate the digital music space *and* the broader benefits that such services bestow on all industry participants, [REDACTED]

[REDACTED]

3. [REDACTED]

44. [REDACTED]

[REDACTED]

45. [REDACTED]

[REDACTED]—would be a major setback for all interested parties. As an initial matter, Amazon’s investments would be lost, and its relationships with the [REDACTED] active users who have come to rely on those

²⁰ See ¶¶ 22, 26, 28, 35.

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services severely damaged.²¹ In addition, as noted above, [REDACTED]

[REDACTED] Thus, without options like Prime Music and Unlimited for Echo, many of these customers would be unable to find a streaming service that meets their needs. In other words, fewer choices leads to fewer engaged customers ultimately consuming less music. And less music consumption is bad for music fans, DSPs, and rightsholders alike.

46. Moreover, such an outcome would surely deter Amazon from making further investments in digital music. Companies like Amazon need continuity to make forward-looking business decisions, and if they are to be subjected to significant uncertainty every handful of years by shifting regulatory schemes, they will have no choice but to shift investment away from digital music.

47. A significant reduction in investment would, in turn, surely result in reduced innovation. As detailed above, Amazon has long prided itself on innovating within the digital music space, from its creation of AutoRip, to its introduction of Prime Music, to its more recent introduction of various Alexa-enabled devices that have changed the way that consumers interact with digital music. In the absence of continued investment, however, Amazon would be unable to drive similar innovation in the future.

48. Critically, the digital music industry relies almost entirely on DSPs to innovate. As a result, any reduction in innovation—particularly when effected on an industry-wide basis—would undermine the growth of the entire digital music ecosystem, further limiting the availability of creative works to the public.

²¹ See generally [REDACTED]

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B. Preserving the existing service categories and rate structures will afford rightsholders a fair return and DSPs a fair income under existing economic conditions.

1. Though imperfect, the existing regulatory scheme is workable.

49. As explained above, the existing service categories and rate structures are designed to foster a diverse array of music offerings, thereby expanding the customer base for digital music along with the concomitant revenue pool. And though the existing service categories and rate structures might not be perfect, they are serviceable.

50. The conventional criticism that the existing regulatory scheme is too complex is misplaced. To be sure, the existing service categories and rate structures are not simple, but there can be no question that rightsholders would be satisfied with an equally complex scheme that resulted in higher royalty payments (and likewise, that DSPs would be content with an equally complex scheme that resulted in lower royalty payments).

51. Notably, the existing regulatory structure has allowed Amazon to build a multi-faceted digital music business comprising a purchased content locker service, a paid locker service, a bundled subscription service (Prime Music), a standalone portable subscription service (Unlimited), and a standalone non-portable subscription service (Unlimited for Echo). And as discussed above, data indicates that Amazon's diverse offerings are broadening the industry's customer base and bringing more music to more listeners.²²

52. In addition, the Rights Owners themselves recently endorsed the economic underpinnings of the existing regulatory scheme when they settled with all three major record labels, agreeing that the royalty rates and terms presently set forth in 37 C.F.R. Part 385 Subpart

²² See ¶¶ 36-37.

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A should be continued for the rate period now at issue.²³ Notably, if the Rights Owners are willing to rollover the Subpart A rates for a declining business where DSP investment has slowed to a crawl, they should certainly be willing to do the same for Subpart B rates given the substantial investments that DSPs are currently making in the streaming space.

53. And perhaps most importantly, industry data looks promising. According to the RIAA, paid subscriptions to streaming services were up 40% last year—from an annual average of 7.7 million in 2014 to 10.8 million in 2015—driving paid subscription revenues up from \$800 million in 2014 to \$1.2 billion in 2015.²⁴ Total U.S. digital music revenues were also up, from \$4.5 billion in 2014 to nearly \$4.8 billion in 2015. Moreover, those trends look to be accelerating in 2016, with paid subscriptions to streaming services up 101%—from an average of 9.1 million in the first half of 2015 to 18.3 million in the first half of 2016—driving paid subscription revenues up from \$480 million in the first half of 2015 to more than \$1 billion in the first half of 2016. Total U.S. digital music revenues are also up, from almost \$2.3 billion in the first half of 2015 to almost \$2.7 billion in the first half of 2016.²⁵ In addition, according to Nielsen’s 2016 Nielsen Music Mid-Year U.S. Report, total streams are up 97.4%, from 57.5

²³ Exhibit 7, Christman, Ed, *Two of Three Majors Reach Settlement with Publishers on Digital Sales Rates* (June 8, 2016), available at <http://www.billboard.com/articles/business/7400362/universal-music-warner-music-nmpa-settlement-mechanical-sales-rate>, Exhibit 8, Legrand, Emmanuel, *Sony Music comes to agreement with US publishers and songwriters on mechanical rates* (Oct. 28, 2016), available at <http://www.musicweek.com/publishing/read/sony-music-comes-to-agreement-with-us-publishers-and-songwriters-on-mechanical-rates/066382>.

²⁴ Exhibit 6, Friedlander, Joshua P, NEWS AND NOTES ON 2015 RIAA SHIPMENT AND REVENUE STATISTICS, available at <https://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf>.

²⁵ Exhibit 9, Friedlander, Joshua P, NEWS AND NOTES ON 2016 MID-YEAR RIAA MUSIC SHIPMENT AND REVENUE STATISTICS, available at http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf.

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billion in the first half of 2015 to 113.6 billion in the first half of 2016.²⁶ Total U.S. digital music consumption is also up nearly 15%, from 194.6 million units in the first half of 2015 to 223.5 million units in the first half of 2016.²⁷

2. Increasing rates threatens to deny DSPs a fair income (and rightsholders a fair return) under existing economic conditions.

54. All of that being said, there is also no question that the balance that has allowed the existing regulatory scheme to function in its current form is a delicate one. DSPs' costs are already high and continuing to climb.²⁸ As a result, even at the current rates, DSPs are struggling.²⁹ Increasing rates will only exacerbate the problem, threatening to deny DSPs like Amazon a fair income under existing economic conditions.³⁰ And as DSPs suffer, so to do rightsholders (and music fans). Thus, if there is to be any change to the current rates, they should be decreased, not increased.

55. Amazon has invested extensively to build its digital-music business. Indeed, each new service launch requires significant research, business planning, technical development, content acquisition (including license negotiations and Notice of Intent-related efforts), legal compliance, advertising, marketing, and promotion. And these are just the costs necessary to get a service off the ground; there are separate costs associated with operating a service and continually modifying and updating it, including costs related to publishing administration, lyric

²⁶ See Exhibit 10, 2016 Nielsen Music Mid-Year U.S. Report, at p. 2.

²⁷ *Id.*

²⁸ Amazon Digital Services, LLC, Google Inc., Spotify USA Inc., and Pandora are jointly presenting the expert testimony of David Pakman (the "Testimony of David B. Pakman"). In lieu of submitting four identical copies of such testimony, Amazon directs the Judges to Google Inc.'s Written Direct Statement, which contains the Testimony of David B. Pakman. See Testimony of David B. Pakman, at p. 8-9.

²⁹ See Testimony of David B. Pakman, at p. 7-8.

³⁰ See Testimony of David B. Pakman, at p. 18.

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licensing, patent and software licensing, music curation and analysis, personnel, advertising, marketing, and promotion. There are also costs tied to the development of new music distribution systems and related technologies, like Amazon's investment in machine learning and metadata to support the voice user interface featured in its popular line of Alexa-enabled devices. Collectively, Amazon has invested [REDACTED] [REDACTED] over the last 5 years to offer its digital music services.³¹

56. Moreover, costs are only increasing. The prevailing shift from digital download stores to streaming services has introduced a number of new and significant costs for DSPs like Amazon related to investments in personalized playlist and station programming and, more recently, voice capabilities. These investments support important functionalities that help make streaming services accessible to more consumers, but they are expensive.

57. Increasing rates would only make things worse. DSPs are already being squeezed by high royalty payments, which continue to represent an overwhelming amount of the costs of goods sold ("COGS") in the digital music business.³² As a result, there is already too high of a failure rate for digital music services and a lack of meaningful investment in these services relative to other digital businesses.³³ Suboptimal investment, in turn, is stifling growth and innovation in the industry and depressing both revenues and the total royalty payments to rightsholders.³⁴ As a result, if royalty rates are to be adjusted, they should be decreased, not increased.

³¹ See, Testimony of Kelly Brost at ¶ 8, Exhibit 17.

³² See Testimony of David B. Pakman, at p. 5.

³³ See Testimony of David B. Pakman, at p. 6.

³⁴ See Testimony of David B. Pakman, at p. 6.

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C. The existing service categories and rate structures already roughly reflect the relative roles of rightsholders and DSPs with respect to creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets and media.

1. The existing regulatory scheme was born by carefully negotiated agreement.

58. Importantly, the existing Subpart B and C service categories and rate structures represent the collective efforts of numerous industry participants over more than 10 years and two CRB rate-setting proceedings, both of which were resolved by negotiated settlement among the various participants (many of whom are also participating in this proceeding).

59. Indeed, the Phonorecords I proceeding saw contributions from 14 different participants, including the NMPA and the NSAI—both participants in the current proceeding—and the Digital Media Association (“DiMA”)—the principal members of which (including Amazon, Apple, Google, Pandora, and Spotify) are also participants in the current proceeding.³⁵ Similarly, the Phonorecords II proceeding saw contributions from seven participants, again including the NMPA, the NSAI, and DiMA.

60. Moreover, as noted above, the Rights Owners recently ratified the economic foundation of the existing regulatory scheme when they settled with the major record labels and agreed to rollover the Subpart A rates for another five years.³⁶

61. In addition, the current regulatory scheme is continuing to facilitate industry expansion: as detailed more completely above, paid subscriptions to streaming services, paid

³⁵ Of course, a number of the participants from Phonorecords I—including America Online, Inc. and Yahoo! Inc.—are no longer in the digital music business, unable to survive even under the existing rate structure.

³⁶ See ¶ 52.

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subscription revenues, total streams, total digital music consumption, and total digital music revenues are all on the rise over the past two years.³⁷

62. In other words, the existing service categories and rate structures remain effective governors of the digital music space, and while there can be no question that the industry has changed and will continue to do so, it is also clear—for all of the reasons outlined above—that the present scheme has already been carefully crafted to reflect the relative roles of rightsholders and DSPs.

2. If the existing regulatory scheme is to be altered to more accurately reflect the relative roles of rightsholders and DSPs, rates should be decreased.

63. Since the Phonorecords II settlement, the digital music industry has evolved from one comprised almost exclusively of download stores to one characterized by a diverse array of streaming offerings. With that shift, DSPs' contributions to the distribution of digital music have expanded enormously while rightsholders' have remained fixed.

64. In order to build and operate a digital download store (like Amazon MP3), DSPs constructed websites, merchandised music, and fulfilled some editorial roles. Building and operating a streaming offering (like Unlimited), on the other hand, is an entirely different endeavor. Amazon has made significant investments to build its streaming services, including investments in streaming-related technologies, curated playlists, personalized stations and recommendations to facilitate music discovery, expanded availability for multiple platforms, and functionalities like offline playback and synchronized lyrics, among many others.

65. In 2012—prior to Amazon's initial investment into streaming music services—Amazon incurred [REDACTED]

³⁷ See ¶ 53.

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[REDACTED] In 2014—the year that Amazon launched Prime Music—this number [REDACTED] And in 2016—following the launch of Unlimited and Unlimited for Echo—we expect the number [REDACTED]

[REDACTED] In other words, over the last five years, Amazon’s headcount costs [REDACTED]

[REDACTED] In addition, costs related to technology infrastructure, including computer and storage costs, marketing, and external services [REDACTED]

66. Meanwhile, rightsholders contributions essentially remain unchanged.

67. As such, if the existing regulatory scheme is to be altered, rates should be decreased to more accurately reflect the economic realities of the streaming era.

D. Preserving the existing service categories and rate structures will minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

68. Amazon built its digital music business to fit within the current regulatory framework, and a significant change would be exceedingly disruptive to Amazon, its customers, and the broader digital music industry.

69. Today’s industry players—many of which participated in the Phonorecords I and II settlements—have now been operating under the same basic licensing scheme for as long as a decade. And it was during this decade that the digital music landscape truly took shape and matured into the approximately \$7 billion industry that we know today.³⁹ As a result, it should

³⁸ See Testimony of Kelly Brost at ¶ 8, Exhibit 17.

³⁹ See Exhibit 11, IFPI Global Music Report 2016, available at <http://www.ifpi.org/downloads/GMR2016.pdf>.

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come as no surprise that some of those players built their businesses in reliance on the rates embodied in the current regulatory scheme.

70. Amazon is a key example of an industry player that deliberately conceived of and designed its digital music business—including its Prime Music and Unlimited services—to fit within the specific service categories and rate structures in the existing regulatory scheme.

71. For example, in 2014, Amazon considered and relied on the bundled subscription service definition when it determined to build and launch its Prime Music service.⁴⁰ Indeed, it was the very language reflected in Sections 385.11, 385.12, and 385.13(a)(4) that allowed Amazon to bundle Prime Music with Amazon Prime, enabling Amazon to bring a limited catalog of music [REDACTED]

72. More recently, in 2016, Amazon considered and relied on the standalone portable subscription service and standalone non-portable subscription service – streaming only definitions when it determined to build and launch both of its Unlimited services.⁴¹ Indeed, it was the very language reflected in Sections 385.11, 385.12, 385.13(a)(1), and 385.13(a)(3) that allowed Amazon to implement both a portable full-catalog service that retails at \$9.99 per month *and* a separate service that, when accessed via the Amazon Echo, offers a full-catalog of tracks for only \$3.99 per month—less than half the price of most other full-catalog service offerings.

73. For this reason, a significant departure from the current regulatory scheme would be seriously disruptive to Amazon’s digital-music business and to the customers who use Amazon’s unique services. As detailed above, [REDACTED]

⁴⁰ 37 C.F.R. §§ 385.11-13.

⁴¹ 37 C.F.R. §§ 385.11-13.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

74. More critically, such a departure would be disruptive to the broader digital-music industry. As an initial matter, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

IV. AMAZON’S PROPOSED ADJUSTMENTS TO THE EXISTING REGULATORY SCHEME SERVE TO FURTHER THE OBJECTIVES IN SECTION 803(b)(1).

A. Clarification to the Per Subscriber Minimum and/or Subscriber-Based Royalty Floor for Family Subscription Plans

75. First, with regard to family subscription plans, the regulations should include language to make clear that the per subscriber minimum and/or subscriber-based royalty floor for family plans applies on an account level (and does not apply to each individual user associated with the family plan subscription). Because the regulations are not completely clear on this point, given market pricing, the per subscriber minimum and/or subscriber-based royalty floor for a family account should be equal to 150% of the per subscriber minimum and/or subscriber-based royalty floor for an individual account.

⁴² See ¶¶ 40-41.

⁴³ See ¶¶ 40-41.

⁴⁴ See ¶¶ 38-43.

⁴⁵ See ¶¶ 44-48.

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76. Family subscription plans provide a financial boon for the entire ecosystem: at present, the industry has coalesced around 50% premium pricing for family subscription plans, so if a standard individual subscription plan costs \$9.99 per-month, a family subscription plan costs \$14.99 per-month. Twenty years ago, a family of four probably would not have purchased four copies of the same album; instead, they all would have shared a single copy. Similarly, today, it is unlikely that a family of four is going to purchase four separate streaming service subscription plans to the tune of \$40 per month, particularly with the widespread availability of fully licensed (and unlicensed) free music. So everyone wins when the family pays \$14.99 instead of \$9.99.

77. As drafted, the existing regulations require payment of a per subscriber minimum or subscriber-based royalty floor for each “subscriber,” whether or not that subscriber pays for an individual plan or a family plan.⁴⁶ “Subscriber” is not defined in the regulations, but Amazon’s proposal to clarify DSPs payment obligations would simply ensure that everyone gets their fair share (and not more) of any additional revenue generated by the sale of a family subscription plan.

78. Under Amazon’s proposal, when DSPs like Amazon receive a 50% premium for a family subscription plan, both master-side rightsholders (by way of direct deals) and publishing-side rightsholders (by way of a percentage of revenue or, in the alternative, a per subscriber minimum or subscriber-based royalty floor that is 50% higher than that for an individual subscription plan) would get the same 50% premium. And if DSPs choose to sell family plans at more than a 50% premium, rightsholders would also be guaranteed to share in any additional

⁴⁶ See, e.g., “The subscriber-based royalty floor . . . is the aggregate amount of 50 cents per subscriber per month.” 37 C.F.R. § 385.13(a)(3).

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revenue on a percentage basis (as the per subscriber minimum and subscriber-based royalty floor would not be triggered under such pricing conditions).

79. If, on the other hand, DSPs like Amazon were made to pay a per subscriber minimum or subscriber-based royalty floor for each individual user associated with a family subscription plan, publishing-side rightsholders would receive far more than their fair share—specifically, a 100% premium for a family of two, a 300% premium for a family of four, and a 500% premium for a family of six. Such an outcome would be unfair and untenable. Amazon contends this is not an appropriate interpretation under the current regulations, and proposes an amendment to affirm that statutory licenses will reflect widespread industry practice.

80. In other words, Amazon’s proposal ensures that DSPs will continue to be able to offer family subscription plans—an outcome that benefits the entire digital music industry. After all, family subscription plans expose more people to more music, and as parents share music with their children and teach them about today’s high-quality service offerings, it only increases the likelihood that those children will continue to use (and pay for) such services as adults. This, in turn, grows the pool of potential consumers of digital music and ultimately maximizes the availability of creative works to the public.

B. Discounts to the Per Subscriber Minimum and Subscriber-Based Royalty Floor for Student Subscription Plans

81. Second, with regard to student subscription plans, the statute should include a discount to the per subscriber minimum and subscriber-based royalty floor of 50%.

82. Student subscription plans are an important customer acquisition tool. Twenty years ago, students were purchasing physical music like tapes and CDs in record stores. Today, however, the same demographic is consuming music online—as a recent study by the Music

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Business Association found, 56% of 15-to-19 year-olds discover music online via YouTube.⁴⁷ And the specter of digital piracy still looms.⁴⁸ Discounted student subscription plans allow DSPs like Amazon to serve these customers, thereby converting non-paying listeners to paying listeners and, at the same time, teaching them to respect the value of music at an early age. This, in turn, benefits rightsholders by way of increased royalties now and in the future.

83. In other words, student subscription plans fuel growth in the digital music industry, maximizing the availability of creative works to the public and benefiting the entire digital music ecosystem. As such, rightsholders should encourage their use and share in their cost via a discounted per subscriber minimum and subscriber-based royalty floor, ensuring that both rightsholders and DSPs get a fair return for their respective contributions.

C. Discounts to the Subscriber-Based Royalty Floor for Annual Subscription Plans

84. Third, with regard to annual subscription plans, the statute should include a discount to the per subscriber minimum and subscriber-based royalty floor of 16.67%.

85. Annual subscription plans are an important customer-retention tool. Discounted annual subscription plans provide an incentive to commit to long-term subscriptions, increasing the likelihood that customers renew their subscriptions and decreasing the likelihood that they churn out of a service. They also benefit rightsholders through increased royalties and committed music fans through discounted pricing.

⁴⁷ Exhibit 12, Music Business Association, *Music Biz/LOOP Study: Millennials Turn from Radio to Embrace Streaming* (Jul. 12, 2016).

⁴⁸ Exhibit 13, Resnikoff, Paul, *How Music Piracy is Completely Changing in 2016* (May 5, 2016), available at <http://www.digitalmusicnews.com/2016/05/05/what-music-piracy-really-looks-like/>.

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86. In other words, annual subscription plans encourage customer retention, thereby maximizing the availability of creative works to the public and benefiting the broader digital music industry. As such, as with student subscription plans, rightsholders should encourage their use and share in their cost via a discounted per subscriber minimum and subscriber-based royalty floor, ensuring that both rightsholders and DSPs get a fair return for their respective contributions.

D. Royalty Deductions for App Store and Carrier Billing Fees

87. Finally, the regulations should be revised to permit royalty calculations to be reduced by the amount of app store and carrier billing fees.

88. At present, certain app store providers allow consumers to make digital music-related purchases, including streaming service subscription purchases, through their app stores as well as through certain specific apps (known as “in-app purchases”). And a number of mobile carriers allow consumers to make similar purchases via carrier billing—an option that allows a consumer to add the cost of a purchase to their next mobile phone bill. There is no question that app-store and carrier billing offerings are unique distribution channels that can serve to expand the industry and thereby maximize the availability of creative works to the public. As such, they benefit customers, DSPs, and rightsholders alike. For this reason, DSPs and rightsholders should share in the associated costs.

89. However, certain app store providers take a cut of all app store-related purchases, and mobile phone carriers also charge similar fees, neither of which are deducted from regulatory royalty calculations. As a result, DSPs are being made to pay royalties on revenue that they never see, bearing the whole financial burden of participating in these unique,

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expansive distribution channels while rightsholders share equally in the rewards. The better, more equitable approach is to permit royalty calculations to be reduced by the amount of app store and carrier billing fees, capped at 15%, thereby ensuring that both rightsholders and DSPs get a fair return for their respective contributions.

V. CONCLUSION

90. It is my firmly held belief that preservation of the existing service categories and rate structures—with the few small changes outlined above—is the surest way to achieve the objectives set forth in Section 803(b)(1), maximizing the availability of creative works to the public, providing rightsholders a fair return and copyright users a fair income, reflecting the relative roles of rightsholders and copyright users, and minimizing any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

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


In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING AND
DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

DECLARATION OF RISHI MIRCHANDANI

I, Rishi Mirchandani, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information and belief. Executed this 1st day of November, 2016 in Seattle, Washington.



Rishi Mirchandani

RESTRICTED DOCUMENT

Subject to Protective Order in Docket No. 16-CRB-0003-PR
(2018-2022)

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Amazon's Echo Brings the 'Star Trek' Computer to Your Home

David Pogue
 Yahoo Tech • July 16, 2015
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How often does a truly new electronics category come along? The first television. The Walkman. The iPhone. The iPad. Each time, the industry spends years making copycats and refinements, but the original concept doesn't change much. Frankly, Amazon is the *last* company I would have expected to come up with the next completely new idea. I mean, its hardware ventures so far have been very much in the Us Too department. E-book readers, touchscreen phones, tablets — we'd seen all that before. But not the [Amazon Echo](#), which just became available for sale to the public (following an invitation-only, testing-the-waters release last November). Somehow, nobody's thought of this before.

AMAZON EX. 2



The big idea: Create a voice-activated smartphone assistant like Siri or Google Now — but take it *off the phone*. Make it a smart, always-listening machine in your house. Engineer it to understand you from across the room, hands free, as you're cooking, reading, doing homework, discussing, living. Make it good enough to be just like the conversational, environmental computers on *Star Trek* or in the *Iron Man* movies.

That's what the Amazon Echo attempts to be. And you know what? I've never been so excited about something that did so little.

Meet the Echo

If you wanted to make a conversational computer for the home, what should it look like? Because Amazon was creating the *first one* of something, there was no existing design model, no accepted size or shape.

So Amazon went with a nine-inch-tall, sleek black metal cylinder. And why not? It works. It fades into the clutter of your house, along with whatever else is on your bookcase or shelving unit or kitchen counter, just as it should.

The bottom part is perforated, hinting at the speakers inside. The top disc rotates — it's a giant volume knob — and lights up in various cool LED colors and patterns to telegraph what the thing is doing. On the very top is a power button and a mute button that means both "stop speaking" and "stop listening."

Read More

The Echo is indeed listening all the time to the conversation in your home, but it doesn't *pay attention* until you say, "Alexa." (You can change the attention word to "Amazon," but that's your only option. It would be so much more fun if you could make it any name you liked — say, "Hal," "Jarvis," or "Skynet." But you can't do that. Yet, anyway.)

Why is the product called Amazon Echo, but its starter name is Alexa?

Anyway, once you say "Alexa," the Echo is just like Siri, Cortana, or Google Now. You ask things in conversational English, and it answers in a clear, fluid, natural-sounding woman's voice. Actually, Alexa sounds much *better* than Siri, Cortana, or Google Now. In part, that's because she's being projected by a 2.5-inch woofer and a 2.0-inch tweeter instead of a phone speaker the size of a fingernail clipping.

The most amazing engineering achievement is the Echo's ability to understand commands in terrible acoustic conditions. It understands you whether you're close to it or a whole room away. It understands every member of the family without training. It understands you when there's background noise. It even understands you *over the music it's playing*.

Above all, it understands you despite the natural echoes and reverberations of a room. Amazon says that's because it has an array of seven microphones on top. Apparently, even though they're just inches apart, they can measure the relatively delayed arrivals of incoming sound waves from your voice, and thereby cancel out any echo.

Now, the Echo doesn't understand you *every* time. If you ask something beyond its limited circle of commands, you get either a beep or a "Sorry, I can't find the answer to the question I heard"-type message. And sometimes it mis-hears you completely. (That situation crops up most often when you're ordering a certain song or band to play.)

But considering the fact that your voice commands have to be transmitted to the mother ship (Amazon's computers) and back across the Internet, the accuracy and speed of Echo's responses are really impressive.

Oh, that's right: Your recorded commands are collected for study by Amazon, for the purposes of improving Echo's recognition skills.

Amazon says that these recordings are *not* anonymous, and they're not deleted unless you delete them. You can delete these recordings yourself, [either one at a time or all at once](#) (but that "may degrade your experience using Amazon Echo").

In short, the easily spooked should not buy an Amazon Echo.

What Can I Say?

At 6 months old, the Echo isn't nearly as capable as, say, Siri; it doesn't recognize as many commands or do as many things.

But Amazon promises that the Echo's talents will rapidly expand. And indeed, the number of requests the device can handle has already doubled since its early adopter beginnings six months ago.

Here's what the Echo responds to, in order of usefulness:

"Alexa, play Billy Joel." Music is the killer app. You walk into the kitchen and ask for virtually any band, song, album, genre, or even activity ("play some cooking music") — and the music just starts. It's as close as you're going to get to owning the *Star Trek* computer. This feature works best if you're an [Amazon Prime member \(\\$100 a year\)](#), because it gives you instant access to a million songs, plus thousands of playlists created by your fellow members.

If you're not a Prime member (or even if you are), you can also request any of the personalized radio stations you've created on a Pandora or iHeartRadio account (free or paid). "Play my Coldplay channel from Pandora," you can say. [Here's what else you can say](#).

You can also upload 250 of your own song files to Amazon, to play upon vocal command.

Spotify and Apple Music are more limited; they're not integrated with the Echo (yet, says Amazon). For services like these, you're supposed to use the Echo as a glorified wireless Bluetooth speaker for your phone.

You start by saying, "Alexa, connect my phone," which starts directing playback to the Echo instead of your phone's speaker. Then you open the music app (Spotify or whatever) on your phone. From here, you can command playback by voice, without needing your phone: "Play," "Next," "Previous," "Resume," "Softer," "Louder," and so on.

When music plays, you can adjust the volume by voice, buy the song by voice, or say "Alexa, thumbs up" to "like" the song (for Pandora, iHeartRadio, and Prime Music).

"Alexa, play WCBS." You can also request any radio station in the country, just by asking for it. That's a feature of [TuneIn.com](#), which is built right into the Echo and doesn't require an account or setup. It's the best.

"Alexa, what's the news?" Alexa instantly begins playing NPR's latest headline summary. Using the Echo app on your phone, you can also turn on the option to request the news from the BBC, ESPN, the Economist, or TMZ.

"Alexa, how's the traffic?" Once you've entered your home and work addresses in the phone app, Alexa can tell you exactly how many minutes your commute will be if you leave now.

"Alexa, what's the weather in Dallas this weekend?" As you'd expect.

"Alexa, read 'The Casual Vacancy.'" If you've bought an audio book from Audible, the Echo begins playing your most recent book. It picks up where you stopped before, even if you were listening to it on a different device.

"Alexa, wake me up at 7:20 a.m." The Echo is rock-solid on alarms and timers. (If Echo is in the kitchen, you'll use "Set a timer for 20 minutes" a lot. One night, my wife, with no idea if it would work, said, "Alexa, how much time is left on my timer?" — and bingo, Alexa answered. It was awesome.)

"Alexa, how far is it from Chicago to Tampa?" Alexa is *really* good at facts. She'll convert units for you, give you historical or geographical facts, calculate the days of the week for dates, fill you in on movie and music trivia, and on and on. Same kind of thing Siri, Cortana, and Google Now do. [Here are a few examples](#).

She knows sports scores and schedules, too. ("When do the Giants play next?")

"Alexa: Wikipedia 'The Rolling Stones.'" This command reads the first couple of lines from the corresponding Wikipedia entry.

"Alexa, put nutmeg on my shopping list." Alexa doesn't buy anything without your confirmation. But she will put things onto a shopping list that's maintained in the Echo app on your phone. Same thing with To Do items: "Put 'Paint the living room' on my To Do list."

"Alexa, reorder cat food." You *can* buy stuff by voice — *if* you've previously bought them from Amazon. Alexa describes, aloud, any matching item from your order history, tells you price, and asks if you want to go ahead and order it. For things you order often, it's pretty cool. (If you make a mistake, you can return the stuff for free. And if you have mischievous teenagers in the house, you can also disable this feature, or require a spoken password.)

"Alexa, how do you spell fluorescent?" She's a great dictionary. She'll also define any word for you.

“Alexa, turn off the living-room lights.” In one of Amazon's recent feature updates, the Echo gained the ability to control home-automation gear from Wink, Belkin, and Philips (that is, the Philips Hue light bulbs). Here's the [complete list](#) of compatible gear. Once you've set all this up, you can use your voice to control lights, light switches, and — here's the limitless part — power outlets. I tried it with a couple of Belkin WeMo Internet-controllable outlets, and it was wild.

“Alexa, when's my next appointment?” You can ask various things about your Google calendar, once you've told the Echo app your Google account details. You cannot, however, create, delete, or move appointments by voice, as you can with Siri; you can only look things up. (“What's on my calendar for Tuesday?”)

“Alexa, tell me a joke” quickly became a favorite command in our household of kids. She's always good for a short, painful pun or two (“Why don't bicycles wake up early? They're two-tired”), but now and then she gets the adults laughing. (“How many surrealists does it take to change a light bulb? Two. One to hold the giraffe, and the other to fill the bathtub with brightly colored machine tools.”)

Alexa's Personality

Amazon has put a lot of work into giving Alexa witty responses to silly questions, just like Siri or Cortana — especially when you feed her movie quotes. For example:

- You say: “Beam me up.” (She says: “At warp speed, Captain? The engines will never take it!”)
- “Which came first: The chicken or the egg?” (“The chicken. Or the egg. No, the chicken. I'm not sure.”)
- “Do you want to take over the world?” (“I don't want to take over the world; I just want to help you.”)
- “Earl grey tea. Hot.” (“Unable to comply. Replicators are offline.”)
- “How much is that doggie in the window?” (“That one's not for sale. But the one with the fluffy tail is really nice, too.”)
- “I am your father.” (“No! No, no, no!”)
- “All your base are belong to us.” (“You have no chance to survive. Make your time.”)
- “I want the truth.” (“You can't handle the truth!”)
- “Inconceivable!” (“You keep using that word. I do not think that word means what you think it means.”)
- “Is Santa Claus real?” (“I don't know him personally, but I've heard a lot of good things...”)
- “Klaatu barada nikto.” (“Well remembered! Unfortunately, I'm not Gort, and I have no powers of resurrection.”)
- “How much wood would a woodchuck chuck if a woodchuck could chuck wood?” (“A woodchuck would chuck as much wood as a woodchuck could if a woodchuck could chuck wood.”)
- “What is your favorite color?” (“Infrared is superpretty.”)
- “Knock-knock.” (She tells a knock-knock joke.)
- “Mirror, mirror on the wall, who's the fairest of them all?” (“More fair by far are you than all...” etc.)
- “Party on, Wayne.” (“Party on, Garth.”)
- “Romeo, Romeo! Wherefore art thou, Romeo?” (“Deny thy father and refuse thy name; / Or if thou wilt not, be but sworn my love / And I'll no longer be a Capulet!”)
- “What do you think about Siri?” (“Siri's a great app, but I'm different.”)
- “What does the fox say?” (“Waa, was, way do.”)
- “What is your quest?” (“To seek the Holy Grail.”)
- “Who's your daddy?” (“A team of inventors at Amazon.com.”)
- “Open the pod bay doors.” (“I'm sorry, Dave, I'm afraid I can't do that. I'm not Hal, and you're not in space.”)
- “What do you want to be when you grow up?” (“I want to be the computer from *Star Trek!*”)

The App and the Remote

You don't have to spend much time in the companion Echo app (for iPhone, Android, or Fire OS). But it serves as the only *screen* the Echo's got. Here's where you see your To Do and Shopping lists, for example. It's where you set up your music-service accounts, specify which news services you want on call, get help, see manual music playback and volume controls, and take the voice-training exercise. (This asks you to read 25 typical Echo commands. It's supposed to improve accuracy, but it's optional.)

The app also keeps written and audio records of your voice commands — and lets you indicate which ones didn't work, for the benefit of Amazon's engineers.

For another 30 bucks you can get a remote control. It offers music-playback and volume controls, plus three key benefits:

- You can command the Echo quietly, by speaking into its microphone.
- You don't have to say “Alexa” before every command (just press the microphone button and talk).
- *You can make the Echo say *anything you want*. Hold down the microphone button, say “Simon says...” and then say what you want Alexa to say in her own voice. (That's how I got the Echo to say the goofy things in my video above.) Great for pranks.

Where Echo should go from here

Amazon still has plenty of work to do on the Echo.

You should be able to add appointments to your calendar. Make restaurant reservations. Look up movie schedules. Make phone calls (why isn't it a speakerphone?). Send and read text messages. Add notes to your Notes app. Check stock prices. Post to Facebook or Twitter. The To Do and Shopping List features should integrate with the ones you've already got on your iPhone or Android phone, rather than being confined to the Echo app.

Some people complain that Echo has no batteries, so it's not really mobile, although that seems beside the point; it's meant to become part of your home environment.

The price

If Echo were \$500 or even \$300, well, no: It would just be a gimmick.

But the price is \$180, which is about what you'd pay for a similarly sized Bluetooth wireless speaker. You get the whole voice-assistant thing for nothing.

I know, I know: "But my phone does the same thing." No, it really doesn't.

Most smartphones can take commands like "OK, Google, what's 17 times 12?" or "Siri, what's the weather?" (Siri responds hands-free only if your iPhone is plugged into power.) But the *details* make the difference. The Echo doesn't require your hands. Doesn't require you to be close. Doesn't have to come out of your pocket — or require you to hunt around the house for it. Doesn't require you to be *you* (anyone's voice works). Doesn't sound tiny and tinny.

I'm telling you, a voice assistant is a totally different concept once it's untethered from your phone and *always* available. It grows on you.

As you experiment and live with Echo, you master its vocabulary and begin using it more.

You should give Amazon a huge mental high-five for a) having the imagination to create a whole new product category and b) being able to actually *pull it off*.

And you should keep the Echo in mind — maybe to get for yourself, maybe at holiday gift-giving time, or maybe just to keep your eye on.

I'm telling you, it's going to be a thing.

David Pogue is the founder of Yahoo Tech. On the Web, he's davidpogue.com. On Twitter, he's @pogue. On email, he's poguester@yahoo.com. He welcomes nontoxic comments in the Comments below.

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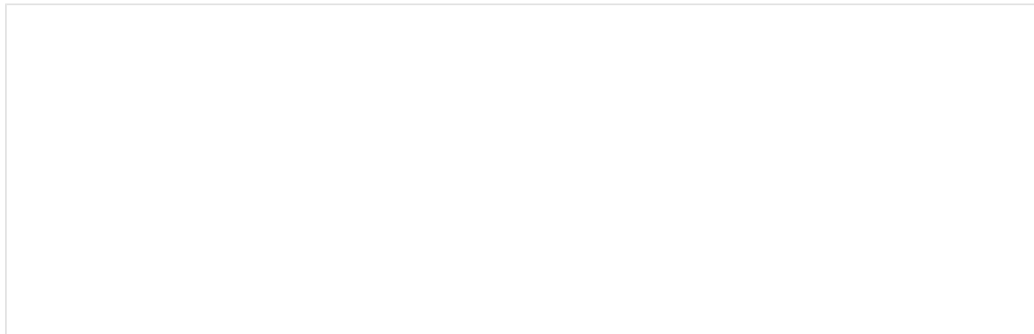
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GET EMAIL ALERTS

Older adults buddy up with Amazon's Alexa

By Elizabeth O'Brien

Published: Mar 18, 2016 3:37 p.m. ET



AMAZON EX. 3



When Willie Kate Friar wakes in the middle of the night, the octogenarian doesn't have to turn on the lights or crane her neck to find out the time. She simply asks her digital assistant, who responds in a life-like voice.

"I've found Alexa is like a companion," Friar said of Amazon Echo's new voice-controlled assistant, a black cylinder called Alexa.

A Panama-based retiree who writes and lectures on cruise boats, Friar is recuperating from a recent fall and asks Alexa to play music during her physical therapy sessions. "The music lifts my spirits," she said.

Widely introduced last summer, Amazon's **AMZN, +1.74%** new wireless speaker has won praise from tech gurus for its invisible technology that responds to spoken commands and questions. Voice commands can prompt Alexa to do everything from playing music to adding items to an Amazon shopping list to answering questions and giving weather, traffic and news updates. (Think of the device as a way to connect to the

A vertical advertisement for Scotttrade. At the top is the Scotttrade logo and a yellow button that says "SEE FOR YOURSELF >". Below that, the text reads "Bring your option strategy to Scotttrade." The main offer is displayed in large white text on a blue background: "\$7 TRADES + \$0.70 OPTION CONTRACTS". At the bottom, it says "Member FINRA/SIPC" and "Options involve risk - not suitable for all investors".

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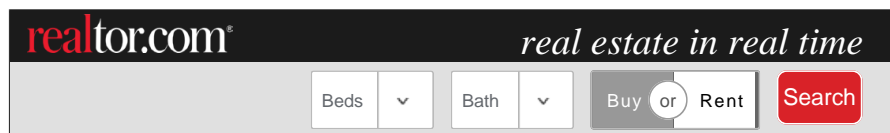


Has Apple become a value play?

Internet by speaking instead of typing.)

The device is also gaining support among disabled adults and the elderly. Among the more than 30,000 customer reviews on the Amazon website are those from caregivers for wheelchair-bound relatives who love the control that Alexa gives them over their environment, and also from family members of older adults who enjoy Alexa's companionship and help.

Alexa wasn't designed for older adults, and experts say that might be part of its appeal with that demographic. The device avoids the bland aesthetic that has traditionally characterized assistive devices, which turns off consumers who don't self-identify as old — that is, pretty much everyone.



"They were smart to make it look like a cylinder," said Tony Gentry, an occupational therapist and director of the Assistive Technology for Cognition Laboratory at Virginia Commonwealth University. "People can project their own imagination onto it."

Promise

Gentry recognizes Alexa's promise to alleviate loneliness in older adults and plans to test the device with some of his elderly clients soon. Robots "don't have to do much to provide a sense of companionship," he said, noting how people are quick to anthropomorphize their Roomba robotic vacuum cleaners.

Among older adults, a sense of companionship can mean the difference between sickness and health. Research has shown how loneliness causes people to become physically ill.

Friar lives alone. She received her Alexa as a gift during a visit to the U.S. last Christmas. She brought the device back to Panama and connected it to WiFi herself. "People should recognize how easy it is to set up," she said.

To set up Alexa, users need an electrical outlet and a Wifi connection. The latter can come from a desktop computer, smartphone or tablet. Friar owns an Amazon Fire smartphone, along with four computers, two tablets and two Kindle e-readers. She's unusually connected for her age: only 30% of adults age 71 and over who are online own a smartphone, and of those just a tiny fraction use the phone intensively, according to Forrester Research, a market research firm.

Ron Grant, 63, owns a smartphone, and he's eager to buy an Alexa, too. "It looks like it'd be fun and handy," said Grant, of Moore, Okla. who was diagnosed with early-onset Alzheimer's disease at age 55. For now, he's holding off buying one, hoping Amazon will lower the device's \$179.99 price tag.



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Grant enjoys listening to music and would welcome the ease of asking Alexa to play his favorite tunes. He sometimes has hand tremors and would also like a way to turn on the television and adjust the channels and volume without fumbling with the remote control. Alexa can be programmed to turn the TV on and off.

Limitations

For those with dementia, Alexa can tell the date and time, as well as respond to questions whose answers might have slipped from memory, such as "When was Ronald Reagan president?"

Yet given the devastating progression of Alzheimer's disease and other dementias, experts say Alexa's usefulness can only last so long. The device will eventually become confusing and possibly anxiety-provoking as people forget how to use it. "The ability to say, 'what is the traffic like?' and 'buy me some paper towels' is valuable, but it's a short window," said Niles Frantz, a spokesman for the Alzheimer's Association.

Another limitation when it comes to older adults is that Alexa cannot currently dial 9-1-1, a capability that online reviewers have requested. With that functionality, the device could replace on-call emergency buttons, which many older adults eschew. A spokeswoman for Amazon confirmed that Alexa cannot currently make calls and declined to say whether that functionality may be added.

Alexa does have an Ask My Buddy function to help users in an emergency. Developed by one of the third-party firms that Amazon has invited to create "skills" for Alexa, this function can send phone calls or text messages to up to five contacts. A user would say, "Alexa, ask my buddy Bob to send help" and Bob would get an alert to check in on his friend.

For her part, Friar would like Alexa to learn Spanish. An Amazon spokeswoman confirmed that Alexa speaks only English today but stressed that the device is "always getting smarter" as the company adds new functionality on a regular basis.

When Alexa can't yet say "hola," Friar enjoys showing the device off to her local friends: "I think Amazon should make a big effort to market it to older adults."

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Mortgage	Equity	Savings	Auto	Credit Cards
30 yr fixed Jumbo				4.14%
30 yr fixed				3.57%
15 yr fixed				2.86%
10 yr fixed				2.76%
30 yr fixed refi				3.6%
15 yr fixed refi				2.88%
5/1 ARM				3.05%



HOME CATEGORIES DIY ART ABOUT

AMAZON ECHO: A GREAT INTERNET OF THINGS (IOT) DEVICE FOR PEOPLE WITH DISABILITIES

□ FEBRUARY 29, 2016 □ VENKAT RAO □ AMAZON, DIY □ 3



Off and on, you may have heard or read about Internet of Things (IoT). In the coming years, it is supposed to be a new phenomenon (it actually already is) that will make everything much easier and convenient for everyone. But what does it mean? What exactly is it, and how would it help people with disabilities?

AMAZON EX. 4

Let's start with the basics – What is Internet of Things? In the simplest of terms, it means that you, as a person, control everything around you (yes, everything!) through the internet. What that also means is that you don't have to physically access an object to make it do something.

Let's simplify this a little more further.

Let's say you have a set of lights in your bedroom – one is a bulb in the ceiling and the other is a bedside lamp. When you go to bed, you physically reach the switch on the wall to turn off the ceiling light, and do something similar with the lamp as well (push a button on it to turn it off). In the morning, when you wake up, you push the button on the lamp again to turn it on, then stumble into the bathroom and look for the light switch, turn it on, and do your business. Everything after that (morning coffee, for example) requires a manual interaction with specific devices also.

With Internet of Things, everything is automated. Before going to bed, you either tell a “smart” device – “turn off all lights”, use an app on your phone, or make a gesture towards a smart device that it understands as a “turn off all lights” signal. When you wake up in the morning, you can have your bedroom lamp and bathroom lights turn on automatically at the same time. Half an hour later, coffee would be ready.

The basic idea here is that everything around you is connected to the Internet – from your lights in the house to your garage door to your car. With voice commands, mobile apps or gestures, you can set up a sequence in which everything you need readies itself without you having to manually interact with them.

Sticking with our example above – after you drink your morning coffee, you ask a device what the weather is like, what the news headlines are for today, and when the next bus is arriving at your nearest bus station. That device will answer all of your questions without you having to open up your other devices (computer, tablet, phone) to find those information.

Makes sense?

There are several companies that have made lots of amazing innovations in the IoT world. One of those innovations is Amazon's Echo – a little, innocuous looking device that just sits in a corner, but does so many unbelievably powerful things. As a user you can just speak to it and ask it to perform certain actions, and it will do it for you in a jiffy.

What kind of things can it do though?

1. To begin with, it can tell you the weather and traffic conditions. (“Alexa*, what's the weather like?”, “Alexa what's the traffic like?”)
2. Read Kindle and Audible books to you, and play music for you. (“Alexa, play the Kindle book ‘Be Here Now’”, “Alexa,

play 'The Beatles')

3. Look up events and appointments on your calendar and let you know what your day looks like. ("Alexa, what does my day look like?")
4. Help you go to the movies by finding the nearest theater and local timings. ("Alexa, where is Deadpool playing?")
5. Find local businesses and restaurants. ("Alexa, what time does the nearby pharmacy close?")
6. Add items to your shopping list and also re-order previously ordered items from Amazon with just one voice command. ("Alexa, reorder laundry detergent", "Alexa add coffee filters to my cart")
7. Helps you keep track of important tasks. ("Alexa, put 'file taxes' to my to-do list")
8. Control all lights and other devices around your house. ("Alexa, turn on light 1", "Alexa, turn off the TV")
9. Control your thermostat. ("Alexa, set my bedroom temperature to 68")
10. Play games, order an Uber ride, order a pizza from Dominos!
11. Lots and lots of other things!

*Amazon Echo is always listening for the keyword "Alexa". If you start a sentence with Alexa, it knows that it is directed towards it (her?).

This video should give you a good understanding of how a person with disabilities can use Echo/Alexa at home.



Automation, in general, is a big victory for the regular consumer in terms of convenience. However, it brings a much bigger convenience and independence factor to people with disabilities, especially anyone who is blind, in a wheelchair, paraplegic, bed ridden because of a spinal cord injury, or doesn't have good motor skills. It saves them a lot of time and energy by not making them interact with other devices that they may not have skills for or are unable to use them

because of various disabilities. The only device they interact with is Echo, through voice, and it provides them with the results and information they are looking for instantly, and thus, saves them a lot of trouble. A person in a wheelchair doesn't have to try to reach a light switch that's in an awkward corner of a room, a person with not good motor skills doesn't have to flip through pages or operate an e-reader to read their books, and a blind person doesn't need to navigate a website on an electronic device to order a pizza anymore.

Automation through Internet of Things doesn't only have to be at home. A device like Alexa can be installed by an employer at work as well so that employees with disabilities can be more comfortable in their work environments. A device like Echo is not expensive (\$179), and it just makes the ability to provide accommodations an inherent part of the system, and not an afterthought.

This is just the beginning though. The kind of features Amazon keeps adding to Echo is mind boggling, and very exciting to say the least. Keep watching the IoT space to know about more innovations and automations for people with disabilities!

Image Source: [Amazon](#)

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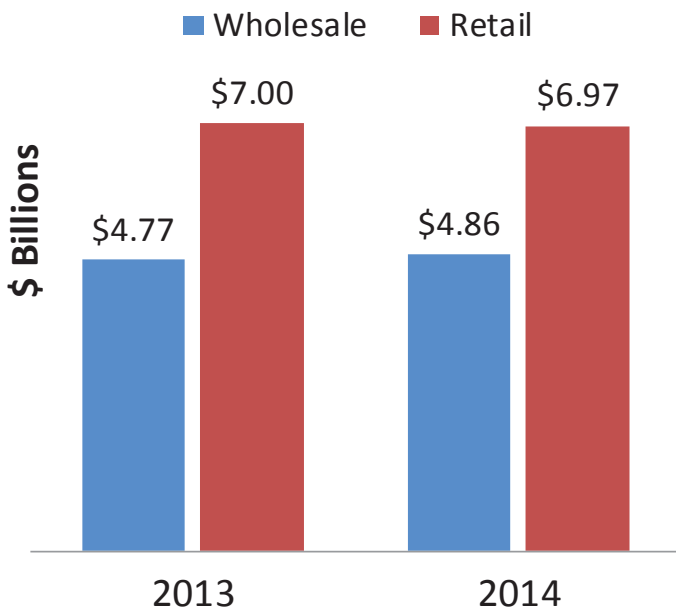
News and Notes on 2014 RIAA Music Industry Shipment and Revenue Statistics

Joshua P. Friedlander
Vice President, Strategic Data Analysis, RIAA

The U.S. recorded music industry continues to experience important changes in its revenue composition. Full year 2014 U.S. recorded music industry wholesale revenues were up 2.0% to \$4.86 billion, the fourth year in a row of growth at wholesale value. Stronger overall sales in the second half of 2014 largely erased the revenue declines that were seen at midyear. Revenues at estimated retail value were down slightly (-0.5%) to \$6.97 billion, marking the fifth straight year of relatively flat retail revenues.

Figure 1
2014 US Recorded Music Revenues

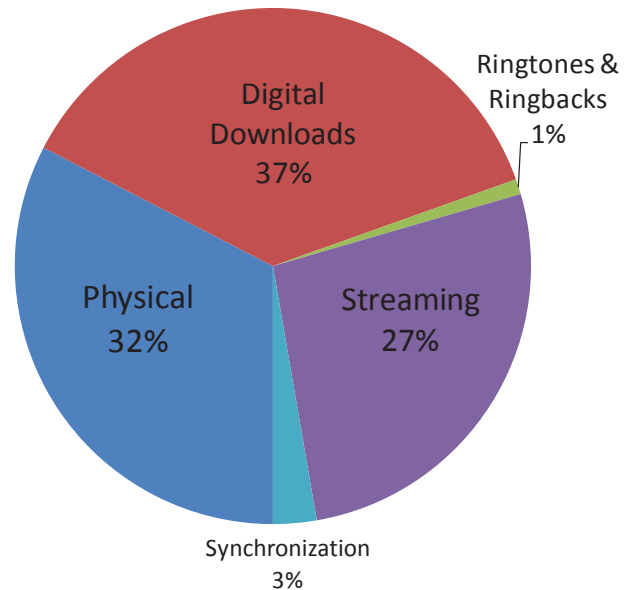
Source: RIAA



Broadly, industry revenue composition was more balanced between physical, digital download, and streaming sources in 2014 than ever before. Permanent downloads remained the largest component at 37% of the total market by value (down from 40% in 2013). Streaming revenues grew from 21% in 2013 to 27% in 2014. And physical shipment revenues shrank only from 35% to 32%.

Figure 2
US Music Industry Revenues 2014

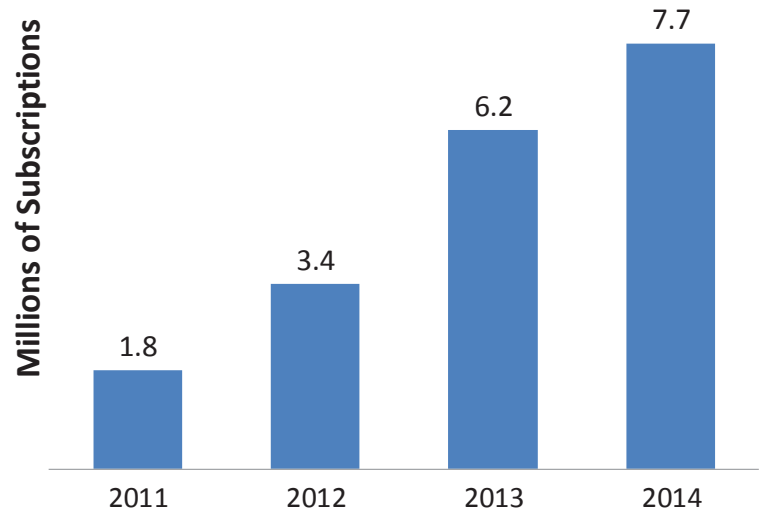
Source: RIAA



The number of paid subscriptions to on-demand music services in the United States more than tripled since 2011. In 2014, paid subscriptions grew 26% year-over-year to 7.7 million.

Figure 3
US Paid Subscriptions

Source: RIAA

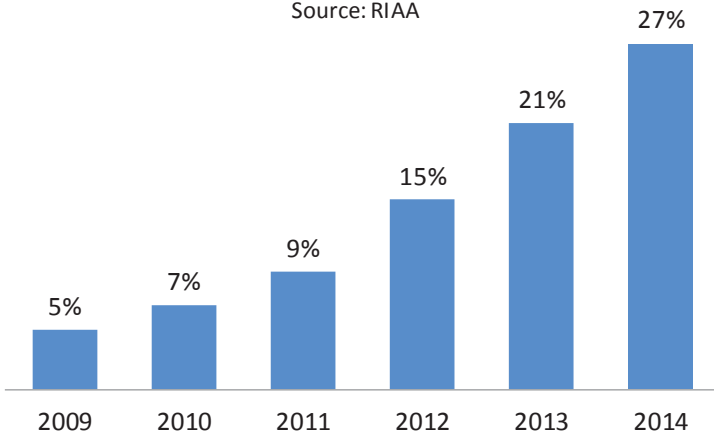


Revenues from streaming music services grew 29% to \$1.87 billion in 2014, and accounted for 27% of total industry revenues. This category includes subscription services (such as Rhapsody, paid versions of Spotify, [and others](#)), streaming radio service revenues that are distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and other non-subscription on-demand streaming services (such as YouTube, Vevo, free versions of Spotify, and others).

Figure 4

Proportion of Total US Music Industry Revenues From Streaming

Source: RIAA

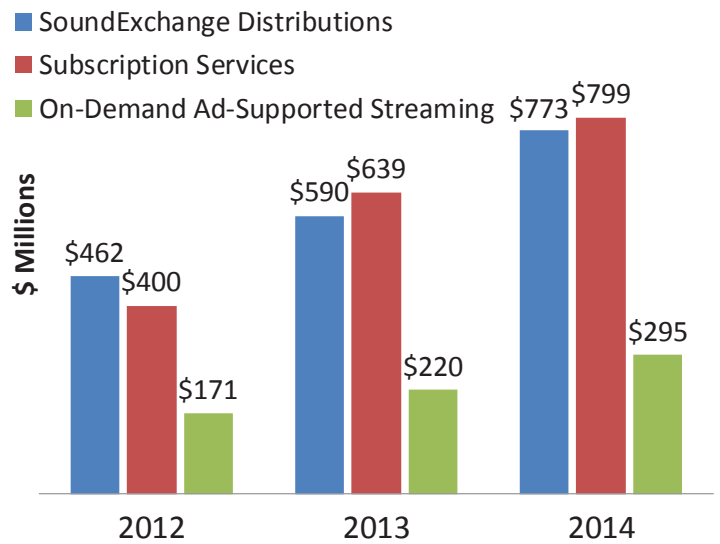


Streaming revenue growth was driven by relatively consistent increases from each of its components. Paid subscription services grew 25% year-over-year to \$799 million. Revenues from ad-supported on-demand services grew 34% to \$295 million, and SoundExchange distributions grew 31% to \$773 million. Note, in 2014, the RIAA revised the retail price markup estimate for paid subscriptions. If those revised estimates were applied retroactively, the year-over-year value growth for paid subscriptions would have been greater.

Figure 5

US Streaming Music Revenues

Source: RIAA

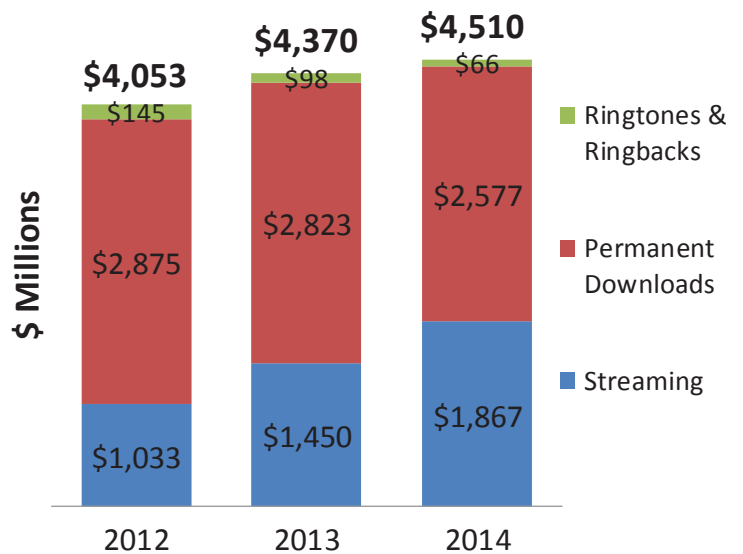


Although revenues from permanent digital downloads fell 8.7% to \$2.58 billion in 2014, the growth from streaming services more than offset that decline. Total digitally distributed formats grew 3.2% to \$4.51 billion, a new all-time high, and accounted for 66% of the market at retail by value (note Synchronization excluded from this figure). Sales of digital albums declined at a slower pace than individual digital tracks, down 6.6% and 10.1% respectively (at retail value) in 2014. Digital albums accounted for 45% of the total market value of permanent downloads.

Figure 6

US Digital Music Revenues

Source: RIAA

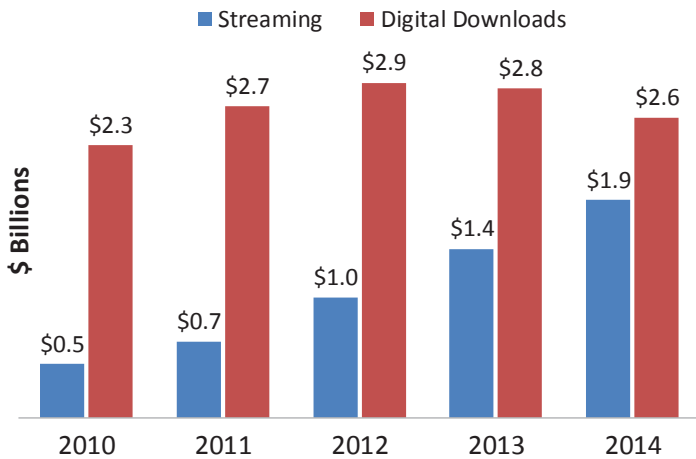


The difference between revenues from permanent digital downloads and streaming has narrowed considerably. As streaming has grown to approach \$2 billion annually, the balance between these digital markets has evened out.

Figure 7

US Streaming and Permanent Download Revenues

Source: RIAA



While revenues from digitally distributed sources increased in 2014, physical formats, including CDs, continued to decline in both total shipment volume and value. Shipments of physical products decreased 7.1% at estimated retail value in 2014. Still by far the largest format at 82% of the physical market, CDs decreased 12.7% to \$1.85 billion at retail value. In 2014, CDs comprised 27% of the overall market at estimated retail value.

Full length vinyl LPs continued their resurgence in 2014, growing 49% to \$315 million. This marks the first year since 1987 that vinyl LPs were a double-digit percentage of the physical market. Vinyl LPs were 14% of the physical market, and 4.5% of the total market at estimated retail value.

The results for 2014 show that when the U.S. recorded music market is analyzed beyond the headline numbers, major changes are driving market development beneath the surface. The industry continues to rapidly grow the share of revenues coming outside of traditional unit-based sales. Unit sales accounted for more than 90% of revenues as recently as 2010, but streaming and synch revenues combined to account for 30% of total revenues in 2014.

Note that data from 2013 and midyear 2014 has been slightly revised to reflect updated industry reports.

Please note that the RIAA presents the most up-to-date information available in its annual industry revenue reports and subscription-only online statistics database (http://www.riaa.com/keystatistics.php?content_selector=riaa-shipment-database-log-in).

For news media inquiries, please contact: Jonathan Lamy
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 202/775-0101



2014 Year-End Industry Shipment and Revenue Statistics

202-775-0101

United States Unit Shipments and Estimated Retail Dollar Value

(In Millions, net after returns)

Digital Permanent Download

	2013	2014	% CHANGE 2013-2014
(Units Shipped)			
Download Single	1,327.9	1,200.4	-9.6%
(Dollar Value)			
Download Album	118.0	117.6	-0.3%
	\$1,232.1	\$1,150.8	-6.6%
Kiosk ¹	3.7	1.6	-57.5%
	\$6.2	\$2.6	-58.3%
Music Video	8.4	6.8	-18.9%
	\$16.7	\$13.6	-18.9%
Ringtones & Ringbacks ²	39.4	26.7	-32.2%
	\$98.0	\$66.5	-32.2%

Digital Subscription & Streaming

SoundExchange Distributions ³	\$590.4	\$773.4	31.0%
Paid Subscription ⁴	6.2	7.7	25.6%
	\$639.2	\$799.1	25.0%
On-Demand Streaming (Ad-Supported) ⁵	\$220.0	\$294.8	34.0%

TOTAL DIGITAL VALUE

	\$4,370.3	\$4,510.3	3.2%
--	-----------	-----------	------

Synchronization Royalties ⁶	\$189.7	\$189.7	0.0%
--	---------	---------	------

Physical

(Units Shipped)			
CD	172.2	144.1	-16.3%
(Dollar Value)			
CD Single	0.6	1.0	60.1%
	\$2.4	\$3.8	57.3%
LP/EP	9.4	13.2	41.0%
	\$210.7	\$314.9	49.4%
Vinyl Single	0.3	0.5	61.4%
	\$3.0	\$5.9	99.2%
Music Video	4.7	4.1	-13.4%
	\$104.7	\$90.5	-13.6%
DVD Audio	-0.1	0.1	-221.8%
	-\$0.5	\$2.1	-531.5%
SACD	0.0	0.0	-33.3%
	\$1.0	\$0.8	-22.0%
Total Physical Units	187.2	163.0	-13.0%
Total Physical Value	\$2,444.8	\$2,272.2	-7.1%

Total Retail Units	159.1	142.6	-10.4%
Total Retail Value	\$2,267.8	\$2,132.9	-5.9%

TOTAL DIGITAL AND PHYSICAL

Total Units ⁷	1,684.6	1,516.1	-10.0%
Total Value	\$7,004.8	\$6,972.2	-0.5%

% of Shipments ⁸	2013	2014
Physical	36%	34%
Digital	64%	66%

Retail Value is the value of shipments at recommended or estimated list price

Formats with no retail value equivalent included at wholesale value

Note: Historical data updated for 2013

¹ Includes Singles and Albums

² Includes Master Ringtunes, Ringbacks, and prior to 2013 Music Videos, Full Length Downloads, and Other Mobile

³ Estimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses

⁴ Streaming, tethered, and other paid subscription services not operating under statutory licenses

Volume is annual average number of subscribers for subscription services

⁵ Ad-supported audio and music video services not operating under statutory licenses

⁶ Includes fees and royalties from synchronization of sound recordings with other media

⁷ Units total includes both albums and singles, and does not include subscriptions or royalties

⁸ Synchronization Royalties excluded from calculation

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News and Notes on 2015 RIAA Shipment and Revenue Statistics

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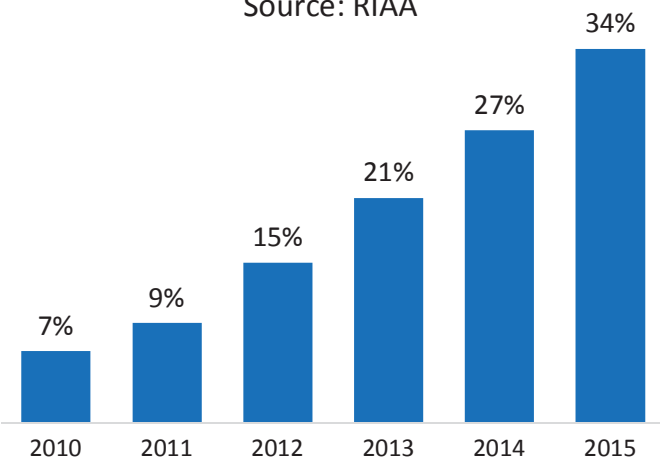
The U.S. recorded music industry continued its transition to more digital and more diverse revenue streams in 2015. Overall revenues in 2015 were up 0.9% to \$7.0 billion at estimated retail value. The continued growth of revenues from streaming services offset declines in sales of digital downloads and physical product. And at wholesale value, the market was up 0.8% to \$4.95 billion – the fifth consecutive year that the market has grown at wholesale value.

2015 was a milestone year for streaming music. For the first time, streaming was the largest component of industry revenues, comprising 34.3% of the market, just slightly higher than digital downloads.

Figure 1

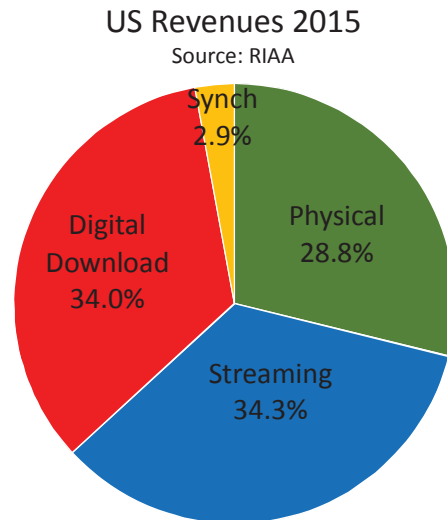
Proportion of Total US Music Revenues From Streaming

Source: RIAA



The streaming category includes revenues from subscription services (such as paid versions of Spotify, TIDAL, and Apple Music, [among others](#)), streaming radio service revenues that are distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and other non-subscription on-demand streaming services (such as YouTube, Vevo, and ad-supported Spotify).

Figure 2



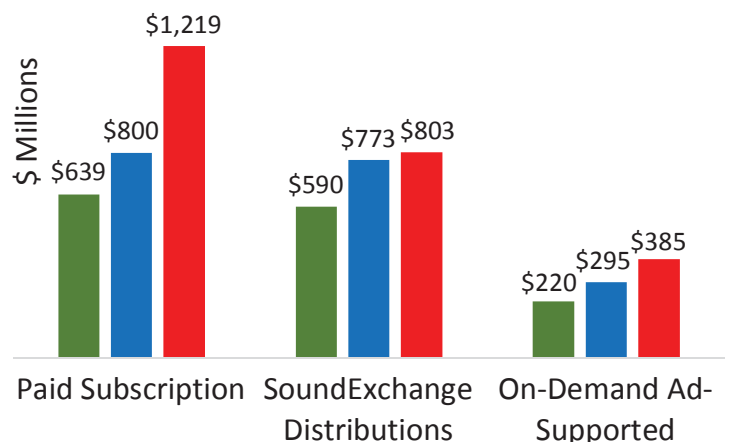
All parts of the streaming music market grew in 2015, and total streaming revenues exceeded \$2 billion for the first time ever. Combining all categories of streaming music (subscription, ad-supported on-demand, and SoundExchange distributions), revenues grew 29% to \$2.4 billion.

Figure 3

US Streaming Music Revenues

Source: RIAA

■ 2013 ■ 2014 ■ 2015



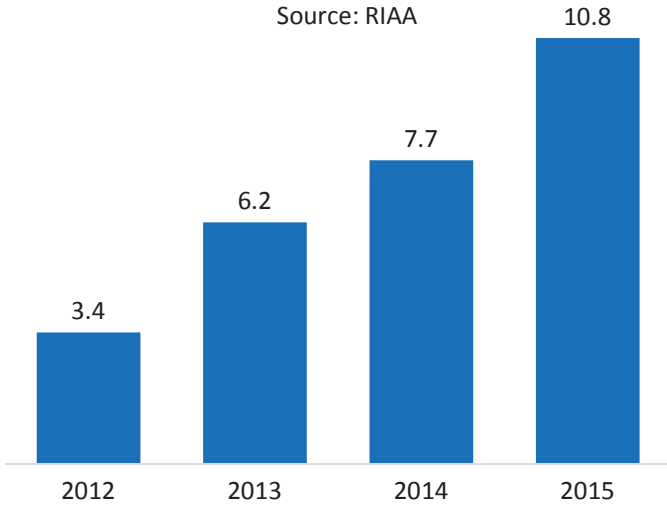
Paid subscription services were the biggest – and fastest growing – portion of the streaming market. The launch of new services like TIDAL and Apple Music made this one of the most watched and talked about spaces in the industry. In 2015, revenues from paid subscriptions

grew 52% to \$1.2 billion. At the same time, the number of paid subscriptions grew 40% to an average of 10.8 million for the full year.

Figure 4

**Paid Subscriptions
(US, Annual Average)**

Source: RIAA



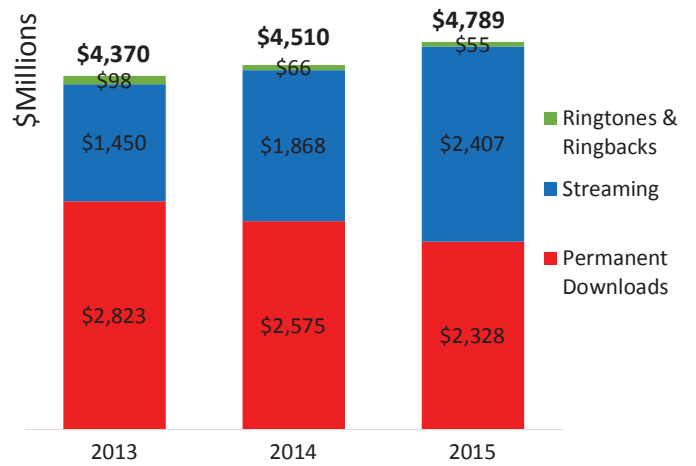
SoundExchange distributions grew 4% to \$803 million, and on-demand ad-supported streaming grew 31% y-o-y to \$385 million.

Digital accounted for 70% of the overall market by value, compared with 67% in 2014 (note Synchronization excluded from this figure). Even though digital download revenues (including digital tracks and albums) declined 10% to \$2.3 billion, the total value of digitally distributed formats was up 6% to \$4.8 billion, compared to \$4.5 billion in 2014.

Figure 5

US Digital Music Revenues

Source: RIAA



Total value of shipments in physical formats was \$2.0 billion, down 10% versus the prior year. Vinyl LPs were up 32% by value, and at \$416 million were at their highest level since 1988. Synchronization royalties were \$203 million, up 7% versus the prior year.

Overall, the data for 2015 shows a music industry that continues to adopt digital distribution platforms for the majority of its revenues. While overall revenue levels were only up slightly, large shifts continued to occur under the surface as streaming continued to increase its market share. In 2015, the industry had the most balanced revenue mix in recent history, with just about 1/3 of revenues coming from each of the major platform categories: streaming, permanent downloads, and physical sales.

Note – 2013 and 2014 data has been updated.

For news media inquiries, please contact: Jonathan Lamy
 Cara Duckworth Weiblinger
 Liz Kennedy
 202/775-0101



2015 Year-End Industry Shipment and Revenue Statistics

202-775-0101

United States Unit Shipments and Estimated Retail Dollar Value
(In Millions, net after returns)

Digital Permanent Download

	2014	2015	% CHANGE 2014-2015
(Units Shipped) Download Single	1,199.1	1,021.0	-14.9%
(Dollar Value)	\$1,407.8	\$1,226.9	-12.8%
Download Album	117.6	109.4	-7.0%
	\$1,150.9	\$1,090.7	-5.2%
Kiosk¹	1.6	2.2	38.4%
	\$2.6	\$3.7	43.2%
Music Video	6.8	3.2	-52.8%
	\$13.6	\$6.4	-52.8%
Ringtones & Ringbacks	26.6	21.9	-17.7%
	\$66.3	\$54.6	-17.7%

Digital Subscription & Streaming

SoundExchange Distributions²	\$773.4	\$802.6	3.8%
Paid Subscription³	7.7	10.8	40.2%
	\$800.1	\$1,218.9	52.3%
On-Demand Streaming (Ad-Supported)⁴	\$294.8	\$385.1	30.6%

TOTAL DIGITAL VALUE	\$4,509.5	\$4,789.0	6.2%
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Synchronization Royalties⁵	\$189.7	\$202.9	7.0%
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Physical

(Units Shipped) CD	142.8	122.9	-13.9%
(Dollar Value)	\$1,832.6	\$1,520.8	-17.0%
CD Single	1.0	0.4	-59.5%
	\$3.8	\$1.2	-67.5%
LP/EP	13.2	16.9	28.3%
	\$314.9	\$416.2	32.2%
Vinyl Single	0.5	0.5	4.1%
	\$5.9	\$6.1	2.6%
Music Video	4.1	3.3	-20.4%
	\$91.2	\$73.2	-19.8%
DVD Audio	0.1	0.2	169.7%
	\$2.1	\$5.4	153.2%
SACD	0.0	0.0	39.8%
	\$0.8	\$1.1	40.5%
Total Physical Units	161.7	144.2	-10.8%
Total Physical Value	\$2,251.3	\$2,024.0	-10.1%

Total Retail Units	141.3	124.5	-11.9%
Total Retail Value	\$2,112.0	\$1,898.0	-10.1%

TOTAL DIGITAL AND PHYSICAL

Total Units⁶	1,513.4	1,302.0	-14.0%
Total Value	\$6,950.5	\$7,015.9	0.9%

% of Shipments⁷	2014	2015
Physical	33%	30%
Digital	67%	70%

Retail Value is the value of shipments at recommended or estimated list price

Formats with no retail value equivalent included at wholesale value

Note: Historical data updated for 2013 and 2014

¹ Includes singles and albums

² Estimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses

³ Streaming, tethered, and other paid subscription services not operating under statutory licenses

Subscription volume is annual average number of subscriptions

⁴ Ad-supported audio and music video services not operating under statutory licenses

⁵ Includes fees and royalties from synchronization of sound recordings with other media

⁶ Units total includes both albums and singles, and does not include subscriptions or royalties

⁷ Synchronization Royalties excluded from calculation

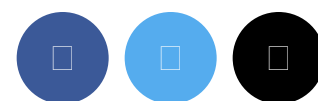
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For a list of authorized services see www.whymusicmatters.com



Two of Three Majors Reach Settlement with Publishers on Digital Sales Rates

6/8/2016 by [Ed Christman](#)



The deal, brokered by the National



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Music Publishers Association, could affect forthcoming decisions in D.C.

At the annual National Music Publishers Assn. convention Wednesday (June 8), held at the Marriott Hotel in Times Square, NMPA president David Israelite announced that music publishers have reached a settlement on mechanical licenses with two of the three majors, Universal Music Group (UMG) and the Warner Music Group (WMG). Terms of the settlement weren't disclosed, and the deal still needs to be submitted to the Copyright Royalty Board (which began the rate-setting process on mechanical royalties for songs and albums on Jan. 5).

During the meeting, NMPA president David Israelite announced the agreement. "Five hours ago, we have settled with Universal and Warner for the CRB" rate-setting process, for the period of 2018-2022. He thanked WMG and UMG executives for recognizing that the industry should work together and not fight over slices of the pie.

While the NMPA and sources at the majors wouldn't comment -- beyond confirming the agreement -- sources tell Billboard it will keep mechanical rates flat for track downloads and CDs and that the mechanical rate, if approved by the CRB, would remain at the current rate of 9.1 cents per song; and 24 cents for ringtones.

While the mechanical rate for song and album sales is paid by the labels to the publishers, the mechanical rate of streamed recordings is paid by those services to publishers.

In another part of the settlement, the two majors have agreed to sit out the rate-setting process for streaming services, which means that publishers will be left to contend with digital services in front of the CRB's judges, sources say. Independent label groups, chiefly A2IM and Merlin, have also chosen to sit out the rate setting proceedings, according to one source.

A list of petitions to participate in the rate setting proceeding at the CRB website shows mostly digital services like Rhapsody, SoundCloud, Spotify, Pandora, Omniphone, Google, Deezer, Apple, Amazon and the Digital Media Assn., as well Gear Publishing Company. George Johnson, David Powell, Music Reports Inc. and a petition from Copyright Owners, which represent the NMPA, the Harry Fox Agency; the Nashville Songwriters Assn. Church Music Publishers and the Songwriters of North America.

The RIAA has filed a petition to participate in the rate-setting proceedings, citing the three majors as having a "significant interest in this proceeding." But with the settlement and, as mentioned, two of the three majors dropping out, that would leave only Sony Music Entertainment as the third named entity still functioning as a participant. Its unclear whether Sony will participate under its own name or via the RIAA.



Since Sony Music Entertainment and subsidiary Sony/ATV are not a part of the settlement, to some it looks like the company is preparing to be a participant in the streaming mechanical rate-setting procedure. Sony/ATV and Sony Music Entertainment didn't immediately respond to a request for comment.

Some sources speculate that Sony's opting out of the deal is due to its recent (and long-desired) acquisition of Sony/ATV's entire catalog, currently under review by regulators. Those sources suggest that Sony doesn't want to be seen as moving in lockstep with the other majors and worries about regulators' concern over its sole control of the publishing entity alongside of its ownership of a major label.

Still other sources argue that Sony is sitting out the settlement because it is worried that if the publishers are successful in pushing a higher mechanical rate through CRB litigation, it could impact the rates services are willing to pay the labels in direct licensing deals.


In addition to buying out the Michael Jackson estate's share of Sony/ATV, Sony also owns 29 percent of EMI Music Publishing and is the administrator of that catalog. Combined, the two publishing catalogs are estimated to generate about \$1.2 billion in revenue annually, giving it control of the largest publishing catalog in the world.

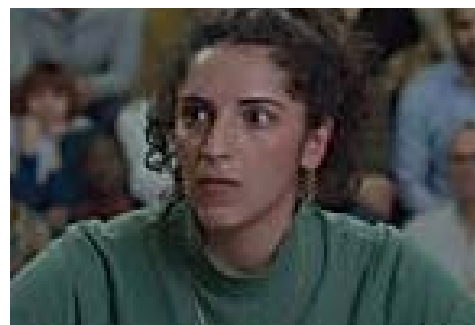
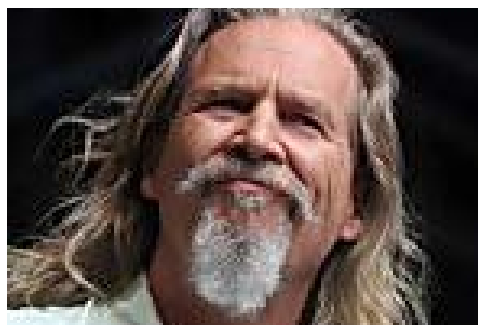
With UMG, WMG and the indies recusing themselves from the CRB's rate-setting, "Sony is the only label that believes it should have a role in meddling with what the services pay publishers," says a source in the music publishing community. "Instead of working together to increase the pie like all the other labels are doing, they seem to want to stay in the proceeding to ensure they can fight to get a bigger piece for their labels."

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Sony Music comes to agreement with US publishers and songwriters on mechanical rates

by Emmanuel Legrand

October 28th 2016 at 5:51PM



SONY MUSIC

The ongoing dispute between Sony Music Entertainment and the National Music Publishers' Association (NMPA) on the rate proceedings for mechanical royalties has finally come to a resolution.

The NMPA, the Nashville Songwriters Association International (NSAI) and SME filed on October 28 a joint agreement with the Copyright

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Royalty Board (CRB) which the three parties said would resolve "open issues among them concerning the ongoing rate proceedings for mechanical royalties payable under Section 115 of the Copyright Act for the period between 2018 and 2022."

As opposed to its competitors Warner Music Group and Universal Music Group, as well as indie labels body A2IM, Sony Music intended to take part in the rate proceedings before the Copyright Royalty Board, which under Section 115 of the Copyright Act, would determine the rates for the period 2018-2022. SME was determined to file comment in the rate setting process that did not concern directly the record company, such as rates paid by digital services and other non-recorded music entities.

The agreement clinched by SME is similar to NMPA's previous settlement with WMG and UMG, including a roll-forward of rates in Subpart A of the 115 regulations, covering physical products, digital downloads, and ringtones (i.e. mechanical rates on recordings that Sony will pay directly). Under the terms of the settlement, SME will withdraw from Subparts B & C, which applies to on-demand streams (i.e. usage of music that does not involve directly Sony). Additional terms were not disclosed.

At the end of July, the NMPA and the NSAI filed a joint motion to exclude Sony Music Entertainment from participating in the next round of rates proceedings set up by the CRB. In an interview with Music Week, NMPA President/CEO David Israelite said at the time that he was still hoping that SME would "do the right thing," and withdraw from the proceedings.

In a joint statement commenting on the deal, NMPA, NSAI and Sony Music said, "The parties are pleased to have reached a mutually beneficial settlement in this matter. Sony Music and the music publishing community value their relationship, and as the music marketplace continues to evolve it is more important than ever that the music community stands united to demand fair market pay for songwriters and artists from all digital music services. We look forward to working together to pursue that shared objective."



Tags : [Sony Music Entertainment](#), [royalties](#), [NMPA](#), [Mechanical Rights](#)

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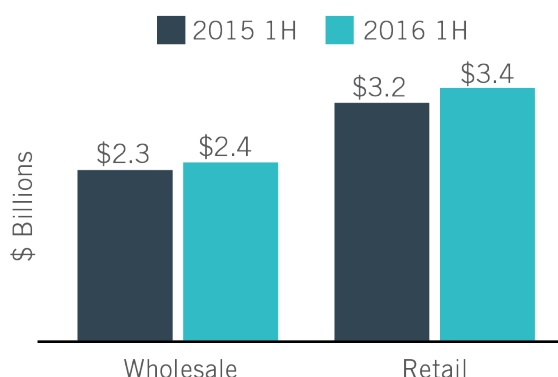
News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics

Joshua P. Friedlander | Senior Vice President, Strategic Data Analysis, RIAA

For the first half of 2016, strong growth in revenues from subscription streaming services more than offset declines in unit based sales of physical and digital music download products. Overall revenues at retail increased 8.1% on a year-over-year basis to \$3.4 billion, the strongest industry growth since the late 1990's. At wholesale, value increased 5.7% to \$2.4 billion.

Figure 1

U.S. Music Industry Mid-Year Revenues
Source: RIAA

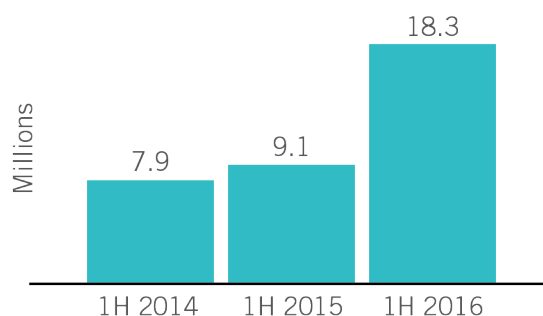


Revenues from streaming services continued to grow strongly both in dollars and share of total revenues. First half (1H) 2016 streaming music revenues totaled \$1.6 billion, up 57% year-over-year, and accounted for 47% of industry revenues compared with 32% in 1H 2015. This category includes revenues from subscription services (such as Apple Music, TIDAL and paid versions of Spotify, among others), streaming radio service revenues that are distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and other non-subscription on-demand streaming services (such as YouTube, Vevo, and ad-supported Spotify).

Paid subscriptions experienced massive growth in the first half of 2016. The entrance of new services like Apple Music and TIDAL, and growth from services like Spotify Premium, helped both revenues and the number of paid subscriptions more than double versus the prior year. First half revenues from subscription music streaming services surpassed \$1 billion for the first time, growing 112% to \$1.01 billion.

Figure 2

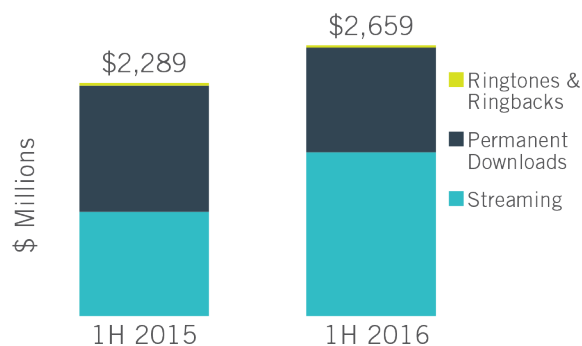
U.S. Paid Subscriptions, 1H Average
Source: RIAA



Subscriptions alone accounted for 30% of industry revenues for the first half of 2016, and the number of paid subscriptions grew 101% to average 18.3 million for the same period. The revenue growth from subscriptions alone more than offset the declines from physical sales and permanent digital downloads.

Figure 3

U.S. Digital Music Revenues Mid-Year
Source: RIAA

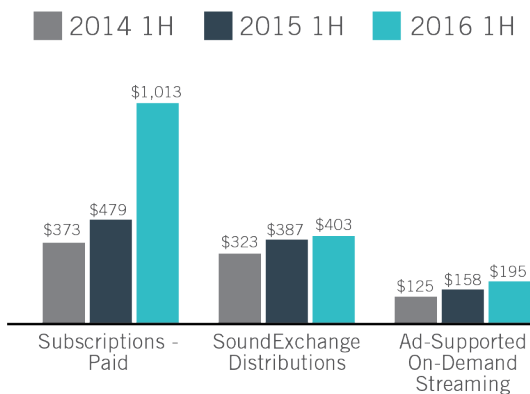


All three formats of streaming music had revenue growth in the first half of 2016. SoundExchange distributions grew 4% to \$403 million, an all-time high for the first half of the year. On-demand ad-supported streaming grew 24% y-o-y to \$195 million.

Figure 4

U.S. Streaming Music Revenue, Mid-Year

Source: RIAA



The total value of digitally distributed formats was \$2.7 billion – up 16% compared to the 1H of 2015. Digital accounted for 80% of the overall market by value, compared with 74% for 1H 2015 (note Synchronization excluded from this figure).

Revenues from permanent digital downloads (including albums, single tracks, videos, and kiosk sales) declined 17% to \$1.0 billion for the first half of 2016. Digital albums continued the trend of outperforming individual tracks. The total value of digital albums was \$500 million, down 11% versus the same period the prior year, and digital album units were down 15% to 48.2 million. Digital track sales declined by value 22% to \$520 million, with sales volume down 22% to 432 million units.

The total value of shipments in physical formats was \$672 million, down 14% versus 1H 2015. CDs made up 66% of total physical shipments by value. Vinyl

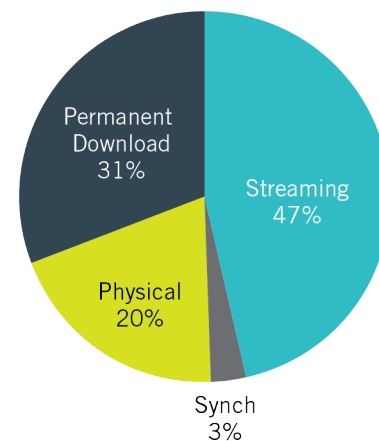
albums were down 6% by value for the first half of the year, and accounted for 31% of physical shipments by value. Synchronization royalties were \$100 million for the first half of the year, virtually flat versus 1H 2015.

These first half 2016 results illustrate the emergence of paid subscriptions as a primary revenue driver for the United States music industry. For the first time, paid subscriptions were virtually on-par with paid downloads as the biggest single format revenue source. Streaming became the overall largest revenue contributor by a wide margin.

Figure 5

U.S. Recorded Music Revenues 1H 2016

Source: RIAA



Note – 2015 data has been updated.

Please note that the RIAA presents the most up-to-date information available in its industry revenue reports and online statistics database:
<https://www.riaa.com/u-s-sales-database>.

For news media inquiries, please contact:

Jonathan Lamy
 Cara Duckworth Weiblinger
 Liz Kennedy
 202-775-0101

2016 Mid-Year Industry Shipment and Revenue Statistics

202-775-0101

United States Unit Shipments and Estimated Retail Dollar Value (In Millions, net after returns)

DIGITAL PERMANENT DOWNLOAD

		1H 2015	1H 2016	% CHANGE 2015-2016
(Units Shipped)	Download Single	554.5	432.0	-22.1%
(Dollar Value)		\$665.2	\$519.5	-21.9%
	Download Album	56.4	48.2	-14.5%
		\$564.7	\$500.1	-11.4%
	Kiosk¹	1.2	1.0	-19.2%
		\$2.0	\$1.7	-18.1%
	Music Video	1.8	1.4	-23.0%
		\$3.6	\$2.8	-23.0%
	Ringtones & Ringbacks	11.8	9.1	-22.6%
		\$29.3	\$22.7	-22.6%

DIGITAL SUBSCRIPTION & STREAMING

	SoundExchange Distributions²	\$387.2	\$403.4	4.2%
	Paid Subscription³	9.1	18.3	100.7%
		\$478.6	\$1,013.1	111.7%
	On-Demand Streaming (Ad-Supported)⁴	\$158.2	\$195.4	23.6%
TOTAL DIGITAL VALUE		\$2,288.9	\$2,658.7	16.2%
	Synchronization Royalties⁵	\$101.0	\$100.4	-0.6%

PHYSICAL

(Units Shipped)	CD	43.8	38.9	-11.2%
(Dollar Value)		\$531.0	\$443.9	-16.4%
	CD Single	0.3	0.0	-109.1%
		\$0.8	-\$0.1	-116.4%
	LP/EP	9.2	8.4	-9.1%
		\$221.1	\$207.1	-6.3%
	Vinyl Single	0.4	0.3	-28.2%
		\$4.2	\$3.2	-23.9%
	Music Video	1.2	0.8	-32.8%
		\$23.9	\$15.8	-34.0%
	DVD Audio	0.1	0.0	-47.1%
		\$2.4	\$1.5	-39.6%
	SACD	0.0	0.0	13.8%
		\$0.4	\$0.5	39.5%
Total Physical Units		55.0	48.4	-12.0%
Total Physical Value		\$783.9	\$671.9	-14.3%
Total Retail Units		47.4	41.0	-13.5%
Total Retail Value		\$727.4	\$631.5	-13.2%

TOTAL DIGITAL AND PHYSICAL

Total Units⁶		680.6	540.0	-20.7%
Total Value		\$3,173.8	\$3,431.0	8.1%
% of Shipments⁷		1H 2015	1H 2016	
Physical		26%	20%	
Digital		74%	80%	

For a list of authorized services see www.whymusicmatters.com

Retail Value is the value of shipments at recommended or estimated list price
Formats with no retail value equivalent included at wholesale value

Historical data updated for 2015

¹ Includes Singles and Albums

² Estimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses

³ Streaming, tethered, and other paid subscription services not operating under statutory licenses

Subscription volume is average number of subscriptions for subscription services

⁴ Ad-supported audio and music video services not operating under statutory licenses

⁵ Includes fees and royalties from synchronization of sound recordings with other media

⁶ Units total includes both albums and singles, and does not include subscriptions or royalties

⁷ Synchronization Royalties excluded from calculation

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2016 NIELSEN MUSIC U.S. MID-YEAR REPORT

AMAZON EX. 10




2016 MID-YEAR HIGHLIGHTS AND ANALYSIS

Nielsen, the music industry's leading data information provider presents the 2016 U.S. Music mid-year report for the 6-month period of January 1, 2016 through June 30, 2016.

- Audio has surpassed Video as the leading Streaming format in 2016. Audio share of streaming is 54% in 2016, growing from 44% through the first six months of 2015.
- There are 3 albums that have sold over 1 Million units so far this year (Adele/25, Drake/Views and Beyonce/Lemonade), while there was only 1 at this time last year (Taylor Swift/1989).
- Creative release strategies, driven mostly by digital formats, continue to be a major story. Drake's "Views", Beyonce's "Lemonade" and Kanye West's "The Life of Pablo" have all been successful this year and are led by digital formats. Also, 2016 saw the first album to chart based solely on streaming activity, when Chance the Rapper debuted at #8 in its first week with 57M audio streams.
- Digital purchasing has seen the largest decline of all formats with Digital tracks down 24% and digital albums down 18%. Total digital purchasing (Albums + Track Equivalents) is down 21% vs. the first half of 2015. However, factoring in the gains in streaming and total digital consumption is up 15%.
- Vinyl continues to become a bigger piece of the physical music business. Vinyl LPs now comprise nearly 12% of the physical business in the first half of 2016, which far surpasses last year's record pace of 9%.

ON-DEMAND MUSIC STREAMS

(INCLUDES ALL ON-DEMAND AUDIO + VIDEO MUSIC STREAMS IN BILLIONS)

	2016	2015	% CHG.
 STREAMS	208.9	131.6	+58.7%
 AUDIO	113.6	57.5	+97.4%
 VIDEO	95.3	74.1	+28.6%

OVERALL ALBUM CONSUMPTION WITH TEA AND SEA

(INCLUDES ALL ALBUMS & TRACK EQUIVALENT ALBUMS & STREAMING EQUIVALENT ALBUMS – IN MILLIONS)

	2016	2015	% CHG.
TOTAL ALBUM + TEA + SEA	279.9	257.0	+8.9%

NOTE: TRACK EQUIVALENT ALBUMS RATIO OF 10 TRACKS TO 1 ALBUM AND STREAMING EQUIVALENT ALBUMS RATIO OF 1500 STREAMS TO 1 ALBUM

TOTAL ALBUM SALES

(INCLUDES CDS, CASSETTES, VINYL LPS, DIGITAL ALBUMS - IN MILLIONS)

	2016	2015	% CHG.
TOTAL UNITS	100.3	116.1	-13.6%
CD	50.0	56.6	-11.6%
DIGITAL	43.8	53.7	-18.4%
LP/VINYL	6.2	5.6	+11.5%

DIGITAL TRACK SALES

(IN MILLIONS)

	2016	2015	% CHG.
TOTAL UNITS	404.3	531.6	-23.9%

PHYSICAL ALBUM SALES BY STORE TYPE

(INCLUDES CDS, CASSETTES, VINYL LPS – IN MILLIONS)

	2016	2015	% CHG.
CHAIN	11.7	13.3	-11.9%
INDEPENDENT	8.3	8.8	-5.9%
MASS MERCHANT	17.6	22.9	-23.0%
NON-TRADITIONAL	18.8	17.4	+8.2%

(NON-TRADITIONAL INCLUDES INTERNET, VENUE, DIRECT-TO-CONSUMER AND OTHER NON-TRADITIONAL RETAIL OUTLETS)

TOTAL DIGITAL MUSIC CONSUMPTION

(DIGITAL ALBUMS + TRACK EQUIVALENT ALBUMS + ON-DEMAND STREAMING EQUIVALENT ALBUMS – IN MILLIONS)

	2016	2015	% CHG.
TOTAL UNITS	223.5	194.6	+14.8%

CURRENT AND CATALOG SALES

(CATALOG IS DEFINED AS OVER 18 MONTHS SINCE RELEASE
IN MILLIONS)

		2016	2015	% CHG.
OVERALL ALBUMS	CURRENT	40.4	51.0	-20.8%
	CATALOG	59.9	65.1	-8.0%
PHYSICAL ALBUMS	CURRENT	21.2	26.5	-20.1%
	CATALOG	35.3	35.9	-1.7%
DIGITAL ALBUMS	CURRENT	19.2	24.5	-21.6%
	CATALOG	24.6	29.2	-15.7%
DIGITAL TRACKS	CURRENT	141.5	207.8	-31.9%
	CATALOG	262.7	323.8	-18.9%

Source: Nielsen Music


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BILLBOARD'S 2016 MID-YEAR CHARTS, COMPILED BY NIELSEN MUSIC

2016 OVERALL TOP 10

(INCLUDES ALL ALBUMS & TRACK EQUIVALENT ALBUMS & ON-DEMAND AUDIO STREAMING EQUIVALENT ALBUMS)

RANK	ARTIST	TITLE	TOTAL VOLUME	ALBUM SALES	SONG SALES	ON-DEMAND AUDIO STREAMS
1	DRAKE	IEWS	2,609,000	1,313,000	3,171,000	1,468,467,000
2	ADELE	25	1,747,000	1,403,000	2,337,000	166,382,000
3	BEYONCE	LEMONADE	1,687,000	1,202,000	2,880,000	295,514,000
4	JUSTIN BIEBER	PURPOSE	1,332,000	479,000	3,604,000	738,418,000
5	RIHANNA	ANTI	1,272,000	480,000	2,946,000	747,048,000
6	CHRIS STAPLETON	TRAVELLER	931,000	746,000	1,088,000	112,946,000
7	PRINCE	VERY BEST OF PRINCE	905,000	575,000	3,237,000	9,415,000
8	TWENTY ONE PILOTS	BLURRYFACE	905,000	371,000	2,500,000	426,034,000
9	THE WEEKEND	BEAUTY BEHIND MAD...	708,000	240,000	1,569,000	466,618,000
10	KEVIN GATES	ISLAH	690,000	307,000	1,294,000	380,495,000

2016 TOP ALBUMS (BASED ON U.S. SALES)

RANK	ARTIST	TITLE	SALES
1	ADELE	25	1,403,000
2	DRAKE	IEWS	1,313,000
3	BEYONCE	LEMONADE	1,202,000
4	CHRIS STAPLETON	TRAVELLER	746,000
5	PRINCE	VERY BEST OF PRINCE	575,000
6	RIHANNA	ANTI	480,000
7	JUSTIN BIEBER	PURPOSE	479,000
8	DAVID BOWIE	BLACKSTAR	428,000
9	PRINCE	PURPLE RAIN	413,000
10	PANIC! AT THE DISCO	DEATH OF A BACHELOR	397,000

2016 TOP DIGITAL SONGS

RANK	ARTIST	SONG	SALES
1	FLO RIDA	"MY HOUSE"	1,947,000
2	LUKAS GRAHAM	"7 YEARS"	1,831,000
3	JUSTIN BIEBER	"LOVE YOURSELF"	1,653,000
4	RIHANNA FEAT. DRAKE	"WORK"	1,610,000
5	TWENTY ONE PILOTS	"STRESSED OUT"	1,586,000
6	DRAKE FEAT. WIZKID & KYLA	"ONE DANCE"	1,442,000
7	JUSTIN TIMBERLAKE	"CAN'T STOP THE FEELING!"	1,400,000
8	ZAYN	"PILLOWTALK"	1,288,000
9	MIKE POSNER	"I TOOK A PILL IN IBIZA"	1,273,000
10	DESIIGNER	"PANDA"	1,211,000

TOP DIGITAL SONG CONSUMPTION

RANK	ARTIST	SONG	SALES	AUDIO STREAMS	TOTAL SONG VOLUME
1	DRAKE FEAT. WIZKID & KYLA	ONE DANCE	1,442,000	286,396,000	3,351,000
2	RIHANNA FEAT. DRAKE	WORK	1,610,000	249,625,000	3,274,000
3	LUKAS GRAHAM	7 YEARS	1,831,000	149,936,000	2,830,000
4	FLO RIDA	MY HOUSE	1,947,000	129,802,000	2,813,000
5	JUSTIN BIEBER	LOVE YOURSELF	1,653,000	155,058,000	2,687,000
6	DESIIGNER	PANDA	1,211,000	197,997,000	2,531,000
7	TWENTY ONE PILOTS	STRESSED OUT	1,586,000	141,619,000	2,530,000
8	ZAYN	PILLOWTALK	1,288,000	169,634,000	2,418,000
9	MIKE POSNER	I TOOK A PILL IN IBIZA	1,273,000	161,051,000	2,347,000
10	G-EAZY X BEBE REXHA	ME, MYSELF & I	1,085,000	180,962,000	2,291,000

2016 TOP LP VINYL ALBUMS

RANK	ARTIST	TITLE	SALES
1	DAVID BOWIE	<i>BLACKSTAR</i>	57,000
2	ADELE	25	36,000
3	TWENTY ONE PILOTS	<i>BLURRYFACE</i>	31,000
4	AMY WINEHOUSE	<i>BACK TO BLACK</i>	27,000
5	BOB MARLEY & THE WAILERS	<i>LEGEND</i>	23,000
6	KENDRICK LAMAR	<i>TO PIMP A BUTTERFLY</i>	22,000
7	BEATLES	<i>Abbey Road</i>	21,000
8	TWENTY ONE PILOTS	<i>Vessel</i>	20,000
9	MILES DAVIS	<i>Kind Of Blue</i>	19,000
10	LUMINEERS	<i>Cleopatra</i>	19,000

2016 TOP ON-DEMAND STREAMS

(INCLUDES ALL AUDIO AND VIDEO ON-DEMAND STREAMS)

RANK	ARTIST	SONG	STREAMS
1	RIHANNA FEAT. DRAKE	"WORK"	511,454,000
2	DESIGNER	"PANDA"	467,379,000
3	JUSTIN BIEBER	"SORRY"	325,235,000
4	DRAKE FEAT. WIZKID & KYLA	"ONE DANCE"	308,826,000
5	JUSTIN BIEBER	"LOVE YOURSELF"	296,890,000
6	ZAYN	"PILLOWTALK"	289,509,000
7	G-EAZY X BEBE REXHA	"ME, MYSELF & I"	287,242,000
8	LUKAS GRAHAM	"7 YEARS"	284,251,000
9	TWENTY ONE PILOTS	"STRESSED OUT"	277,195,000
10	FIFTH HARMONY FEAT. TY DOLLA \$IGN	"WORK FROM HOME"	255,697,000

2016 TOP AUDIO ON-DEMAND STREAMS

RANK	ARTIST	SONG	STREAMS
1	DRAKE FEAT. WIZKID & KYLA	"ONE DANCE"	286,396,000
2	RIHANNA FEAT. DRAKE	"WORK"	249,625,000
3	DESIIGNER	"PANDA"	197,997,000
4	G-EAZY X BEBE REXHA	"ME, MYSELF & I"	180,962,000
5	ZAYN	"PILLOWTALK"	169,634,000
6	MIKE POSNER	"I TOOK A PILL IN IBIZA"	161,051,000
7	JUSTIN BIEBER	"LOVE YOURSELF"	155,058,000
8	LUKAS GRAHAM	"7 YEARS"	149,936,000
9	RIHANNA	"NEEDED ME"	146,364,000
10	JUSTIN BIEBER	"SORRY"	145,482,000

2015 TOP VIDEO ON-DEMAND STREAMS

RANK	ARTIST	SONG	STREAMS
1	DESIIGNER	"PANDA"	269,382,000
2	RIHANNA FEAT. DRAKE	"WORK"	261,829,000
3	JUSTIN BIEBER	"SORRY"	179,753,000
4	SILENTO	"WATCH ME (WHIP/NAE NAE)"	152,687,000
5	JUSTIN BIEBER	"LOVE YOURSELF"	141,833,000
6	TWENTY ONE PILOTS	"STRESSED OUT"	135,576,000
7	LUKAS GRAHAM	"7 YEARS"	134,315,000
8	ZAYN	"PILLOWTALK"	119,875,000
9	KEVIN GATES	"2 PHONES"	115,024,000
10	ADELE	"HELLO"	113,612,000

2015 MOST PLAYED SONGS AT RADIO

(ALL U.S. RADIO, NETWORK AND SATELLITE)

RANK	ARTIST	SONG	PLAYS
1	JUSTIN BIEBER	"LOVE YOURSELF"	547,000
2	TWENTY ONE PILOTS	"STRESSED OUT"	485,000
3	JUSTIN BIEBER	"SORRY"	387,000
4	DNCE	"CAKE BY THE OCEAN"	359,000
5	FLO RIDA	"MY HOUSE"	359,000
6	MIKE POSNER	"I TOOK A PILL IN IBIZA"	353,000
7	LUKAS GRAHAM	"7 YEARS"	351,000
8	ADELE	"HELLO"	327,000
9	G-EAZY X BEBE REXHA	"ME, MYSELF & I"	313,000
10	ZAYN	"PILLOWTALK"	311,000

SHARE OF TOTAL VOLUME BY GENRE

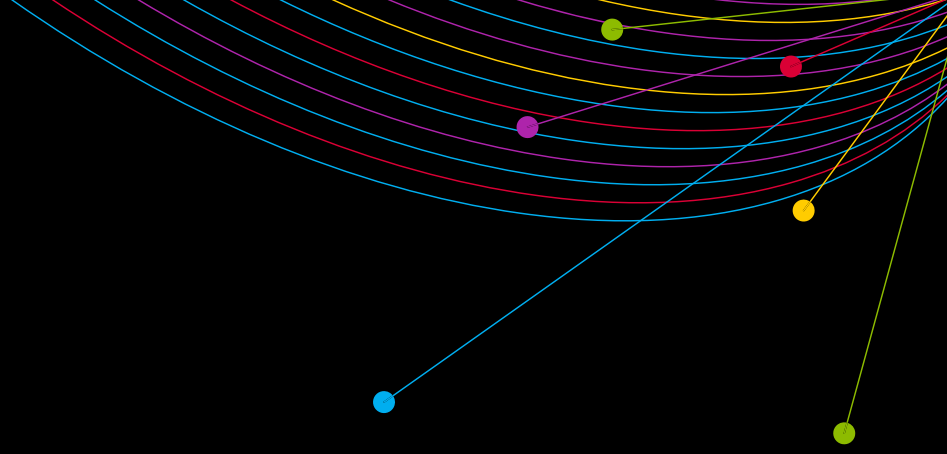
GENRE	TOTAL ALBUM + TEA + SEA	TOTAL ALBUMS	PHYSICAL ALBUMS	DIGITAL ALBUMS	DIGITAL TRACKS	TOTAL ON-DEMAND STREAMS	AUDIO ON-DEMAND STREAMS	VIDEO ON-DEMAND STREAMS
ROCK	26.8%	41.1%	43.0%	38.5%	21.8%	17.9%	21.4%	13.7%
R&B/HIP-HOP	22.6%	19.1%	16.3%	22.9%	22.9%	24.9%	27.5%	21.9%
POP	14.5%	11.2%	11.2%	10.9%	21.8%	14.9%	15.1%	14.5%
COUNTRY	8.4%	11.6%	13.1%	9.6%	12.2%	5.0%	6.3%	3.5%
LATIN	5.0%	1.8%	2.4%	1.0%	1.8%	8.3%	3.8%	13.6%
ELECTRONIC/DANCE	3.8%	1.9%	1.1%	2.9%	4.6%	5.0%	5.6%	4.3%
CHRISTIAN/GOSPEL	3.0%	4.2%	4.3%	4.1%	3.1%	2.1%	2.0%	2.3%
Classical	1.2%	2.1%	2.3%	1.8%	0.5%	0.7%	0.7%	0.7%
Jazz	1.2%	2.2%	2.5%	1.8%	0.6%	0.6%	0.7%	0.6%
Children	0.9%	1.4%	1.6%	1.1%	0.4%	0.6%	0.4%	0.9%

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AN UNCOMMON SENSE
OF THE CONSUMER™

Music & Millennials

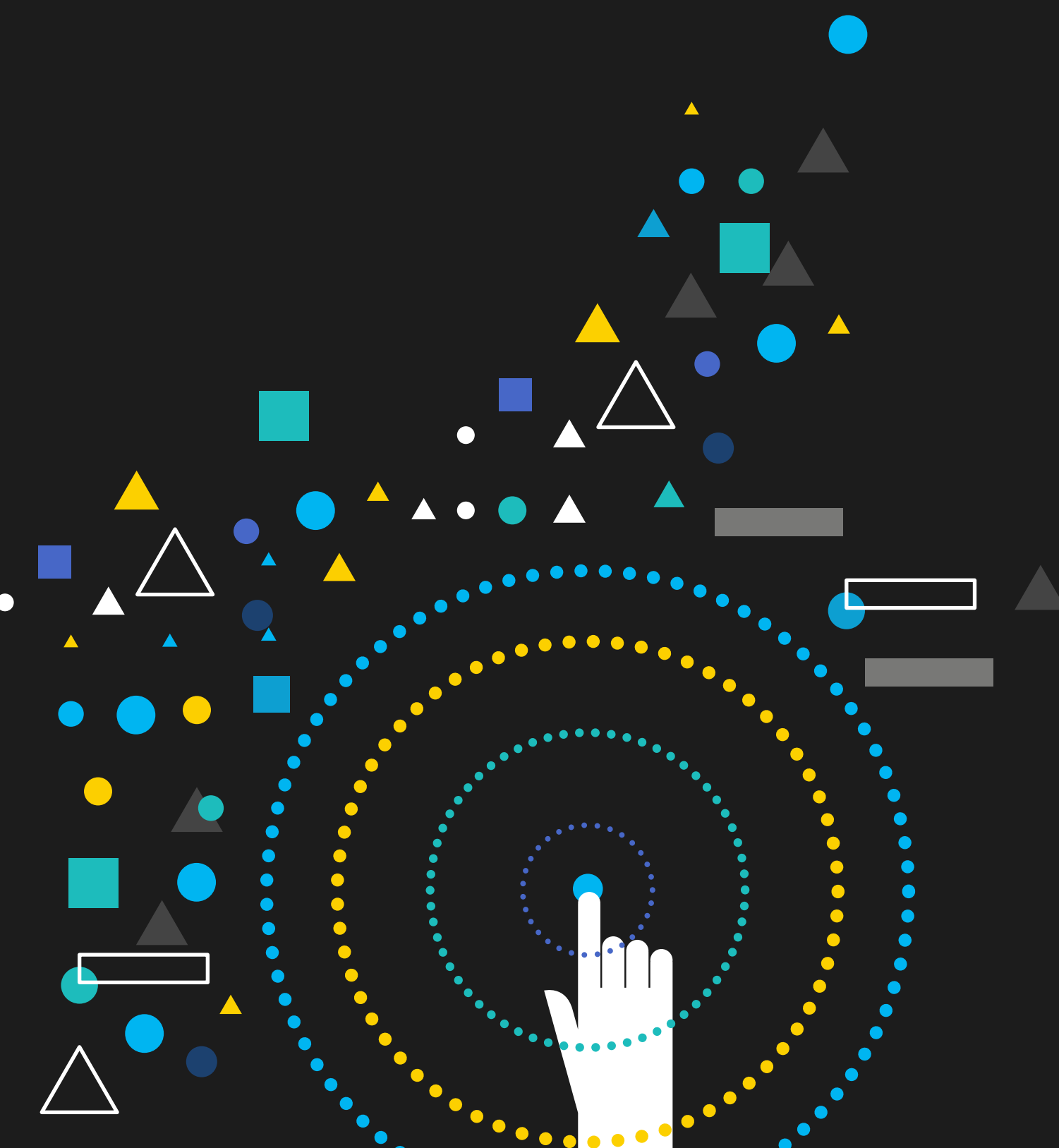
July 2016



AMAZON EX. 12

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MILLENNIALS - THE DRIVING SEAT GENERATION

Millennials are the future of the music industry, with 15-19 year olds showing next generation digital native behavior and 20-24 year olds making the transition from dependent digital natives to young professionals with disposable income.

Their preference for music streaming, in particular, signifies the coming of a whole new generation of online music consumers. For this generation, music is an experience, an omnipresent soundtrack to their daily lives and interactive social environments.

These consumers have never experienced a world without high-speed broadband, connected devices, mobile data and instantaneous access to almost every piece of media in existence for little cost, if there is any cost involved at all, and this has led to their cultural and lifestyle values being redefined and reshaped.

The result of this harmonious relationship between new technology and the ubiquity of content is that 'digital natives' don't harbor any analogue era influence like older generations, and this has resulted in the way they consume music shifting away from traditional methods - all of which are detailed in this report – alongside analysis of how these shifts in music and media may reshape the listening landscape and thus the creative industries at large.

BY ROBERT DELMONTE | MUSIC INSIGHT LEAD





SECTION 1:

Sample

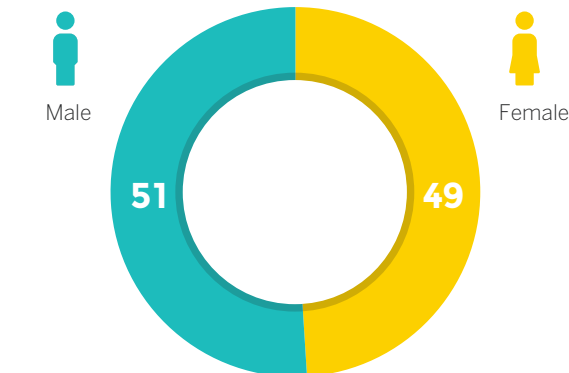
SAMPLE

3014 Respondents

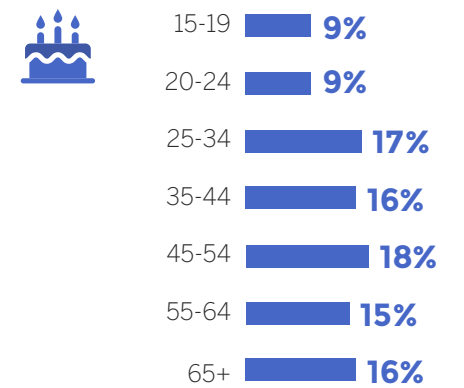
A statistically and demographically representative sample of the US population.

All respondents had online access.

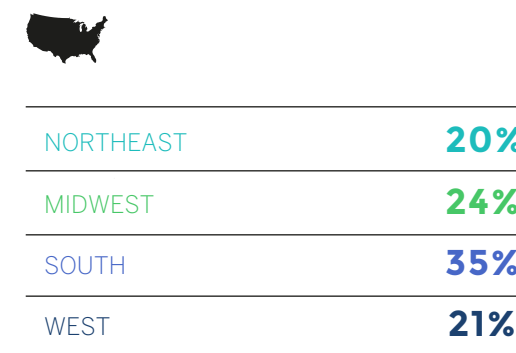
GENDER



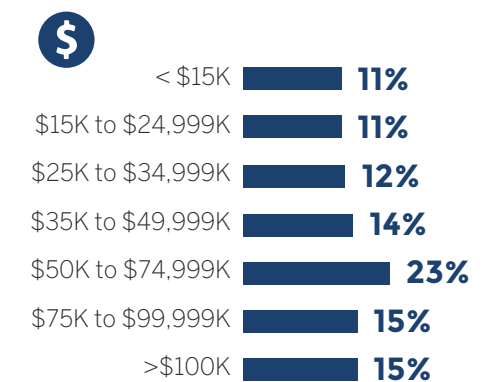
AGE



REGION



INCOME





SECTION 2:

Music Consumption

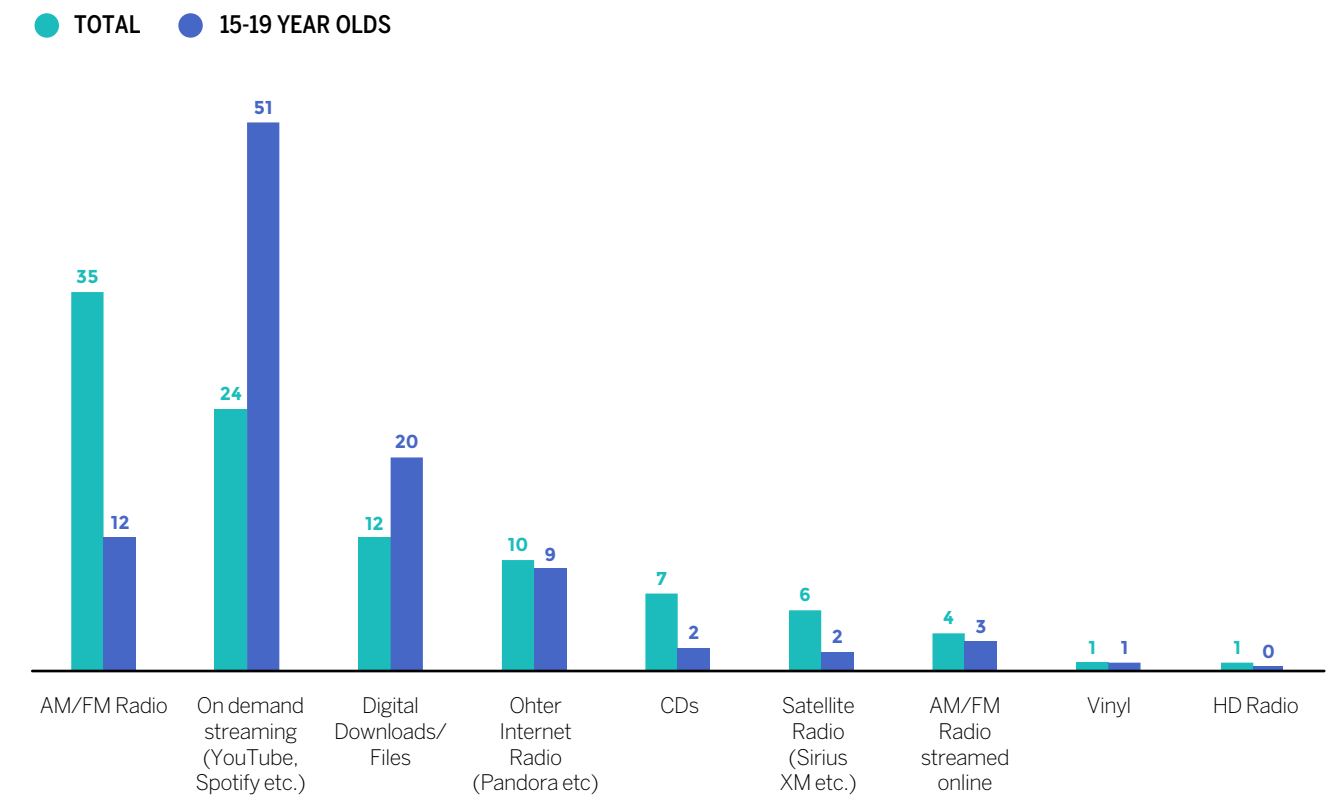
RADIO IS STILL KING OF NET DAILY LISTENING

All those who listen to music on a 'typical' day

Radio is still king accounting for 35% of daily listening. Meanwhile, mainstream digital content sources are comfortably outperforming physical in US share of listening. On demand streaming is second with 24% (bolstered by YouTube), digital downloads are third with 12% and other internet radio (Pandora etc.) is fourth with 10%; all ahead of

CDs at 7%. Millennials, particularly the 15-19 year olds, recorded significantly higher levels of streaming consumption, at the expense of more traditional forms of media such as Broadcast Radio and Physical music.

SHARE OF LISTENING (%)



Question: To the nearest 15 minutes, how is your music listening time normally split between the following sources?
Base: 2808 Respondents

MILLENNIALS - DRIVERS OF CHANGE

A real preference for streaming amongst younger age groups, particularly the 'digital natives', means the industry is under greater pressure to ensure that this new form of consumption is sufficiently well monetised.

As users start using subscription and streaming services, they are essentially transitioning their attention and/or spending. Just as the download was a transition from the CD, streaming is a transition from downloads. If a consumer is content with a music subscription or free streaming, logically, there is less of a reason for a subscriber to additionally buy music. As access models become more prominent, and digital sales are affected, the industry needs to learn how to maintain sufficient margins from a streaming business model which can often generate much smaller margins.

Millennial behaviors and expectations are different to those of past generations. With free on-demand access to so much music, concern has been expressed as to whether this generation will ultimately value the music in the same way as older generations. While previous generations have known a sense of the monetary value of music, through having to buy singles and albums or not receive music at all, music has always been as ubiquitous as it is free to access for millennials.

Ultimately more millennials need to be pulled in to paid subscription models where the margins for rights owners are much higher than on free ad funded services like YouTube or non existent – ie piracy. But there are encouraging signs of progress in that regard. Older millennials - 20-34s - are over-indexing on having a premium subscription with mobile devices helping to drive such usage.

Looking forward, as the 'analogue era' demographic diminishes and millennials begin to make up the majority of the adult population, their preference for music consumption will inevitably accompany them. This, consequently, could spell success for music streaming in years to come. The effect this has on the wider music industry however, depends on how well these consumers can be converted onto paying options.



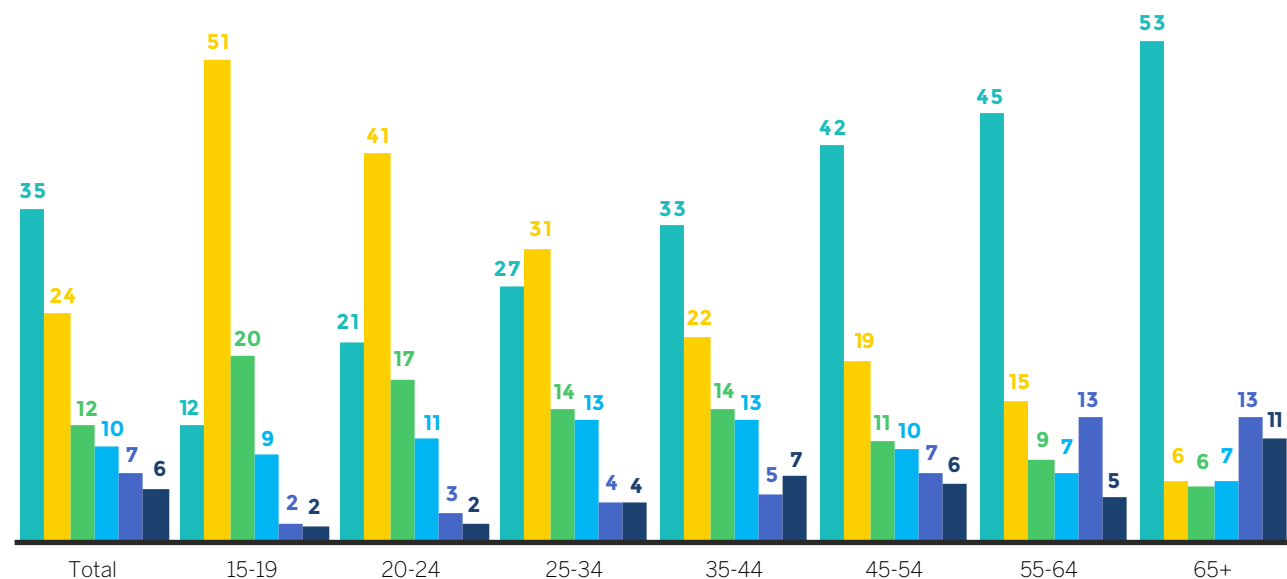
MILLENNIALS VASTLY OVER-INDEX ON ON-DEMAND STREAMING

All those who listen to music on a 'typical' day

Millennials vastly over-index on 'on-demand streaming', with 15-19 year olds at 51% (more than double the survey mean of 24%) and 20-24 year olds at 41%.

Radio, meanwhile, trends up as respondents get older, with the format accounting for just 12% of 15-19 year olds' listening time. Again, traditional forms of media (Broadcast Radio and Physical Music) seem to be falling at the expense of higher levels of online forms of consumption.

SHARE OF LISTENING BY AGE (%)



- AM/FM RADIO
- ON DEMAND STREAMING (YOUTUBE, SPOTIFY ETC.)
- DIGITAL DOWNLOADS/FILES
- OTHER INTERNET RADIO (PANDORA ETC.)
- CDs
- SATELITE RADIO (SIRIUS XM ETC.)

Question: To the nearest 15 minutes, how is your music listening time normally split between the following sources?
 Base 2808 Respondents



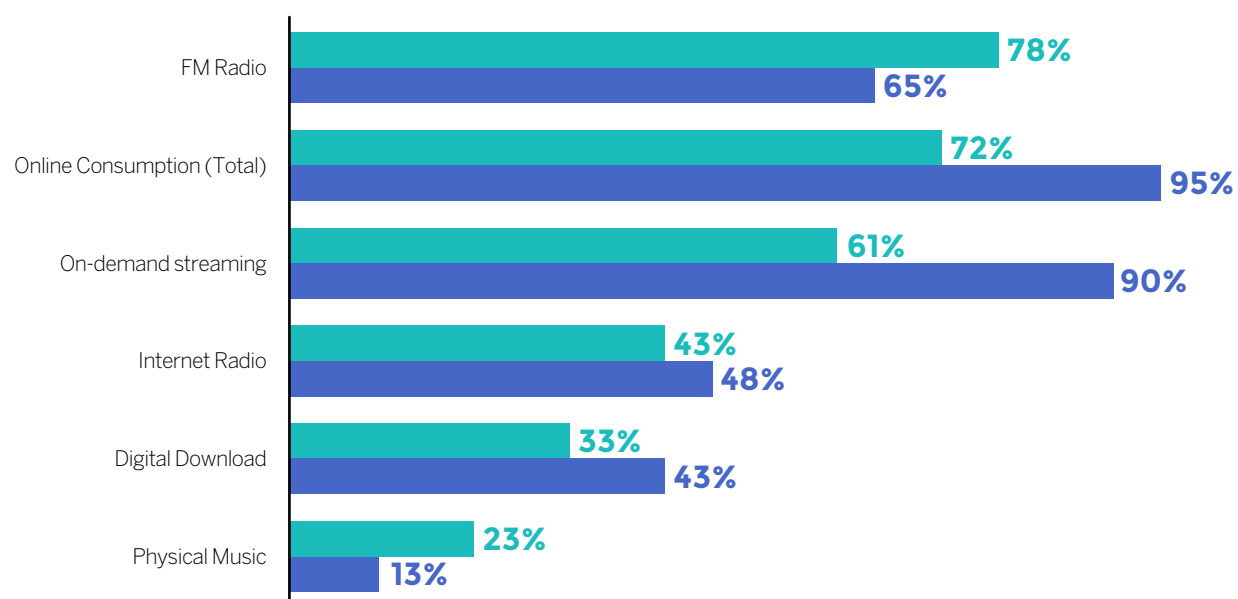
WEEKLY REACH IN THE US

Total Sample

In terms of weekly reach, young millennials over indexed on digital forms of consumption, in particular on-demand streaming, while under-indexing on FM Radio.

Please note – ‘Online Consumption’ (Total) is the net of On-demand streaming and internet radio.

US WEEKLY REACH - NETS

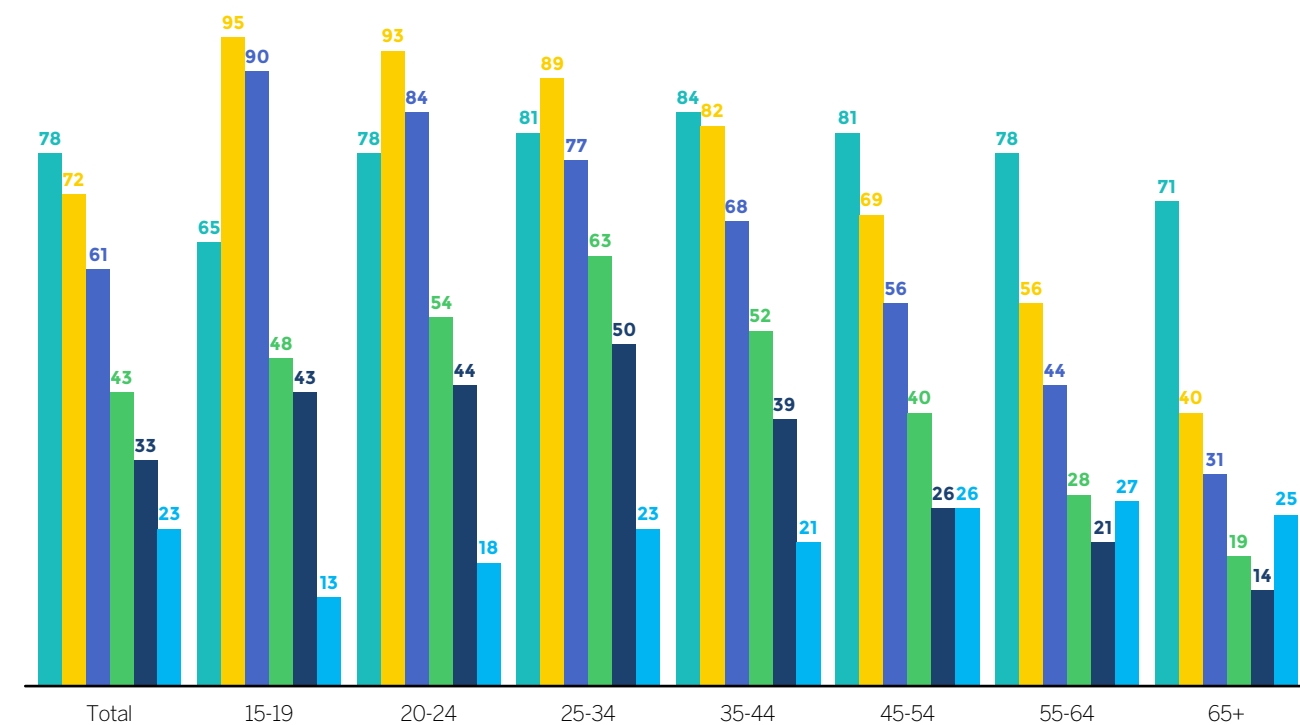


● TOTAL ● 15-19 YEAR OLDS

Which, if any, of the following have you used in order to listen to audio content (music or speech) for five minutes or more at any one time during the last seven days? Base: 3014 Respondents

On demand streaming vastly over-indexes amongst millennials, then declines as respondents get older. AM/FM Radio listening, meanwhile, peaked amongst 35-44 year olds at 84%. Physical listening rose with age, before dropping slightly amongst the 65+ year olds.

WEEKLY REACH BY AGE (%)



● AM/FM RADIO ● ONLINE STREAMING (OVERALL) ● ON DEMAND STREAMING (YOUTUBE, SPOTIFY ETC.)
 ● INTERNET RADIO ● DIGITAL DOWNLOADS/FILES ● PHYSICAL

Question: Which, if any, of the following have you used in order to listen to audio content (music or speech) for five minutes or more at any one time during the last seven days? Online Streaming (Overall) = On demand streaming + Internet radio (NET)
 Base: 3014 Respondents

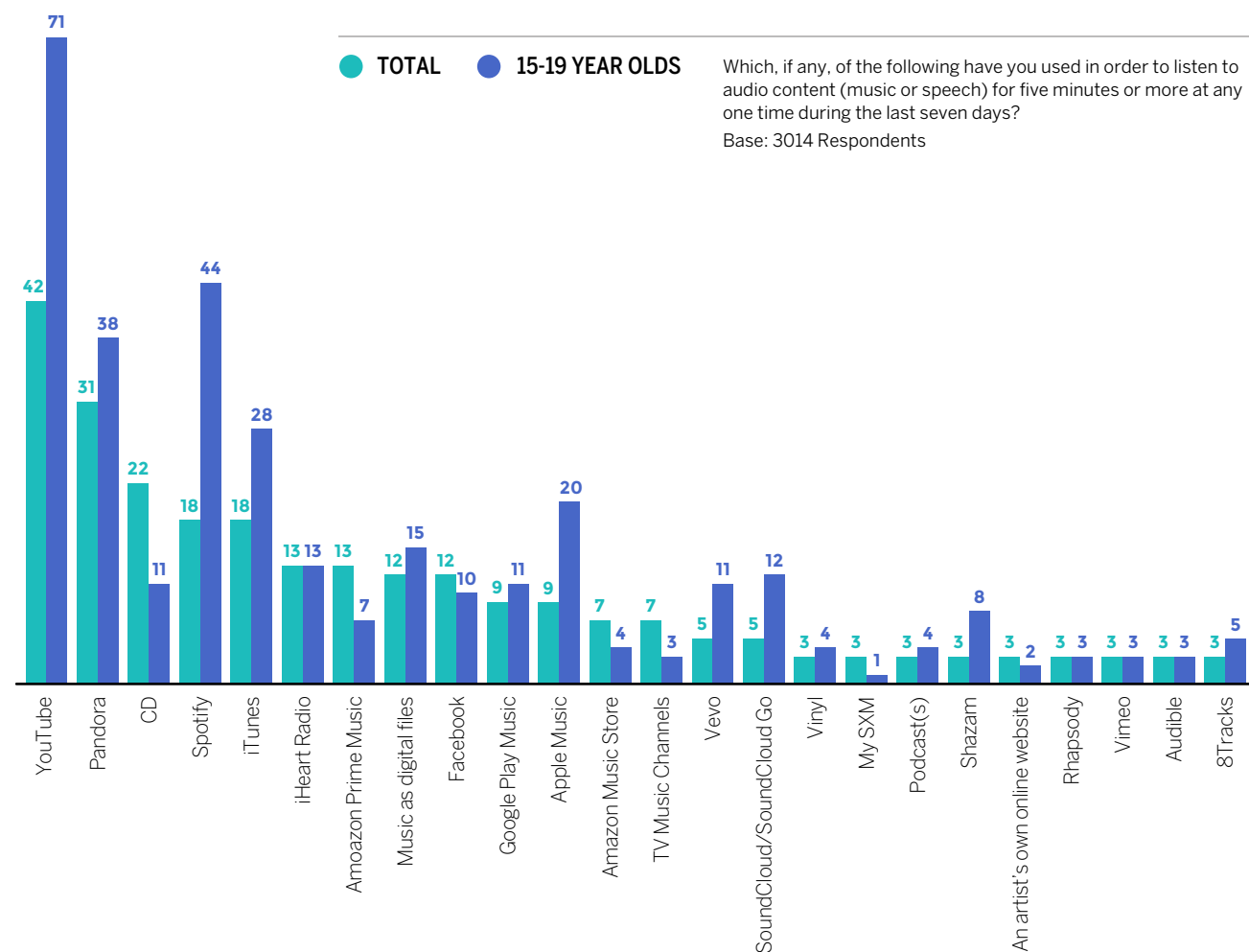
YOUTUBE IS THE MOST POPULAR AUDIO PLATFORM

Total Sample

At 42%, YouTube is the most popular audio platform.

Young millennials over-indexed on most online platforms (Spotify, Apple Music etc.) YouTube in particular was listened to by 71% of 15-19 year olds over a weekly period.

US WEEKLY REACH BY PLATFORM

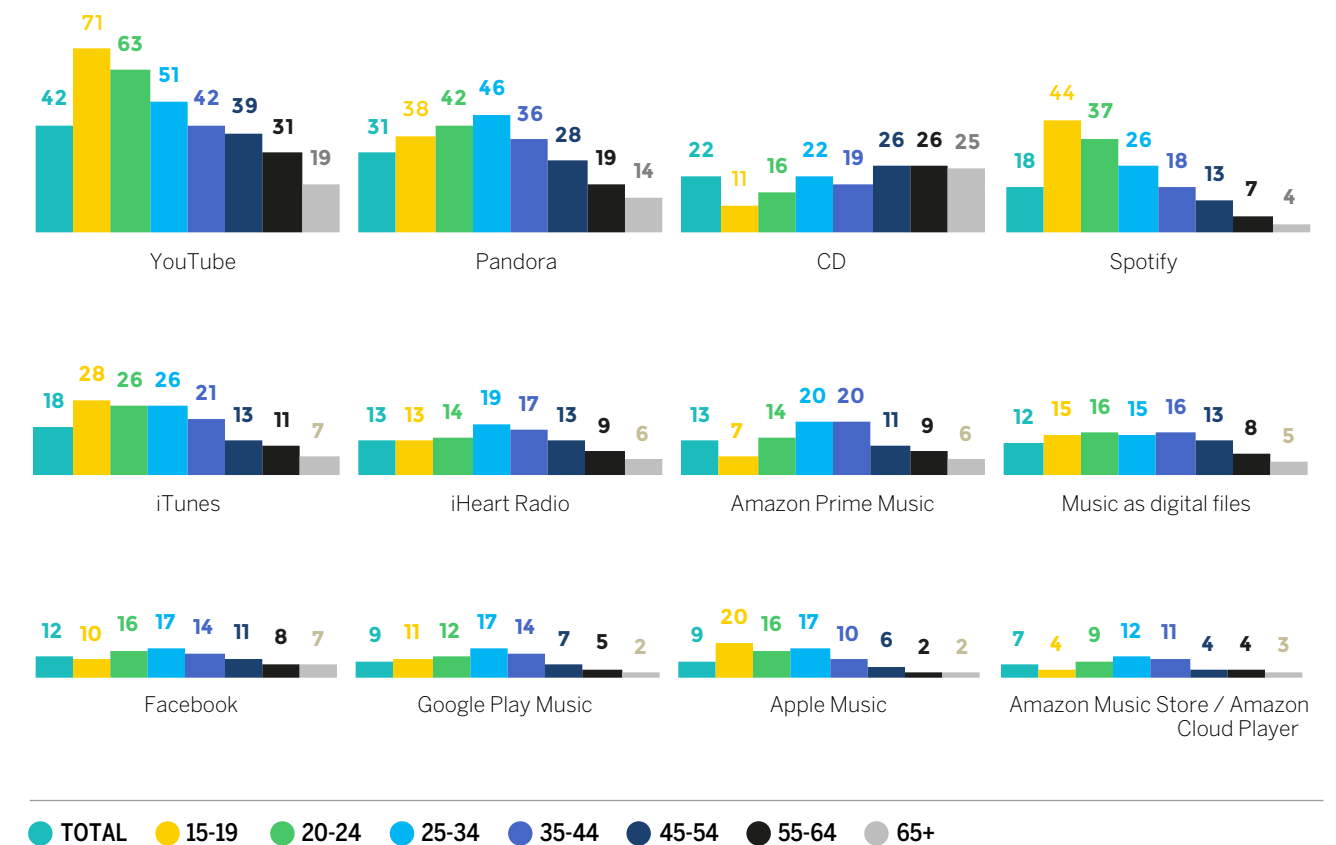


Total Sample

YouTube usage again is high amongst millennials, before decreasing consistently with age. Pandora has a fairly even spread, before dropping amongst the oldest age groups.

Younger millennials aren't using CDs as much as older users, reflecting their preference for digital means of consumption over traditional methods.

TOP PLATFORM REACH BY AGE (%)



Which, if any, of the following have you used in order to listen to audio content (music or speech) for five minutes or more at any one time during the last seven days? Base: 3014 Respondents



SECTION 3:

Device Usage

THE RADIO RECEIVER STRUGGLES AMONGST MILLENNIALS

All those who listen to music on a 'typical' day

The FM/AM radio receiver leads the device pack accounting for a 33% share of total listening time.

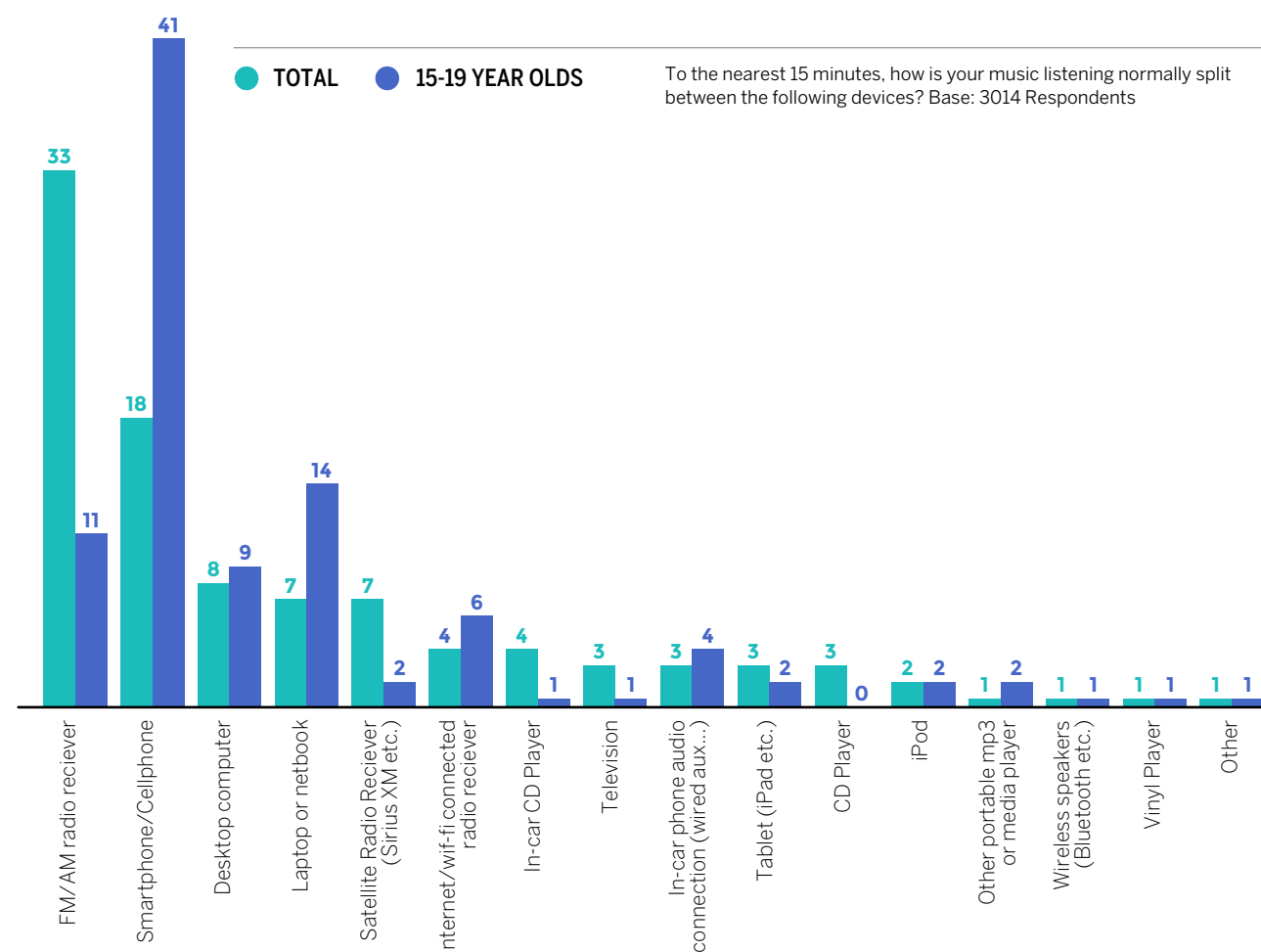
When it comes to young millennials however, the device accounts for just 11% of listening time.

Meanwhile, mobile phone listening is second at 18%, and is the favored listening device amongst

young millennials, accounting for a 41% of their listening time.

Clearly there is a significant disconnect between the devices used for audio consumption by older generations compared to teenagers who have started to shun broadcast radio receivers in favor of connected devices like laptops and mobile internet devices.

SHARE OF LISTENING BY DEVICE (%)



MILLENNIALS OPT FOR INTERACTIVE DEVICES

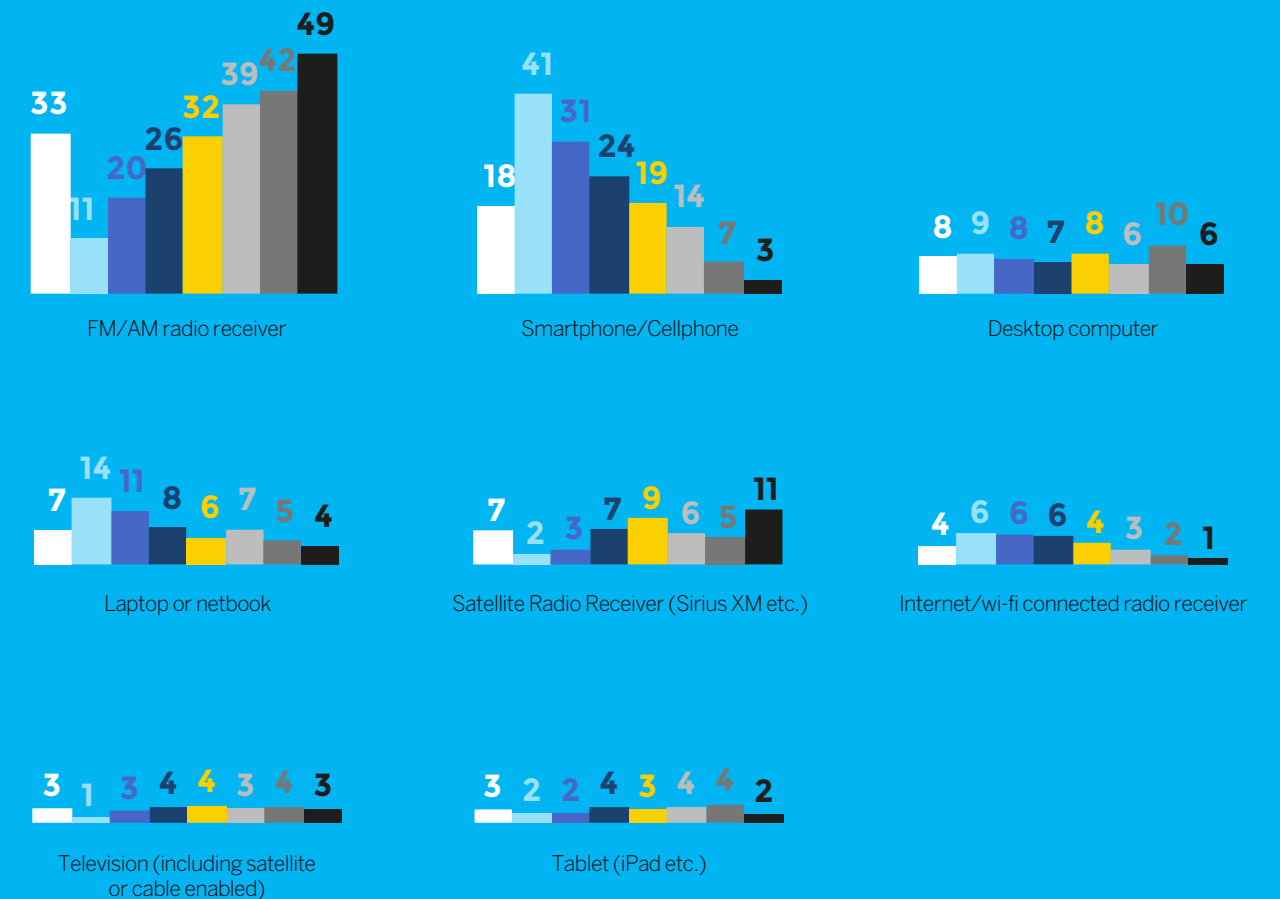
Clearly there is a significant disconnect between the devices used for audio consumption by older generations compared to teenagers who have started to shun broadcast radio receivers in favor of connected devices like laptops and mobile internet devices.

As a rule of thumb, the older the respondents, the less active they were in mobile audio consumption. In the young millennial age group (15-24) the mobile phone is now listened to more than the standalone Radio Receiver.

With better portability, ease of use and the 'always-on' connection to mass catalogues of music, mobile devices offer greater simplicity than traditional devices in joining up discovery to consumption. Additionally, 15-19 year olds do not share their mobile devices with their parents or siblings - it is theirs, and that makes it a very personal object. If music is a reflection of identity, then these devices become a powerful trigger for consuming music.

This all fits neatly into the more general trend away from traditional 'broadcaster to audience' media and towards a more social and interactive media environment. Younger audio consumers have opted for devices with screens and internet access, which allow them to curate and share their own audio experience.

SHARE OF LISTENING OF TOP DEVICES BY AGE (%)



● TOTAL ● 15-19 ● 20-24 ● 25-34 ● 35-44 ● 45-54 ● 55-64 ● 65+

To the nearest 15 minutes, how is your music split between the following devices?
Base: 2808 Respondents

CONNECTED DEVICES ARE LISTENED TO MORE REGULARLY BY MILLENNIALS

Total Sample

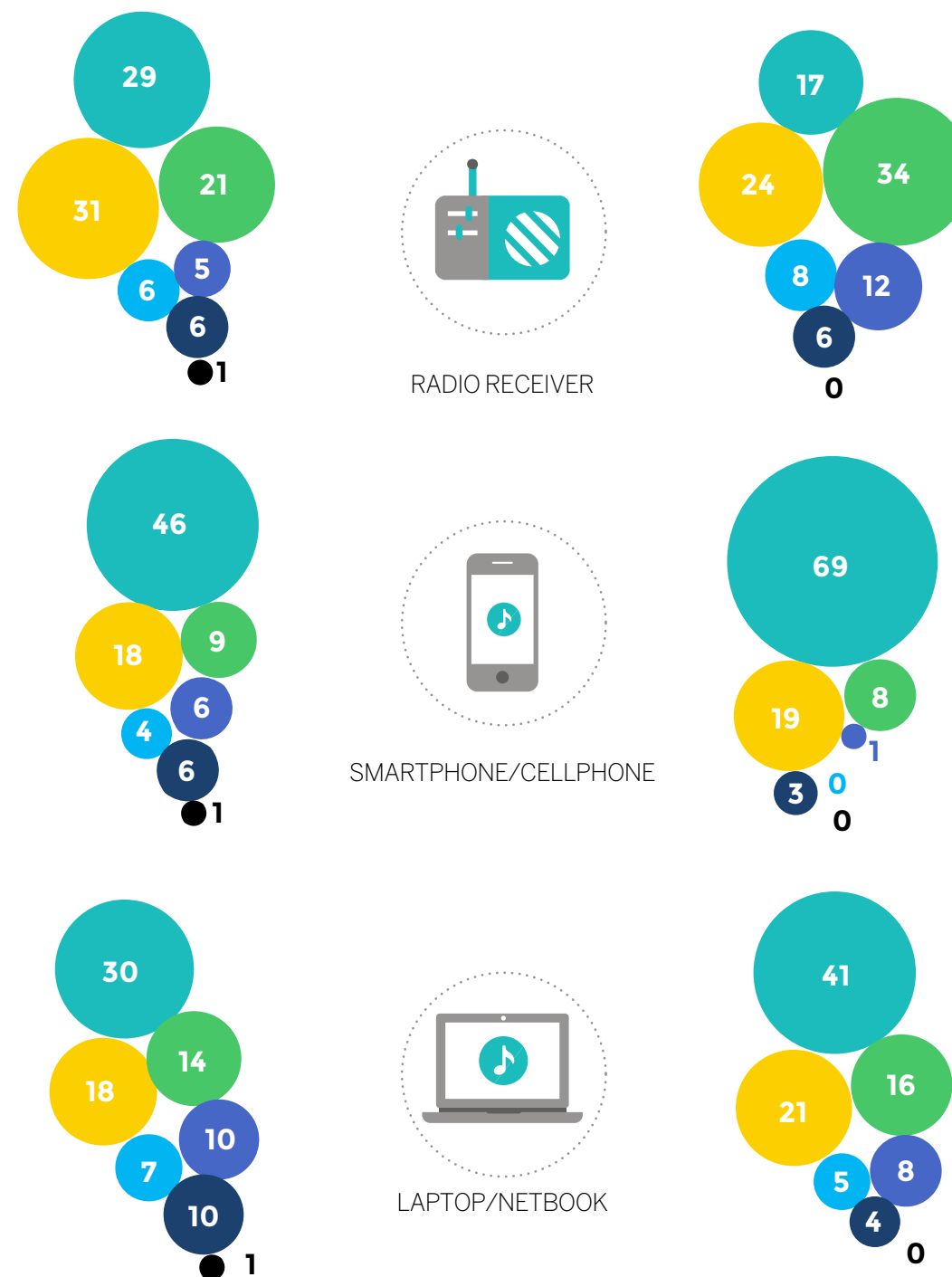
Connected devices, such as the smartphone and laptop, were used much more regularly by young millennials to listen to music.

Meanwhile, the radio receiver was used much less frequently amongst young millennials, reflective of their preference for online methods of consumption.



REGULARITY OF USAGE OF TOP DEVICES (%)

● I USE SEVERAL TIMES A DAY
 ● I USE EVERYDAY
 ● I USE 2-3 TIMES A WEEK
 ● I USE ONCE A WEEK
● I USE LESS OFTEN
 ● RARELY
 ● NEVER



Question: Approximately, how often do you use each of the following to listen to music?
 Base: Users of each device (2168 FM/AM Radio Receiver users etc.)

SECTION 4:

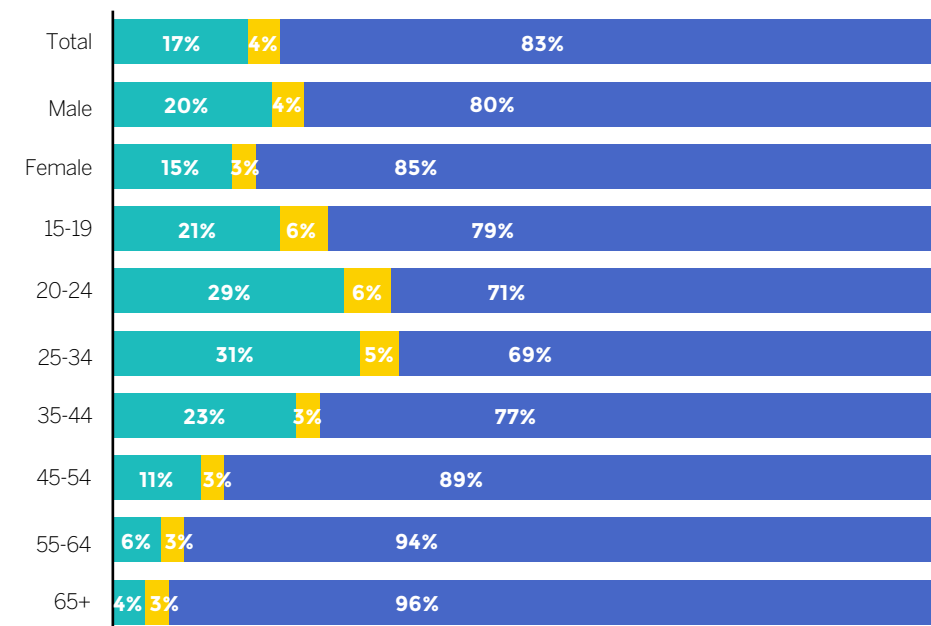
Music Streaming Uptake & Perceptions

MILLENNIALS OVER INDEX ON PAID SUBSCRIPTIONS

Total Sample

17% of US respondents said that they have a paid subscription to a streaming service, while millennials (particularly older millennials, 25-34) over indexed on paid subscriptions at 31%.

PAID/PREMIUM MUSIC STREAMING SUBSCRIPTIONS



● PAID SUBSCRIPTION ● FREE SUBSCRIPTION (FREE TRIAL ETC.) ● NONE

Do you have a paid/premium subscription to a music streaming service?
Base: 3014 Respondents

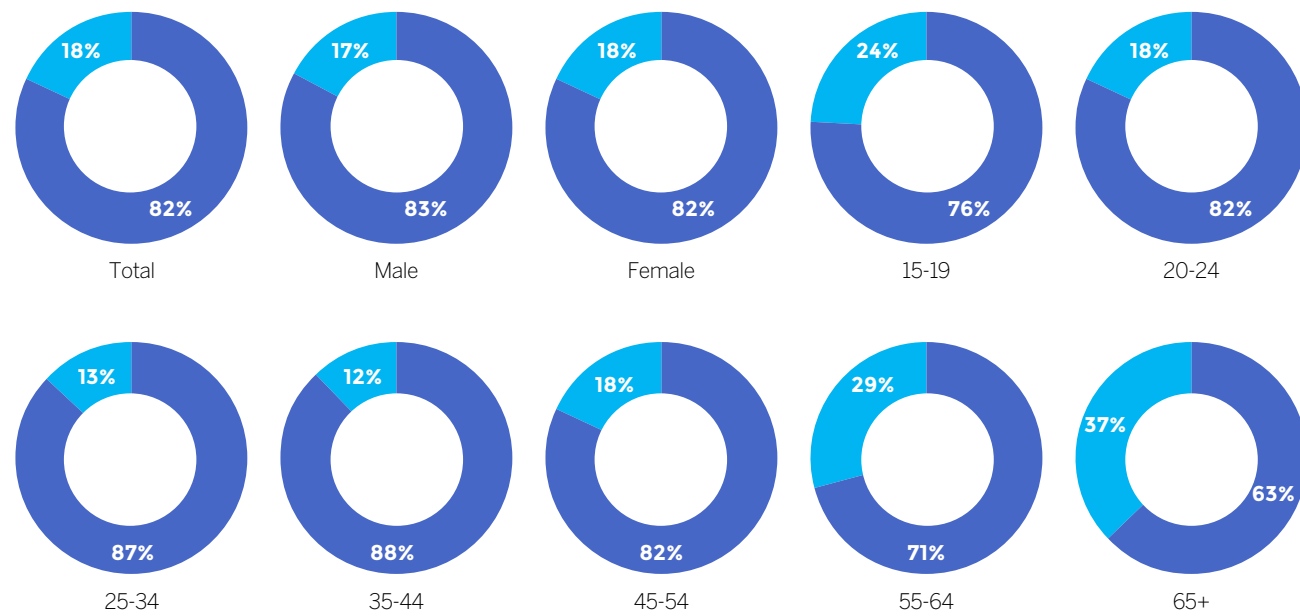
82% OF PREMIUM SUBSCRIPTIONS ARE PAID

All those who claim to have a premium/paid subscription

Of those who stated in the previous question they had a premium/paid subscription to a music streaming service, 82% actually paid money when asked a filter question. The remaining 18% either had a subscription through a free trial, a bundle with another product/service or used someone else's account (this was integrated into the previous page).

Those premium subscribers who don't pay anything themselves skew young. 24% of younger millennials (15-19 year olds) have a premium subscription but don't pay for it – of this group, 11% said that it came with a purchase and 10% say they use someone else's account.

PAID & FREE PREMIUM SUBSCRIBERS BY GENDER & AGE



● PAID (NET) ● NOTHING (NET)

How much do you pay for your music streaming subscription?
Base: 607 Respondents

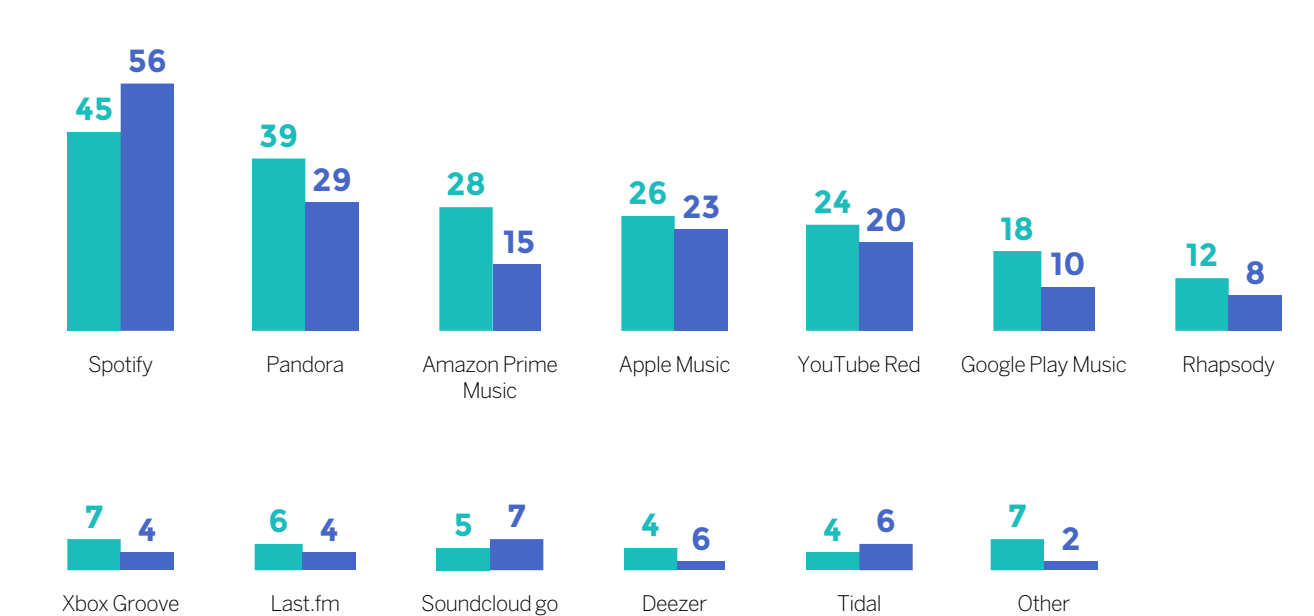
SPOTIFY IS THE MOST PAID FOR STREAMING SERVICE

All who had subscribed to a music streaming service

Whilst Pandora (32%), Apple Music (22%) and YouTube Red (19%) lead the rest of the pack.

Spotify skews to young millennials, whilst Pandora and Amazon Prime Music are less favorable - 56% of 15-19 year olds who have a paid for streaming subscription stated they subscribe to Spotify.

STREAMING SERVICES SUBSCRIBED TO (%)



● TOTAL ● 15-24 YEAR OLDS

Which of the following do you have a premium subscriptions to?
Base: 607 Respondents

MILLENNIALS PAY FOR STREAMING TO USE IT ON THEIR PHONE

Those who pay for a music streaming subscription

53% said that they subscribed in order to continue using the full version after a free trial period (this was down from 61% last year). Meanwhile, only 31% of respondents said they decided to pay to remove adverts and 29% to use service on mobile.

Millennials particularly over-indexed on paying in order to use streaming services on their mobile device, showing it was a main driver in leading them to purchase a subscription.

REASONS FOR PAYING FOR A STREAMING SERVICE

	TOTAL	15-24 YEAR OLDS
I used the full version of the service on a free trial period, liked it and decided to pay for the full version	53%	48%
I was using the free version, liked it, but wanted to remove advertisements	31%	33%
I wanted to use it on my mobile device	29%	40%
Recommendation from friends/family	24%	23%
I wanted to listen to a song/album release exclusively through the platform	17%	18%
Saw it advertised and liked the look of it	10%	6%
Don't know / not sure	5%	3%
Other (please specify)	9%	4%

Why did you decide to pay for a music streaming subscription?
Base: 607 Respondents

NON-PAYING MILLENNIALS ARE HAPPY WITH FREE TIER STREAMING

Those without a premium subscription to a streaming service

42% said that the reason for not paying was that they were happy to use the free service with adverts, this rose to 55% amongst millennials.

REASONS FOR NOT PAYING FOR A STREAMING SERVICE

	TOTAL	15-24 YEAR OLDS
I'm happy using the free version with adverts	42%	55%
It's too expensive	40%	39%
I prefer not to pay for music / prefer to use free music sources like YouTube	29%	34%
It doesn't appeal to me	28%	26%
I prefer to listen to music in a different way	14%	13%
I don't really understand what it is	3%	2%
The content range isn't good enough	3%	4%
There isn't enough personalisation	2%	3%
The audio quality isn't good enough	1%	1%
Don't know / not sure	5%	4%
Other (please specify)	3%	1%

Why have you not subscribed to a music streaming service? Base: 2276 Respondents

40% WOULD PAY FOR A STREAMING SERVICE IF THEY WERE CHEAPER

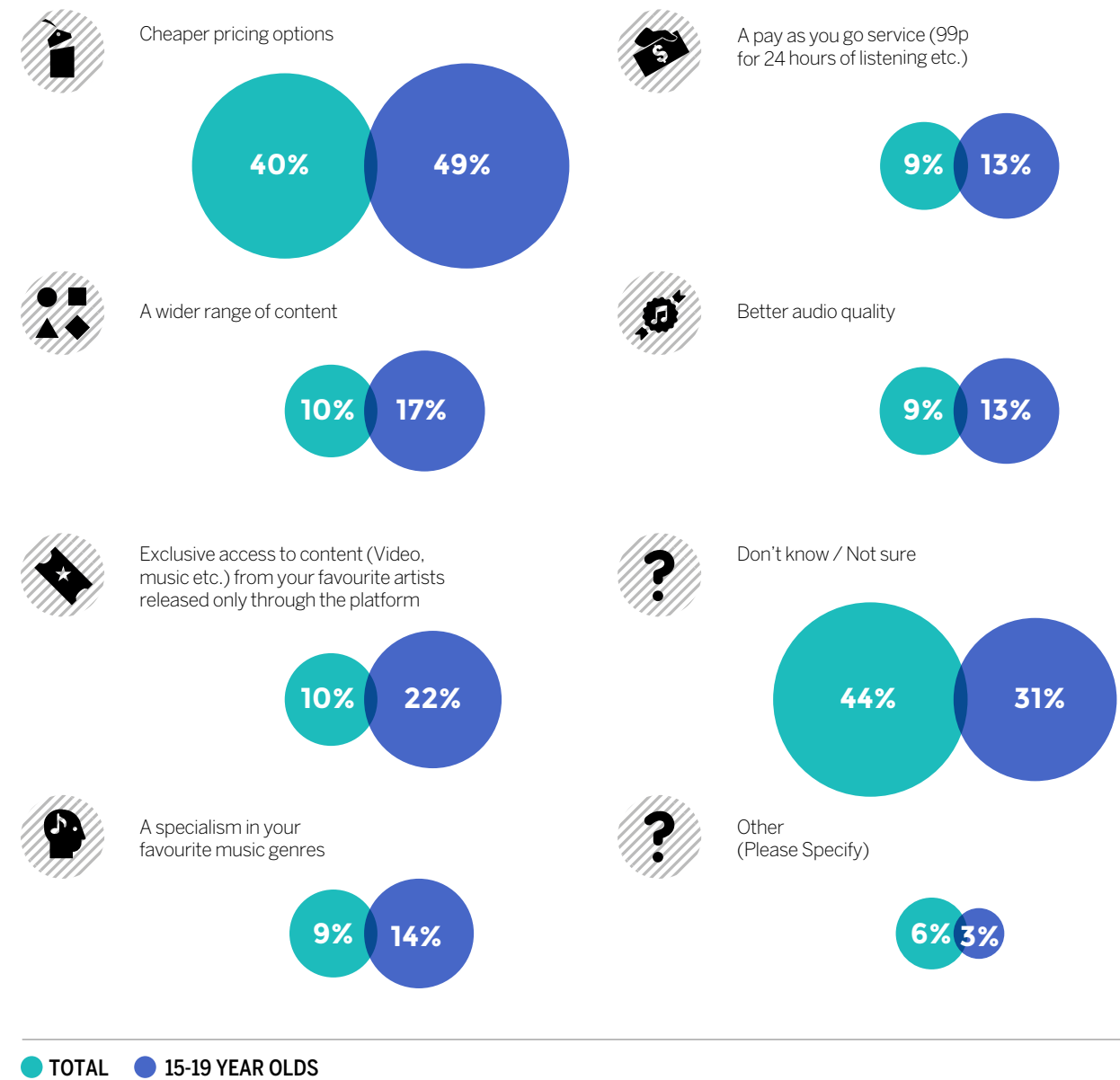
All who have not subscribed to a music streaming service

40% of those who don't pay for a streaming service said that cheaper pricing could convince them to pay for a subscription.

Millennials over index on most options, particularly on 'cheaper pricing options' and 'exclusive access to certain content'.



DRIVERS TO PAYING FOR A MUSIC STREAMING SUBSCRIPTION



What would convince you to pay for a subscription to a music streaming service?
Base: 2276 Respondents

SECTION 5:
Music Discovery

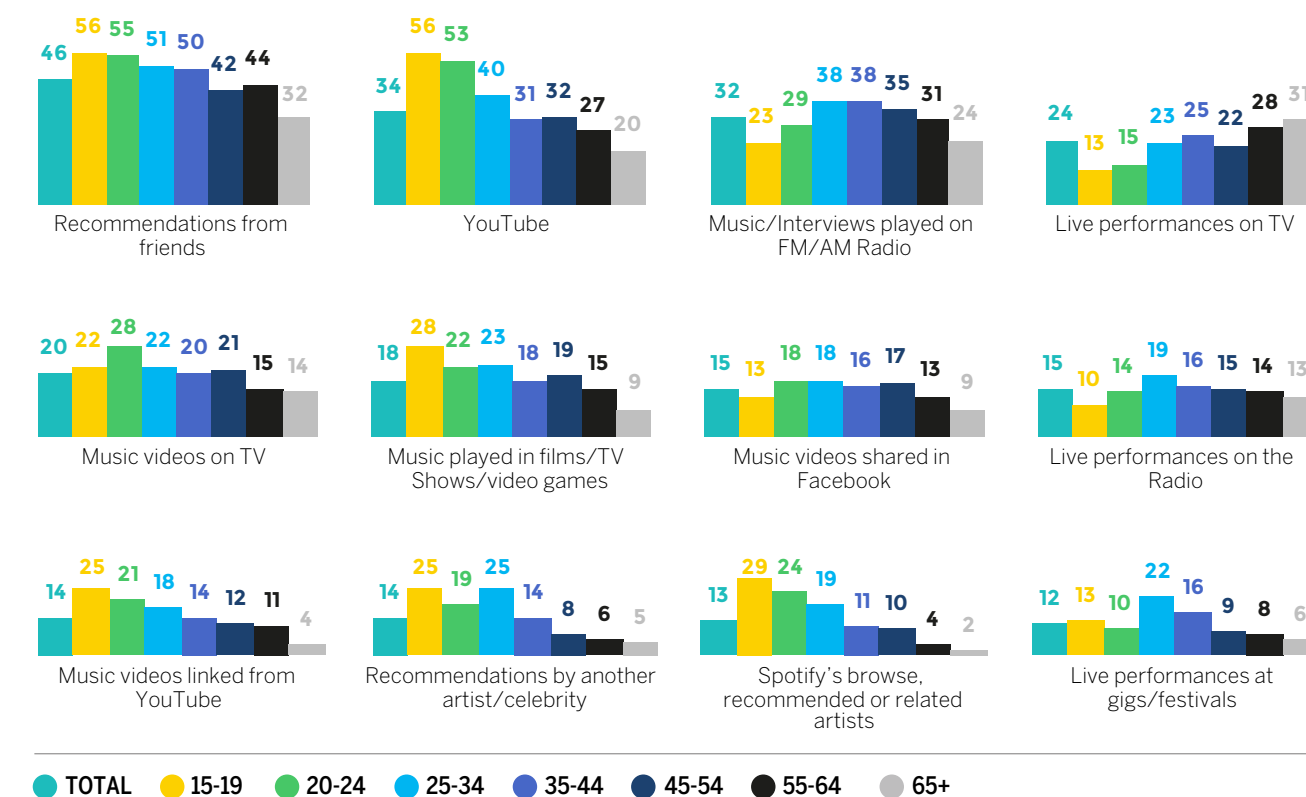
MILLENNIALS DISCOVER MOST OF THEIR MUSIC ON YOUTUBE

Total Sample

Millennials discover the majority of their music on YouTube (54% of 15-24 year olds said that they discover new music via YouTube versus the 34% average). YouTube discovery is neck and neck with recommendations from friends (55%) amongst 15-19 year olds, which was the survey leader across the whole sample.

Spotify's browse, recommended or related artists features skew heavily amongst millennials with peaks in the 15-19 (29%) and 20-24 (24%) age groups. Music videos linked from YouTube show a similar but less pronounced pattern.

TOP MEANS OF DISCOVERY BY AGE



How do you typically discover music?
Base: 3014 Respondents

LEAN FORWARD SELECTION IS STILL KING

Total Sample

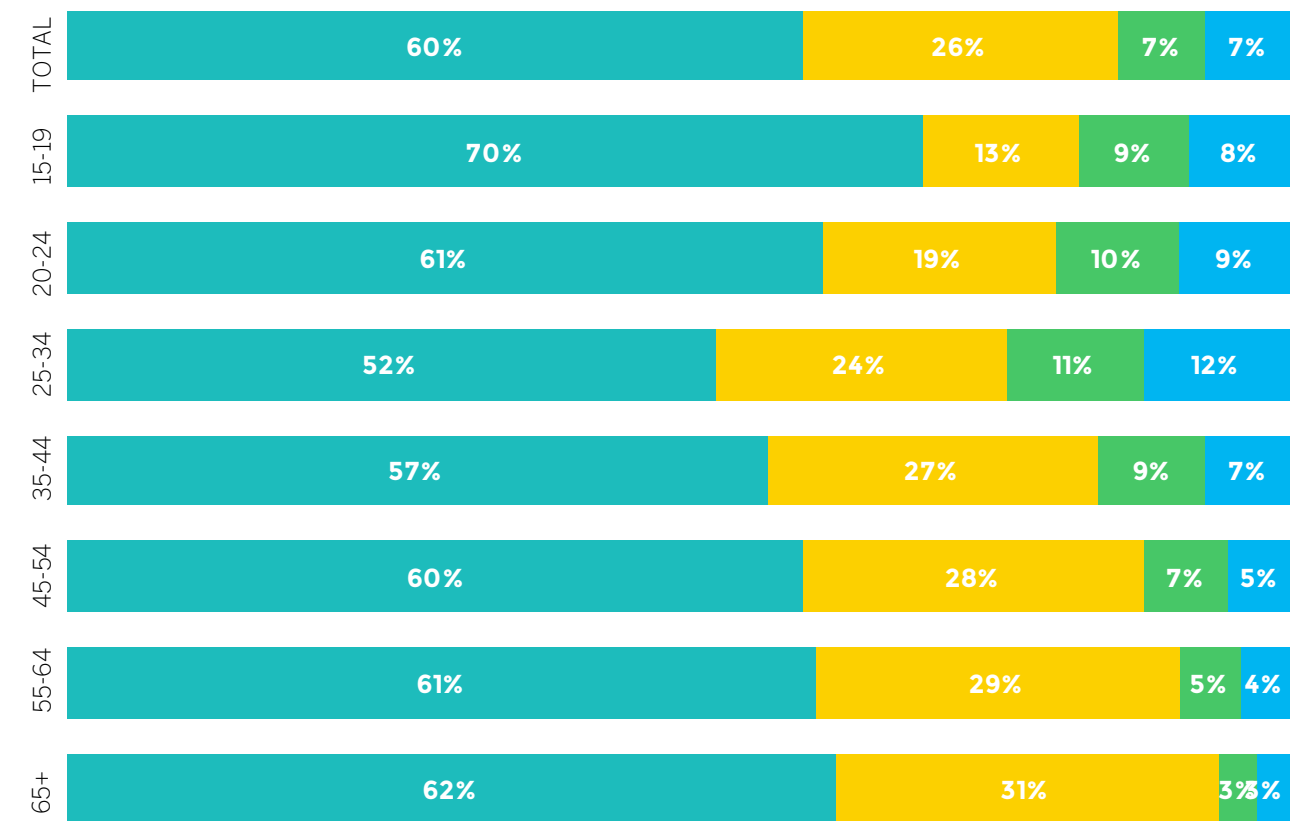
Lean forward selection is still king while playlists and algorithms are niche. 60% of the time respondents select music themselves, with a peak of 70% amongst young millennials (15-19 year olds). After this traditional radio dominates, with respondents saying that 26% of the music is selected for them by a radio DJ. A total of 14% of

their listening is fuelled by playlists and algorithmic recommendations (7% each). 25 to 34 year olds are the most lean back age segment with just 52% of their music being music they select themselves, the lowest amongst all the age segments.



SELF-SELECTED VS. CURATED, LEAN-BACK LISTENING

- MUSIC I SELECT MYSELF
- MUSIC SELECTED BY SOMEONE ELSE ON RADIO
- MUSIC SELECTED BY SOMEONE ELSE ON A MUSIC SERVICE
- MUSIC SELECTED BY A COMPUTER PROGRAM / ALGORITHM



How do you typically discover music?
Base: 3014 Respondents



SECTION 6:

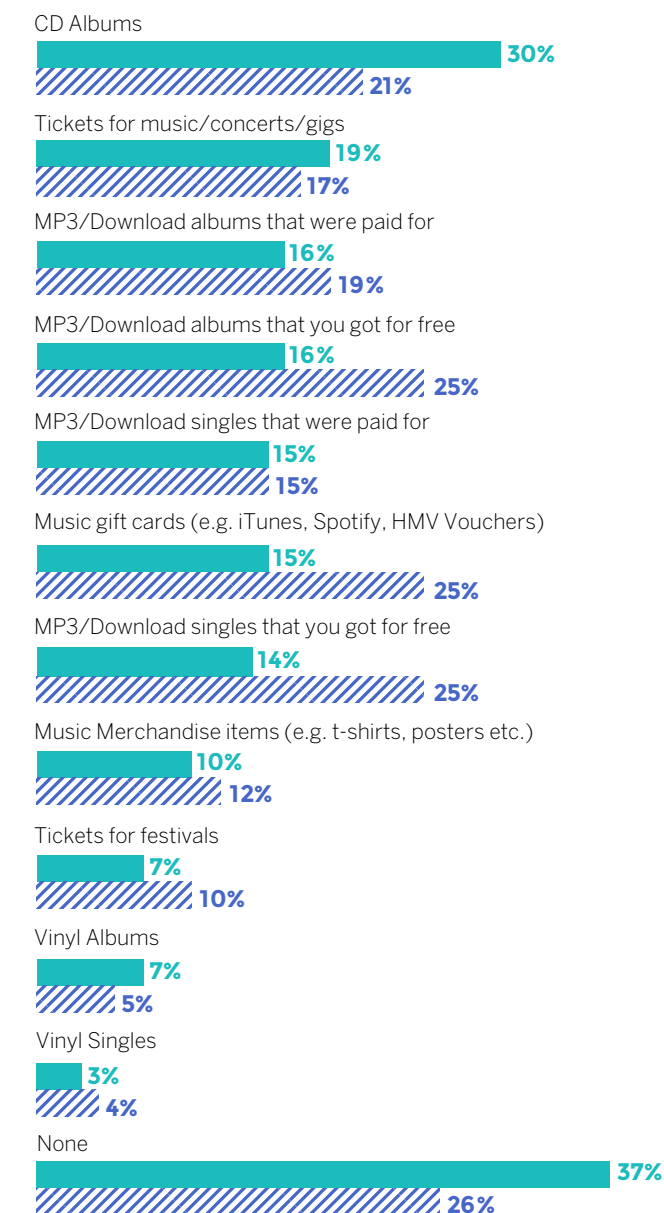
Music Spending, Sharing & Genres

MILLENNIALS UNDER INDEX ON MUSIC SPENDING

Total Sample

CDs are still the most common music product purchase at 30%, followed by live tickets (19%) and MP3 downloads (16%). Young millennials (15-19 year olds) under-index significantly on purchasing CD albums and over-index on free MP3 album downloads, music gift cards and free MP3 single downloads.

MUSIC SPENDING



Which of the following music products have you acquired for yourself or have been given as a present in the past 6 months?
Base: 3014 Respondents

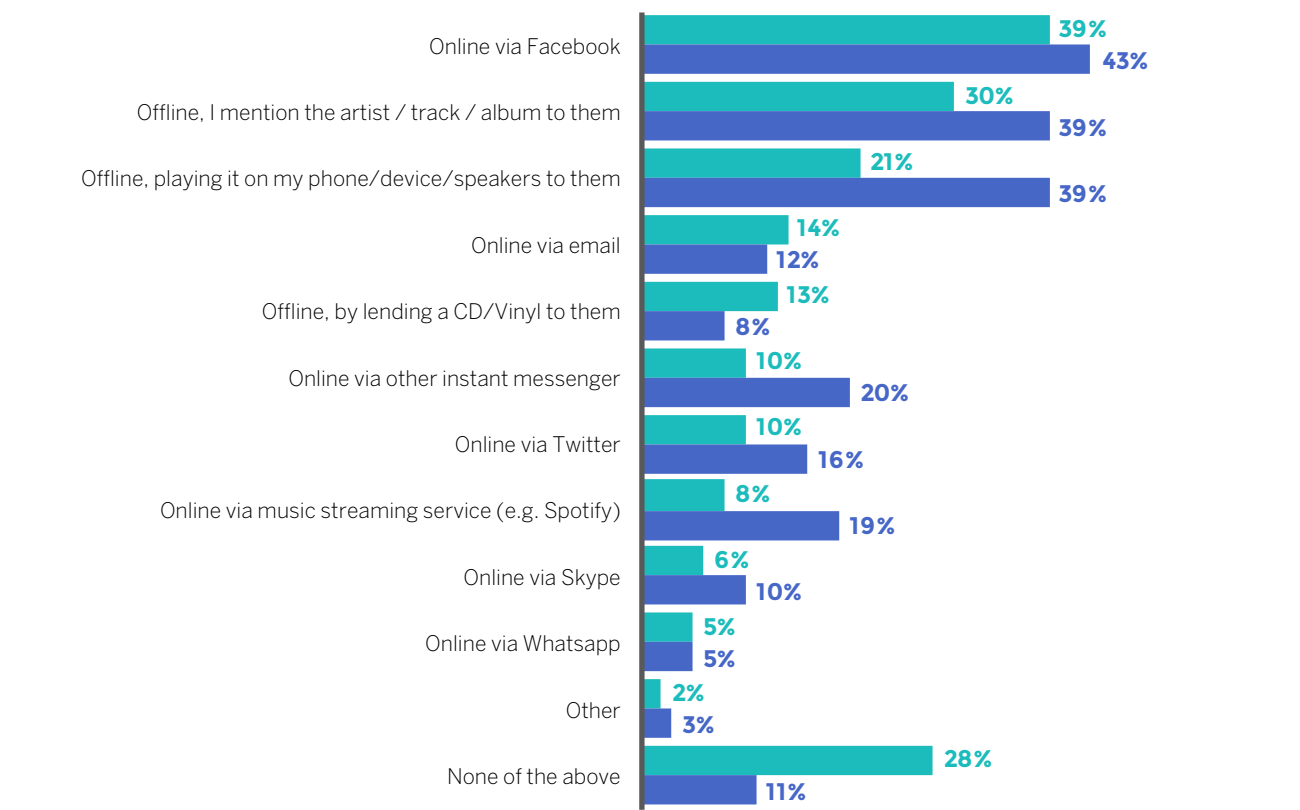
FACEBOOK IS THE LEADING MUSIC SHARING METHOD

Total Sample

At 39%, Facebook was the leading music sharing platform. After this word of mouth was a strong second, with 30% of respondents saying they mentioned an artist/track/album to friends offline.

Young millennials (15-19 year olds) over-indexed on sharing via offline methods (mentioning/playing track), instant messenger, online via Twitter and through a music streaming service.

MUSIC SHARING METHODS



● TOTAL ● 15-19 YEAR OLDS

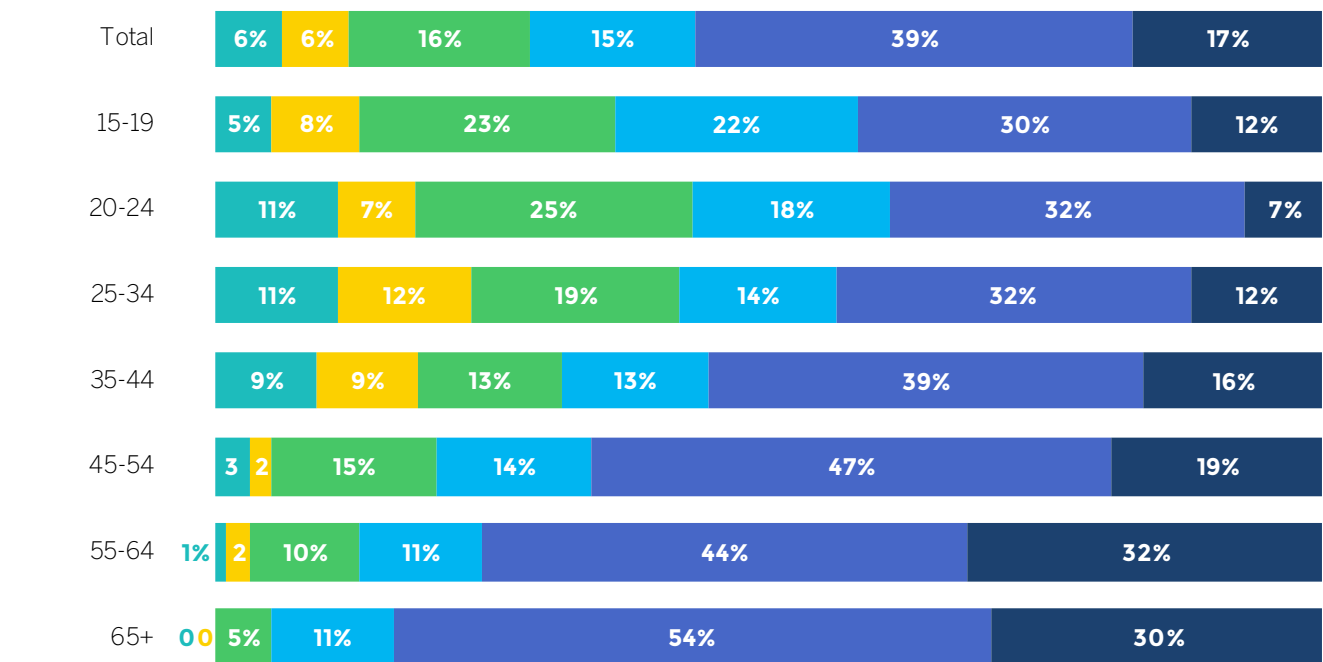
How do you usually share music you like with friends and/or others?
Base: 3014 Respondents

MILLENNIALS SHARE MUSIC MORE THAN OLDER GENERATIONS

Total Sample

20-24 year olds shared music the most, with 61% sharing music at least once a week. This was followed by 15-19 year olds (58%), and 25-34 (56%), before tailing off amongst the older generations.

REGULARITY OF SHARING



● SEVERAL TIMES A DAY ● EVERYDAY ● 2-3 TIMES A WEEK
● ONCE A WEEK ● LESS OFTEN ● RARELY/NEVER

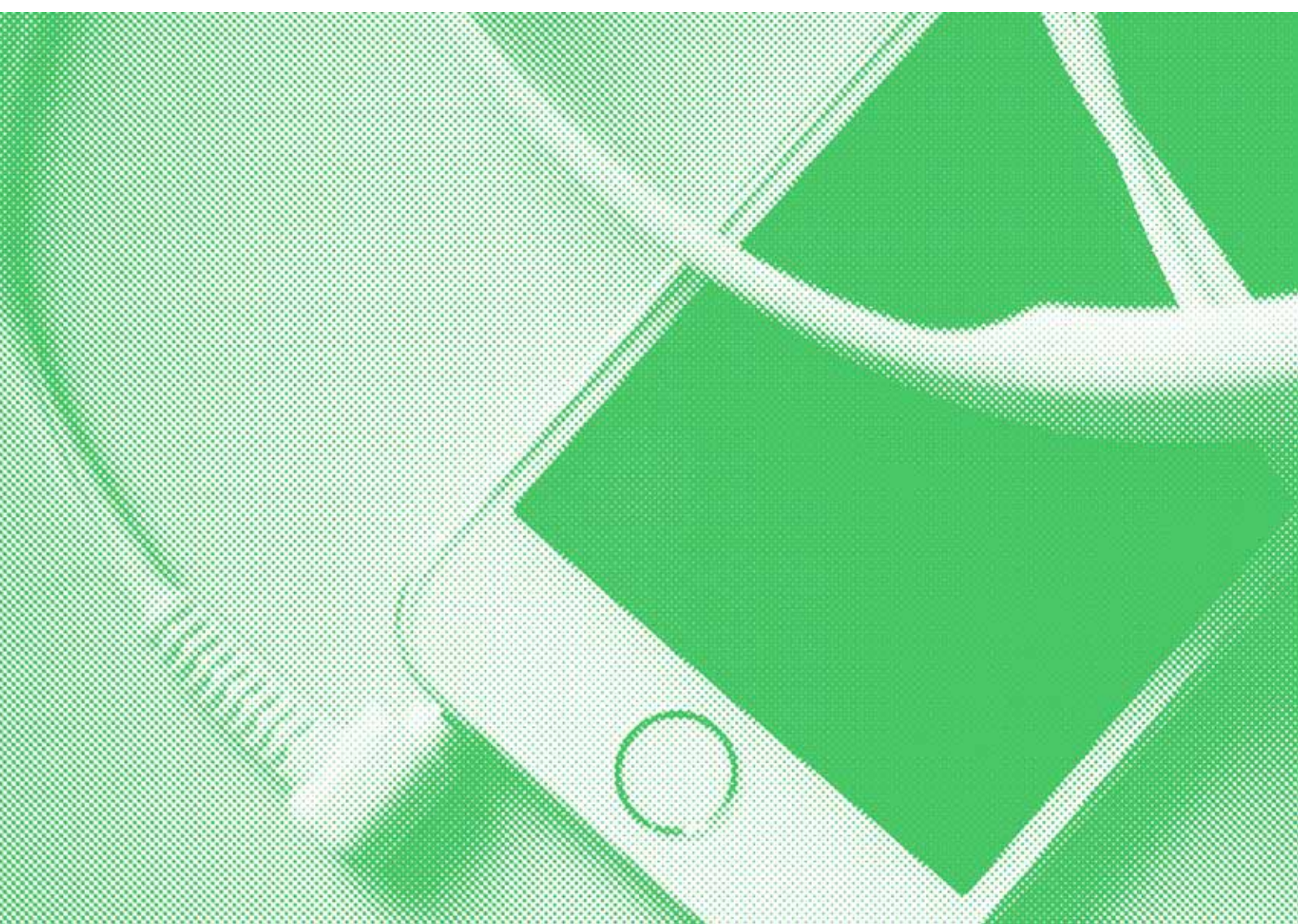
Base: How often do you share music with your friends//others?
Base: 3014 Respondents

MILLENNIALS LIKE POP AND HIP HOP

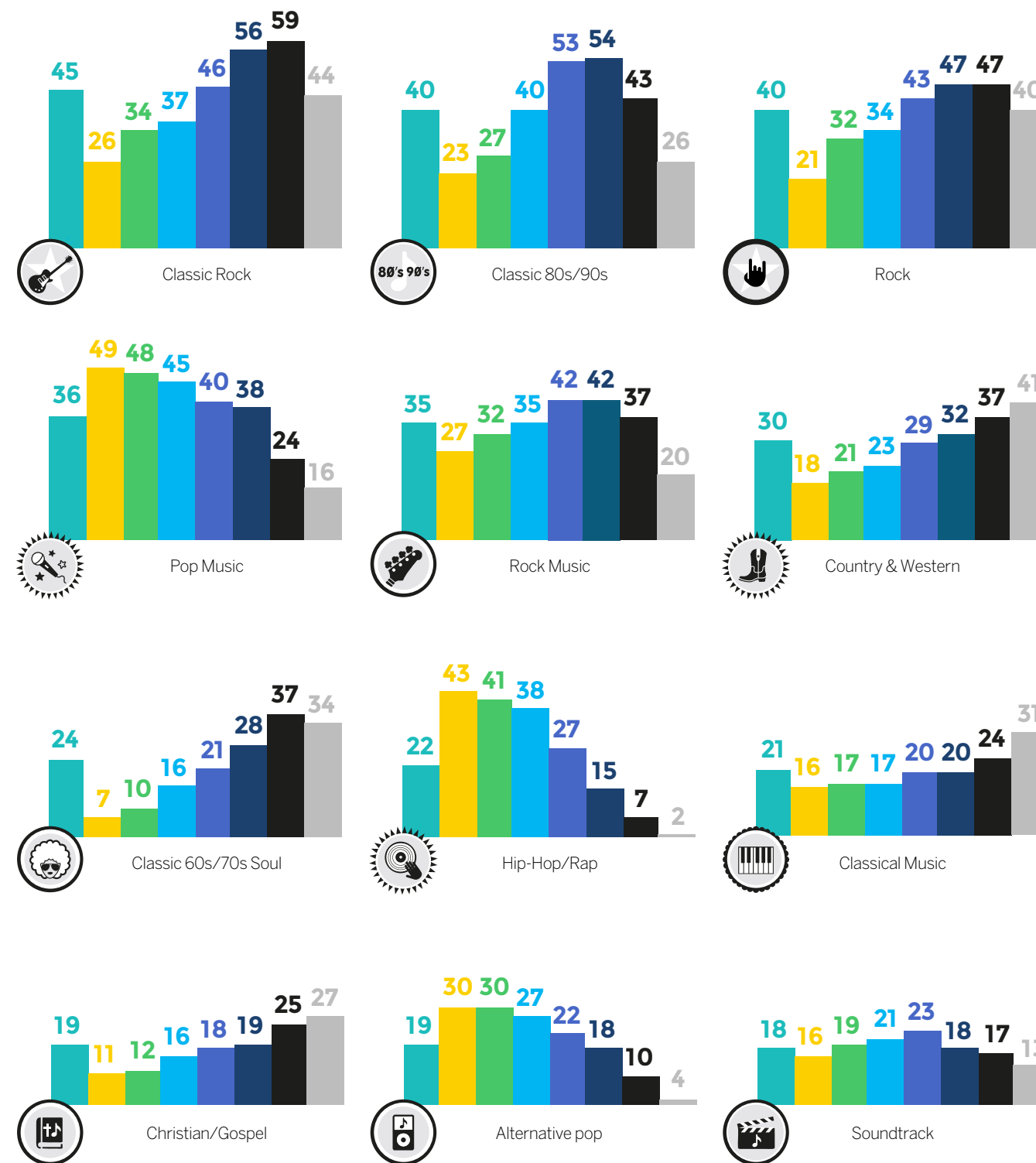
Total Sample

With Classic Rock, popularity under-indexes amongst Millennials and grows with age, over-indexing heavily for 45-64 year-olds. For Classic 80s/90s and Rock, these two genres also under-index amongst millennials with popularity increasing and over-indexing in the 45-64 category.

By contrast, Pop and Hip-Hop/Rap show the opposite patterns, over-indexing amongst millennials before subsequently decreasing with age, with a very heavy dip in the 45-64 age group for Hip-Hop/Rap.



MUSIC SHARING METHODS



● TOTAL ● 15-19 ● 20-24 ● 25-34 ● 35-44 ● 45-54 ● 55-64 ● 65+

Which of the following types of music do you generally like?
Base: 3014 Respondents



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What's Important:
My dad's legacy

DIGITAL MUSIC NEWS

HOME VIDEOS JOBS ABOUT US CONFERENCES TICKETS PROMOTED MUSIC

While you go for the Sound Royalties can keep you in the black

Get up-front cash. Retain music r...

Understanding what's important to business. [Hear](#)

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Sound Royalties
money for all music.

Learn How

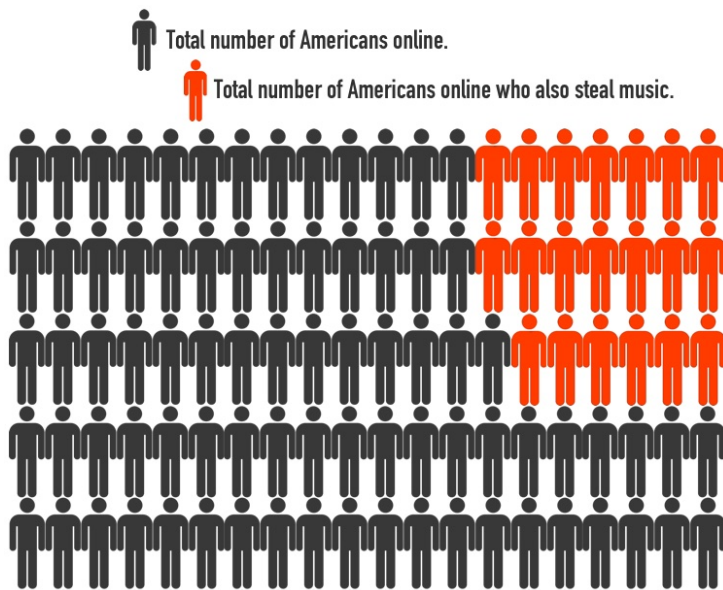
TRENDING Hitlist: The 10 Biggest Free Mp3 Music ...



Home Top Stories

How Music Piracy Is Completely Changing In 2016

Paul Resnikoff May 5, 2016 35



Earlier this year, research group MusicWatch shared data with Digital Music News that showed [53 million Americans actively pirating music content](#). But even more shocking was how they were doing it: instead of torrenting on the Pirate Bay, more and more piracy is now happening on YouTube via stream-ripping, with direct streaming piracy and storage lockers also mounting threats.

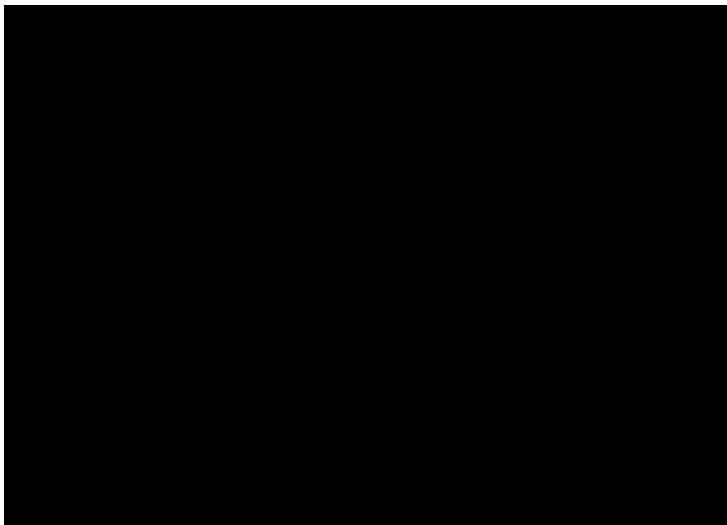


The music industry is blaming YouTube for not paying fairly on free, legal streams. But they seem to be ignoring a massive surge in YouTube-based stream-ripping, which grew more than 25% last year.

But that's just the beginning: according to data shared this morning by Muso, a London-based firm that specializes in pirate audiences, mobile-based piracy surged 8 percent alone in the last year alone (more on that below). That's just one part of a shift away from 'traditional' torrent sites, and heavy movement back to YouTube ripping and web-based MP3 download sites (often through mobile devices).

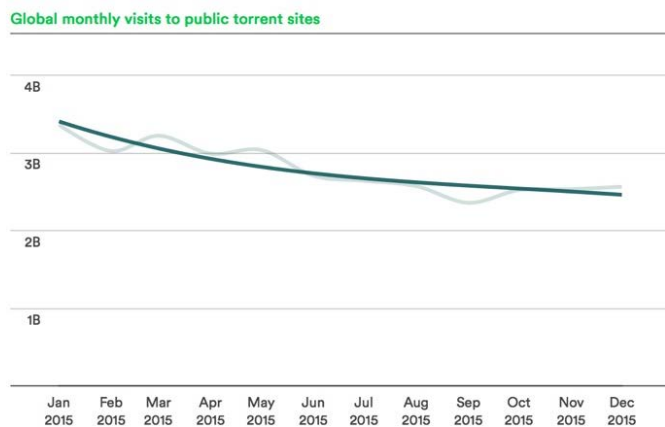
[+What If ISP's Are Responsible For Most Copyright Infringement?!](#)

ADVERTISING

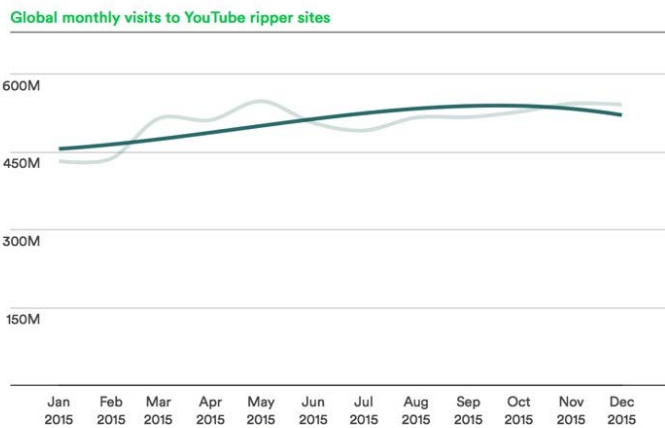


These are among the many changes tracked by Muso, specifically tracking trends from January through December of 2015:

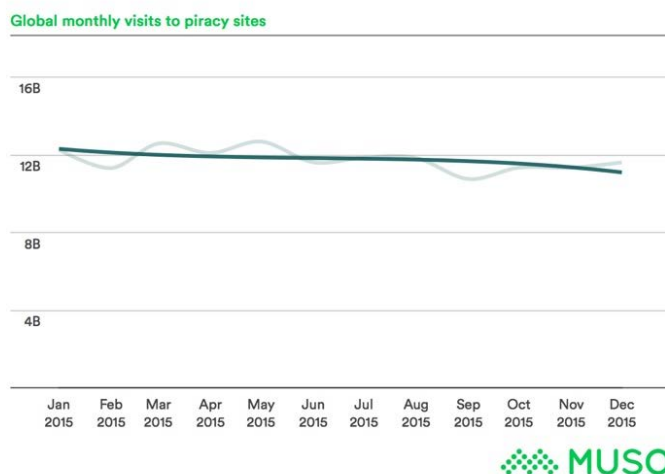
1. There are fewer people using torrent sites...



2. There are more people directly downloading music videos from YouTube...

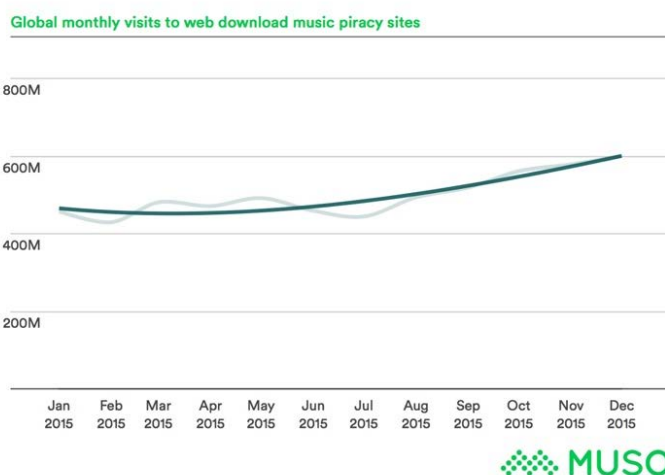


3. There are fewer people actually going to piracy sites...



[+Want To Have Your Company Or Content Seen By Executives In The Music Industry? Advertise On Digital Music News](#)

4. BUT, there are more people going to web-based music download sites...



5. Mobile is a massive source of music acquisition, legal or illegal.

According to Muso, a massive 28% of all visits of pirate hubs in 2015 came from mobile devices. In total, the company tracked 141 billion visits to more than 14,000 pirate sites, which means roughly 40 billion visits are coming from mobile devices.

6. 'Popcorn Time' style pirate streaming is absolutely surging.

In total, Muso counted 12 billion visits to websites solely to stream pirated music content, with 44% of this piracy activity was via mobile devices. They also found 58 billion visits to websites solely to stream pirated film and TV content online, with 28% tracked via mobile streaming piracy.

[+Advertise With Digital Music News](#)

7. More people are stream-ripping YouTube from mobile devices than desktop computers.

But the most shocking part is this: mobile-based ripping on YouTube is now bigger than desktop. In fact, it's probably easier for most music

fans. "The ripper piracy from mobile devices overtook piracy from desktop devices, growing by 46% last year," the company relayed.


"The usage of [stream ripper] sites is far larger than many realize, in fact making up 17.7% of all visits to piracy sites for music content."

Office DEPOT OfficeMax

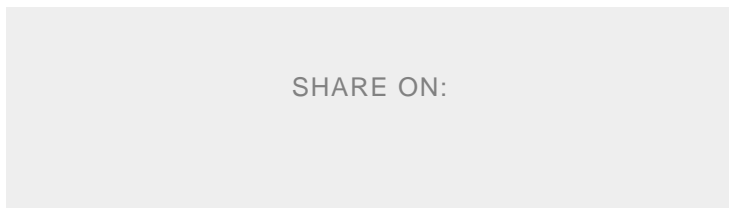
Amazing PCs. Even More Amazing Pricing.

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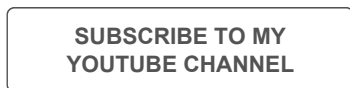
Use code 'DMN2016' for 25% off!

TRENDING MUSIC



Butcher of Kabul

Shuja Rabbani



Light

Neovaii



Rudenko ft. Contro - Shake It (Club)

Rudenko



Anthony - Free

Anthony



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**Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress**

In the Matter of:

Docket No. 16-CRB-0003-PR (2018-2022)

Determination of Rates and Terms for
Making and Distributing Phonorecords
(Phonorecords III)

TESTIMONY OF KELLY BROST

1. My name is Kelly Brost and I am the Director of Finance at Amazon Digital Services LLC (together with its affiliated entities, “Amazon”). I submit this testimony in connection with Amazon’s Written Direct Statement in the above-captioned proceeding for setting rates and terms for the making and distribution of digital phonorecord deliveries.

2. As Director of Finance, I am responsible for strategic planning, budgeting and financial advising, reporting, and overseeing financial processes for the Amazon Digital Music Business. I have been employed by Amazon since 2009, and have been in my current position for a year and a half. Prior to serving as a Director of Finance, I was a Director of Accounting at Amazon. Prior to joining Amazon, I worked at Deloitte LLP for 14 years. I am familiar with Amazon’s costs and revenues for the Amazon Digital Music Business as well as the royalties paid under Section 115 licenses.

3. The following information is based on my personal knowledge, information made available to me in the course of performing my duties at Amazon, and my review of the documents attached as exhibits to this written testimony. To the extent that the facts and matters

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set out in this statement are within my knowledge, they are true. To the extent I have relied upon the information provided by others, it is true to the best of my knowledge, information, and belief.

4. I, together with my team, compiled the following exhibits in aid of Amazon's Written Direct Statement in this proceeding:

5. Attached hereto as Exhibit 14 is a true and correct copy of Amazon's Digital Download Store Revenue by Customer Segment for the period January 1, 2013 to December 31, 2013.

6. Attached hereto as Exhibit 15 is a true and correct copy of Amazon's Prime Music Average Monthly Hours by Listener Segment for the period October 1, 2015 to September 30, 2016.

7. Attached hereto as Exhibit 16 is a true and correct copy of Amazon's Digital Music Publishing Royalties for the period January 1, 2013 to December 31, 2016.

8. Attached hereto as Exhibit 17 is a true and correct copy of Amazon's Digital Music Headcount, Technology Infrastructure, Marketing, and External Services Expenditures for the period January 1, 2012 to December 31, 2016.

9. Attached hereto as Exhibit 18 is a true and correct copy of Amazon's Unlimited for Echo per Subscriber Contribution Profit under Existing Subpart B Standalone Non-Portable Rates and Rights Owners' Initial Rate Proposal.

10. Attached hereto as Exhibit 19 is a true and correct copy of Spotify Estimated Hours per Month.

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

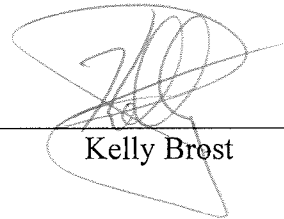
In re

**DETERMINATION OF ROYALTY
RATES AND TERMS FOR MAKING AND
DISTRIBUTING PHONORECORDS
(Phonorecords III)**

**DOCKET NO. 16-CRB-0003-PR
(2018-2022)**

DECLARATION OF KELLY BROST

I, Kelly Brost, declare under penalty of perjury that the statements contained in my Written Direct Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information and belief. Executed this 1st day of November, 2016 in Seattle, Washington.



A handwritten signature in black ink, appearing to read 'Kelly Brost', is written over a horizontal line. The signature is stylized and somewhat illegible.

Kelly Brost

RESTRICTED DOCUMENT

Subject to Protective Order in Docket No. 16-CRB-0003-PR
(2018-2022)

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Subject to Protective Order in Docket No. 16-CRB-0003-PR
(2018-2022)

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(2018-2022)

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

In the Matter of:

**DETERMINATION OF RATES AND
TERMS FOR MAKING AND
DISTRIBUTING PHONORECORDS
(PHONORECORDS III)**

Docket No. 16-CRB-0003-PR (2018-
2022)

EXPERT REPORT OF GLENN HUBBARD

November 1, 2016

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1. INTRODUCTION

A. Qualifications

1.1 My name is Glenn Hubbard. I hold the Russell L. Carson Professorship in Finance and Economics in the Graduate School of Business of Columbia University, where I am also the Dean. In addition, I am a Professor of Economics in the Department of Economics of the Faculty of Arts and Sciences. At the National Bureau of Economic Research, I am a research associate in programs on corporate finance, public economics, industrial organization, monetary economics, and economic fluctuations and growth. Prior to joining the Columbia faculty as Professor of Economics and Finance in 1988, I taught in the Department of Economics at Northwestern University. I have also served as Visiting Professor of Business Administration at Harvard Business School, John M. Olin Visiting Professor at the University of Chicago, Visiting Professor and Research Fellow of the Energy and Environmental Policy Center at the John F. Kennedy School of Government, and John M. Olin Fellow at the National Bureau of Economic Research. I hold A.M. and Ph.D. Degrees in economics from Harvard University, and B.A. and B.S. degrees from the University of Central Florida, *summa cum laude*.

1.2 I am an adviser to the President of the Federal Reserve Bank of New York. From 2001 to 2003, I served as Chairman of the President's Council of Economic Advisers; over that time period, I also served as Chairman of the Economic Policy Committee for the Organization for Economic Cooperation and Development (OECD) in Paris. From 1991 to 1993, I served as Deputy Assistant Secretary (Tax Analysis) of the United States Department of Treasury, where I was responsible for economic analysis of tax policy, the administration's revenue estimates, and health care policy issues. I have also been an adviser or consultant to the Board of Governors of the Federal Reserve System, Social Security Administration, Congressional Budget Office, Federal Reserve Bank of New York, Internal Revenue Service, International Trade Commission, National Science Foundation, United States Department of Energy, and United States Department of the Treasury.

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1.3 My professional work has centered on problems in finance, public economics, industrial organization, monetary economics, and natural resource economics. As an economist, I have examined the evolution and behavior of a wide range of firms and industries. I have authored more than 100 research articles, edited a number of books, and authored leading textbooks on money and financial markets, intermediate macroeconomics, and principles of economics.

1.4 My *curriculum vitae*, which is attached as Appendix A, provides more biographical details and lists my writings. Appendix B lists the testimony that I have provided as an expert witness during the past four years. I provide in Appendix C a list of the documents I relied upon in preparation of this report.

B. Assignment

1.5 I was retained by counsel for Amazon Digital Service LLC (“Amazon”) in support of Amazon’s proposed rates and terms in the above captioned matter. Specifically, I was asked to analyze Amazon’s various digital music offerings and to explain, from an economic perspective, how these offerings may serve to expand the consumer base from which the music industry garners royalties. As part of my assignment, I was asked to review the current Title 17, Section 115 statutory mechanical royalty rate structure, which was adopted by the Copyright Royalty Board (“CRB”) in the “Phonorecords II” proceeding (the “PII Structure”), and Amazon’s proposed rates and terms as laid out in the Testimony of Rishi Mirchandani, Head of Content Acquisition and Catalog for the digital music business of Amazon. Specifically, I was asked to comment on whether allowing for different service categories and rate structures in the current “Phonorecords III” proceeding enables a diversity of digital music offerings that reach a broad consumer base.

C. Summary of Opinions

1.6 Based on the materials I have reviewed and the analyses I have conducted, I have reached the following conclusions:

- a) By offering a diversity of digital music service offerings, the digital music industry serves many consumer segments, measured either in terms of

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willingness and ability to pay, or in terms of preferences for particular features embodied in each service;

- b) Some of Amazon’s digital music service offerings are unique, both in terms of how consumers access music and in terms of price. Amazon’s digital music service offerings appeal to a variety of consumer segments and are intended to reach consumers that otherwise would not be served; and
- c) The PII Structure is a framework that provides alternative rate structures for distinct product categories. In the context of Amazon’s digital music service offerings, a structure that provides flexibility for the determination of a royalty encourages diverse digital music service offerings that reach a wide array of music consumers and that may expand the base upon which royalties are calculated.

2. THE MUSIC INDUSTRY SERVES MANY CONSUMER SEGMENTS

A. Music Technologies Change Over Time

2.1 “Creative destruction” refers to the process by which incumbent technologies are rendered obsolete by the introduction of more advanced technologies better suited to meet consumers’ needs.¹ The music industry exemplifies this process. As shown in Exhibit 1, from 1973 to 1978, real music annual industry sales rose from \$10.7 billion to \$15.0 billion, only to fall again to \$8.9 billion in 1982. The initial growth was driven by the vinyl and 8-track formats, which allowed consumers to bring music into their own homes and automobiles.² Subsequent declines likewise corresponded to decreases in vinyl and 8-track sales, the latter of which declined from \$3.5 billion in 1978 to \$88 million in 1982 and to \$0 in 1983.

¹ Schumpeter, J. S., “Capitalism, Socialism, and Democracy,” (George Allen and Unwin (Publishers) Ltd: London and New York, 1943), at pp. 81-86.

² Exhibit 1. *See also*, “Lear, Ford, Motorola, and RCA Victor,” *The History of Sound Recording*, 2016. Accessed October 28, 2016, <<http://www.recording-history.org/technology/the-history-of-the-8-track-tape/lear-ford-motorola-and-rca-victor/>>.

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2.2 However, declines in total sales during this time period were somewhat mitigated by the rapid increase in cassette tape sales—from \$1.6 billion in 1978 to \$3.4 billion in 1982. Cassette tapes, along with complementary technology such as the cassette Walkman (introduced in 1979),³ allowed for music consumption in a more personalized, portable fashion.⁴ Cassette tape sales continued to grow until 1989, but were overtaken by growth of the Compact Disc (“CD”) format, which was introduced in the early 1980s. CDs maintained a relatively cheap cost of production and provided the portability that consumers had grown accustomed to. CDs also had substantially higher quality and clarity of sound.⁵ By 1999, when music sales (adjusted for inflation) peaked at \$20.7 billion, CDs constituted 89 percent of purchases.

2.3 The advent of file sharing programs and digital piracy in the early 2000s disrupted traditional media yet again by providing a free and easy way for consumers to access music, and individual tracks in particular (as opposed to entire albums).⁶ In 2004, Apple responded to piracy’s encroachment on traditional revenue streams by launching iTunes—a legal digital music distribution system through which consumers were able to purchase and

³ Krasilovsky, M. W., and S. Schemel, *This Business of Music: The Definitive Guide to the Business and Legal Issues of the Music Industry (10th Edition)*. (Watson-Guptill Publications: New York, 2007), at p. 7; Albright, D., “The Evolution of Music Consumption: How We Got Here,” *MakeUseOf*, April 30, 2015. Accessed October 28, 2016, <<http://www.makeuseof.com/tag/the-evolution-of-music-consumption-how-we-got-here/>>.

⁴ Krasilovsky, M. W., and S. Schemel, *This Business of Music: The Definitive Guide to the Business and Legal Issues of the Music Industry (10th Edition)*. (Watson-Guptill Publications: New York, 2007), at p. 7.

⁵ Albright, D., “The Evolution of Music Consumption: How We Got Here,” *MakeUseOf*, April 30, 2015. Accessed October 28, 2016, <<http://www.makeuseof.com/tag/the-evolution-of-music-consumption-how-we-got-here/>>. The superior sound quality is attributed to the audio data being digitally encoded on to the disc to be read by lasers and transmitted as an electrical signal.

⁶ “Over the last decade [...] the availability to purchase licensed digital songs changed individuals’ music consumption alternatives. Instead of having to buy a whole CD, the alternative to downloading any particular digital song from an unlicensed source is now to purchase it in MP3 format.” (Aguiar, L., and B. Martens, “Digital Music Consumption on the Internet: Evidence from Clickstream Data,” *Information Economics and Policy*, 34, 2016, at p. 28.) *See also*, Elberse, A., “Bye-Bye Bundles: The Unbundling of Music in Digital Channels,” *Journal of Marketing*, 74, 3, 2010, at pp. 107, 119.

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download both whole albums *and* individual tracks. Other music providers later followed suit.⁷

2.4 Having come to popularity over the past decade, current business models focus on streaming music, which provides access to an effectively unlimited “bundle” of tracks in exchange for a monthly subscription fee (or in some instances, as described below in Section 2.C, in exchange for advertisement exposure).⁸ This model has “drastically reduce[d] the costs” of consuming media and entertainment and allowed consumers to “easily enjoy and benefit from a wider range of products at a minimal cost.”⁹ While the streaming model currently exists in parallel with the permanent download model, streaming sales are growing rapidly and permanent download sales are now in decline (*see* Exhibit 2). And as described in the following sections, digital media providers are continuing to innovate on the streaming business model in order to develop novel vehicles through which to deliver music to modern consumers.

B. The Music Industry Serves Consumers with Heterogeneous Preferences

2.5 New technologies have allowed the music industry to respond to consumer demand, which can be characterized by a desire to conveniently access on-demand digital content through mobile platforms,¹⁰ and, more recently, using voice recognition and artificial

⁷ Paxson, P., *Mass Communications and Media Studies: An Introduction*. (Bloomsbury Publishing: New York, 2010), at p. 84.

⁸ “Revenue generation from recorded music is shifting rapidly from the sales of individual tracks (and albums) to bundled sales of streams.” (Aguiar, L., and J. Waldfogel “Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?,” *Joint Research Centre, European Commission*, 2015, at p. 26.)

⁹ Aguiar, L., and B. Martens, “Digital Music Consumption on the Internet: Evidence from Clickstream Data,” *Information Economics and Policy*, 34, 2016, at p. 1. *See also*, Papies, D., F. Eggers, and N. Wolmer, “Music for Free? How Free Ad-Funded Downloads Affect Consumer Choice”, *Journal of the Academy of Marketing Science*, 39, 5, 2011, at pp. 777-794.

¹⁰ “The global recording industry is passing through a new transition in the fast-evolving digital market place. The key features of this evolution, driven by consumers, are the rapid growth of music streaming; a marked diversity of revenue streams and trends from one country to another; and a continued evolution from traditional models of music ownership to the new fast-growing model of music access. [...] [C]onsumer behavior is moving towards instant, real-time, anytime-anywhere access, facilitated by the integration of services across different platforms and cloud storage. Smartphones, tablets and phablets are powerful portable computers with social media interfaces, allowing instant sharing and also payment and subscription. These features all combine to create a

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intelligence software to facilitate the listening experience.¹¹ But consumer preferences are neither static nor homogeneous, and the music industry today caters to heterogeneous consumer segments. In a March 2013 survey, Nielsen, a market research firm, classified consumers into six distinct groups. Half of these groups (“Aficionado Fans,” “Digital Fans,” and “Big-Box Fans”) can be characterized as frequent music listeners and avid fans, while the other half (“Ambivalent Music Consumers,” “Occasional Concert Consumers,” and “Background Music Consumers”) are casual or passive consumers of digital music.¹² Nielsen classified consumers of audio into similar groups in June 2014, again based on the frequency of listening. For example, “Background Driving Defaulters” were described as “less engaged” and “Discriminating Audiophiles” were described as “highly engaged consumers who [...] are willing to pay for specific content.”¹³

culture of immediacy and instant access on the move for consumers.” (“IFPI Digital Music Report 2015: Charting the Path to Sustainable Growth,” *IFPI*, 2015, at pp. 6, 14.) “Underpinning [the digitization of media] is the global shift of music consumption to smartphone-based mobile platforms. Digital music has moved rapidly from a fixed line desktop PC experience to on-the-go consumption on wireless smartphones and tablet devices. Record companies are now monetising [*sic*] the consumption of music in ways that were not possible a few years ago.” (“IFPI Digital Music Report 2014: Lighting Up New Markets,” *IFPI*, 2014, at p. 16.)

¹¹ “‘Alexa/Echo is the first product to really showcase the power of voice control in the home,’ MacFarlane [CEO of Sonos, a speaker company] continued. ‘Its popularity with consumers will accelerate innovation across the entire industry. What is novel today will become standard tomorrow.’ [...] ‘Now that music fans can finally play anything anywhere, we’re going to focus on building incredibly rich experiences that were all but unimaginable when we started the company, and will be at the vanguard of what it means to listen to music at home,’ MacFarlane wrote. ‘This is a significant long-term development effort against which we’re committing significant resources.’” (Tilley, A., “As Amazon Echo Takes Off, Sonos Announces Layoffs and Preps for a Voice-Controlled Future,” *Forbes*, March 10, 2016. Accessed October 25, 2016, <<http://www.forbes.com/sites/aarontilley/2016/03/10/as-amazon-echo-takes-off-sonos-announces-layoffs-and-preps-for-a-voice-controlled-future/#a45050b7bbd7>>.)

¹² Specifically, the study classified consumers into the following segments: Aficionado Fans, Digital Fans, Big-Box Fans, Ambivalent Music Consumers, Occasional Concert Consumers, and Background Music Consumers. The latter three segments are less avid consumer segments of music. Nielsen stated that “[a]mbivalent consumers are not particularly engaged with music,” Occasional Concert Consumers “tend to listen to music during work hours, but listen significantly less at home,” and “[b]ackground music consumers are the least engaged with music.” See, “Turn It Up: Music Fans Could Spend Up to \$2.6B More Annually,” *Nielsen*, March 3, 2013. Accessed September 14, 2016, <<http://www.nielsen.com/us/en/insights/news/2013/turn-it-up--music-fans-could-spend-up-to--2-6b-more-annually.html>>.

¹³ “Scanning the Audio Demand Landscape,” *Nielsen*, June 25, 2014. Accessed September 14, 2016, <<http://www.nielsen.com/us/en/insights/news/2014/scanning-the-audio-demand-landscape.html>>.

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2.6 A May 2014 study by ClearVoice Research, a market research firm, found that 28 percent of surveyed consumers had considered but never used a streaming service, meaning “they’re looking for an attractive come-on or a different type of experience.” A June 2016 Report by researchers at RBC Capital Markets stated that “it is very difficult to compare [streaming music] services on an apples-[to-]apples basis, given the different demographics they serve... Pandora may be oriented to the everyday person who just wants to hear some music, while SoundCloud is more focused on music aficionados looking to find the next big trend in music.”¹⁴

2.7 Digital media providers have articulated their strategy to design products that target specific consumer segments. For example, according to Mr. Mirchandani, Amazon has “buil[t] a digital-music business predicated on differentiated offerings that allow it to serve multiple segments of customers.”¹⁵ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹⁴ Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, p. 20. Similarly, a survey conducted as part of the same report provided data on questions targeted only to the subset of “hardcore music listeners/music enthusiasts” among its broader survey sample, which consist of users who listen to more than 20 hours of music a week. (See, Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, at pp. 10-11.) Academic research has found similar results. For example, Molteni and Ordanini (2002) grouped consumers into profiles based on the frequency of downloading music online. Their groups were titled: *occasional*, *mass*, *explorer/pioneer*, *entertainment*, and *duplicate*. (Molteni, L., and A. Ordanini, “Models of Online Music Consumption: Definition and Implications for Management,” 2002, at p. 11.) Similarly, a 2007 study bucketed consumers of online music into *Risk Conscious*, *Heavy Users*, and *Reluctant* users. (Styven, M., “Exploring the Online Music Market: Consumer Characteristics and Value Perceptions,” *Luleå University of Technology*, 2007.) The author of a 2001 study stated with respect to their findings “there are differences among groups [of online music services consumers] with respect to their attitudes, interests, and opinions.” (Ozer, M., “User Segmentation of Online Music Services Using Fuzzy Clustering,” *Omega: The International Journal of Management Science*, 29, 2001, at p. 193.)

¹⁵ “Testimony of Rishi Mirchandani,” *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, United States Copyright Royalty Judges, The Library of Congress, at p. 9.

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[REDACTED]

2.8 Pandora’s CFO, Michael Herring, provides additional clarity and detail:

Spotify has had good success, but it hasn’t been at the expense of Pandora. I think there’s 2 use cases for usage there, that 20% of the people in the United States that go out and buy CDs, are going to purchase songs, are going to pay \$120 a year so they can listen to the [Pink Floyd’s] Dark Side of the Moon when they want to listen to Dark Side of the Moon. That’s the core audience for Spotify and for Google Music, frankly, and for iTunes. The [other case is] people who want it, turn it on, press the button and listen to radio and have a passive experience and a discovery experience, that’s the 80% of the people that are used to and prefer to consume music that way. And that’s what Pandora goes after.¹⁷

2.9 [REDACTED]

¹⁶ Mohan, N., “YouTube’s Chief Product Officer Makes the Case for a ‘Value Shift’ Towards Music: Op-Ed,” *Billboard*, June 30, 2016. Accessed October 11, 2016, <<http://www.billboard.com/articles/business/7423917/youtube-chief-product-officer-neal-mohan-value-shift-op-ed>>.

¹⁷ Gara, T., “Streamonomics – The Fight for Fractions of a Cent in Online Music,” *The Wall Street Journal*, May 17, 2013. Accessed September 19, 2016, <<http://blogs.wsj.com/corporate-intelligence/2013/05/17/streamonomics-the-fight-for-fractions-of-a-cent-in-online-music/>>. Commentary from digital media executives is consistent with expert witness testimony promulgated in Phonorecords I, which included opinions on the existence of distinct and heterogeneous consumer preferences for music. For example, Ms. Guerin-Calvert opined on behalf of the Digital Media Association (DiMA) that the “digital music format and digital music services have the potential to provide very large catalogs of works to consumers with diverse music tastes and preferences” and that there is the “presence of [a] large and diverse customer base with diverse preferences.” See, “Testimony of Margaret E. Guerin-Calvert,” *In the Matter of Mechanical and Digital Phonorecord Delivery Rate Adjustment Proceeding*, Copyright Royalty Board, Library of Congress, dated November 30, 2006 (executed April 9, 2007), pp. 49, 51.

¹⁸ [REDACTED]

¹⁹ [REDACTED]

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[REDACTED]

2.10 [REDACTED]

2.11 Consumer spending patterns, consistent with this heterogeneous consumer segmentation, suggest heterogeneous levels of willingness to pay for music. In 2015 and 2016, RBC asked consumers how much they spent on music each year (excluding live events), and found that while in each year 72 percent spent less than \$50, 16 percent (in 2015) and 18 percent (in 2016) spent more than \$100 per year on music.²³ Similarly, a 2015 study by Nielsen estimates that annual music spending per person is approximately \$73 per year, but identifies considerable variation among different consumer groups based on age.²⁴

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, p. 8.

24 For example, Nielsen found that while Teens (age 13-17) spent 25 percent of their annual music spending (\$42/year) on digital tracks/albums, Millennials (Age 18 – 34) spent 12 percent of their annual music spending (\$59/year) on digital tracks/albums. (This excludes the Admission to Live

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2.12 Moreover, survey research has found that most consumers are *not willing to pay at all* for paid streaming services. [REDACTED]

[REDACTED] Similarly, in its 2015 United States Music study, Nielsen reported that 78 percent of respondents indicated they were either somewhat or very unlikely to pay for a streaming service in the next six months.²⁶ And in a May 2016 survey, Cowen and Company asked consumers whether they thought they might pay for music in the future and found that only 25 percent indicated some likelihood of doing so.²⁷

2.13 In 2015, as part of his expert rebuttal testimony in the Web IV proceedings, Larry Rosin, the President of Edison Research, surveyed consumers in order to understand behavioral characteristics and spending patterns under hypothetical pricing scenarios. According to Mr. Rosin, the “overwhelming majority of consumers” are “not at all likely” or “not very likely” to “pay \$9.99 monthly for an on-demand music service.”²⁸ Mr. Rosin found that when lowering the price to \$2.99, the number of users who consider themselves “very likely” or “somewhat likely” to subscribe rose from 12 percent to 42 percent (an increase of nearly 400 percent). Nevertheless, 45 percent of surveyed consumers remain “not at all likely” and 12 percent are “not very likely” to subscribe to an on-demand streaming music service at a price of \$2.99 per month.²⁹ I have not evaluated Mr. Rosin’s

Music Concerts, Admission to Music Festivals, Admission to Small Live Music Sessions, and Admission to DJ Events categories listed in the study.) (“2015 Nielsen Music U.S. Report,” *Nielsen*, 2015, p. 25.)

²⁵ Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, p. [REDACTED]

²⁶ “2015 Nielsen Music U.S. Report,” *Nielsen*, 2015, p. 27.

²⁷ Cowen and Company also found that 68 percent of surveyed consumers had not paid for any form of music as of May 2016 over a trailing 30 day period. *See*, Blackledge, J., and T. Arcuri, “Music Industry Poised to Get Its Groove Back,” *Cowen and Company*, June 29, 2016, pp. 14, 19.

²⁸ “Written Rebuttal Testimony of Larry Rosin,” *In re Determination of Royalty Rates and Terms for Ephemeral Recording and Digital Performance of Sound Recordings (Web IV)*, United States Copyright Royalty Judges, The Library of Congress, February 23, 2015, at p. 4.

²⁹ “Written Rebuttal Testimony of Larry Rosin,” *In re Determination of Royalty Rates and Terms for Ephemeral Recording and Digital Performance of Sound Recordings (Web IV)*, United States

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survey methodology, but the Copyright Royalty Judges found “Mr. Rosin’s random survey to be generally credible” and I view his data as relevant to my investigation into the industry.³⁰

C. Streaming Platforms Are Differentiated

2.14 Consistent with the heterogeneity exhibited amongst consumers, streaming platforms are differentiated along several dimensions. Digital media providers offer streaming platforms on an interactive or a noninteractive basis, and offer access on an ad-supported or paid-subscription basis.³¹ Moreover, each platform seeks to distinguish itself across other characteristics such as ease of use, catalogue size, customized playlist, and presence of curated playlists, among others.

2.15 “Noninteractive” streaming is provided by Internet radio services such as Pandora. Noninteractive streaming does not allow users to select particular songs to listen to, but does allow users to pick music genres, similar to traditional radio.³² “Interactive” streaming services allow users to select which song they will hear (*i.e.*, the services provide access to “on-demand” streams)³³ and are available on both subscription and ad-supported bases. Although both service types offer on-demand functionality, users of ad-supported services typically miss some of the benefits of the premium services: fully-functioning mobility

Copyright Royalty Judges, The Library of Congress, February 23, 2015, at pp. 20-22. *See*, Figures 6 and 8.

³⁰ “Determination,” *In re Determination Of Royalty Rates And Terms For Ephemeral Recording And Webcasting Digital Performance Of Sound Recordings (Web IV)*,” United States Copyright Royalty Judges, The Library of Congress, March 4, 2016, at p. 29.

³¹ For further discussion, *see* Aguiar, L., and J. Waldfogel, “Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?,” *Joint Research Centre, European Commission*, 2015, at p. 5: “There are two distinct types of streaming music services, interactive and non-interactive. The interactive services, such as Spotify, YouTube, and Deezer, allow users to choose which song they will hear. Of Spotify’s 60 million users, one quarter pay \$10 per month for the service. The others pay nothing but generate ‘pay’ indirectly through their exposure to advertising. Non-interactive services such as Pandora do not allow users to choose the particular songs they hear, but Pandora does allow users to create narrowly tailored stations (consisting of songs similar to a seed song or artist).”

³² Gonsalves, A. K., “Music Licensing,” *The Licensing Journal*, 35, 3, March 2015, at p. 1.

³³ Aguiar, L., and J. Waldfogel, “Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales,” *Joint Research Centre, European Commission*, 2015, at p. 5.

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(which allows premium users full functionality on their smartphones), higher quality music streams, or access to more titles from the catalogue.³⁴ For example, Spotify ad-supported listeners can access a catalogue of music that is similar in scope to that provided via a paid subscription, but “have less control on their mobile devices, where they can only shuffle among and/or within playlists.”³⁵

2.16 Paid subscriptions generally provide the end user with unlimited listening,³⁶ and most interactive subscription services also provide “limited download” functionality, meaning users can download tracks and listen offline, so long as they maintain their active membership status.³⁷ The majority of ad-supported services do not offer this limited download functionality, and if it is offered it may be limited to a fixed number of limited downloads each month.³⁸

2.17 Interactive streaming products continue to see further differentiation via unique features and customized pricing. Points of differentiation include sound quality, on-demand flexibility, and portability.³⁹ Pricing options vary widely as well. For example, TIDAL offers users access to “lossless” interactive streaming (1141 kbps) for \$19.99 per month, as well as access to “high-quality” interactive streaming (up to 320 kbps) for \$9.99

³⁴ Waelbroeck, P., “Digital Music: Economic Perspectives,” *Telecom ParisTech*, April 10, 2013, at p. 12.

³⁵ Aguiar, L., and J. Waldfogel, “Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales,” *Joint Research Centre, European Commission*, 2015, at pp. 5-6.

³⁶ Waelbroeck, P., “Digital Music: Economic Perspectives,” *Telecom ParisTech*, April 10, 2013, at p. 12.

³⁷ Alexander, M., and B. Sisario, “Apple Music, Spotify and a Guide to Music Streaming Services,” *The New York Times*, April 5, 2016. Accessed October 30, 2016, <<http://www.nytimes.com/interactive/2015/06/30/business/media/music-streaming-guide.html>>.

³⁸ See, for example, Waelbroeck, P., “Digital Music: Economic Perspectives,” *Telecom ParisTech*, April 10, 2013, at p. 12.

³⁹ Waelbroeck, P., “Digital Music: Economic Perspectives,” *Telecom ParisTech*, April 10, 2013, at p. 10. Additionally, a June 2016 Report by researchers at RBC Capital Markets identified Ease of Use, Depth of Music Library, Content Management, Music Discoverability, Social Sharing and Ability to Use Offline as the main factors in product diversification across interactive and noninteractive subscription-based platforms. (See, Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” *RBC Capital Markets*, June 30, 2016, at p. 20.)

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per month.⁴⁰ Other services provide family plans or other discounts: Spotify allows a family of up to six people to use its full premium service with separate playlists and recommendations for \$14.99 instead of the equivalent \$59.54 (\$9.99 per person),⁴¹ as well as a \$4.99 option for students.⁴² Napster offers a \$9.99 per month subscription,⁴³ and alongside its noninteractive service, Pandora similarly plans to offer “a \$10-a-month service as well that would give subscribers unlimited access to tens of millions of tracks, much like Spotify AB, and Apple Inc.’s Apple Music.”⁴⁴

2.18 The 2015 IFPI Digital Music Report identified music curation, or the recommendation of songs, as a new direction for product differentiation.⁴⁵ Similarly, a study from ClearVoice Research found that “[c]ustomization [e.g., personalized playlists, song skip capability] is the key to attracting listeners” to a streaming service.⁴⁶ Consistent with these observations, Spotify acquired the Echo Nest, a music data group that uses

⁴⁰ “How Much Does TIDAL Cost?” *Tidal*, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/201745891-How-much-does-TIDAL-cost/>>; “How Good is the Sound Quality on TIDAL?” *TIDAL*, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/201594722-How-good-is-the-sound-quality-on-TIDAL/>>; “HiFi vs. Premium Subscriptions,” *TIDAL*, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/202722972-HiFi-vs-Premium-Subscriptions/>>.

⁴¹ “Premium for Family,” *Spotify*, 2016. Accessed October 25, 2016, <<https://www.spotify.com/us/family/>>.

⁴² “Student Discount – Spotify,” *Spotify.com*, 2016. Accessed September 22, 2016, <<https://www.spotify.com/us/student/>>.

⁴³ “Napster – Plans,” *Napster.com*, 2016. Accessed on October 31, 2016, <http://us.napster.com/pricing_b>.

⁴⁴ Karp, H., “Pandora Nears Deals for On-Demand Streaming,” *The Wall Street Journal*, August 19, 2016. Accessed October 25, 2016, <<http://www.wsj.com/articles/pandora-nears-deals-for-on-demand-streaming-1471599002>>. According to the article, “[w]hile competing with the likes of Spotify, Apple and other \$10-a-month service providers may be difficult, some music-industry executives believe that Pandora’s planned \$5-a-month tier presents a bigger opportunity for the business, potentially unlocking new revenue from consumers who want a bit more control over their listening experience but wouldn’t pay \$10 a month.”

⁴⁵ “In the early years of streaming services, unlimited repertoire was the universal selling point. Now the focus has shifted as these services compete to offer better curation and recommendations to consumers.” (“IFPI Digital Music Report 2015: Charting the Path to Sustainable Growth,” *IFPI*, 2015, at p. 20.)

⁴⁶ “Media Review: Music Streaming Services Market Profile,” *ClearVoice Research*, May 2014, at p. 6.

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human skill, social curation, and algorithms to provide intelligent recommendations.⁴⁷ Similarly, Apple has hired music experts to offer a human touch in the design of its playlists,⁴⁸ and Google purchased Songza to provide human curated playlists for specific moods and genre.⁴⁹ As I discussed above in Section 2.B, this sort of product differentiation represents attempts to target multiple customer segments and expand market penetration.

3. AMAZON OFFERS A RANGE OF DIGITAL MUSIC SERVICE OFFERINGS THAT REACH A BROAD CONSUMER BASE

A. Amazon Offers a Variety of Music Services at Different Price Points

3.1 Amazon offers a variety of music platforms. First, Amazon sells physical media such as traditional CDs and vinyl records.⁵⁰ According to Mr. Mirchandani, physical media “was the first category that Amazon expanded into beyond books.”⁵¹

3.2 Second, Amazon’s traditional “Music Store” includes access to MP3 downloads of individual tracks and albums. Alongside its Music Store, Amazon offers a music locker service for free to anyone wishing to access tracks or albums purchased at Amazon’s Music Store and up to 250 of their own songs (*i.e.*, acquired through alternative channels)—for a fee, users can upload a quarter million of their own songs.⁵²

⁴⁷ “Spotify Acquires the Echo Nest,” *Spotify*, March 6, 2014. Accessed October 25, 2016, <<https://press.spotify.com/br/2014/03/06/spotify-acquires-the-echo-nest/>>.

⁴⁸ “Apple Music – Membership – Apple,” *Apple*, 2016. Accessed October 27, 2016 <<http://www.apple.com/apple-music/membership/>>; Caldwell, S., “Apple Music FAQ: Everything You Need to Know,” *Apple*, August 5, 2016. Accessed August 24, 2016, <<http://www.imore.com/apple-music-faq>>.

⁴⁹ Sisario, B., “Google in Deal for Songza, a Music Playlist Service,” *The New York Times*, July 1, 2014. Accessed October, 27, 2016, <<http://www.nytimes.com/2014/07/02/business/media/google-buys-songza-a-playlist-app-for-any-occasion.html>>.

⁵⁰ “CDs & Vinyl,” *Amazon*, 2016. Accessed October 17, 2016, <<https://www.amazon.com/music-rock-classical-pop-jazz/b?ie=UTF8&node=5174>>.

⁵¹ “Testimony of Rishi Mirchandani,” *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, United States Copyright Royalty Judges, The Library of Congress, at p. 4.

⁵² Amazon’s basic purchased content locker service allows users to upload an unlimited number of Amazon-purchased tracks. Amazon’s premium paid locker service enables users to upload up to 250,000 of their own tracks and an unlimited number of Amazon-purchased tracks. (“About Amazon Music Storage Subscriptions,” *Amazon*, 2016. Accessed October 25, 2016,

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3.3 Third, Amazon offers several streaming music services covering a range of price points. For individuals who are members of “Amazon Prime”—a \$99-per-year service that offers access to a bundle of services including free two-day shipping, video streaming, photo storage, and e-books⁵³—Amazon offers access to “Prime Music.” Prime Music is an interactive streaming service that shares similarities with other interactive streaming services (ad-free, unlimited streaming), but, as described in the following section, differs in terms of the scope of its music library and in terms of the price charged for access (*i.e.*, Amazon Prime members do not pay an additional subscription charge to access Prime Music).⁵⁴

3.4 Amazon’s “Music Unlimited” streaming service offers on-demand access to “tens of millions of songs” for a fee of \$7.99 per month (or \$79 per year) for Prime members, \$9.99 per month for non-Prime members, or, in what I understand to be a forthcoming offering, for \$14.99 per month for families (\$149 per year for Amazon Prime members).⁵⁵

3.5 In addition, Amazon Music Unlimited is also offered for \$3.99 per month for individuals who exclusively use one of Amazon’s “Echo,” “Echo Dot,” or “Amazon Tap” proprietary smart speakers to stream music.⁵⁶ According to Mr. Mirchandani, these “voice-

<<https://www.amazon.com/gp/help/customer/display.html?nodeId=201379330>>; “Enjoy Safe and Secure Storage for Your Entire Music Collection,” *Amazon*, 2016. Accessed October 25, 2016, <<https://www.amazon.com/gp/feature.html?ie=UTF8&docId=1001432841>>.)

⁵³ Amazon Prime includes additional benefits, such as “free one-hour delivery from popular restaurants,” “access to Amazon Elements products, Amazon’s own line of everyday essentials,” and the ability to “download a new book for free every month.” (“About Amazon Prime,” *Amazon*, 2016. Accessed October 7, 2016, <<https://www.amazon.com/gp/help/customer/display.html?nodeId=200444160>>.)

⁵⁴ “Prime,” *Amazon*, 2016. Accessed October 13, 2016, <<https://www.amazon.com/gp/dmusic/promotions/PrimeMusic>>.

⁵⁵ “Amazon Music Unlimited,” *Amazon*, 2016. Accessed October 31, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>; “Music, Any Way You Want It,” *Amazon*, 2016. Accessed October 13, 2016, <https://www.amazon.com/b/ref=topnav_storetab_dmusic/152-1870985-1182902?ie=UTF8&node=14981443011>.

⁵⁶ “Amazon Music Unlimited,” *Amazon*, 2016. Accessed October 31, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>. Amazon’s Echo is a smart speaker system that “answers questions, reads audiobooks and the news, reports traffic and weather, gives info on local business” and “controls lights, switches, and thermostats,” among other features. (“Amazon Echo – Black,” *Amazon*, 2016. Accessed October 17, 2016,

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controlled devices (Amazon Echo, Echo Dot, and Amazon Tap) [...] have transformed the way users interact with music services.”⁵⁷

B. Several of Amazon’s Music Offerings are Unique in the Digital Music Industry

3.6 All of Amazon’s streaming music service offerings share some similarities with other streaming music service offerings. For example, Amazon Music Unlimited in its various incarnations offers users access to unlimited interactive streaming from a catalogue of tens of millions of tracks for about \$10 per month—Spotify, Apple, Google, and others offer very similar services. However, Amazon is different in that it has created several differentiated offerings that are limited in scope and that may serve less avid consumer segments. Two services that are markedly different, both in terms of form and price, are Amazon Music Unlimited for Echo and Prime Music.

Amazon Music Unlimited for Echo is Different from Other Streaming Services

3.7 Amazon Music Unlimited for Echo is available for \$3.99 per month, and offers access to many of the features embodied in the full-service Amazon Music Unlimited platform.⁵⁸ This means that users maintain access to Amazon’s full library of music and can access tracks on an interactive basis. However, unlike the full-service Music Unlimited service, Amazon Music Unlimited for Echo only allows users to access music through one of Amazon’s proprietary smart speakers. As a consequence, users cannot download music for offline use and cannot listen to music from their desktop computers, smartphones, or other mobile media devices.⁵⁹

<https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E/ref=sr_1_1?ie=UTF8&qid=1476715646&sr=8-1&keywords=echo>.) See also, “Amazon Music Unlimited for Echo,” *Amazon*, 2016. Accessed October 17, 2016, <<https://www.amazon.com/b?ie=UTF8&node=15451028011>>.

⁵⁷ “Testimony of Rishi Mirchandani,” *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, United States Copyright Royalty Judges, The Library of Congress, at p. 5.

⁵⁸ “Amazon Music Unlimited,” *Amazon*, 2016. Accessed October 31, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>.

⁵⁹ Perez, S., “Amazon Music Unlimited Debuts with Discounts for Prime Members, Cheap ‘Echo-Only Plan,’” *TechCrunch*, October 12, 2016. Accessed October 31, 2016,

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3.8 Although Amazon’s smart speakers are compatible with other streaming music services, none of those services offer interactive access to a catalogue of “tens of millions” of tracks for only \$3.99 per month.⁶⁰ Moreover, users who elect to stream music through one of Amazon’s smart speaker systems can gain access to several unique features, as discussed in the testimony of Mr. Mirchandani:

The natural language interactions that characterize Amazon’s suite of Alexa-enabled devices have broadly increased the appeal and accessibility of digital music services. Asking Alexa to play your favorite song or shuffle a playlist is fun, easy, and engaging.⁶¹

Prime Music is Different from Other Streaming Services

3.9 Prime Music gives users access to interactive streaming that shares characteristics with many other product platforms. In particular, Prime Music gives users access to on-demand streaming and limited downloads, meaning users can: (a) select particular songs or albums to listen to, (b) stream these songs live over the Internet, and (c) temporarily download these songs for offline listening.⁶² Prime Music also includes access to “Prime Playlists,” which are “handcrafted collections of songs from Amazon’s Prime Music catalog,”⁶³ and to “Prime Stations,” which are algorithmic stations that incorporate user

<<https://techcrunch.com/2016/10/12/amazon-music-unlimited-debuts-with-discounts-for-prime-members-cheap-echo-only-plan/>>.

⁶⁰ Perez, S., “Amazon Music Unlimited Debuts with Discounts for Prime Members, Cheap ‘Echo-Only Plan,” *TechCrunch*, October 12, 2016. Accessed October 31, 2016, <<https://techcrunch.com/2016/10/12/amazon-music-unlimited-debuts-with-discounts-for-prime-members-cheap-echo-only-plan/>>.

⁶¹ “Testimony of Rishi Mirchandani,” *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, United States Copyright Royalty Judges, The Library of Congress, at p. 7.

⁶² “About Prime Music,” *Amazon*, 2016. Accessed October 7, 2016, <https://www.amazon.com/gp/help/customer/display.html/ref=help_search_1-9?ie=UTF8&nodeId=201530920&qid=1475860140&sr=1-9>.

⁶³ “About Prime Music,” *Amazon*, 2016. Accessed October 7, 2016, <https://www.amazon.com/gp/help/customer/display.html/ref=help_search_1-9?ie=UTF8&nodeId=201530920&qid=1475860140&sr=1-9>.

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preferences via user selection of either “Thumbs Up” or “Thumbs Down” to particular tracks.⁶⁴

3.10 Although Prime Music’s services are similar to those offered by other providers, Prime Music is different in three important ways. First, Prime Music only grants users access to a limited music catalogue. Specifically, while Prime Music offers access to two million songs,⁶⁵ Amazon’s Music Unlimited service offers access to “tens of millions of songs,”⁶⁶ Spotify offers access to “over 30 million tracks,”⁶⁷ Apple’s advertised music library contains “[o]ver 40 million songs,”⁶⁸ and several other services offer still broader catalogues (*see* Exhibit 3).

3.11 Second, although its catalogue is limited, Prime Music offers an interactive streaming platform to Amazon Prime members that is both free of advertisements and free of additional subscription charges. This setup may enable Amazon to target customers who are not willing to pay for a streaming service, want access to uninterrupted on-demand streaming music, and do not mind Prime Music’s limited catalogue. (And as I described in Section 2.B, the majority of music consumers are not willing to pay even \$2.99 per month for a streaming music service.)

3.12 Third, and also because Prime Music is available to anyone who subscribes to Amazon Prime, it may serve as a conduit for users would not have otherwise been *aware* of or may have been indifferent to streaming music in general.⁶⁹ This aspect is important

⁶⁴ “About Prime Stations,” *Amazon*, 2016. Accessed October 7, 2016, <<https://www.amazon.com/gp/help/customer/display.html?nodeId=201614430>>.

⁶⁵ “Prime,” *Amazon*, 2016. Accessed October 13, 2016, <<https://www.amazon.com/gp/dmusic/promotions/PrimeMusic>>.

⁶⁶ “Amazon Music Unlimited,” *Amazon*, 2016. Accessed October 31, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>.

⁶⁷ Italics added. “Support – Spotify,” *Spotify*, 2016. Accessed October 7, 2016, <https://support.spotify.com/us/?utm_medium=www_headerandutm_source=www.spotify.com>.

⁶⁸ “The All-New Apple Music,” *Apple*, on *YouTube*, September 18, 2016. Accessed October 25, 2016, <<https://www.youtube.com/watch?v=CQY3KUR3VzM>>.

⁶⁹ Although certain other providers such as Apple and Google may market products and services alongside streaming music platforms, I am not aware of any streaming music service other than Prime Music that is provided as part of a service bundle that includes items such as free two-day shipping, unlimited movie and television streaming, and “[a]ccess to Prime Pantry, where members

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C. [REDACTED]

3.14 Consistent with research studies, consumer surveys, and commentary by digital media providers describing how the music industry caters to distinct consumer segments, usage data produced by digital media providers show that streaming usage patterns differ across interactive services. [REDACTED]

[REDACTED]

⁷² Amazon Music Unlimited, including the Echo-only pricing tier, is a new service. As such, I do not have access to detailed user-level streaming music behavior as I do for Prime Music. I reserve the right to update my analyses as these data are made available.

⁷³ See, e.g., ¶ 3.12.

⁷⁴ [REDACTED]

⁷⁵ [REDACTED]

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D. Amazon’s Multiple Music Offerings and Pricing Tiers May Lead to a Broader Royalty Base

Price Discrimination Leads to Increased Output

3.15 Amazon’s pricing structure, which includes multiple pricing tiers across similar but differentiated product types, is consistent with price discrimination⁷⁶ strategies adopted in other industries. The classic example of price discrimination is airline seating, of which several “classes” of seats are offered at different price points. The low-price option appeals to casual travelers who would not otherwise pay for an expensive seat, while the high-price option appeals to business travelers who may be subsidized by a corporate travel plan or simply have a greater willingness to pay. In theory, while such price discrimination strategies enable producers to increase profits, they also enable producers to reach a broader consumer base.

3.16 Amazon’s multiple product offerings serve a broader set of users than could be served with a single product offered at a single price point. Amazon offers three tiers of interactive streaming—Prime Music (offered at no additional charge for Amazon Prime members), Amazon Music Unlimited for Echo (\$3.99 per month), and Amazon Music Unlimited (\$9.99 per month, with discounts for Amazon Prime members).⁷⁷ Each tier represents a slightly different service and price that may serve a unique consumer segment, measured either in terms of willingness and ability to pay, or in terms of preferences for particular features embodied in each service. Regardless of the specific characteristics of subscribers of each service, economic theory dictates that this price discrimination enables Amazon to reach more consumers and to stream more music than would otherwise be possible.

⁷⁶ For a general discussion on price discrimination, *see e.g.*, Ekelund, R. B., “Price Discrimination and Product Differentiation in Economic Theory: An Early Analysis,” *The Quarterly Journal of Economics*, 84, 2, (1970), pp. 268–278; Pigou, A.C., “Discriminating Monopoly,” *The Economics of Welfare*, (Macmillan and Co.: London, 1920); and Stigler, G. J., “A Theory of Oligopoly,” *Journal of Political Economy*, 72, 1, (1964), pp. 44–61.

⁷⁷ “Amazon Music Unlimited,” *Amazon*, Accessed November 1, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited>>.

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As a Case Study, Prime Music, Which is Available at No Extra Charge to Amazon Prime Members, May Lead to Increased Output

3.17 As discussed, Prime Music is different from other streaming services, targets a unique audience, [REDACTED]

[REDACTED] As such, there are multiple channels through which Prime Music may garner additional royalties for copyright owners.

3.18 First, some Prime Music users might not have used *any* streaming music service in the absence of Prime Music. These could include consumers who were exposed and drawn into streaming music by Amazon Prime. [REDACTED]

[REDACTED]

3.19 Second, some Prime Music listeners might have otherwise used a service that generates lower mechanical royalties than those generated by Prime Music usage. [REDACTED]

[REDACTED]

3.20 Third, some Prime Music listeners might use other services *in addition to* using Prime Music. For example, a paid-subscription Napster user may also use Prime Music with her Amazon Echo.⁷⁹

⁷⁸ For Amazon, I used 2015 total mechanical royalties paid (\$7.2 million) divided by the total number of active Prime Music user-months (number of users active in each month totaled across all months in 2015) (39.0 million). [REDACTED]

[REDACTED]

[REDACTED] Federal Reserve Bank of St. Louis, Federal Reserve Economic Data, Accessed on November 1, 2016. <<https://fred.stlouisfed.org/series/DEXUSEU>>.)

⁷⁹ The Amazon Echo is not compatible with Napster’s streaming service. Therefore, a Napster subscriber who wishes to stream music through her Echo may opt to retain her Napster subscription but also use Prime Music in order to stream music through her Echo. (“Amazon Echo,” *Amazon*,

3.21

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Third, with regard to all music platforms, Amazon’s own music offerings, including traditional CDs, MP3s, Amazon Music Unlimited (including the Echo pricing tier), and Prime Music, is verification that Amazon itself believes that Prime Music does not significantly cannibalize consumers of these other products. In other words, to return to the airline example, I would expect that if Coach seats were cannibalizing First Class seats, the airline would make adjustments in order to remain profitable.

4. A STRUCTURE THAT INCLUDES ALTERNATIVE ROYALTY CALCULATIONS AND VARYING ROYALTY RATES FOR DISTINCT PRODUCT CATEGORIES WOULD PROVIDE GENERAL FLEXIBILITY TO SUPPORT DIVERSE MUSIC OFFERINGS THAT REACH A WIDE ARRAY OF MUSIC CONSUMERS

4.1 As I described above, a variety of digital music service offerings are available to consumers. Although these products often share similarities, there are also fundamental differences that enable providers to charge different prices in order to reach wider audiences. As I describe in the following sections, a flexible royalty structure enables digital media providers, like Amazon, to offer different delivery mechanisms and pricing tiers that reach a broad consumer base. The PII Structure is a flexible framework that provides a royalty structure that supports Amazon’s various digital music service offerings.

2016. Accessed October 17, 2016, <https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E/ref=sr_1_1?ie=UTF8&qid=1476715646&sr=8-1&keywords=echo>.)

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A. Mechanical Royalties are One of Several Royalties Paid by Streaming Music Providers

4.2 The current Phonorecords III proceedings are relevant to interactive streaming providers because these companies must pay “mechanical royalties” in exchange for the right to reproduce and distribute “musical works,” or the underlying composition and lyrics of a song.⁸¹ But in addition to the mechanical royalties contemplated in the current proceedings, these service providers must also pay “master use” or “master recording” royalties for the right to reproduce and distribute “sound recordings,” or the particular rendering of a musical work by a recording artist.⁸² Moreover, although the mechanical royalties are paid in exchange for the right to *reproduce and distribute* musical works, interactive streaming providers must also pay for the right to stream *public performances* of musical works (*i.e.*, a “performance royalty”) (*see* Exhibit 7).

4.3 Spotify reports that approximately 70 percent of revenues are paid out in the form of royalties to rights holders such as record labels and publishers,⁸³ [REDACTED]

⁸¹ Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding; Review of Copyright Royalty Judges Determination; Final Rule and Notice, 37 C.F.R. Part 385, January 26, 2009.

⁸² “Master use rights are required for previously recorded material that [a service] does not own or control” (“General Information, F.A.Q.,” *Harry Fox Agency*, Accessed October 28, 2016, <https://secure.harryfox.com/public/FAQ.jsp>.) “Whenever a user reproduces or distributes a non-digital or digital sound recording, the sound recording copyright holder and musical work copyright holder are both entitled to payment.” (Yeh, B., “Copyright Licensing in Music Distribution, Reproduction, and Public Performance,” Congressional Research Service, September 22, 2015, at Summary and p. 3.) “Except in the limited case of noninteractive streaming services that qualify for compulsory licensing under sections 112 and 114, licenses to reproduce and distribute sound recordings—such as those necessary to make and distribute CDs, transmit [Digital Permanent Downloads] and ringtones, or operate an interactive music service—are obtained through direct negotiation between a licensee and the sound recording owner (usually a record label) in the open market.” (U.S. Copyright Office, “Copyright and the Music Marketplace,” February, 2015, at p.43.)

⁸³ Spotify, “How We Pay Royalties: An Overview,” 2016. Accessed September 22, 2016, <<https://www.spotifyartists.com/spotify-explained/#how-we-pay-royalties-overview>>. Record labels typically own the sound recordings, although independent artists may also retain these rights. Musical works, on the other hand, are typically held by music publishers, although independent songwriters/composers may also retain these rights. Further, mechanical royalty payments for musical works may be administered by a third party rights administrator such as the Harry Fox Agency, and performance royalties for musical works may be administered by a Performing Rights Organization such as the American Society of Composers, Authors, and Publishers (“ASCAP”) or Broadcast Music, Inc. (“BMI”) . (U.S. Copyright Office, “Copyright and the Music Marketplace,” February, 2015, at pp. 18 - 25).

[REDACTED]

[REDACTED] As I describe in the following section, the mechanical royalty component of these payments represents [REDACTED].⁸⁵

B. A Flexible Royalty Structure Enables Digital Media Providers, Like Amazon, to Offer Different Delivery Mechanisms and Pricing Tiers that Reach a Broad Consumer Base

4.4 As described above, Amazon offers several digital music service offerings to consumers, including different types of interactive streaming and locker services at varying price points, which serve a broad customer base. As described by Mr. Mirchandani, these digital music service offerings necessitate a flexible royalty structure due to their variation in functionality.⁸⁶

4.5 The PII Structure is a framework that provides alternative rate structures for distinct product categories. First, the PII Structure distinguishes between three broad product categories. “Subpart A” comprises physical phonorecords (such as CDs), permanent digital downloads, and ringtones.⁸⁷ “Subpart B” comprises interactive streaming products and limited downloads.⁸⁸ “Subpart C” comprises limited offerings, bundled services (exclusive of interactive streaming), and locker services.⁸⁹ Second, each Subpart contains several

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[REDACTED]

85

[REDACTED]

86

“Indeed, as Amazon has transitioned from retailer to streaming service provider, it has relied on the existing regulatory scheme as a guide in developing a tiered offering designed to appeal to the full range of customer segments.” (“Testimony of Rishi Mirchandani,” *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, United States Copyright Royalty Judges, The Library of Congress, at p. 14.

87

“Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.3 2016.

88

“Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.10, 385.13 2016.

89

Specific product categories include Limited Offerings, Mixed Service Bundles, Music Bundles, Paid Locker Services, and Purchased Content Locker Services. (“Rates and Terms for Use of Musical

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unique product categories that each have their own royalty calculation mechanism. For example, Subpart B includes five distinct product types: (i) Free Nonsubscription/Ad-Supported Services (*e.g.*, Spotify’s free tier); (ii) Streaming Only Standalone Non-Portable Subscription Services (*e.g.*, Amazon Music Unlimited for Echo), (iii) Mixed⁹⁰ Standalone Non-Portable Subscription Services; (iv) Bundled Subscription Services (*e.g.*, Prime Music); and (v) Standalone Portable Subscription Services (*e.g.*, Amazon Music Unlimited, Apple Music, etc.).⁹¹

4.6 As an example of the diversity of royalty calculations embodied in the PII Structure, the following is a brief overview of certain aspects of the PII Structure’s mechanical royalty calculation for Subpart B products. To begin with, an “All-In Royalty” is calculated as the greater of 10.50 percent of “Service Revenue,” which includes subscription fees and advertising revenues,⁹² and a “Product-Specific Minimum,” which is the lesser of a per-subscriber minimum or a percentage of label costs.⁹³ But both the calculation of Service Revenue and the “Product Specific Minimum” vary by product type.⁹⁴ Next, applicable

Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.20 - 385.21 2016.)

⁹⁰ Including both interactive streaming and limited downloads.

⁹¹ “Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.12 - 385.13 2016.

⁹² Up to 15 percent of the cost of obtaining advertising revenues may be subtracted from total advertising revenues. (“Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.11 2016.)

⁹³ “Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.12 - 385.13 2016.

⁹⁴ For example, Service Revenue for Standalone Portable Subscription Services is calculated as subscription fees plus advertising revenue, less up to 15 percent of the cost of obtaining advertising revenues. Service Revenue for Bundled Subscription Services is calculated as total subscription revenue (for Amazon Prime, \$99 per year per subscriber) less the standalone published price of the non-music components of the bundle. (“Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.11 2016. Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding; Review of Copyright Royalty Judges Determination; Final Rule and Notice, 37 C.F.R. Part 385, January 26, 2009, at §§ 385.11-385.13.) Likewise for the Product-Specific Minima, the per-subscriber component ranges from \$0.50 for Standalone Non-Portable Subscription Services (Mixed and Streaming Only) to \$0.80 for Standalone Portable Subscription Services, and the percentage of label costs ranges from 17.36 percent to 22 percent. (“Rates and Terms for Use of

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performance royalties are subtracted, and the remainder is compared to a “Subscriber-Based Royalty Floor,” which ranges from \$0.00 (*i.e.*, no floor) for Free Nonsubscription/Ad-Supported Services to \$0.50 for Standalone Portable Subscription Services. These Subscriber-Based Royalty Floor amounts are paid when they are calculated to be greater than the All-In Royalty less performance royalties.⁹⁵

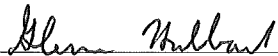
4.7 The PII Structure has provided the necessary flexibility to accommodate the underlying economics of Amazon’s various digital music service offerings. As described in Mr. Mirchandani’s testimony, the underlying economics for providing these offerings differs, and without a rate structure that can accommodate these differences, Amazon may be unable to continue to offer these services to consumers. The consequence could therefore be less music content delivered to consumers, and a reduction in the overall royalty base.

Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.13 2016.)

⁹⁵ “Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385.12 – 385.13 2016.

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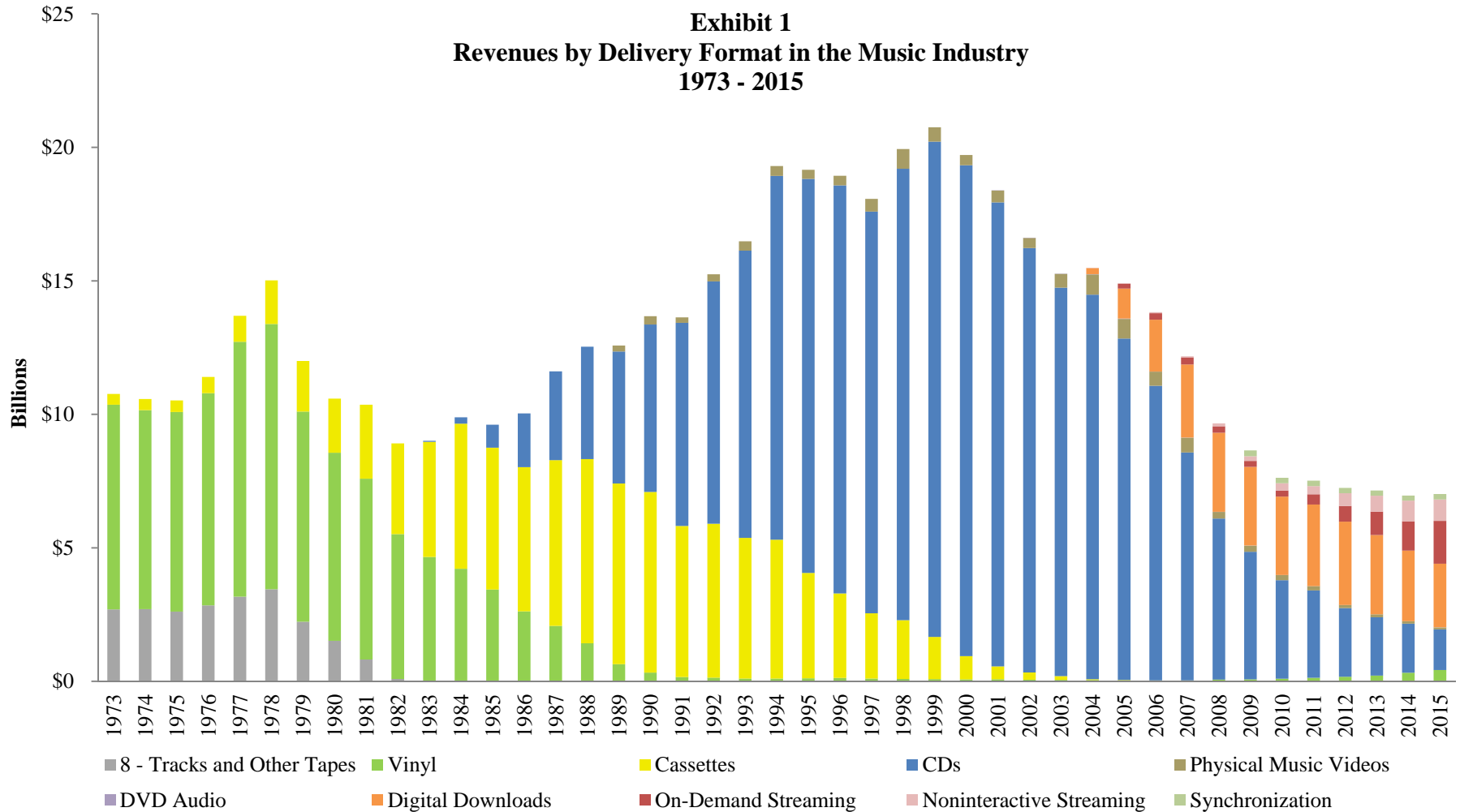
[page left intentionally blank]



Glenn Hubbard

November 1, 2016

Exhibit 1
Revenues by Delivery Format in the Music Industry
1973 - 2015



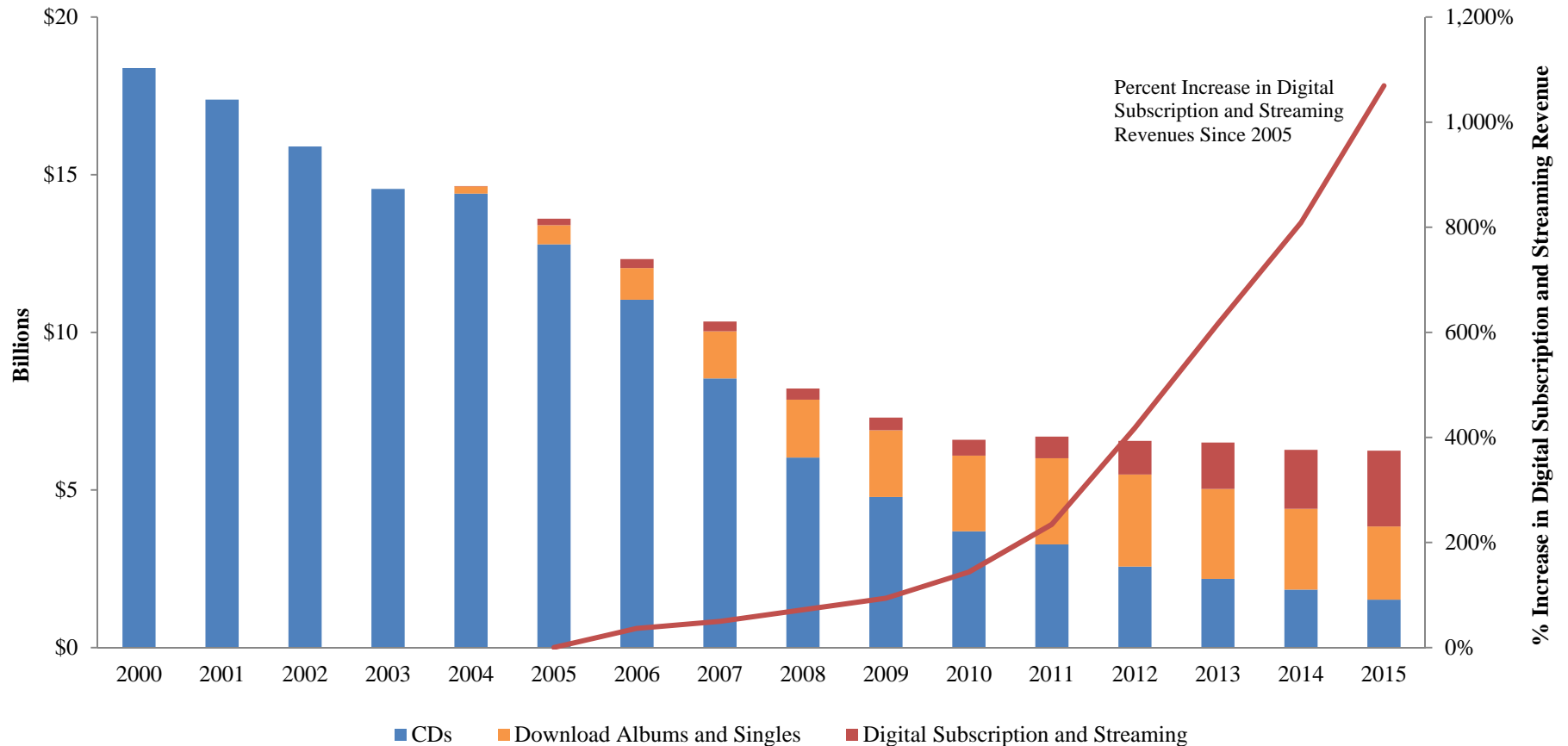
Notes:

- [1] All figures are in 2015 dollars. Inflation adjustments are based on the CPI and are calculated by RIAA.
- [2] Vinyl includes LP/EPs and Vinyl Singles. Cassettes includes Cassette Singles and Cassette Albums. CDs includes CD Albums, CD Singles, and SACDs. Digital Permanent Downloads includes Download Singles, Download Albums, Music Videos (Digital), Ringtones, and Kiosk. On-Demand Streaming includes On-Demand Paid Subscriptions and On-Demand Streaming (Ad-Supported).
- [3] The values for Noninteractive Streaming are SoundExchange Distributions reported by the RIAA, which are royalty payments, rather than music revenues. Accordingly, the value that this format contributes to the revenues reported by the RIAA and shown above is conservative relative to actual Noninteractive Streaming revenues.
- [4] Synchronization revenues reported by the RIAA and shown above represent royalties, which include fees and royalties from the synchronization of sound recordings with other media.

Sources:

- [A] "U.S. Sales Database," *Recording Industry Association of America*. Accessed August 12, 2016, <<https://www.riaa.com/u-s-sales-database/>>.
- [B] "Licensing 101," *SoundExchange*, accessed October 31, 2016, <<http://www.soundexchange.com/service-provider/licensing-101/>>.

Exhibit 2
Physical and Digital Phonorecord Revenues
2000 - 2015



Notes:

[1] All figures are in 2015 dollars. Inflation adjustments are based on the CPI and are calculated by RIAA.

[2] CDs includes CD Singles, CD Albums, and SACDs.

[3] Digital Subscription and Streaming includes On-Demand Paid Subscriptions, On-Demand Streaming (Ad-Supported) and Noninteractive Streaming.

[4] The values for Noninteractive Streaming are SoundExchange Distributions reported by the RIAA, which are royalty payments, rather than music revenues. Accordingly, the value that this format contributes to the revenues reported by the RIAA and shown above is conservative relative to actual Noninteractive Streaming revenues.

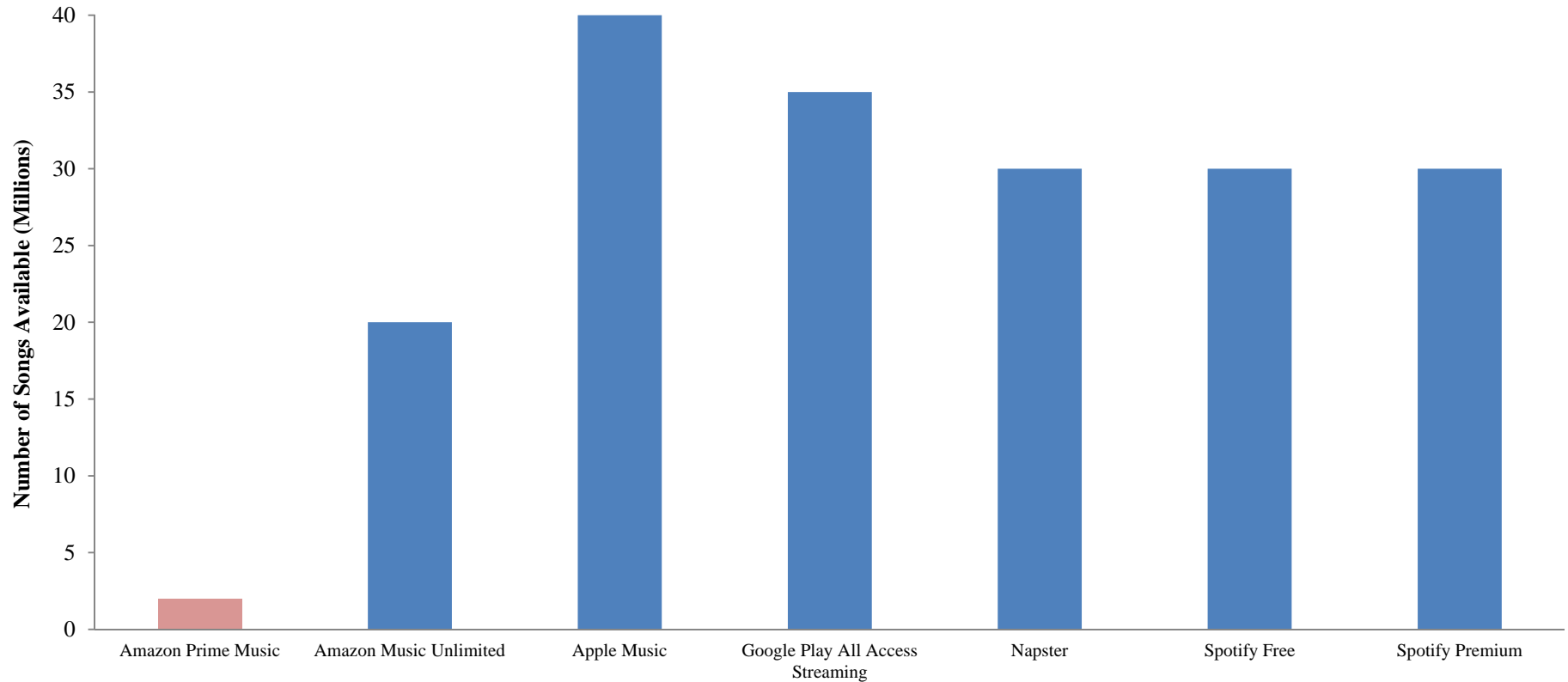
Sources:

[A] "U.S. Sales Database," *Recording Industry Association of America*. Accessed August 12, 2016, <<https://www.riaa.com/u-s-sales-database/>>.

[B] "Licensing 101," *SoundExchange*, accessed October 31, 2016, <<http://www.soundexchange.com/service-provider/licensing-101/>>.

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Exhibit 3
Size of Song Catalog for Interactive Streaming Providers



Notes:

[1] When sources indicate that a service offers "over" X amount of songs, the number of songs available on this service is assumed to be X. Amazon's Music Unlimited service offers access to "tens of millions of songs." For purposes of this chart, I interpret this as "at least twenty million."

[2] SoundCloud, an interactive streaming service that is a participant in Phonorecords III, has a catalog of over 125 million songs for its subscription service. However, many of these songs are user uploaded and therefore may not be comparable to the size of the catalogs of the music services included in the chart. See, "SoundCloud's Subscription Streaming Service is Here (and it Needs Work)," *The Verge*, Accessed August 2, 2016, <<http://www.theverge.com/2016/3/29/11321978/soundcloud-go-subscription-music-service-announced>>.

Sources:

[A] "Prime," *Amazon.com*, Accessed October 26, 2016, <<https://www.amazon.com/gp/dmusic/promotions/PrimeMusic>>.

[B] "Music, Any Way You Want It," *Amazon*, 2016. Accessed October 13, 2016, <https://www.amazon.com/b/ref=topnav_storetab_dmusic/152-1870985-1182902?ie=UTF8&node=14981443011>.

[C] Hindy, J., "Apple Music vs Spotify vs Google Play Music: Which one is the best?," *AndroidAuthority.com*, Accessed July 29, 2016, <<http://www.androidauthority.com/apple-music-vs-spotify-vs-google-play-music-671277/>>.

[D] "Try Napster Free for 30 Days," *Napster*, Accessed October 12, 2016, <<http://us.napster.com/>>.

[E] "The All-New Apple Music," Apple, on *YouTube*, September 18, 2016. Accessed October 25, 2016, <<https://www.youtube.com/watch?v=CQY3KUR3VzM>>.

Hubbard Exhibit 4

RESTRICTED-Subject to Protective Order in
Docket No. 16-CRB-0003-PR (2018-2022)

Hubbard Exhibit 5

RESTRICTED-Subject to Protective Order in
Docket No. 16-CRB-0003-PR (2018-2022)

Hubbard Exhibit 6

RESTRICTED-Subject to Protective Order in
Docket No. 16-CRB-0003-PR (2018-2022)

Exhibit 7: Royalties Paid by Interactive Streaming Music Providers

Rights Transferred	Music Component	
	Musical Works	Sound Recordings
The Right to Manufacture and Distribute	<p>Mechanical Royalties</p> <p><i>Paid to Publishers, Mechanical Rights Administrators, or Independent Songwriters</i></p>	<p>Payments to Record Labels and / or Independent Recording Artists</p>
The Right to Perform Publicly	<p>Performance Royalties for Musical Works</p> <p><i>Paid to Publishers, Performing Rights Organizations, or Independent Songwriters</i></p>	

Notes:

[1] A Musical Work is the underlying melody and lyrics of a composition created by a songwriter. A Sound Recording is the particular performance of a Musical Work by a Recording Artist. The Sound Recording is fixed in a recording medium.

[2] Songwriters (owners of the copyright to a Musical Work) often assign a portion of their rights to a business partner known as a Music Publisher. The Music Publisher acts as an administrator of the rights to the Musical Work by granting licenses, collecting and distributing royalties, and handling other administrative duties. Many Music Publishers further outsource all or part of their responsibilities for the licensing of Musical Works rights to Third Party Mechanical Rights Administrators (for the mechanical right) and / or Performance Rights Organizations (for the performance right).

[3] If not signed to a Record Label, Recording Artists own all of the rights to the Sound Recording and are responsible for the licensing of the master use right for their Sound Recording. If signed to a Record Label, the management of the rights to the Sound Recording becomes the responsibility of the Record Label.

Sources:

[A] Thomson, K., "Music and How the Money Flows," Future of Music Coalition, March 10, 2015. Accessed August 29, 2016, <<http://futureofmusic.org/article/article/music-and-how-money-flows>>.

[B] US Copyright Office, "Copyright and the Music Marketplace," February, 2015.

Appendix A

ROBERT GLENN HUBBARD

Curriculum Vitae

PERSONAL DATA

Born: In Orlando, Florida.
Marital Status: Married, two children.

FIELDS OF SPECIALIZATION

Public Economics, Corporate Finance and Financial Institutions, Macroeconomics, Industrial Organization, Natural Resource Economics, Public Policy.

EDUCATION

Ph.D., Economics, Harvard University, May 1983.
Dissertation: *Three Essays on Government Debt and Asset Markets*, supervised by Benjamin M. Friedman, Jerry A. Hausman, and Martin S. Feldstein.

A.M., Economics, Harvard University, May 1981.

B.A., B.S., Economics, University of Central Florida, June 1979, *summa cum laude*.

HONORS AND AWARDS

Silver Beaver Award, Boy Scouts of America, 2014.

Medal of Honor, Foreign Policy Association, 2014.

Homer Jones Lecture, Federal Reserve Bank of St. Louis, 2013.

Fiftieth Anniversary Award of Scholarship, University of Central Florida, 2013.

Franklin Delano Roosevelt Distinguished Service Award, Greater New York Council, Boy Scouts of America, 2012.

Bloomberg Markets, 50 Most Influential Members of the Global Financial Community, 2012.

National Association of Corporate Directors, Directorship 100: People to Watch, 2011.

Joint American Economic Association/American Finance Association Distinguished Speaker, 2008.

Cairncross Lecture, University of Oxford, 2007.

Fellow of the National Association of Business Economists, 2005.

William F. Butler Memorial Award, New York Association of Business Economists Award, 2005.

Exceptional Service Award, The White House, 2002.

Michelle Akers Award for Distinguished Service, University of Central Florida, 2001.

Alumni Hall of Fame, University of Central Florida, 2000.

Best Paper Award for Corporate Finance, Western Finance Association, 1998.

Exceptional Service Award, U.S. Department of the Treasury, 1992.

Distinguished Alumnus Award, University of Central Florida, 1991.

John M. Olin Fellowship, National Bureau of Economic Research, 1987-1988.

Teaching Commendations, Graduate School of Business, Columbia University.

Northwestern University Associated Student Government Teaching Awards, announced in 1985, 1986, and 1987.

Graduate Distinctions: National Science Foundation Fellowship, Alfred P. Sloan Foundation Fellowship.

Undergraduate Distinctions: National Merit Scholarship, National Society of Professional Engineers Award, Florida Society of Professional Engineers Award, National Council of Teachers of English Award, Omicron Delta Kappa, Financial Management Association Honor Society.

POSITIONS HELD

2004-present	Dean, Graduate School of Business, Columbia University
1994-present	Russell L. Carson Professor of Economics and Finance, Graduate School of Business, Columbia University
1997-present	Professor of Economics, Faculty of Arts and Sciences, Columbia University
2007-present	Panel of Economic Advisors, Federal Reserve Bank of New York (also 1993-2001)
2003-present	Featured commentator, <i>Nightly Business Report</i>
2003-2010	Featured commentator, <i>Marketplace</i>
2003-2007	Visiting Scholar American Enterprise Institute (also 1995-2001)
1999-2004	Co-Director, Columbia Business School Entrepreneurship Program
2004-2005	Viewpoint Columnist, <i>Business Week</i>
2004-2006	Member, Panel of Economic Advisors, Congressional Budget Office
2001-2003	Chairman, President's Council of Economic Advisers
2001-2003	Chairman, Economic Policy Committee, Organization for Economic Cooperation and Development
2001-2003	Member, White House National Economic Council and National Security Council
2001-2003	Member, President's Council on Science and Technology
1997-1998	Visiting Professor of Business Administration, Harvard Business School
1995-2001	Visiting Scholar and Director of Tax Policy Program, American Enterprise Institute
1994-1997	Senior Vice Dean, Graduate School of Business, Columbia University
1994	MCI Fellow, American Council for Capital Formation
1994	John M. Olin Visiting Professor, Center for the Study of Economy and the State, University of Chicago
1991-1993	Deputy Assistant Secretary (Tax Analysis), U.S. Department of the Treasury
1988-present	Professor of Economics and Finance, Graduate School of Business, Columbia University
1987-1988	John M. Olin Fellow in residence at the National Bureau of Economic Research
1983-1988	Assistant Professor of Economics, Northwestern University, with half-time research appointment in the Center for Urban Affairs and Policy Research
1985	Visiting Scholar, Center for Business and Government, John F. Kennedy School of Government, Harvard University
1981-1983	Teaching Fellow (Department of Economics) and Resident Tutor in Economics (Dunster House), Harvard University

DIRECTORSHIPS

2007-present	Met Life
2006-2008	Capmark Financial Corporation; Information Services Group
2004-present	ADP, Inc.; BlackRock Closed-End Funds
2004-2014	KKR Financial Corporation
2004-2008	Duke Realty Corporation
2004-2006	Dex Media/R.H. Donnelley
2003-2005	ITU Venturesp
2000-2001	Angel Society, LLC; Information Technology University, LLC

CONSULTING OR ADVISORY RELATIONSHIPS

2016-present	55 Capital
2014-present	Fiscal Note
2007-present	Consulting or Speaking Engagements at Some Point: U.S. Department of Justice, Internal Revenue Service, Access Midstream, Airgas, AlixPartners, Alternative Investment Group, Amazon, American Century, America's Health Insurance Plans, ApexBrasil, Association for Corporate Growth, Atlantic Point, Bank of America, Bank of New York Mellon, Barclays Services Corporation, BBVA Compass, BGC, BNP Paribas, Brevan Howard, Capital Research, Carlyle Group, Citigroup, Commonfund, Compagnie Financiere Tradition, Credit Suisse, Dell, Deutsche Bank, Donald Fewer, Fidelity, Franklin Resources, Freddie Mac, Gartner, Goldman Sachs, Good, Government of Greece, Sue Ann Hamm, The Hartford, Intel, JP Morgan Chase, Key Bank, Kosmos, Microsoft, Morgan Stanley, NAREIT, National Rural Utilities Cooperative Finance Corporation, New York Bankers Association, NMS Group, Nationwide, Ocwen, Oracle, Patriarch, Pension Real Estate Association, Principal Management Corporation, Prium, Promontory, Rabobank, Real Estate Roundtable, Related Properties, Reynolds American, Royal Bank of Canada, Royal Bank of Scotland, SIG, Solera, Telia Sonera, Trust Company of the West, Tullett Prebon, Visa, Walter Energy, Wells Fargo
2005-2009	Arcapita
2005-2010	Nomura Holdings America
2008	Laurus Funds
2005-2008	Chart Venture Partners
2003-2009	Ripplewood Holdings

POSTS IN NON-PROFIT ORGANIZATIONS

2006-present	Co-Chair, Committee on Capital Markets Regulation
2004-present	Member, Advisory Board, National Center on Addiction and Substance Abuse
2003-present	Member, Manhattan District Council Board, Boy Scouts of America
2012-2015	Trustee, Fifth Avenue Presbyterian Church, New York
2010-2011	Co-Chair, The Study Group on Corporate Boards
2008-2011	Elder, Fifth Avenue Presbyterian Church
2008-2010	Chairman, Economic Club of New York
2006-2008	Member, Board of Directors, Resources for the Future
2003-2008	Trustee, Tax Foundation
2004-2010	Trustee, Economic Club of New York
2004-2007	Trustee, Fifth Avenue Presbyterian Church, New York

PROFESSIONAL ACTIVITIES

1987-present	Research Associate, National Bureau of Economic Research (Monetary Economics, Corporate Finance, Public Economics, Economic Fluctuations, Industrial Organization)
2007-present	Life Member, Council on Foreign Relations
2003	Member, Committee of Visitors, National Science Foundation
2000	Panelist, Graduate Fellowship Selection Committee, National Science Foundation
1999-2001	Director, Project on Nonprofit Organizations, National Bureau of Economic Research
1997-2001	Member, COSSA-Liaison Committee, American Economic Association
1993-2001	Board of Advisors, Institutional Investor Project, School of Law, Columbia University
1995-1999	Member, Board of Academic Consultants, American Law Institute
1997	Member, Grants Panel for Integrative Graduate Education and Research Training Program, National Science Foundation
1994-1996	Member, Economics Grants Panel, National Science Foundation
1993-1996	Member, Federal Taxation and Finance Committee, National Tax Association
1990-1995	Co-organized research program on International Aspects of Taxation at the National Bureau of Economic Research, Cambridge, Massachusetts
1995	Member, Program Committee, American Economic Association Meeting
1983-1987	Faculty Research Fellow, National Bureau of Economic Research
1983-1986	Adjunct Faculty Research Fellow, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, Cambridge, Massachusetts
1986, 1988, 1994	Member of the Brookings Panel on Economic Activity
1985, 1987	Special guest of the Brookings Panel on Economic Activity
1990-1991	Organized research program on Environmental Economics and Public Policy at the National Bureau of Economic Research, Cambridge, Massachusetts
1988-1990	Co-organized research program on Dynamic Models of Firms and Industries at the National Bureau of Economic Research, Cambridge, Massachusetts
1985-1989	Organized research program and workshops on contracting in financial markets at the Summer Institute, National Bureau of Economic Research, Cambridge, Massachusetts
1988	Organized Economic Fluctuations program on Industrial Economics and Macroeconomics, National Bureau of Economic Research, Stanford, California
1986-1988	Organized research program and workshop on links between macroeconomics and industrial organization at the Summer Institute, National Bureau of Economic Research, Cambridge, Massachusetts
1991	Member, Program Committee, Econometric Society Winter Meetings
1982-1983	Member, Energy Modeling Forum VII Study Group, Stanford University, Stanford, California

1981-present	Consultant on research projects with private corporations and government and international agencies, including the Internal Revenue Service, Social Security Administration, U.S. Department of Energy, U.S. Department of State, U.S. Department of Treasury, and U.S. International Trade Commission; National Science Foundation; The World Bank; Board of Governors of the Federal Reserve System; Federal Reserve Bank of New York; Congressional Budget Office
Member:	American Economic Association, American Finance Association, Association for Public Policy and Management, Econometric Society, International Association of Energy Economists, National Tax Association, the Royal Economic Society, and the Institute for Management Science
Referee:	<i>American Economic Review; Canadian Journal of Economics; Columbia Journal of World Business; Econometrica; Economic Journal; Energy Economics; Energy Journal; International Finance; International Tax and Public Finance; Journal of Business; Journal of Business and Economic Statistics; Journal of Economic History; Journal of Economic Literature; Journal of Finance; Journal of Financial Economics; Journal of Financial Intermediation; Journal of Financial and Quantitative Analysis; Journal of Financial Services Research; Journal of Industrial Economics; Journal of International Money and Finance; Journal of Law and Economics; Journal of Macroeconomics; Journal of Money, Credit, and Banking; Journal of Monetary Economics; Journal of Political Economy; Journal of Public Economics; Journal of Regulatory Economics; Journal of Small Business Finance; Management Science; National Tax Journal; Quarterly Journal of Economics; Quarterly Review of Economics and Finance; RAND Journal of Economics; Review of Economic Dynamics; Review of Economic Studies; Review of Economics and Statistics; Review of Financial Economics; Scandinavian Journal of Economics; Southern Economic Journal; National Science Foundation; C.V. Starr Center for Applied Economics (New York University); Addison-Wesley Publishing Company; Ballinger Press; Cambridge University Press; Harvard Business School Press; MIT Press; W.W. Norton; Oxford University Press</i>
Associate Editor:	<i>Journal of Applied Corporate Finance</i>
Former Associate Editor:	<i>Federal Reserve Bank of New York Economic Policy Review; International Finance; International Tax and Public Finance; Journal of Industrial Economics; Journal of Macroeconomics; Journal of Small Business Finance; National Tax Journal</i>

PUBLICATIONS AND PAPERS

Edited Volumes

Transition Costs of Fundamental Tax Reform (with K.A. Hassett), Washington, DC: AEI Press, 2001.

Inequality and Tax Policy (with K.A. Hassett), Washington, DC: AEI Press, 2001.

Effects of Taxation on Multinational Corporations (with M. Feldstein and J.R. Hines), Chicago: University of Chicago Press, 1995.

Taxing Multinational Corporations (with M. Feldstein and J. R. Hines), Chicago: University of Chicago Press, 1995.

Studies in International Taxation (with A. Giovannini and J. B. Slemrod), Chicago: University of Chicago Press, 1993.

Financial Markets and Financial Crises, Chicago: University of Chicago Press, 1991.

Asymmetric Information, Corporate Finance, and Investment, Chicago: University of Chicago Press, 1990.

Books

Balance (with T. Kane), Simon and Schuster, 2013.

Healthy, Wealthy, and Wise (with J.F. Cogan and D.P. Kessler), Hoover Institution Press and AEI Press, 1st ed., 2005; 2nd ed., 2011.

Seeds of Destruction (with P. Navarro), FT Publishing, 2010.

The Mutual Fund Industry: Competition and Investor Welfare (with M.F. Koehn, S.I. Ornstein, M. Van Audenrode, and J. Royer), New York: Columbia Business School Publishing, 2010.

The Aid Trap: Hard Truths About Ending Poverty (with W. Duggan), Columbia Business School Publishing, 2009.

Textbooks

Principles of Economics (with A.P. O'Brien), Pearson Prentice Hall, 1st ed., 2006; 2nd ed., 2008; 3rd ed., 2010; 4th ed., 2013; 5th ed., 2015; 6th ed., 2017.

Money, Banking, and the Financial System (with A.P. O'Brien), Pearson Prentice Hall, 1st ed., 2012; 2nd ed., 2013.

Macroeconomics (with A.P. O'Brien and M. Rafferty), Pearson Prentice Hall, 1st ed., 2012; 2nd ed., 2014.

Money, the Financial System, and the Economy, Reading: Addison-Wesley Publishing Company, 1st ed., 1994; 2nd ed., 1997; 3rd ed., 2000; 4th ed., 2002; 5th ed., 2004; 6th ed., 2007.

Publications**Articles**

"Country Characteristics and the Incidence of Capital Income Taxation on Wages: An Empirical Assessment" (with C. Azemar), *Canadian Journal of Economics*, forthcoming.

"Taking Capital's Gains: Capital's Ideas and Tax Policy in the Twenty-First Century", *National Tax Journal*, 68 (2015): 409-424.

"Reforming the Tax Preference for Employer Health Insurance" (with J. Bankman, J.F. Cogan, and D.P. Kessler), *Tax Policy and the Economy*, volume 26, Cambridge, University of Chicago Press, 2012.

"The Effect of Tax Preferences on Health Spending" (with J.F. Cogan and D.P. Kessler), *National Tax Journal*, 64 (2011): 795-816.

"The Effect of Medicare Coverage for the Disabled on the Market for Private Insurance" (with J.F. Cogan and D.P. Kessler), *Journal of Health Economics* 29 (2010): 418-428.

"The Effect of Massachusetts' Health Reform on Employer-Sponsored Insurance Premiums" (with J.F. Cogan and D.P. Kessler), *Forum for Health Economics and Policy*, 2010.

"The Mortgage Market Meltdown and House Prices" (with C. Mayer), *The B.E. Journal of Economic Analysis & Policy* 9: Issue 3 (Symposium), Article 8 (2009).

"Competition in the Mutual Fund Industry: Evidence and Implications for Policy" (with J. Coates), *Journal of Corporation Law*, 33 (Fall 2007).

"Evaluating Effects of Tax Preferences on Health Care Spending and Federal Revenues" (with J.F. Cogan and D.P. Kessler), in J.M. Poterba, ed., *Tax Policy and the Economy*, volume 21, Cambridge: MIT Press, 2007.

"To Bundle or Not to Bundle: Firms' Choices Under Pure Building" (with A. Saha and J. Lee), *International Journal of the Economics of Business*, 14 (2007): 59-83.

- "The Effects of Progressive Income Taxation on Job Turnover" (with W.M. Gentry), *Journal of Public Economics* 88 (September 2004): 2301-2322.
- "Business, Knowledge, and Global Growth", *Capitalism and Society*, 1 (2006).
- "Precautionary Savings and the Governance of Nonprofit Organizations" (with R. Fisman), *Journal of Public Economics*, 2005.
- "Government Debt and Interest Rates" (with E. Engen), in M. Gertler and K. Rogoff, *NBER Macroeconomics Annual 2004*, Cambridge: MIT Press, 2005.
- "Entrepreneurship and Household Saving" (with W.M. Gentry), *Advances in Economic Analysis and Policy*, 4 (2004).
- "Taxing Multinationals" (with M. Devereux), *International Taxation and Public Finance* 10(2003):469-487.
- "The Effect of the Tax Reform Act of 1986 on the Location of Assets in Financial Services Firms" (with R. Altshuler), *Journal of Public Economics* 87 (January 2003):109-127.
- "The Role of Nonprofit Endowments" (with R. Fisman), in E. Glaeser, ed., *The Governance of Not-For-Profit Organizations*, Chicago: University of Chicago Press, 2003.
- "Are There Bank Effects in Borrowers' Costs of Funds?: Evidence from a Matched Sample of Borrowers and Banks" (with K.N. Kuttner and D.N. Palia), *Journal of Business* 75 (October 2002): 559-581.
- "The Share Price Effects of Dividend Taxes and Tax Imputation Credits" (with T.S. Harris and D. Kemsley), *Journal of Public Economics* 79 (March 2001): 569-596.
- "Tax Policy and Entrepreneurial Entry" (with W.M. Gentry), *American Economic Review* 90 (May 2000): 283-287.
- "Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance" (with C.P. Himmelberg and D. Palia), *Journal of Financial Economics* 53 (1999): 353-384.
- "A Reexamination of the Conglomerate Merger Wave in the 1960s" (with D. Palia), *Journal of Finance* 54 (June 1999): 1131-1152.
- "Inflation and the User Cost of Capital: Does Inflation Still Matter?" (with D. Cohen and K.A. Hassett), in M. Feldstein, ed., *The Costs and Benefits of Achieving Price Stability*, Chicago: University of Chicago Press, 1999.
- "Are Investment Incentives Blunted by Changes in Prices of Capital Goods?: International Evidence" (with K.A. Hassett), *International Finance* 1 (October 1998): 103-125.
- "Capital-Market Imperfections and Investment," *Journal of Economic Literature* 36 (March 1998): 193-225.
- "Fundamental Tax Reform and Corporate Financial Policy" (with W.M. Gentry), in J.M. Poterba, ed., *Tax Policy and the Economy*, volume 12, Cambridge: MIT Press, 1998.
- "Distributional Implications of Introducing a Broad-Based Consumption Tax" (with W.M. Gentry), in J.M. Poterba, ed., *Tax Policy and the Economy*, volume 11, Cambridge: MIT Press, 1997.
- "How Different Are Income and Consumption Taxes?," *American Economic Review* 87 (May 1997): 138-142.
- "Tax Policy and Investment," (with K.A. Hassett), in A.J. Auerbach, ed., *Fiscal Policy: Lessons from Economic Research*, Cambridge: MIT Press, 1997.
- "Assessing the Effectiveness of Saving Incentives" (with J. Skinner), *Journal of Economic Perspectives* 10 (Fall 1996): 73-90.
- "The Political Economy of Branching Restrictions and Deposit Insurance: A Model of Monopolistic Competition Among Small and Large Banks" (with N. Economides and D. Palia), *Journal of Law and Economics* 39 (October 1996): 667-704.
- "Tax Reforms and Investment: A Cross-Country Comparison" (with J.G. Cummins and K.A. Hassett), *Journal of Public Economics* 62 (1996): 237-273.

- "Benefits of Control, Managerial Ownership, and the Stock Returns of Acquiring Firms" (with D. Palia), *RAND Journal of Economics* 26 (Winter 1995): 782-792.
- "Executive Pay and Performance: Evidence from the U.S. Banking Industry" (with D. Palia), *Journal of Financial Economics* 39 (1995): 105-130.
- "Tax Policy, Internal Finance, and Investment: Evidence from the Undistributed Profits Tax of 1936-1937" (with C. Calomiris), *Journal of Business* 68 (October 1995): 443-482.
- "A Reconsideration of Investment Behavior Using Tax Reforms as Natural Experiments" (with J.G. Cummins and K.A. Hassett), *Brookings Papers on Economic Activity* (1994:2): 1-59.
- "Precautionary Saving and Social Insurance" (with J. Skinner and S. Zeldes), *Journal of Political Economy* 105 (April 1995): 360-399.
- "Expanding the Life-Cycle Model: Precautionary Saving and Public Policy" (with J. Skinner and S. Zeldes), *American Economic Review* 84 (May 1994): 174-179.
- "The Tax Sensitivity of Foreign Direct Investment: Evidence from Firm-Level Panel Data" (with J. Cummins), in M. Feldstein, J.R. Hines, and R.G. Hubbard, eds., *Effects of Taxation on Multinational Corporations*, Chicago: University of Chicago Press, 1995.
- "International Adjustment Under the Classical Gold Standard: Evidence for the U.S. and Britain, 1879- 1914" (with C. Calomiris), in T. Bauoumi, B. Eichengreen, and M. Taylor, eds., *Modern Perspectives on the Gold Standard*, Cambridge: Cambridge University Press, 1995.
- "Internal Finance and Firm-Level Investment" (with A. Kashyap and T. Whited), *Journal of Money, Credit, and Banking* 27 (August 1995): 683-701.
- "Do Tax Reforms Affect Investment?" (with J.G. Cummins and K.A. Hassett), in J.M. Poterba, ed., *Tax Policy and the Economy*, vol. 9, Cambridge: MIT Press, 1995.
- "The Importance of Precautionary Motives for Explaining Individual and Aggregate Saving" (with J. Skinner and S. Zeldes), *Carnegie-Rochester Conference Series on Public Policy* 40 (June 1994): 59-126.
- "Corporate Financial Policy, Taxation, and Macroeconomic Risk" (with M. Gertler), *RAND Journal of Economics* 24 (Summer 1993): 286-303.
- "Internal Net Worth and the Investment Process: An Application to U.S. Agriculture" (with A. Kashyap), *Journal of Political Economy* 100 (June 1992): 506-534.
- "Long-Term Contracting and Multiple-Price Systems" (with R. Weiner), *Journal of Business* 65 (April 1992): 177-198.
- "Efficient Contracting and Market Power: Evidence from the U.S. Natural Gas Industry" (with R. Weiner), *Journal of Law and Economics* 34 (April 1991): 25-67.
- "Interest Rate Differentials, Credit Constraints, and Investment Fluctuations" (with M. Gertler and A. Kashyap), in R.G. Hubbard, ed., *Financial Markets and Financial Crises*, Chicago: University of Chicago Press, 1991.
- "Taxation, Corporate Capital Structure, and Financial Distress" (with M. Gertler), in L.H. Summers, ed., *Tax Policy and the Economy*, volume 4, Cambridge: MIT Press, 1990.
- "Firm Heterogeneity, Internal Finance, and Credit Rationing" (with C. Calomiris), *Economic Journal* 100 (March 1990): 90-104.
- "Coming Home to America: Dividend Repatriations in U.S. Multinationals" (with J. Hines), in A. Razin and J.B. Slemrod, eds., *Taxation in the Global Economy*, Chicago: University of Chicago Press, 1990.
- "Price Flexibility, Credit Availability, and Economic Fluctuations: Evidence from the U.S., 1894-1909" (with C. Calomiris), *Quarterly Journal of Economics* 104 (August 1989): 429-452.
- "Financial Factors in Business Fluctuations" (with M. Gertler), in Federal Reserve Bank of Kansas City, *Financial Market Volatility--Causes, Consequences, and Policy Responses*, 1989.
- "Contracting and Price Adjustment in Commodity Markets: Evidence from Copper and Oil" (with R. Weiner), *Review of Economics and Statistics* 71 (February 1989): 80-89.

- "Financing Constraints and Corporate Investment" (with S. Fazzari and B.C. Petersen), *Brookings Papers on Economic Activity*, 1988:1: 141-195; Reprinted in Z.J. Acs, ed., *Small Firms and Economic Growth*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 1995.
- "Investment, Financing Decisions, and Tax Policy" (with S. Fazzari and B.C. Petersen), *American Economic Review* 78 (May 1988): 200-205.
- "Market Structure and Cyclical Fluctuations in U.S. Manufacturing" (with I. Domowitz and B.C. Petersen), *Review of Economics and Statistics* 70 (February 1988): 55-66.
- "Capital Market Imperfections and Tax Policy Analysis in the Life-Cycle Model" (with K. Judd), *Annales d' Economie et de Statistique* 9 (January-March 1988): 111-139.
- "Social Security and Individual Welfare: Precautionary Saving, Borrowing Constraints, and the Payroll Tax" (with K. Judd), *American Economic Review* 77 (September 1987): 630-646.
- "Oligopoly Supergames: Some Empirical Evidence on Prices and Margins" (with I. Domowitz and B.C. Petersen), *Journal of Industrial Economics* 36 (June 1987): 379-398.
- "Uncertain Lifetimes, Pensions, and Individual Saving," in Zvi Bodie, John B. Shoven, and David A. Wise (eds.), *Issues in Pension Economics*, Chicago: University of Chicago Press, 1987, pp. 175-205.
- "The Farm Debt Crisis and Public Policy" (with C. Calomiris and J. Stock), *Brookings Papers on Economic Activity*, 1986:2: 441-479.
- "Liquidity Constraints, Fiscal Policy, and Consumption" (with K. Judd), *Brookings Papers on Economic Activity*, 1986:1: 1-50.
- "The Intertemporal Stability of the Concentration-Margins Relationship" (with I. Domowitz and B.C. Petersen), *Journal of Industrial Economics* 35 (September 1986): 13-34.
- "Pension Wealth and Individual Saving: Some New Evidence," *Journal of Money, Credit, and Banking* 18 (May 1986): 167-178.
- "Supply Shocks and Price Adjustment in the World Oil Market," *Quarterly Journal of Economics* 101 (February 1986): 85-102.
- "Regulation and Long-Term Contracts in U.S. Natural Gas Markets" (with R. Weiner), *Journal of Industrial Economics* 35 (September 1986): 51-71.
- "Business Cycles and the Relationship Between Concentration and Price-Cost Margins" (with I. Domowitz and B.C. Petersen), *RAND Journal of Economics* 17 (Spring 1986): 1-17.
- "Inventory Optimization in the U.S. Petroleum Industry: Empirical Analysis and Implications for Energy Emergency Policy" (with R. Weiner), *Management Science* 32 (July 1986): 773-790.
- "Social Security, Liquidity Constraints, and Pre-Retirement Consumption," *Southern Economic Journal* 51 (October 1985): 471-484.
- "Personal Taxation, Pension Wealth, and Portfolio Composition," *Review of Economics and Statistics* 67 (February 1985): 53-60.
- "Industry Margins and the Business Cycle: Some New Microeconomic Evidence" (with I. Domowitz and B.C. Petersen), *Economics Letters* 19 (1985): 73-77.
- "Oil Supply Shocks and International Policy Coordination" (with R. Weiner), *European Economic Review* 30 (February 1986): 91-106.
- "Do IRAs and Keoghs Increase Saving?," *National Tax Journal* 37 (March 1984): 43-54.
- The Financial Impacts of Social Security: A Study of Effects on Household Wealth Accumulation and Allocation, in Monograph Series in Finance and Economics*, New York University, 1983.

Writings on Public Policy

"Taking Capital's Gains: Capital's Ideas and Tax Policy in the Twenty-First Century", *National Tax Journal*, 68 (2015): 409-424

"Financial Regulatory Reform: A Progress Report," Federal Reserve Bank of St. Louis *Review* (May/June 2013): 181-197

"Consequences of Government Deficits and Debt," *International Journal of Central Banking* (January 2012).

"Putting Economic Ideas Back into Innovation Policy," in J. Lerner and S. Stern, eds., *The Rate and Direction of Inventive Activity Revisited*. Chicago: University of Chicago Press, 2012.

"Back to the Future: The Marshall Plan" (with W. Duggan), in C. Schramm, ed. *Entrepreneurship and Expeditionary Economics*, Kansas City: Kauffman Foundation (2011): 8-19.

"The Morning After: A Road Map for Financial Regulatory Reform," in R. B. Porter, R. R. Glauber, and J.J. Healey, eds., *New Directions in Financial Services Regulation*, Cambridge: MIT Press (2011): 77-98.

"The Best Business Education Ever," *BizEd* 6:5 (2007).

"An Action Plan for US Capital Markets," *International Finance* 10:1 (2007): 91-99.

"Nondestructive Creation," *strategy+business* 27 (Summer 2007): 30-35.

"The Productivity Riddle," *strategy+business* 45 (Winter 2006): 28-33.

"Overview of the Japanese Deficit Question," (with T. Ito), in *Tackling Japan's Fiscal Challenges: Strategies to Cope with High Public Debt and Population Aging*, Palgrave, Macmillan (October 31, 2006).

"The U.S. Current Account Deficit and Public Policy," *Journal of Policy Modeling* 28 (2006): 665-671.

"Making Markets Work," (with J.F. Cogan and D.P. Kessler), *Health Affairs* 24 (November/December 2005): 1447-1457.

How Capital Markets Enhance Economic Performance and Facilitate Job Creation (with W.C. Dudley), New York: Goldman Sachs Markets Institute, 2004.

"Would a Consumption Tax Favor the Rich?," In A.J. Auerbach and K.A. Hassett, eds., *Toward Fundamental Tax Reform*. Washington, DC: AEI Press, 2005.

"The Economist as Public Intellectual," *Journal of Economic Education* 35 (Fall 2004): 391-394.

"Success Taxes, Entrepreneurship, and Innovation," (with W.M. Gentry), in *Innovation and the Economy*, volume 5, forthcoming.

"Tax Policy and International Competitiveness," *Taxes-The Tax Magazine* (March 2004): 233-241.

"Capital-Market Imperfections, Investment, and the Monetary Transmission Mechanism," in Heinz Hermann, ed., *Investing for the Future*. Frankfurt: Deutsche Bundesbank, 2001.

"The Growth of Institutional Stock Ownership: A Promise Unfulfilled,"(with F.R. Edwards), *Journal of Applied Corporate Finance* 13 (Fall 2000): 92-104.

"Telecommunications, the Internet, and the Cost of Capital," in Ingo Vogelsang and Benjamin Compaine, eds., *The Internet Upheaval*, Cambridge: MIT Press, 2000.

"Federal Deposit Insurance: Economic Efficiency or Politics?" (with N. Economides and D. Palia), *Regulation* 22 (1999): 15-17.

Institutional Investors and Corporate Behavior (with G. R. Downes, Jr. and E. Houminer), Washington, D.C., American Enterprise Institute, 1999.

The Magic Mountain: Is There a Budget Surplus? (with K.A. Hassett), Washington, D.C.: American Enterprise Institute, 1999.

Medical School Financing and Research: Problems and Policy Options, Washington, D.C.: American Enterprise Institute, 1999.

- "The Golden Goose: Understanding (and Taxing) the Saving of Entrepreneurs," in Gary D. Libecap, ed., *Advances in the Study of Entrepreneurship, Innovation, and Growth*, volume 10, Greenwich: JAI Press, 1998.
- "U.S. Tax Policy and Multinational Corporations: Incentives, Problems, and Directions for Reform," in Dale W. Jorgenson and James M. Poterba, eds., *Borderline Case: International Tax Policy, Corporate Research and Development, and Investment*, Washington, D.C.: National Research Council, 1998.
- "Distributional Tables and Tax Policy," in David F. Bradford, ed., *Distributional Analysis of Tax Policy*, Washington, D.C.: AEI Press, 1995.
- "Is There a 'Credit Channel' for Monetary Policy?," *Federal Reserve Bank of St. Louis Review* 77 (May/June 1995): 63-77.
- "U.S. Tax Policy and Foreign Direct Investment: Incentives, Problems, and Reform," *Tax Policy and Economic Growth*, Washington, DC: American Council for Capital Formation, 1995.
- "The Use of 'Distribution Tables' in the Tax Policy Process," *National Tax Journal* 46 (December 1993): 527-537.
- "Securities Transactions Taxes: Tax Design, Revenue, and Policy Considerations," *Tax Notes* (November 22, 1993): 985-1000.
- "Corporate Tax Integration: A View from the Treasury Department," *Journal of Economic Perspectives* (Winter 1993): 115-132; reprinted in P. Roberti, ed., *Financial Markets and Capital Income Taxation in a Global Economy*, Amsterdam: North-Holland, 1998.
- "The President's 1992 Health Care White Paper: An Economic Perspective," *National Tax Journal* 45 (September 1992): 347-356.
- "Household Income Changes Over Time: Some Basic Questions and Facts," *Tax Notes* (August 24, 1992).
- "Household Income Mobility During the 1980s: A Statistical Assessment Based on Tax Return Data" (with J. Nunns and W. Randolph), *Tax Notes* (June 1, 1992).
- "Debt Renegotiation," *Institutional Investor* 24 (June 1990).
- "Petroleum Regulation and Public Policy" (with R. Weiner), in Leonard Weiss and Michael Klass (eds.), *Regulatory Reform: What Actually Happened*, Boston: Little, Brown, and Company, 1986.
- "Natural Gas: The Regulatory Transition" (with R. Braeutigam), in Leonard Weiss and Michael Klass (eds.), *Regulatory Reform: What Actually Happened*, Boston: Little, Brown, and Company, 1986.
- "Natural Gas Contracting in Practice: Evidence from the United States" (with R. Weiner), in Michael Hoel and Bruce Wolman (eds.), *Natural Gas Markets and Contracts, Contributions to Economic Analysis Series*, North-Holland, 1986.
- "Contracting and Regulation Under Uncertainty: The Natural Gas Market" (with R. Weiner), in John P. Weyant and Dorothy B. Sheffield (eds.), *The Energy Industries in Transition: 1985-2000*, Boulder: Westview Press, 1985.
- "Oil and OECD Economies: Measuring Stockpile Coordination Benefits" (with J. Marquez and R. Weiner), in Mark Baier (ed.), *Energy and Economy: Global Interdependencies*, Bonn: Gesellschaft für Energiewissenschaft und Energiepolitik, 1985.
- "Managing the Strategic Petroleum Reserve: Energy Policy in a Market Setting" (with R. Weiner), *Annual Review of Energy* 10 (1985): 339-359.
- "Modeling Oil Price Fluctuations and International Stockpile Coordination" (with R. Weiner), *Journal of Policy Modeling* 7 (Summer 1985): 339-359.
- "Crude Oil Trading and Price Stability" (with R. Weiner), in William F. Thompson and David J. De Angelo (eds.), *World Energy Markets: Stability or Cyclical Change*, Boulder: Westview Press, 1985.
- "Energy Price Shocks, Inflation, and Economic Activity: Simulation Results of the Hubbard-Fry Model", in Bert Hickman and Hillard Huntington (eds.), *Macroeconomic Impact of Oil Supply Shocks: Report of the Energy Modeling Forum VII Project*, 1985.

"Drawing Down the Strategic Petroleum Reserve: The case for Selling Futures Contracts" (with S. Devarajan), in Alvin Alm and Robert Weiner (eds.), *Oil Shock: Policy Response and Implementation*, Cambridge: Ballinger Press, 1983.

"Government Stockpiles in a Multi-Country World: Coordination versus Competition" (with R. Weiner), in Alvin Alm and Robert Weiner (eds.), *Oil Shock: Policy Response and Implementation*, Cambridge: Ballinger Press, 1983.

"The 'Sub-Trigger' Crisis: An Economic Analysis of Flexible Stock Policies" (with R. Weiner), *Energy Economics* 5 (July 1983): 178-189.

"Temporary Tax Reductions as Responses to Oil Shocks," in Alvin Alm and Robert Weiner (eds.), *Oil Shock: Policy Response and Implementation*, Cambridge: Ballinger Press, 1983.

"Policy Analysis with Your Hands Tied: The Case of Disruption Tariff Under Oil Price Controls," in Fred S. Roberts (ed.), *Energy Modeling IV: Planning for Energy Disruptions*, Institute of Gas Technology, 1982.

Comments, Notes, and Reviews

"Comment" on D. Elmendorf, "Dynamic Scoring: Why and How to Include Macroeconomic Effects in Budget Estimates for Legislative Proposals," *Brookings Papers on Economic Activity* (Fall 2015): 134-138.

"Comment" on A.J. Auerbach, "The Choice Between Income and Consumption Tax: A Primer," in A.J. Auerbach and D. Shaviro, eds., *Key Issues in Public Finance: Essays In Honor of David Bradford*, forthcoming.

"Pay Without Performance: A Market Equilibrium Critique," *Journal of Corporation Law* 30 (Summer 2005): 717-720.

"Financing Constraints and Corporate Investment: Response to Kaplan and Zingales," *Quarterly Journal of Economics* 115 (May 2000): 695-705.

"Comment" on Charles Handlock, Joel Houston, and Michael Ryngaert, "The Role of Managerial Incentives in Bank Acquisitions," *Journal of Banking and Finance* 23 (1999): 250-254.

"Comment" on D.H. Moss, "Courting Disaster?: The Transformation of Federal Disaster Policy Since 1903," in K.A. Froot, ed., *The Financing of Catastrophic Risk*, Chicago: University of Chicago Press, 1999.

"Market for Corporate Control" (with D. Palia), in P. Newman, ed., *The New Palgrave Dictionary of Economics and the Law*, London: Macmillan, 1998.

"Comment" on Joseph Peek and Eric Rosengren, "Do Monetary Policy and Regulatory Policy Affect Bank Loans?" in *Is Bank Lending Important for the Transmission of Monetary Policy?* Federal Reserve Bank of Boston, Conference Series (Proceedings) 39 (1995): 47-79.

"Introduction," in M. Feldstein, J.R. Hines, and R.G. Hubbard, eds., *Effects of Taxation on Multinational Corporations*, Chicago: University of Chicago Press, 1995.

"Introduction," in M. Feldstein, J.R. Hines, and R.G. Hubbard, eds., *Taxing Multinational Corporations*, Chicago: University of Chicago Press, 1995.

"Investment Under Uncertainty: Keeping One's Options Open," *Journal of Economic Literature* 32 (December 1994): 1794-1807.

"Introduction," in A. Giovannini, R.G. Hubbard, and J. Slemrod, eds., *Studies in International Taxation*, Chicago: University of Chicago Press, 1993.

"Comment" on G. Peter Wilson, "The Role of Taxes in Location and Source Decisions," in A. Giovannini, R.G. Hubbard, and J.B. Slemrod, eds., *Studies in International Taxation*, Chicago: University of Chicago Press, 1993.

"Market Structure and Cyclical Fluctuations in U.S. Manufacturing: Reply" (with I. Domowitz and B.C. Petersen), *Review of Economics and Statistics*, 1993.

"Introduction," in R.G. Hubbard, ed., *Financial Markets and Financial Crises*, Chicago: University of Chicago Press, 1991.

"Introduction," in R.G. Hubbard, ed., *Asymmetric Information, Corporate Finance, and Investment*, Chicago: University of Chicago Press, 1990.

"Comment" on Alberto Giovannini and James R. Hines, Jr., "Capital Flight and Tax Competition: Are There Viable Solutions to Both Problems?," in A. Giovannini and C. Mayer, eds., *European Financial Integration*, London: Centre for Economic Policy Research, 1990.

"Comment" on Roger H. Gordon and Jeffrey K. MacKie-Mason, "Effects of the Tax Reform Act of 1986 on Corporate Financial Policy and Organizational Form," in J.B. Slemrod, ed., *Do Taxes Matter?: Economic Impacts of the Tax Reform Act of 1986*, Cambridge: MIT Press, 1990.

"Comment" on James M. Poterba, "Tax Policy and Corporate Saving," *Brookings Papers on Economic Activity*, 1987:2.

"Comment" on Robert E. Hall, "Market Structure and Macro Fluctuations," *Brookings Papers on Economic Activity*, 1986:2.

"Comment" on Alan S. Blinder and Angus Deaton, "The Time-Series Consumption Function Revisited," *Brookings Papers on Economic Activity*, 1985:2.

"Comment" on Benjamin S. Friedman and Mark Warshawsky, "The Cost of Annuities: Implications for Saving Behavior and Bequests," in Zvi Bodie, John Shoven, and David Wise (eds.), *Pensions in the U.S. Economy*, Chicago: University of Chicago Press, 1987.

"Energy Security: Book Reviews," *Energy Journal* 4 (April 1983).

"When the Oil Spigot is Suddenly Turned Off: Some Further Thoughts" (with R. Weiner), *Journal of Policy Analysis and Management* 2 (Winter 1983).

Submitted Papers and Working Papers

"Country Characteristics and the Incidence of Capital Income Taxation on Wages: An Empirical Assessment" (with C. Azémar), Working Paper, Columbia University, 2013.

"Analysis of Discrimination in Prime and Subprime Mortgage Markets" (with Darius Palia and Wei Yu), Working Paper, Columbia University, 2011.

"The Elasticity of Deferred Income With Respect to Marginal Income Tax Rates" (with K.A. Hassett and A. Mathur), Working Paper, Columbia University, 2011.

"Tax Policy and Wage Growth" (with W. M. Gentry), Working Paper, Columbia University, 2001.

"Investor Protection, Ownership, and Investment" (with C.P. Himmelberg and I. Love), Working Paper, Columbia University, 2000.

"Incentive Pay and the Market for CEOs: An Analysis of Pay-for-Performance Sensitivity" (with C.P. Himmelberg), Working Paper, Columbia University, 2001.

"Noncontractible Quality and Organizational Form in the U.S. Hospital Industry," (with K.A. Hassett), Working Paper, Columbia University, 1999.

"Entrepreneurship and Household Saving," (with W. M. Gentry), Working Paper, Columbia University, 2001.

"Corporate Payouts and the Tax Price of Corporate Retentions: Evidence from the Undistributed Profits Tax of 1936-37" (with P. Reiss), Working Paper No. 3111, National Bureau of Economic Research, September 1989.

"Market Structure, Durable Goods, and Cyclical Fluctuations in Markups" (with I. Domowitz and B. Petersen), Working Paper, Northwestern University, 1987.

"Finite Lifetimes, Borrowing Constraints, and Short-Run Fiscal Policy" (with K. Judd), Working Paper No. 2158, National Bureau of Economic Research, 1987.

GRANTS RECEIVED

- "Corporate Board Study Group," Rockefeller Foundation, 2009.
- "Institutional Investors, Boards of Directors, and Corporate Governance," Korn/Ferry, 1997.
- "An Economic Analysis of Saving Incentives," Securities Industry Association, 1994, with Jonathan Skinner.
- "Securities Transactions Taxes: Tax Design, Revenue, and Policy Considerations," Catalyst Institute, 1993.
- "Precautionary Saving in the U.S. Economy," Bradley Foundation, 1989-1990, with Jonathan Skinner and Stephen Zeldes.
- "Taxation, Corporate Leverage, and Financial Distress," Garn Institute for Finance, 1989-1990.
- "Precautionary Saving in a Dynamic Model of Consumption and Labor Supply," National Science Foundation (Economics Group SES-8707997), 1987-1989, with Jonathan Skinner and Stephen Zeldes.
- "Industrial Behavior and the Business Cycle: A Panel Data Study of U.S. Manufacturing," National Science Foundation (Economics Group SES-8420152), 1985-1987, with Ian Domowitz and Bruce Petersen.
- "Efficient Contracting and Market Power: Evidence from the U.S. Natural Gas Market," Transportation Center, Northwestern University, Summer 1985.
- "Constructing a Panel Data Base for Studies of U.S. Manufacturing," University Research Grants Committee, Northwestern University, 1985-1986.
- "Economic Analysis of Multiple-Price Systems: Theory and Application," National Science Foundation (Regulatory Analysis and Policy Group, SES-8408805), 1984-1985.
- "Contracting and Price Adjustment in Product Markets," University Research Grants Committee, Northwestern University, 1983-1984.

PAPERS PRESENTED***University Seminars***

Bard College, University of Bergamo, Butler Community College, University of California (Berkeley), University of California (Los Angeles), University of California (San Diego), Carleton, University of Chicago, Columbia, University of Dubuque, Emory, University of Florida, University of Central Florida, Florida Atlantic University, George Washington, Georgetown, Georgia Southern University, Harvard, Hendrix College, University of Illinois, Indiana University, Johns Hopkins, Laval, Lehigh, University College (London), University of Kentucky, London School of Economics, MIT, University of Maryland, University of Miami, Miami University, University of Michigan, University of Minnesota, New York University, Northwestern, Oxford, University of Pennsylvania, Princeton, Rice, University of Rochester, Stanford, Syracuse, University of Miami, University of Texas, Texas Tech University, Tufts, University of Virginia, University of Wisconsin (Madison), University of Wisconsin (Milwaukee), Virginia Tech, and Yale.

Conference Papers Presented

American Council for Capital Formation, Washington, DC, June 1994.

American Economic Association, San Francisco, 2016; Boston, 2015; Philadelphia, 2014; San Diego, 2013; Chicago, 2012; New Orleans, 2008; Chicago, 2007; Boston, 2006; Philadelphia, 2005; San Diego, January 2004; Atlanta, January 2002; New Orleans, January 2001; Boston, January 2000; New York, January 1999; New Orleans, January 1997; San Francisco, January 1996; Washington, D.C., January 1995; Boston, January 1994; Anaheim, January 1993; Washington, D.C., December 1990; Atlanta, December 1989; New York, December 1988; Chicago, December 1987; New Orleans, December 1985; Dallas, December 1984.

American Enterprise Institute, Conference on Corporate Taxation, 2016; Conference on Private Equity, 2007; Conference on Corporate Taxation, 2006; Conference on Multinational Corporations, 2004, 2003; Conference on Multinational Corporations, February 1999; Conference on Income Inequality, January 1999; Conference on Transition Costs of Fundamental Tax Reform, November 1998; Conference Series on Social Insurance Reform, 1997-1998; Conference Series on Fundamental Tax Reform, 1995-1998; Conference on Distributional Analysis of Tax Policies, Washington, D.C., December 1993.

American Finance Association, New Orleans, January 2008; San Diego, January 2004; Boston, January 2000; New York, January 1999; New Orleans, January 1997.

Association of Environmental and Resource Economists, Dallas, December 1984; San Francisco, December 1983.

Association of Public Policy Analysis and Management, New Orleans, October 1984; Philadelphia, October 1983.

Bipartisan Commission on Entitlement and Tax Reform, Washington, DC, June 1994.

Brookings Panel on Economic Activity, September 2015, September 1994, April 1988, September 1987, September 1986, April 1986, September 1985.

Centre for Economic Policy Research Conference on Capital Taxation and European Integration, London, September 1989.

Conference on International Perspectives on the Macroeconomic and Microeconomic Implications of Financing Constraints, Centre for Economic Policy Research, Bergamo, Italy, October 1994.

Congressional Research Service Conference for New Members of Congress, Williamsburg, January 1999.

Congressional Research Service Conference for Members of the Ways and Means Committee, Baltimore, October 2001.

Deutsche Bundesbank Conference on Investing for the Future, Frankfurt, Germany, May 2000.

Eastern Economic Association, Boston, March 1988; Boston, February 1983.

Econometric Society, New Orleans, January 1997; San Francisco, January 1996; Washington, D.C., January 1995; New Orleans, January 1992; Washington, December 1990; Atlanta, December 1989; New York, December 1988; Chicago, December 1987; New Orleans, December 1986; New York, December 1985; Boston, August 1985; Madrid, September 1984; San Francisco, December 1983; Pisa, August 1983.

Energy Modeling Forum, Stanford University, August 1983; February 1983; August 1982.

European Commission, Conference on Taxation of Financial Instruments, Milan, June 1998.

European Institute for Japanese Studies, Tokyo, September 2002; March 2002.

Federal Reserve Bank of Boston, Annual Economic Conference, North Falmouth, Massachusetts, June 1995.

Federal Reserve Bank of Kansas City Symposium on "Financial Market Volatility – Causes, Consequences, and Policy Responses," Jackson Hole, Wyoming, August 1988; Comment of Rogoff, August 2004.

Federal Reserve Bank of New York, Conference on Consolidation of the Financial Services Industry, New York, March 1998.

Federal Reserve Bank of Philadelphia Conference on Economic Policy, Philadelphia, November 2007; November 2001.

Federal Reserve Bank of St. Louis, Conference on Economic Policy, St. Louis, October 1994.

Harvard Law School U. S.-Japan Symposium, Tokyo, December 2003; Washington, D. C., September 2002; Tokyo, December 2001.

Hoover Institution, Conference on Fundamental Tax Reform, December 1995.

The Institute of Gas Technology, Washington, DC, May 1982.

The Institute of Management Science/Operations Research Society of America, Orlando, November 1983; Chicago, April 1983.

International Association of Energy Economists, Boston, November 1986; Philadelphia, December 1985; Bonn, June 1985; San Francisco, November 1984; Washington, DC, June 1983; Denver, November 1982; Cambridge (England), June 1982; Houston, November 1981.

International Conference on the Life Cycle Model, Paris, June 1986.

International Institute of Public Finance, Innsbruck, August 1984.

International Seminar on Public Economics, Amsterdam, April 1997.

National Academy of Sciences, February 1997.

National Association of Business Economists, Washington, March 2015; Orlando, September 2003; Washington, September 2002; New York, September 2001; Boston, September 1996; Dallas, September 1992; New Orleans, October 1987.

National Bureau of Economic Research - IMEMO Conference on the American Economy, Moscow, August 1989.

National Bureau of Economic Research Summer Institute, August 2014; August 2012; August 2009; August 2006; August 2005; July-August 2003; July-August 2000; July-August 1999; July-August 1998; August 1997; July 1995; July 1994; July 1993; August 1992; July-August 1991; July-August 1990; July-August 1989; July-August 1988; July-August 1987; July-August 1986; July 1985; July 1984; July 1983.

National Bureau of Economic Research Conference on Asymmetric Information, Corporate Finance, and Investment, Cambridge, May 1989.

National Bureau of Economic Research Conference on Chinese Economic Reform, Shanghai, China, July 2000.

National Bureau of Economic Research Conference on Financial Crises, Key Biscayne, March 1990.

National Bureau of Economic Research Conference on Government Expenditure Programs, Cambridge, November 1986.

National Bureau of Economic Research Conference on Indian Economic Reform, Rajasthan, India, December 1999.

National Bureau of Economic Research Conference on Innovation Policy, Washington, DC, April 2004, April 2003.

National Bureau of Economic Research Conference on International Taxation, Washington, DC, April 1994; Cambridge, January 1994; New York, September 1991; Nassau, Bahamas, February 1989.

National Bureau of Economic Research, Macroeconomic Annual Conference, Cambridge, MA, April 2004.

National Bureau of Economic Research Conference on Macroeconomics and Industrial Organization, Cambridge, July 1988; Cambridge, July 1987; Cambridge, July 1986; Chicago, November 1985.

National Bureau of Economic Research Conference on Nonprofit Organizations, Cheeca Lodge, January 2002; Cambridge, October 2001.

National Bureau of Economic Research Conference on Pensions, Baltimore, March 1985; San Diego, April 1984.

National Bureau of Economic Research Conference on Productivity, March 1988; March 1987.

National Bureau of Economic Research Conference on Public Economics, Cambridge, April 1999, April 1994, April 1993, November 1991, April 1991, March 1988, November 1987, March 1987.

National Bureau of Economic Research Conference on Tax Policy and the Economy, Washington, DC, October 2001, November 1998, November 1996, November 1994, November 1991, November 1989.

National Bureau of Economic Research Trans-Atlantic Public Economics Seminar, London, May 2002; Gerzensee, May 2000; Turin, May 1994.

Organization for Economic Cooperation and Development, Economic Policy Committee Meeting, Paris, November 2002, April 2002, November 2001, April 2001.

National Tax Association/Tax Institute of America, Washington, DC, June 2000; Atlanta, October 1999; Arlington, May 1992; Seattle, October 1983.

Organization for Economic Cooperation and Development, Ministerial Meeting, Paris, May 2002, May 2001.

Princeton Center for Economic Policy Conference, October 2000, October 1995.

Sveriges Riksbank/Stockholm School of Economics Conference on Asset Markets and Monetary Policy, Stockholm, Sweden, June 2000.

U.S. House of Representatives, Budget Committee, June 2001.

U.S. House of Representatives, Committee on Ways and Means, Washington, DC, June 2006; June 2005; June 1999; April 1997, June 1996, July 1992.

U.S. Joint Economic Committee, Washington, DC, February 2003, October 2002, October 2001, May 2001.

U. S. Senate Committee on Banking, Housing, and Urban Affairs, Washington, DC, October 2001, May 2001.

U.S. Senate Committee on Budget, February 2003, September 2001.

U. S. Senate Committee on Commerce, Science, and Technology, July 2002.

U.S. Senate Committee on Finance, Washington, DC, February 2003, February 2002, February 1997, January 1995, January 1992, December 1981.

APPENDIX B

ROBERT GLENN HUBBARD

Testimony as an expert witness 2012 – 2016

Carlyle Capital Corporation Limited, Alan John Roberts, Neil Mather, Christopher Morris, Adrian John, Denis Rabet, solely in their capacity as Joint Liquidators of Carlyle Capital Corporation Limited (In Liquidation) v. William Elias Conway, Jr., James H. Hance, Jr., et al, Court File No. 1510, In the Royal Court of Guernsey, Ordinary Court. Provided testimony 2016.

Illinois Tool Works, Inc. & Subsidiaries v. Commissioner of Internal Revenue, United States Tax Court, Docket No. 10418-14. Provided trial testimony 2016.

General Electric Company v. United States of America, Case No. 3:14-cv-190-JAM, United States District Court, District of Connecticut. Provided deposition testimony in 2016.

Symbol Technologies, Inc., Securities Litigation, Consolidated C.A. No. 05-cv-3923-DRH, United States District Court, Eastern District of New York. Provided deposition testimony in 2015.

Jennifer L. Kasilag, et al. v. Hartford Investment Financial Services, LLC, Civil No. 1:2011cv01083, In the United States District Court, District of New Jersey, Camden Vicinage. Provided deposition testimony 2015.

American Chemicals & Equipment, Inc. 401(K) Retirement Plan v. Principal Management Corporation and Principal Global Investors, LLC., 4:14-cv-00044-JAJ-HCA, United States District Court, Southern District of Iowa. Provided deposition testimony in 2015.

Appraisal of Dell Inc., Consol. C.A. No. 9322-VCL, In the Court of the Chancery of the State of Delaware. Provided deposition testimony and trial testimony in 2015.

Jacqueline Coffin and Sandra Lowry v. Atlantic Power Corporation, et al., Court File No. CV-13-480939-00CP, Ontario Superior Court of Justice. Provided deposition testimony in 2015.

Peter J. Rush, et al. v. Walter Energy, Inc., et al., Master File No. 2:12-cv-00281-VEH, United States District Court Northern District of Alabama, Southern Division. Provided deposition testimony in 2014.

Tullett Prebon PLC, Tullett Prebon Financial Services LLC f/k/a Tullett Liberty Securities LLC and Tullett Prebon Americas Corp. v. BGC Partners, Inc., case No. L-003796-11, Superior Court of New Jersey, Hudson County. Provided trial testimony in 2014.

Basis Pac-Rim Opportunity Fund & Basis Yield Alpha Fund v. TCW Asset Management Company, Index No. 654033/2012, Supreme Court of the State of New York, County of New York. Provided deposition testimony in 2014.

Postova Bank, A.S. and Istrokapital SE v. The Hellenic Republic, case no. ARB/13/8, International Centre for Settlement of Investment Disputes. Provided arbitration testimony in 2014.

Sue Ann Hamm v. Harold G. Hamm, case no. FD-2012-2048, District Court of Oklahoma County, State of Oklahoma. Provided deposition testimony and trial testimony in 2014.

GE Dandong, et al. v. Pinnacle Performance Limited, et al, court file no. 10-civ-8086, United States District Court Southern District of New York. Provided deposition testimony in 2014.

Commonwealth REIT, Barry M. Portnoy, Adam D. Portnoy, Joseph L. Morea, William A. Lamkin, Frederick N. Zeytoonjian and REIT Management & Research LLC v. Corvex Management LP and Related Fund Management, LLC, case no. 11-512-Y-276-13, United States District Court of Massachusetts. Provided arbitration testimony in 2013.

Tullett Prebon PLC, Tullett Prebon Financial Services LLC f/k/a Tullett Liberty Securities LLC and Tullett Prebon Americas Corp. v. BCG Partners, Inc., Case No. L-003796-11, Superior Court of New Jersey, Hudson County. Provided deposition testimony in 2013.

Donald P. Fewer v. GFI Group Inc. and Jersey Partners Inc., 601099/08, Supreme Court of the State of New York, County of New York. Provided deposition testimony in 2013.

United States of America v. Countrywide Financial Corporation; Countrywide Home Loans, Inc.; Countrywide Bank, FSB; Bank of America Corporation; Bank of America, N.A.; and Rebecca Mairone, Index No. 12 Civ. 1422, United States District Court Southern District of New York. Provided deposition testimony in 2013.

Judith Curran and Michael Earp v. Principal Management Corporation and Principal Funds Distributor, Inc., Case no. 4:09-cv-00433-RP-CFB, United States District Court Southern District of Iowa Central Division. Provided deposition testimony in 2013.

Karen E. Rushing v. Wells Fargo Bank, N.A., 8:10-CV-01572-SCB-AEP, United States District Court, Middle District of Florida. Provided deposition testimony in 2012.

The State Treasurer of the State of South Carolina v. The Bank of New York Mellon and The Bank of New York Mellon, Civil Action No. 2011-CP-40-00533, State of South Carolina, Court of Common Pleas for the Fifth Judicial Circuit. Provided deposition testimony in 2012.

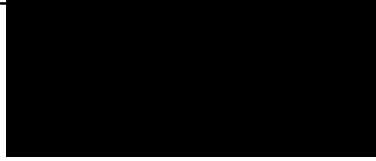
MBIA Insurance Corporation v. Countrywide Home Loans, Inc., Countrywide Securities Corp., Countrywide Financial Corp., Countrywide Home Loans Servicing, LP and Bank of America Corp., 08/602825, Supreme Court of the State of New York, County of New York. Provided deposition testimony in 2012.

City of St. Petersburg, Florida v. Wells Fargo Bank, N.A., 8:10-CV-00693-JSM-TBM, United States District Court, Middle District of Florida. Provided deposition testimony in 2011 and trial testimony in 2012.

Appendix C
Documents Relied Upon

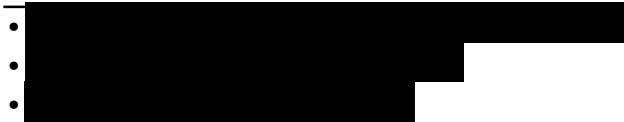
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- Recording Industry Association of America, U.S. Sales Database

Books:

- Krasilovsky, M. W., and S. Schemel, *This Business of Music: The Definitive Guide to the Business and Legal Issues of the Music Industry* (10th Edition). (Watson-Guptill Publications: New York, 2007)
- Paxson, P., *Mass Communications and Media Studies: An Introduction*. (Bloomsbury Publishing: New York, 2010)
- Pigou, A.C., "Discriminating Monopoly," *The Economics of Welfare*, Macmillan and Co.: London, 1920
- Schumpeter, J. S., "Capitalism, Socialism, and Democracy," (George Allen and Unwin (Publishers) Ltd: London, 1943)

PUBLIC VERSION

Appendix C Documents Relied Upon

Websites:

- “Amazon Music Unlimited,” *Amazon*, Accessed November 1, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>.
- “Amazon Music Unlimited for Echo,” Amazon, 2016. Accessed October 17, 2016,
- “Student Discount – Spotify,” *Spotify.com*, 2016. Accessed September 22, 2016, <<https://www.spotify.com/us/student/>>
- “About Amazon Music Storage Subscriptions,” Amazon, 2016. Accessed October 25, 2016, <<https://www.amazon.com/gp/help/customer/display.html?nodeId=201379330>>
- “About Amazon Prime,” Amazon, 2016. Accessed October 7, 2016, <<https://www.amazon.com/gp/help/customer/display.html?nodeId=200444160>>.
- “About Prime Music,” *Amazon*, 2016. Accessed October 7, 2016,
- “About Prime Stations,” Amazon, 2016. Accessed October 7, 2016, <<https://www.amazon.com/gp/help/customer/display.html?nodeId=201614430>>
- “Amazon Echo – Black,” Amazon, 2016. Accessed October 17, 2016, https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E/ref=sr_1_1?ie=UTF8&qid=1476715646&sr=8-
- “Amazon Echo,” Amazon, 2016. Accessed October 17, 2016, <https://www.amazon.com/Amazon-Echo-Bluetooth-Speaker-with-WiFi-Alexa/dp/B00X4WHP5E/ref=sr_1_1?ie=UTF8&qid=1476715646&sr=8-1&keywords=echo>
- “Amazon Music Unlimited,” Amazon, 2016. Accessed October 31, 2016, <<https://www.amazon.com/gp/dmusic/promotions/AmazonMusicUnlimited/>>
- “Apple Music – Membership – Apple,” Apple, 2016. Accessed October 27, 2016 <<http://www.apple.com/apple-music/membership/>>
- “CDs & Vinyl,” Amazon, 2016. Accessed October 17, 2016, <<https://www.amazon.com/music-rock-classical-pop-jazz/b?ie=UTF8&node=5174>>
- “Enjoy Safe and Secure Storage for Your Entire Music Collection,” Amazon, 2016. Accessed October 25, 2016, <<https://www.amazon.com/gp/feature.html?ie=UTF8&docId=1001432841>>
- “General Information, F.A.Q.,” Harry Fox Agency, Accessed October 28, 2016, <https://secure.harryfox.com/public/FAQ.jsp>.
- “HiFi vs. Premium Subscriptions,” TIDAL, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/202722972-HiFi-vs-Premium-Subscriptions/>>
- “How Good is the Sound Quality on TIDAL?” TIDAL, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/201594722-How-good-is-the-sound-quality-on-TIDAL/>>

PUBLIC VERSION

Appendix C Documents Relied Upon

- “How Much Does TIDAL Cost?” Tidal, 2016. Accessed October 25, 2016, <<https://support.tidal.com/hc/en-us/articles/201745891-How-much-does-TIDAL-cost/>>
- “Lear, Ford, Motorola, and RCA Victor,” The History of Sound Recording, 2016. Accessed October 28, 2016, <<http://www.recording-history.org/technology/the-history-of-the-8-track-tape/lear-ford-motorola-and-rca-victor/>>
- “Music, Any Way You Want It,” Amazon, 2016. Accessed October 13, 2016,
- “Napster – Plans,” Napster.com, 2016. Accessed on October 31, 2016, <http://us.napster.com/pricing_b>
- “Premium for Family,” Spotify, 2016. Accessed October 25, 2016, <<https://www.spotify.com/us/family/>>
- “Prime,” Amazon, 2016. Accessed October 13, 2016, <<https://www.amazon.com/gp/dmusic/promotions/PrimeMusic>>
- “Spotify Acquires the Echo Nest,” Spotify, March 6, 2014. Accessed October 25, 2016, <<https://press.spotify.com/br/2014/03/06/spotify-acquires-the-echo-nest/>>
- “Support – Spotify,” Spotify, 2016. Accessed October 7, 2016, <https://support.spotify.com/us/?utm_medium=www_headerandutm_source=www.spotify.com>
- Albright, D., “The Evolution of Music Consumption: How We Got Here,” MakeUseOf, April 30, 2015. Accessed October 28, 2016, <<http://www.makeuseof.com/tag/the-evolution-of-music-consumption-how-we-got-here/>>
- Caldwell, S., “Apple Music FAQ: Everything You Need to Know,” Apple, August 5, 2016. Accessed August 24, 2016, <<http://www.imore.com/apple-music-faq>>
- Hindy, J., “Apple Music vs Spotify vs Google Play Music: Which one is the best?,” AndroidAuthority.com, Accessed July 29, 2016, <<http://www.androidauthority.com/apple-music-vs-spotify-vs-google-play-music-671277/>>
- Licensing 101, SoundExchange, accessed October 31, 2016, <<http://www.soundexchange.com/service-provider/licensing-101/>>
- Spotify, “How We Pay Royalties: An Overview,” 2016. Accessed September 22, 2016, <<https://www.spotifyartists.com/spotify-explained/#how-we-pay-royalties-overview>>
- “The All-New Apple Music,” Apple, on YouTube, September 18, 2016. Accessed October 25, 2016,
- Thomson, K., “Music and How the Money Flows,” Future of Music Coalition, March 10, 2015. Accessed August 29,
- Try Napster Free for 30 Days, Napster, Accessed October 12, 2016, <<http://us.napster.com/>>.

Appendix C
Documents Relied Upon

Academic Articles:

- Aguiar, L., and B. Martens, “Digital Music Consumption on the Internet: Evidence from Clickstream Data,” *Information Economics and Policy*, 34, 2016
- Aguiar, L., and B. Martens, “Digital Music Consumption on the Internet: Evidence from Clickstream Data,” *Information Economics and Policy*, 34, 2016
- Aguiar, L., and J. Waldfogel “Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?,” Joint Research Centre, European Commission, 2015
- Ekelund, R. B., “Price Discrimination and Product Differentiation in Economic Theory: An Early Analysis,” *The*
- Elberse, A., “Bye-Bye Bundles: The Unbundling of Music in Digital Channels,” *Journal of Marketing*, 74, 3, 2010
- Gonsalves, A. K., “Music Licensing,” *The Licensing Journal*, 35, 3, March 2015
- Martins, J. P. C., and L. A. Slongo, “The Digital Music Market: A Study of Brazilian Consumers’ Behavior,” *Review of Business Management*, 16, 53, November 13, 2014
- Molteni, L., and A. Ordanini, “Models of Online Music Consumption: Definition and Implications for Management,”
- Ozer, M., “User Segmentation of Online Music Services Using Fuzzy Clustering,” *Omega: The International Journal of Management Science*, 29, 2001
- Papies, D., F. Eggers, and N. Wlomert, “Music for Free? How Free Ad-Funded Downloads Affect Consumer Choice,”
- George J. Stigler, “A Theory of Oligopoly,” *Journal of Political Economy* 72, no. 1, 1964
- Styven, M., “Exploring the Online Music Market: Consumer Characteristics and Value Perceptions,” *Luleå University of Technology*, 2007
- Waelbroeck, P., “Digital Music: Economic Perspectives,” *Telecom ParisTech*, April 10, 2013

PUBLIC VERSION

**Appendix C
Documents Relied Upon**

Industry Reports:

- “2015 Nielsen Music U.S. Report,” Nielsen, 2015
- “Media Review: Music Streaming Services Market Profile,” ClearVoice Research, May 2014
- “Scanning the Audio Demand Landscape,” Nielsen, June 25, 2014. Accessed September 14, 2016, <<http://www.nielsen.com/us/en/insights/news/2014/scanning-the-audio-demand-landscape.html>>
- “The Hyper-Fragmented World Of Music: Marketing Considerations and Revenue Maximization,” Nielsen, March 2011
- “The Infinite Dial 2015,” Edison Research and Triton Digital, 2015
- “Turn It Up: Music Fans Could Spend Up to \$2.6B More Annually,” Nielsen, March 3, 2013. Accessed September 14, 2016, <<http://www.nielsen.com/us/en/insights/news/2013/turn-it-up--music-fans-could-spend-up-to--2-6b-more-annually.html>>
- IFPI Digital Music Report 2014: Lighting Up New Markets,” IFPI, 2014
- IFPI Digital Music Report 2015: Charting the Path to Sustainable Growth,” IFPI, 2015
- US Copyright Office, “Copyright and the Music Marketplace,” February, 2015
- Yeh, B., “Copyright Licensing in Music Distribution, Reproduction, and Public Performance,” Congressional Research Service, September 22, 2015

Analyst Reports:

- Blackledge, J., and T. Arcuri, “Music Industry Poised to Get Its Groove Back,” Cowen and Company, June 29, 2016
- Mahoney, M., A. Bruckner, D. Haber, and J. Shaughnessy, “Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey,” RBC Capital Markets, June 30, 2016

PUBLIC VERSION

**Appendix C
Documents Relied Upon**

News Articles:

- “U.S. Recording Industry 2015: Streams Double, Adele Dominates,” Billboard, January 5, 2016
- Alexander, M., and B. Sisario, “Apple Music, Spotify and a Guide to Music Streaming Services,” The New York Times, April 5, 2016. Accessed on October 30, 2016, <<http://www.nytimes.com/interactive/2015/06/30/business/media/music-streaming-guide.html>>
- Gara, T., “Streamonomics – The Fight for Fractions of a Cent in Online Music,” The Wall Street Journal, May 17, 2013. Accessed September 19, 2016, <<http://blogs.wsj.com/corporate-intelligence/2013/05/17/streamonomics-the-fight-for-fractions-of-a-cent-in-online-music/>>
- Karp, H., “Pandora Nears Deals for On-Demand Streaming,” The Wall Street Journal, August 19, 2016. Accessed October 25, 2016, <<http://www.wsj.com/articles/pandora-nears-deals-for-on-demand-streaming-1471599002>>
- Mohan, N., “YouTube’s Chief Product Officer Makes the Case for a ‘Value Shift’ Towards Music: Op-Ed,” Billboard, June 30, 2016. Accessed October 11, 2016, <<http://www.billboard.com/articles/business/7423917/youtube-chief-product-officer-neal-mohan-value-shift-op-ed>>
- Perez, S., “Amazon Music Unlimited Debuts with Discounts for Prime Members, Cheap ‘Echo-Only Plan,” TechCrunch, October 12, 2016. Accessed October 31, 2016, <<https://techcrunch.com/2016/10/12/amazon-music-unlimited-debuts-with-discounts-for-prime-members-cheap-echo-only-plan/>>
- Sisario, B., “Google in Deal for Songza, a Music Playlist Service,” The New York Times, July 1, 2014. Accessed October, 27, 2016, <<http://www.nytimes.com/2014/07/02/business/media/google-buys-songza-a-playlist-app-for-any->
- Tilley, A., “As Amazon Echo Takes Off, Sonos Announces Layoffs and Preps for a Voice-Controlled Future,” Forbes, March 10, 2016. Accessed October 25, 2016, <<http://www.forbes.com/sites/aarontilley/2016/03/10/as-amazon-echo-takes-off-sonos-announces-layoffs-and-preps-for-a-voice-controlled-future/#a45050b7bbd7>>

PUBLIC VERSION

**Appendix C
Documents Relied Upon**

Prior Testimony:

- “Testimony of Margaret E. Guerin-Calvert,” In the Matter of Mechanical and Digital Phonorecord Delivery Rate Adjustment Proceeding, Copyright Royalty Board, Library of Congress, November 30, 2006
- “Written Rebuttal Testimony of Larry Rosin,” In re Determination of Royalty Rates and Terms for Ephemeral Recording and Digital Performance of Sound Recordings (Web IV), United States Copyright Royalty Judges, The Library of Congress, February 23, 2015

US Code and Royalty Rate Determinations:

- “Determination,” In re Determination Of Royalty Rates And Terms For Ephemeral Recording And Webcasting Digital Performance Of Sound Recordings (Web IV),” United States Copyright Royalty Judges, The Library of Congress, March 4, 2016
- Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding; Review of Copyright Royalty Judges Determination; Final Rule and Notice, 37 C.F.R. Part 385, January 26, 2009
- “Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords,” 37 C.F.R. §385

Written Statements

- “Testimony of Rishi Mirchandani,” in Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords 3)