Before the
United States Copyright Royalty Judges
The Library of Congress
Washington, D.C.

In the Matter of: **Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)**	**Docket No. 16-CRB-0003-PR (2018-2022)**

Written Rebuttal Statement of Google Inc.

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Introductory Memorandum to the
Written Rebuttal Statement of Google Inc.

The Copyright Owners' written direct statement makes plain that their proposal is untethered from the § 801(b) standard that will guide this Board. Running throughout the Copyright Owners' witness statements is a consistent theme that the Board should abandon any benchmarks tainted by the "shadow of the compulsory license." Copyright Owners are tacitly begging the Board to jettison the § 801(b) factors that Congress applied to Section 115 licensing in favor of a new standard where *any* license created in an unregulated market—whether infected by monopolistic market power, related to a different bundle of rights, or with licensees disparate from the streaming music services licensed by Section 115—is credited as a valid benchmark. It comes as no surprise that after abandoning the § 801(b) factors, Copyright Owners propose a rate dramatically above historical rates and at odds with each of the four factors that must guide the outcome of this proceeding.

Copyright Owners' proposal is unassailably disruptive. From the digital streaming industry's inception, interactive streaming services like Google Play Music have paid rights' holders under a percentage-of-revenue rate. [redacted]

[redacted] And as Google's expert economist, Dr. Gregory K. Leonard, will explain, traditional models of music distribution, including sales of albums and digital downloads, have charged listeners a one-time access fee rather than per listen. Copyright Owners' proposal is a disruptive detour from longstanding norms.

A per-user royalty structure would negatively impact digital services. As Zahavah Levine explains in her written rebuttal testimony, a per-stream royalty structure would create perverse incentives for services to decrease user engagement to control content costs. [redacted]

Copyright Owners' proposed rates should also be rejected because they are a [redacted] increase from the current Section 115 rates. Copyright Owners' half-heartedly argue that their proposed rates are in-line with the rates that the services already pay. But as Google's expert Dr. Gregory K. Leonard explains in his written rebuttal statement, Copyright Owners' experts conclude this only after massaging

or even just ignoring the available data. Under the Copyright Owners' proposal, Google Play Music would have owed royalties [redacted] percent higher for its streaming service than it paid under the current regulations.

Copyright Owners' only justification for this increase is the supposed decline in royalties over the past few years. [redacted] In reality, and as University of Chicago Professor Mark E. Zmijewski will testify, [redacted]. To obscure this fact, Copyright Owners are overly careful to only speak in terms of *mechanical* royalties. But unlike physical sales or digital downloads, which only generate mechanical rights to publishers, interactive streaming services must pay publishers for both the mechanical and performance rights. To the extent that publishers' mechanical revenue has declined, [redacted]. Moreover, Copyright Owners' tales of doom and gloom omit any mention of the share of royalties paid directly to songwriters. By focusing only on publishers' financial statements, the Copyright Owners understate the full amount of public performance royalties Copyright Owners receive. Copyright Owners' careful focus on the mechanical revenues received directly by the publishers only tells half the story.

To obscure the disruption that their proposal would cause, Copyright Owners speculate wildly about the supposed benefits that diverse companies like Google

receive from interactive streaming. These arguments are offered without evidence and say nothing about the rates that should be set for an entire industry, including pure-play services. And in reality, the relationship runs in the other direction. On-demand music services benefit from being associated with the brand names of some of the most recognizable companies in the world and the wide, existing market reach of those companies.

In sum, the Copyright Owners' rate proposal is not supported by the § 801(b) factors and should not be adopted by this Board. Instead, the Board should maintain the existing percentage-of-revenue rate structure and rates agreed to by the parties in *Phonorecords* and *Phonorecords II*, subject to the several modifications discussed in Google's rate proposal. The following section summarizes the testimony offered by Google in its rebuttal statement.

Fact Witnesses

1. Zahavah Levine, Vice President of Partnerships for Google Play

Zahavah Levine will testify in support of Google's written rebuttal statement. In particular, Ms. Levine will address negotiations leading up to the *Phonorecords II* settlement and the state of the streaming industry at the time, as well as the unfavorable consequences that would result from a per-stream royalty structure.

Ms. Levine begins her testimony by addressing statements made in the written direct statement of David M. Israelite, the President of the National Music Publishers Association, about the prior *Phonorecords* proceedings. As Ms. Levine explains, Mr. Israelite mischaracterizes the negotiations leading to the

Phonorecords II settlement, which was hardly the quick "rubber stamp" that Mr. Israelite suggests. Rather, it was only after considerable negotiations that the publishers agreed to carry forward the rates from *Phonorecords I*. Indeed, the negotiations spanned more than a year and involved substantial back-and-forth regarding a series of issues including not only headline rates, but also the length of royalty-free preview clips, issues related to accounting and to cloud storage of purchased music, as well as over regulations for the new Subpart C services. Ms. Levine will also testify that streaming services were well past the "experimental" stage in 2012. As of 2012, Rhapsody had been in existence for a decade and had over one million paying U.S. subscribers. Spotify had already launched in the United States. And as Ms. Levine will point out, AOL, Yahoo!, and Microsoft were all invested in the streaming market in the mid-2000s.

Ms. Levine also will address the statements in the Copyright Owners' written direct statement speculating about the supposed benefits that Google receives from Google Play Music. As Ms. Levine will explain, the Copyright Owners' contention that Google Play Music fuels growth in other sectors of Google gets matters backward. Google Play Music has [redacted] paying subscribers in the United States, while Google's other products reach hundreds of millions of people. In reality, Google Play Music is marketed to a far wider net of possible subscribers because of Google's brand and the reach of Google's other products.

Finally, Ms. Levine will testify that Google Play Music's primary objective is [redacted], and this objective would be undermined by a

shift to a per-play rate structure. Ms. Levine will explain that per-play rates may lead to "capping" usage to contain content costs. But capping usage detracts from the listeners' experience and adversely impacts user engagement. In turn, that makes it more likely that a user will "churn," meaning that a user will either fail to convert to a subscriber or that a paying subscriber will stop subscribing.

Expert Witnesses

Google will present the testimony of the following expert witnesses:

1. **Dr. Gregory K. Leonard, Economist**

Dr. Gregory K. Leonard, one of Google's experts in its written direct statement, will offer rebuttal testimony that addresses the Copyright Owners' rate proposal and the deficiencies in the expert reports submitted in support of that proposal, as well as the reports of Apple's experts, in light of the § 801(b) factors.

As Dr. Leonard will testify, the Copyright Owners' proposal would significantly increase streaming services' royalty payments. Under the Copyright Owners' proposal, Google Play Music would owe royalties [redacted] for its interactive streaming service than under the current regulations, a [redacted] increase.

In addition, Dr. Leonard will discuss how Copyright Owners' experts have misleadingly focused on mechanical rights royalties when claiming that the publishers have lost royalties over time. As Dr. Leonard will explain, a streaming service requires both the mechanical right and the performance right for a musical work. The rights are perfect complements—for an interactive streaming service,

one right is worth nothing without the other. From an economics perspective, Dr. Leonard will testify that it makes no sense to look at the mechanical royalties in isolation. Instead, only the all-in rate is meaningful.

Moreover, Dr. Leonard will explain that the per-stream prong of Copyright Owners' proposal (and Apple's proposal) is a significant departure from the current statutory rate structure. If adopted, it would be disruptive to consumers and streaming services and would result in decreased consumption of music. In particular, any increase in rates would likely result in the exit of some services from the streaming market, harming consumers that preferred those services and leading to a decrease in competition. This would decrease music consumption. For the services that do remain, the royalty increases under Copyright Owners' proposal would result in higher costs for those services. The Services, in turn, may raise prices, driving away some consumers, or limit usage to control royalty costs. This too would decrease music consumption.

Dr. Leonard will also critique the expert statements offered by the Copyright Owners' experts in support of their rate proposal. Two of their experts, Drs. Eisenach and Rysman, claim to have performed calculations that show that historical mechanical rates paid by the streaming services [redacted]. But to reach these conclusions, Drs. Eisenach and Rysman cherry-picked their data. They omit data on providers, plans, and time periods unfavorable to their conclusions. For example, Dr. Eisenach omits [redacted] when calculating industry sound recording rights royalties per play, which skews

the results upward. When these omissions are corrected, Copyright Owners' proposed rates are much higher than historical mechanical rates.

Besides misapplying data, Dr. Eisenach also fails to conduct an appropriate "benchmark" analysis. Dr. Eisenach compares the ratios of sound recording and musical works rights in other music markets and opines that the ratio of sound recordings to musical works payments is anywhere in a range of [redacted]. As Dr. Leonard explains, this range is so large—with the top of the range [redacted] as large as the bottom—that it contradicts a key assumption of Dr. Eisenach's analysis that the ratio of sound recording to musical works payments is stable. Moreover, Dr. Leonard notes that Dr. Eisenach relied on royalties for [redacted] that are quite different from the interactive streaming market.

Finally, Dr. Leonard addresses the reports of Apple's experts. In particular, Dr. Leonard explains that Apple's experts arbitrarily considered [redacted] streams to be equivalent to one permanent digital download. Based on industry data and practice, Apple should have used a ratio of 137 or 150 streams to one download. Had Apple used this data, its rate proposal would have been [redacted]

2. Dr. Mark E. Zmijewski, Professor of Accounting at The University of Chicago Booth School of Business

Pandora, Google, Spotify, and Amazon are jointly presenting the expert rebuttal testimony of Professor Mark E. Zmijewski. Professor Zmijewski is the Charles T. Horngren Professor of Accounting, The University of Chicago Booth School of Business. Professor Zmijewski analyzes the financial and accounting

statements produced in discovery by music publishers to test the Copyright Owners' assertions about a purportedly negative impact on music publishers' financial condition as a result of interactive streaming. Professor Zmijewski observes that that the reported declines in mechanical revenues [redacted] Professor [redacted], and industry analysts are bullish on prospects for music publishers' revenue growth over the next few years. Finally, Professor Zmijewski considers the contentions of Copyright Owner witnesses who claim that publishers will be unable to recoup advances to songwriters absent a significant increase in rates. Not only are private agreements between publishers and songwriters over how to divide the royalties paid by interactive streaming services irrelevant to this proceeding, [redacted].

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Written Rebuttal Statement of Zahavah Levine
(On Behalf of Google, Inc.)

I. Introduction

1. My name is Zahavah Levine. I am the Vice President of Partnerships for the Google Play division of Google Inc. ("Google"). I submit this testimony in support of Google's rebuttal case.

II. Prior *Phonorecords* Proceedings

2. I have reviewed the public version of the Witness Statement of David M. Israelite. Mr. Israelite describes the circumstances surrounding the *Phonorecords II* settlement in 2012 and claims that both parties were "prepared to quickly negotiate a settlement" and "were able to do so in the proceedings without need to file a written direct statement, take any discovery or engage in any hearings."[1] I agree with Mr. Israelite that the digital services entered into the *Phonorecords II* settlement discussions prepared to roll over the rates and rate structures negotiated in the *Phonorecords I* proceeding. These rates had been negotiated over a period of six

[1] Witness Statement of David M. Israelite at ¶ 100.

years and had only been in place for two years, and the services were not inclined to jettison six years of work to start afresh on determining new rates. However, I certainly recall the *publishers* initially pressing to raise the previously negotiated rates. Only after considerable negotiations between the parties and after the services made very clear that there would be no increase in rates did the publishers and representatives of the copyright holders accede to this position.

3. In addition, Mr. Israelite glosses over the very substantive discussions that occurred in the *Phonorecords II* proceedings relating to issues beyond just rate and rate structure. After two years of experience under the *Phonorecords I* Subpart B regulations, the parties negotiated modifications to portions of the Subpart B regulations that had proved unclear. The parties spent considerable time negotiating the length of royalty-free preview clips, issues related to accounting and issues related to cloud storage of purchased music. These were hard-fought battles spanning more than a year.

4. The parties also negotiated over additional regulations for new service offerings that had emerged in the years since the prior proceeding. These negotiations resulted in the addition of Subpart C, which provided rates and rate structures for Limited Offerings, Mixed Service Bundles, Music Bundles, Paid Locker Services, and Purchased Content Locker Services.

5. Mr. Israelite claims that streaming services were merely "experimental ventures" at the time that *Phonorecords I* and *II* were negotiated.[2] While reasonable minds can differ with respect to how developed the streaming market was prior to the

[2] *Id*. at ¶ 103.

first *Phonorecords* proceeding, it is undeniable that the market for streaming music was already well past the "experimental" stage by the *Phonorecords II* settlement in 2012.

6. I began at Listen.com in 2001, the same year that the Rhapsody music service launched. Listen.com was bought by RealNetworks in 2003. Rhapsody pioneered the model that still exists today of offering a streaming on-demand music service with unlimited access to a large catalog of music for a flat monthly subscription fee. Pressplay and MusicNet (now known as MediaNet), which were both funded by record labels, also launched in 2001. By the mid-2000s, large technology companies AOL, Yahoo!, and Microsoft were also deeply invested in the interactive streaming market. AOL launched AOL Music Now after the acquisition of a streaming service known as Full Audio. Yahoo! Music Unlimited launched after Yahoo!'s acquisition of the streaming services Launch Media and MusicMatch. And Microsoft released the Zune player in 2006 and offered a subscription-based, on-demand music streaming service called Zune Pass. In the mid-2000s, Sony also offered a music subscription service called Sony Connect. MOG was founded in 2005 and by 2009 had launched a subscription-based, on-demand music streaming service. Rdio launched in 2010 and Rara in 2011—both based on the same model initially pioneered by Rhapsody. Spotify had launched in Europe in 2006 and launched in the U.S. amidst great anticipation in July 2011. By 2012 when we settled the *Phonorecords II* rates, the streaming market was no longer in its infancy. Rhapsody had been in existence for almost a decade and had over one million U.S. paying

subscribers in 2011.[3]

III. The Benefits to Google Play Music of Google's Substantial Reach

7. In addition to Mr. Israelite's statement, I read the public version of the Witness Statement of David Kokakis. In reviewing both of their statements, I was troubled by their unfounded claims about the ways in which Google Play Music supposedly drives value to other parts of Google (which value, they claim, is not captured in the revenues generated by Google Play Music). For example, Mr. Israelite claims that Google Play Music "helps Google maintain users engaged within its vast network of online features, including its search engine, email service and even GPS mapping application that taken together have created one of the [sic] valuable corporations in the world."[4] Mr. Kokakis also claims that "Google do[es] not raise the subscription fees for [its] . . . music service[ ] because, rather than focus on driving revenue and profits from [its] music service[ ] higher, [Google] appear[s] to be more interested in growing [its] base of customers to whom [it] can then market [its] other products and services."[5] In particular, Mr. Kokakis argues that "Google, the colossus of the tech world, has many different avenues for monetizing its users' data, including data from its music streaming service."[6]

8. These claims about Google are unequivocally unfounded. [redacted]

[redacted]

[3] Ryan Nakashima, *Rhapsody passes million US subscriber milestone*, The Seattle Times (Dec. 22, 2011), http://www.seattletimes.com/business/rhapsody-passes-million-us-subscriber-milestone/.
[4] Witness Statement of David Israelite at ¶ 35.
[5] Witness Statement of David Kokakis at ¶ 60.
[6] *Id.*

[redacted].[7] It is public knowledge that Google's other products already reach literally hundreds of millions of people in the U.S.[8] [redacted].

9. The value proposition flows in the opposite direction. [redacted].[10]

IV. Google Play Music's Drive Toward Profitability

10. Google Play Music's primary objective is to achieve standalone, sustainable profitability—a profitability that will in turn be shared with the Copyright Owners.

11. To this end, Google Play Music has analyzed how to grow revenue by

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[7] *See* Google Dir. Ex. 008 (GOOG-PHONOIII-00003330).

[8] *See, e.g.*, Greg Sterling, *Billions served: PC search is down but query volume is way up for Google*, Search Engine Land (Aug. 31, 2016), http://searchengineland.com/billions-served-pc-search-query-volume-way-google-257899 (noting that in July 2016, Google had 64 percent of desktop searches in the United States and 94 percent of mobile searches in the United States).

[9] [redacted]

[10] Richard Nieva, *No faking it, Facebook rakes it*, cnet (Feb. 1, 2017), https://www.cnet. com/news/facebook-earnings-fourth-quarter-2016/.

attracting and maintaining customers. [redacted][11]

12. Google Play Music has also determined that user engagement is the primary indicator of how likely users are to "churn."[12] "Churn" is a term used to describe when users fail to convert to a paying subscriber or fail to continue as paying subscribers. In my experience, decreasing churn is one of the most important ways to grow the subscriber base and increase revenue. Unsurprisingly, users that do not use the product frequently tend to drop off, while frequent, heavy users are more likely to pay for a subscription month after month.

13. In response to a per-play rate such as the rate proposed by the Copyright Owners, usage may be capped to contain content costs. But capping usage runs counter to what digital services ought to be doing, which is to try to increase user engagement. Capping usage detracts from the listeners' experience with the service and will adversely impact user engagement. Engagement is the driving factor in whether a user is likely to churn or stay a loyal user.

14. Google is interested in maximizing revenues associated with Google

[11] Google Reb. Ex. 002; *see also* Google Reb. Ex. 003 at 3747 (identifying "[t]he cost of $10 per month" as a "too high" for some users and a top reason why users disengage).
[12] *See generally* Google Reb. Ex. 003; Google Reb. Ex. 004.

Play Music. As Google Play Music grows, Copyright Owners will share in that success.

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Declaration of Zahavah Levine

I, Zahavah Levine, declare under penalty of perjury that the statements contained in my written rebuttal statement in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 14 day of Feb, 2017 in Mountain View, California.

Zahavah Levine

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REBUTTAL EXPERT WITNESS STATEMENT OF DR. GREGORY K. LEONARD

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I. QUALIFICATIONS AND ASSIGNMENT

1. My name is Gregory K. Leonard. I am an economist and partner at Edgeworth Economics, 333 Bush Street, Suite 1450, San Francisco, CA 94104.

2. My qualifications are presented in the Expert Witness Statement of Dr. Gregory K. Leonard, dated November 1, 2016 (my "opening report"), and amended on January 25, 2017 (my "amended opening report") (collectively, my opening report and amended opening report are referred to as my "opening reports"), which I have previously submitted in this matter.

3. I have been asked by Google to review and comment upon the expert reports issued on behalf of the Copyright Owners including: (1) Expert Report of Jeffrey A. Eisenach, Ph.D., dated October 31, 2015 ("Eisenach Expert Report"); (2) Expert Report of Marc Rysman, Ph.D., dated October 28, 2016 ("Rysman Expert Report"); and (3) Expert Report of Joshua Gans, dated October 31, 2016 ("Gans Expert Report"). I have also been asked to review and comment upon the expert reports issued on behalf of Apple including: (1) Expert Report of Anindya Ghose, dated November 1, 2016 ("Ghose Expert Report"); and (2) Expert Report of Jui Ramaprasad, dated November 1, 2016 ("Ramaprasad Expert Report").

4. In the course of my analysis, I have reviewed the documents and other information listed in Appendix B to this Written Direct Statement. Specific documents and other information cited as support in this testimony are not meant to be an exhaustive listing of all such documents or information.

5. My analysis and this report are based on information currently available to me. I reserve the right to augment or update opinions based on information learned in ongoing discovery.

II. SUMMARY OF OPINIONS

6. I have reached the following opinions:

- The Copyright Owners' proposal would result in a significant increase in the level of royalty payments required from streaming services for both mechanical rights alone and all-in rights for musical works.
  - In their attempts to justify the Copyright Owners' proposed rates, Drs. Eisenach and Rysman claim to have performed calculations that show that historical mechanical rates paid by the streaming services are consistent with the Copyright Owners' proposal.
  - However, these calculations are badly flawed in that they omit, without justification, data on certain providers, plans, and time periods. For example, [redacted] When these omissions, and numerous others, are corrected the Copyright Owners' proposed rate of $0.0015 per play is shown to be inconsistent with historical mechanical per-play rates.
  - Drs. Eisenach's and Rysman's analysis on a per user basis suffers from many of the same errors and issues as their per-play analysis.
- The substantial increase in rates and the change to a per-play structure under the Copyright Owners' proposal would both reduce the consumption of music and be disruptive.
  - Services are currently unprofitable. An increase in royalties likely would result in the exit of some services.
  - Consumers who preferred the services that exited would be made worse off. Streaming services are not homogenous; instead, they are differentiated in their features and their target customers. For example, the Amazon Prime music service offers fewer songs in its catalog, but is bundled in Amazon Prime. Ad-supported services do not require a subscription fee, but users must endure ads. Google offers human curation of playlists. When a differentiated product exits the market, the consumers who had used that service would be harmed (even if they switched to another service because that service would be less preferred), and they may even leave the streaming market entirely (and move to other forms of music that may pay lower royalties, e.g., piracy). Either way, consumption of music likely would decrease.
  - With fewer services, competition would decrease and streaming services' prices would increase. This would be expected to lead to a decrease in consumption of music.
  - The royalty increases under the Copyright Owners' proposal would result in higher costs for services, which could result in higher prices and less music consumption.

- Currently, subscription streaming services generally offer "all you can eat plans." The services have the incentive to encourage usage by subscribers. The resulting "engagement" reduces churn. Given the zero marginal cost of a stream, this setup is economically efficient in that an access fee is charged, but no incremental price is charged for usage. The change in royalty structure to a per play basis would disrupt the industry. Services would have the incentive to switch away from "all you can eat plans" or to limit usage in order to limit their royalty costs. This would result in a decrease in music consumption.

- The Copyright Owners' experts largely ignore the 801(b)(1) factors.
  - They assert that the statutory rate should be a "market rate." However, a "market rate" (as they define it) is not consistent with the 801(b)(1) factors. In contrast, rates determined in the "shadow of regulation" that the Copyright Owners dismiss *do* account for the 801(b)(1) factors, a characteristic that makes them better comparables, all else equal.

- Dr. Eisenach's comparables analysis is unreliable.
  - The wide range of Dr. Eisenach's supposed "comparables" for the ratio of the sound recording rights royalty to the musical works rights royalty demonstrates that there is no single such ratio that applies broadly across all contexts and that, in fact, the ratio depends crucially on economic circumstances of a given context. For example, Dr. Eisenach (and other Copyright Owner experts) point to the [redacted] of sound recording royalties to musical work royalties for synchronization rates. However, this ratio differs substantially from the ratio that Dr. Eisenach and the other Copyright Owner experts claim to be appropriate for streaming. Thus, the economic conditions surrounding synchronization rights must be substantially different than the economic conditions surrounding streaming. However, the Copyright Owners' experts never address this.

  - Dr. Eisenach ultimately relies on the YouTube user uploaded video rates for his final conclusions. Dr. Eisenach's use and analysis of the YouTube user uploaded videos is flawed for several reasons including: (1) Dr. Eisenach inappropriately assumes that user-posted, audiovisual content is similar to interactive music streaming content subject to Section 115; (2) the ratio that Dr. Eisenach derives from user-posted, audiovisual content compares rates that do not account for the 801(b)(1) factors; and (3) further, Dr. Eisenach ignores the musical work rates paid by YouTube for interactive music streaming content subject to Section 115, and for record company videos, both of which result in sound recording to musical work ratios substantially greater than Dr. Eisenach's benchmark based on non-comparable user-posted, audiovisual content.

  - Dr. Eisenach also ultimately relies on the [redacted]s for his final conclusions. Dr. Eisenach's use and analysis of the [redacted]s with music publishers is flawed for several reasons including: (1) the ratios that Dr. Eisenach derives from these agreements compare regulated sound recording rates determined under

the willing buyer/willing seller standard with regulated musical work rates subject to the ASCAP/BMI consent decrees and, therefore, do not account for the 801(b)(1) factors; (2) I understand that the threat of further withdrawals by the music publishers from ASCAP and BMI and the uncertainty regarding the ongoing DOJ review of the consent decrees were used by music publishers to extract supracompetitive rates from [redacted] and (3) Dr. Eisenach's projection of sound recording to musical work ratios for 2018-2022 assumes, without basis, that the ratios are a function of only one factor, the time trend, the historical time trend from 2012 to 2018 would continue into the future, and the sound recording to musical work ratio will continue to decline into the future toward some hypothetical and unspecified equilibrium, market-based rate.

- Dr. Eisenach inexplicably ignores the most appropriate benchmark—the musical work royalty determined under Subpart A. This is the best benchmark because (1) it was agreed to in a settlement involving the same parties, (2) it incorporates the 801(b)(1) factors, and (3) there are economic similarities between streaming and digital downloads.

- The Copyright Owners' experts claim that sound recording rights royalties provide an economically appropriate benchmark for determining the royalties for musical work mechanical rights. This claim is incorrect for several reasons.
  - First, sound recording rights are determined in a market setting not subject to the 801(b)(1) factors.
  - Second, the record labels have market power and thus sound recording rights royalties are above the competitive level.
  - Finally, under Copyright Owners' experts' claim that musical work royalties have been "suppressed," sound recording royalties are necessarily "too high" and thus do not provide a valid benchmark.

- The Copyright Owners' experts misleadingly focus on mechanical rights royalties when claiming that musical work copyright owners have lost royalties over time.
  - A streaming service requires both the mechanical right and the performance right for a musical work.
  - The rights are perfectly complementary—one right is worth nothing without the other. It makes no economic sense to look at the mechanical royalties in isolation. Instead, only the all-in rate is meaningful.
  - An analyst report relied on by Dr. Gans demonstrates that streaming has benefited musical works rights owners, when total royalty payments are considered.
  - In the case of a permanent digital download ("PDD"), the mechanical right is all that is needed and thus the mechanical royalty represents the all-in payment for the musical work.

- The Copyright Owners' experts and Apple's experts are incorrect when they claim that a per-stream royalty structure is preferable to a percentage of revenue royalty structure for streaming.
    - The marginal cost of a stream is essentially zero. Thus, economic efficiency, and the 801(b)(1) factors, suggests that the appropriate royalty structure is an "access fee" plus zero charge per stream. This is, of course, the model on which services charge subscribers for "all you can eat" plans.
    - Matching the royalty payments to the way in which revenues are generated also makes this large cost component more predictable for services.
    - Percentage of revenue royalty structures are common in intellectual property licenses.
    - A per-play rate is not consistent with how rights licenses work in other similar contexts. For example, Netflix pays a fixed lump sum to a rights holder for use of the content for a specified period of time, regardless of the number of times the content is streamed by Netflix customers.
    - The percentage of revenue royalty structure is flexible in that it automatically results in lower royalties for plans or services that target lower willingness to pay consumers. A lower royalty for such customers is appropriate because the musical work has less value in this context.
    - In contrast, a per-play royalty structure imposes a "one size fits all" royalty for all services and plans. This is not economically efficient because the musical work does not have the same value in all contexts.
    - The percentage of revenue royalty structure also reflects the idea that the relative contributions of the musical work and the service are roughly the same in *percentage terms* across services and plans.
    - There is no evidence that the services have manipulated revenue definitions. The Copyright Owners' experts only provide speculation on this point.
    - There is no evidence that the services are setting low prices today to build an installed base with the expectation of "recouping" the "investment" in the future. The Copyright Owners' experts provide only speculation on this point. However, even if that were the case, copyright owners would, along with the services, benefit from the recoupment and thus should properly share in the investment. A percentage of revenue royalty structure accomplishes this.
- Dr. Gans' "Shapley value" approach is badly flawed
    - Contrary to Dr. Gans' claim, Shapley values do not generally replicate "market outcomes"; instead, they provide an axiomatic basis for splitting surplus in a way that

satisfies a specific definition of "fairness." To the extent that Dr. Gans thinks that the statutory rate should reflect a market outcome, the Shapley value approach is not appropriate.

- There is no basis for Dr. Gans' crucial assumption that the contributions of the sound recording and musical works are of equal value. In fact, the contributions of artists are likely to be of greater value (particularly in the case of popular artists).

- Dr. Gans focuses on the publishers and labels and ignores the songwriters and artists. However, the profits to songwriters must be combined with the profits to publishers, for example, for a correct analysis. However, he has no data on profits to songwriters and artists.

- Dr. Gans ignores the fact that, under his own theory that the musical works royalties have been "suppressed," that implies that the sound recording rights have received royalties that are too high. Moreover, he ignores the record labels' market power. Finally, he ignores the services—under his approach, the service should also be entitled to an equal share of the surplus. When these corrections are made (and the other flaws of the approach are ignored), the musical work royalty is substantially lower than Dr. Gans calculated.

- It is important to understand the similarities and distinctions among PDDs, streaming, and bundled albums.
  - With a PDD, a user pays a price for access to a track (by purchasing the PDD), and then can listen to the track as often as desired over an unlimited time.
  - With subscription streaming service, a user pays a price for access to a library for a given time period (by purchasing a subscription), and then can listen to any track in the service's library as often as desired within that time period.
  - With streaming, a user is more likely to "experiment" and listen to a wider variety of tracks than if only PDDs were available because there is no cost to doing so. A user who streams a track would not necessarily have bought a PDD of the track if streaming were not available. Such a user would be even less likely to have bought a bundled album in the absence of streaming and PDDs.
  - Dr. Gans mistakenly assumes that the listening behavior of streaming users is the same as album purchasers.

- Apple's experts, Drs. Ghose and Ramaprasad, endorse Apple's Subpart B proposal of $0.00091 per play, which is based on an outdated streams-to-download ratio of 100:1. More current streams-to-download ratios ranging from 137:1 to 150:1 generate per-play rates considerably lower than Apple's proposal.

III. REVIEW AND CRITICISMS OF THE EXPERT REPORTS ON BEHALF OF THE COPYRIGHT OWNERS

A. The Copyright Owners' Proposal

7. I understand that for Subpart B interactive streaming and limited download services, and Subpart C locker and other services, the Copyright Owners are proposing a mechanical-only royalty equal to the greater of $0.0015 per play and $1.06 per user.[1] These rates are a major departure from the current statutory rates and structure and would result in royalty payments significantly higher than those paid under the current Section 115 rates, or that would be paid under Google's proposed rates.

8. I have calculated what Google's royalty payments would have been historically under the Copyright Owners' proposal, the current Section 115 regulations, and Google's proposal for Google's Subpart B interactive streaming services.[2] Applying the Copyright Owners' proposal to Google's actual historical subscriber interactive streams and subscribers would have resulted in total mechanical royalties for the period from June 2013 to June 2016 of [redacted].[3] To estimate the public performance royalties that Google paid for musical works during the same period, I assumed that Google paid public performance royalties equal to [redacted] of its service revenues for its Google Play subscription service, which equaled $[redacted].[4] In total,

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1 "Copyright Owners' Proposed Rates and Terms," *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016.

2 These calculations assume that the number of streams and users would remain the same under all three scenarios. As discussed below, however, it is likely that the number of streams and perhaps the number of subscribers would have been lower than their historical levels under Copyright Owners' proposal due to the incentives created by the per-stream royalty structure and the higher royalty payments.

3 I understand that the Copyright Owners' proposal applies to both Subpart B and Subpart C services. As a result, applying the Copyright Owners' proposal to Google's total streams and total users (subscribers and active locker users) would generate even greater hypothetical mechanical royalties.

4 [redacted]

Google's all-in royalties (mechanical plus public performance) for musical works under the Copyright Owners' proposal from June 2013 to June 2016 would have equaled [redacted].[5]

9. I compared these hypothetical Google Subpart B all-in royalties based on the Copyright Owners' proposal to the Subpart B all-in royalties that Google has paid based on the current Section 115 regulations. Using Google's actual service revenues, subscribers, and payments for sound recording rights results in all-in royalties of [redacted] for the period from June 2013 to June 2016.[6] As a result, the Copyright Owners' proposal would have the disruptive effect of increasing Google's all-in royalties for Subpart B interactive streaming services from June 2013 to June 2016 by approximately [redacted].

10. In contrast, I also compared Google's Subpart B all-in royalties based on the current Section 115 regulations to the hypothetical Google Subpart B all-in royalties under Google's proposal.[7] Applying Google's proposal to Google's actual service revenues, subscribers, and payments for sound recording rights would have resulted in all-in royalties of [redacted] for the period from June 2013 to June 2016.[8] This is exactly equal to Google's Subpart B all-in royalties based on the current Section 115 regulations.

11. As demonstrated here, the Copyright Owners' proposal represents a significant departure from the existing Section 115 rates, while Google's proposal is consistent with the current rates.

Compositions by means of Streaming and transmissions from cache copies (to the extent a performance right is implicated) via the Licensed Service." See GOOG-PHONOIII-00000319-328 at 319-320. I understand that Google has not yet entered into any licenses with other PROs.

5 Exhibit 1.

6 Exhibit 1.

7 I understand that Google's current proposal for Subpart B interactive streaming and limited download services is the greater of (i) 10.5% of service revenue and (ii) the lesser of (a) 13.5% of the total amount expensed by the service provider for sound recording rights, and (b) the existing per-subscriber per-month minima (e.g., $0.80 per subscriber for standalone portable subscriptions, mixed use).

B. Specific Criticisms of the Eisenach Expert Report

1. Overview of the Eisenach Expert Report

12. Dr. Eisenach contends that the current Section 115 rates were established when the interactive streaming music industry was embryonic and, thus, the rates were discounted in an attempt to jumpstart the then-novel music business models.[9] Furthermore, he states that these statutory rates constrain the market for publishing rights by acting as a ceiling, and not as a floor, on the ultimate rates that interactive music service providers pay.[10] Dr. Eisenach argues that preferable publishing royalty rates would be those freely negotiated in an unconstrained market, and then points to the market for sound recording rights as an example of such a market.

13. In his report, Dr. Eisenach pursues a benchmark analysis based on the rates paid for sound recordings. He focuses on the ratios of the royalties paid for sound recordings to the royalties paid for musical works in contexts that he claims are comparable to the services at issue in this proceeding, and he uses those ratios as a mechanism for converting sound recording rates to rates for musical works.

14. Dr. Eisenach's conversion ratios are calculated based on consideration of the following potential benchmarks: (1) the current Section 115 statutory rates and the rates from direct licenses entered under the Section 115 "regulatory shadow"; (2) rates paid for ringtones; (3) rates paid for synchronization rights; (4) rates paid for Google's YouTube service; and (5) rates paid by [redacted] for its non-interactive service.[11] Dr. Eisenach relies most heavily on the sound

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[8] Exhibit 1.

[9] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 19.

[10] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶¶ 29-32.

[11] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶¶ 81-130.

recording to musical work ratios derived from his YouTube and [redacted] benchmarks. Specifically, for the YouTube benchmark he estimates a ratio of [redacted] based on the assumptions that YouTube pays [redacted] of its ad revenues to content providers, with record labels receiving [redacted] of ad revenues and publishers receiving [redacted] of ad revenues, for "User Video[s] with commercial sound recording," which Dr. Eisenach claims are comparable to YouTube's "audio-only" videos that are subject to the Section 115 interactive streaming statutory rates.[12] For the Pandora non-interactive service benchmark, based on [redacted] with publishers for musical works rights, Dr. Eisenach estimates the ratios of sound recording royalties to musical works royalties for 2012 through 2018 (i.e., [redacted] in 2012, dropping to [redacted] in 2018).[13] Then, Dr. Eisenach uses a linear regression to forecast the decline in the ratio of sound recording royalties to musical work royalties over the 2018 to 2022 period, with a forecasted ratio of [redacted] in 2018 declining to [redacted] in 2022.[14] Dr. Eisenach ultimately relies on his average forecasted ratio derived from this regression for 2018 to 2022 of [redacted].[15]

15. Based on the five aforementioned categories of benchmarks, Dr. Eisenach establishes an upper and lower bound for the relative value of sound recordings and musical works between [redacted].[16] Dr. Eisenach ultimately concludes: "In my opinion, the YouTube and [redacted] agreements represent the most comparable and reliable benchmarks, implying ratios of [redacted]."[17]

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[12] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶¶ 100-102.

[13] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 125, Table 6.

[14] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶¶ 127-128, Table 8.

[15] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 128, Table 8.

[16] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 75.

[17] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 130, Table 9.

16. To calculate an implied rate for mechanical rights for musical works, Dr. Eisenach employs two different methods. Dr. Eisenach's Method 1 assumes that the difference between per-stream rates paid for "all-in" sound recordings rights for interactive streaming services and per-stream rates paid for public performance sound recordings rights for non-interactive streaming services represents an implicit per-stream rate for mechanical sound recording rights for interactive services. He then divides this difference by the ratios of sound recording to musical work royalty payments derived from his benchmarks to calculate an implied per-stream rate for mechanical rights for musical works. As discussed below, Dr. Eisenach's Method 1 and corresponding calculations are unreliable for a number of reasons.

17. Dr. Eisenach's Method 2 divides the per-stream rates paid for sound recordings for interactive streaming services by the ratios of sound recording to musical work royalty payments derived from his benchmarks to calculate an implied all-in per-stream rate for musical works. Then, he subtracts from this result the public performance per-stream rates paid for musical works to calculate an implied per-stream rate for mechanical rights for musical works. As discussed below, Dr. Eisenach's Method 2 and corresponding calculations are also unreliable.

18. Finally, Dr. Eisenach also uses his Method 2 to estimate implied rates for mechanical rights for musical works on a per-user basis. As discussed below, Dr. Eisenach's implementation of Method 2 on a per-user basis is unreliable for many of the same reasons as his implementation of Method 2 on a per-stream basis.

19. In the following sections, I provide specific criticisms of the Eisenach Expert Report.

2. Dr. Eisenach Ignores the Economic Evidence That a Shift to the Copyright Owners' Per-Play or Per-User Rate Would Significantly Disrupt Interactive Streaming Services and Result in Reduced Consumption of Music

20. As an initial matter, as previously discussed above, the Copyright Owners' proposal would have substantially increased the all-in royalties for Subpart B interactive streaming services paid by Google, compared to the royalties that Google paid under the current Section 115 rates and would have paid under its own proposal. Furthermore, going forward, under the Copyright Owners' proposal Google will expect to pay all-in royalties considerably larger than under the current Section 115 rates and its own proposal. Dr. Eisenach ignores this economic reality—that a shift to the Copyright Owners' proposal would significantly disrupt interactive streaming services and ultimately these services' customers and result in the reduced consumption of music.

21. As I discussed in my opening reports, digital interactive streaming service providers have had a history of not being profitable under the current Section 115 statutory rates (See Section VII.B. of my opening reports). For example, despite a continuously increasing user base and subscription revenue, Google Play Music has never been profitable. Spotify, despite its subscriber growth, has also never been profitable. Many other interactive streaming service providers, under the current Section 115 statutory rates, have also not achieved profitability, including Tidal, Deezer, and Rhapsody. According to an October 2016 Goldman Sachs music industry report, "[w]ith no interactive streaming service currently being profitable, the economic viability of such business models is yet to be proven."[18] Furthermore, a number of interactive

[18] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 66. I note that one of Copyright Owners' other experts, Dr. Gans, relies heavily on data contained in the Goldman Sachs report.

streaming service providers have shut down due to a lack of profitability under the current Section 115 rates.[19]

22. As a result, under the Copyright Owners' proposal, which would result in even greater Section 115 all-in royalty payments, existing interactive streaming services providers such as Google would be even less profitable. Furthermore, it is likely that these higher royalty payments would result in additional service providers exiting the market for interactive streaming services. The exit of existing suppliers would be disruptive, both to those suppliers and the customers who prefer those suppliers, given that the various interactive streaming suppliers offer differentiated services that appeal to different customer segments (e.g., Amazon versus Spotify). Any increase in the prices of interactive streaming services or changes in the business model (such as the elimination of "all you can eat" plans or imposition of limits on streaming) that results from an increase in the musical works royalties would be both disruptive to the services, which made investments assuming a particular royalty structure and level, and their customers, who revealed a preference for the specific plan and service they chose. The ultimate result would be a decrease in the consumption of music due to higher prices and a change in the nature of plans.

3. The Markets for Sound Recording and Musical Work Rights Are Substantially Different

23. A fundamental input into Dr. Eisenach's benchmark analysis is the rates paid by interactive music streaming service providers for sound recordings. However, the markets for sound recording and musical work rights are substantially different for several reasons and, as a

[19] Written Direct Testimony of Zahavah Levine, November 1, 2016, ¶¶ 16-17.

result, the use of sound recording royalty payments to form benchmarks for musical work royalty payments is inappropriate.

24. First, sound recording rights for interactive music streaming services are set in a market not subject to the 801(b)(1) factors or other regulatory constraints and reflect the exercise of market power by record companies. As discussed in the Web IV decision:

- "The Services dismiss the idea that the record companies' negotiations with interactive services are evidence of an effectively competitive market. The Judges agree with the Services criticism of this assertion."[20]
- "The Judges reject SoundExchange's argument that evidence of its negotiations with interactive services demonstrates that the interactive market is effectively competitive. As the Judges pointed out in their *Commencement Notice* in this proceeding, price discrimination is a feature of markets such as sound recording markets, where the marginal physical cost of licensing a sound recording is essentially zero, and is also a relatively common feature of many markets…Further, the Judges cannot ignore the testimony from several record company witnesses, discussed in this determination, in which they acknowledged that they never attempted to meet their competitors' pricing when negotiating with interactive services."[21]
- "The Judges were presented with substantial, unrebutted evidence that the interactive services market is *not* effectively competitive. The Services conclude from this that the interactive services benchmarks are wholly uninformative with regard to the rates that would be negotiated in an *effectively competitive* market…The Judges disagree…The Services' own evidence demonstrates persuasively that competitive steering has reduced royalty rates in the noninteractive market and would do so in the hypothetical market as well. This evidence of steering (provided by Pandora and iHeart) demonstrates a measurable range of adjustment to the prices that would be set in a market for those streaming services if the services could inject price competition via steering. Thus, the rate set in Dr. Rubinfeld's upstream interactive benchmark market can and should be adjusted to reflect such price competition, in order to render it is usable as an 'effectively competitive' rate in the segment of the market to which that benchmark applies – the noninteractive subscription market."[22]

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[20] *In re* Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (2016-2020), December 16, 2015, p. 65.

[21] *In re* Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (2016-2020), December 16, 2015, p. 66.

[22] *In re* Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (2016-2020), December 16, 2015, p. 66. See also p. 67 ("Here, the range of steering adjustments from direct noninteractive licenses has been introduced in evidence, steering experiments have confirmed the reasonableness of such an endeavor and expert testimony has

In this matter, as I understand it, the goal is to set rates for mechanical rights for musical works that reflect the economic considerations outlined in the 801(b)(1) factors. Under these factors, rates should not incorporate market power generally and specifically should not incorporate the market power of record labels in the sound recording market. As a result, it is inappropriate to use sound recording royalty payments as comparable benchmarks to establish rates for mechanical rights for musical works.

25. Second, Dr. Eisenach's analysis assumes that musical work rates need to be increased relative to sound recording rates to bring them in line with his sound recording royalties to musical work royalties ratio benchmarks. If sound recording rates are above the competitive level due to record labels' market power in the sound recording market, then setting musical work rates based on sound recording rates results in musical work rates that are similarly above the competitive level. This is not consistent with the 801(b)(1) factors.

26. In addition, Dr. Eisenach ignores an implication of his (and other Copyright Owner experts) claim that the musical work royalties have been "suppressed" by regulation. If musical work royalties have been suppressed, that leaves a larger pie over which the record labels and services bargain, with the result that the labels likely get "more" than they would get if the musical work royalties were not suppressed as Copyright Owners' experts claim. This is particularly so given the record labels' market power and the fact that the services generally have not earned a profit. If musical work royalties increased to the level that Dr. Eisenach proposes, the size of the pie to be bargained over between record labels and services would decrease, the labels would get a smaller royalty payment, and Dr. Eisenach's ratio would then exceed the level

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explained how steering is a mechanism by which to offset the complementary oligopoly power of the Majors (while not reducing their firm-specific and copyright-specific market power.").

he claims is the appropriate benchmark level. To see this, suppose that on each $100 of streaming subscription revenues, musical work royalties are currently $10, sound recording royalties are $60, and the service keeps $30, but this just covers its costs. This means that the record labels capture all of the profit pie that is left after paying musical work royalties. If the musical work royalties increased to $25, consistent with Dr. Eisenach's analysis, the record labels would still capture all of the profit pie left after paying the musical works royalty (record labels' relative bargaining strength is the same), but that pie would now be reduced to $45. (The services would still have to receive $30 to cover its costs.) This means that the sound recording royalty to musical work royalty under his proposal would actually $45/$2[redacted], or 1.8:1, which is smaller than his claimed benchmark ratios [redacted]. Even under his approach, Dr. Eisenach has set the musical work royalty too high because he fails to consider the fact that sound recording royalties will decrease if musical works royalties increase.

4. Dr. Eisenach's Proposed Sound Recording to Musical Work Ratio Benchmarks Are In Fact Not Valid Comparables

a. Dr. Eisenach Ignores Sound Recording to Musical Work Ratios Derived from the Subpart A Permanent Digital Download Rates

27. As I discussed in my opening reports, the most relevant comparable benchmark to use for establishing the rates for Subpart B interactive streaming services is the Subpart A rates for PDDs. The Subpart A rates are the most appropriate benchmarks for reasons including: (1) there is evidence that interactive streaming competes with download sales to varying degrees, which suggests that there should be consistency between the Subpart A and Subpart B rates; (2) the Subpart A rates were recently extended for the period from 2018 to 2022 based on a settlement agreed to by Copyright Owners and the same publishers in this proceeding; and (3)

the Subpart A rates reflect the 801(b)(1) factors. In addition, there are certain conceptual similarities between streaming and a download. Having paid for a track download, a user can listen to it as often as desired without further charge. Similarly, having paid the subscription fee, a streaming user can listen to a track as often as desired without further charge. Dr. Eisenach flatly ignores this benchmark.

28. In my amended opening report, using the Subpart A rates I compared Google's effective Subpart A rate of $0.095 per download paid to publishers for musical work rights under Section 385, Subpart A to the royalties paid to record companies for sound recording rights on the same sale of a PDD (i.e., 70% of the retail price, which is inclusive of the $0.095 per download effective royalty owed to music publishers and that is passed through by the record company to the music publishers). Based on the weighted average retail price per digital download of $0.99 in 2006 and $1.10 in 2015, the ratio of musical work-to-sound recording royalties on sales of PDDs covered under Section 385, Subpart A has decreased from approximately 15.8% to 14.2% from 2006 to 2015. These percentages can be expressed in the manner that Dr. Eisenach presents his ratios—i.e., 15.8% is equivalent to a 6.31:1 ratio, and 14.2% is equivalent to a 7.07:1 ratio. I note that these ratios are higher than the upper bound of ratios (i.e., [redacted]) used by Dr. Eisenach, which is based on the 21% of sound recording payment term in the current Section 115, Subpart B regulations. Furthermore, the ratio based on the Subpart A benchmark has been increasing over time, and is expected to continue to increase because, for example, the average retail price (and the corresponding 70% retail price paid to record labels) of a PDD has trended upward while the Copyright Owners have agreed to fix the Subpart A royalty rate at the current levels through the end of the license period at issue here.

29. It is my opinion, for the reasons explained in my opening reports and discussed above, that the ratio of sound recording to musical work royalties derived from an analysis of the Subpart A royalties is the most comparable benchmark for determining Subpart B interactive streaming royalties.

b. Dr. Eisenach's Range of Sound Recording to Musical Work Royalty Ratio Benchmarks Is Wide, A Fact for Which Dr. Eisenach Has No Explanation, Rendering His Analysis Unreliable

30. According to Dr. Eisenach, for his benchmark analysis "it is sufficient simply to assume that the relative values of the two rights [sound recording and musical work rights] should be stable across similar or identical market contexts."[23] However, the results of Dr. Eisenach's benchmark analysis have, in fact, shown the exact opposite—i.e., that the range of ratios of sound recording to musical work royalties across the markets considered comparable by Dr. Eisenach is extremely wide. Specifically, Dr. Eisenach's analysis, based on five supposed benchmarks, generates ratios of sound recording to musical work royalties ranging from [redacted][25] The wide range exhibited by Dr. Eisenach's sound recording to musical work royalty ratios contradicts his assumption that the ratios across supposedly comparable industries should be "stable." The failure of his own analysis to be consistent with the key

[23] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 79.

[24] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 99. I note that the criteria used by Dr. Eisenach to select his five supposed benchmarks, and to ignore other benchmarks, is generally unclear. For example, he offers no explanation for why he ignored the Subpart A benchmark discussed in the previous section. Additionally, he offers no explanation for why he did not consider, for example, the terrestrial radio benchmark, or why such a benchmark is less comparable than the benchmarks that he used, which include synchronization rights, ringtones, user-posted videos on YouTube, and non-interactive music streaming. I note that the ratio of sound recording to musical work royalties for terrestrial radio is actually 0:1.

[25] I note that the upper bound of Dr. Eisenach's range is lower than the 6:1 ratio calculated by Goldman Sachs for ad-funded and subscription streaming services. See "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 58.

underlying assumption demonstrates that his benchmark analysis is unreliable. Furthermore, as discussed below, the markets and rates that Dr. Eisenach has analyzed—excluding the existing Subpart B interactive streaming rate that generate his [redacted] ratio—are neither similar nor identical.

31. In the following sections, I address the specific comparability issues with each of the benchmarks used by Dr. Eisenach in his analysis. I note that the [redacted] benchmark ratio, based on the existing rates and terms of Subpart B, can be relevant for setting the going-forward Subpart B rates for the percentage of sound recording payments prong in this proceeding because these rates were set in a 2012 settlement and reflect the 801(b)(1) factors. However, as discussed in the previous section, the increasing historical ratios based on the Subpart A benchmark are further evidence that the ratio has been and will continue to increase over time.

c. Ringtones and Interactive Streaming Services Are Not Comparable

32. As discussed above, Dr. Eisenach ignores benchmarks based on Subpart A rates for PDDs; however, he does rely on a benchmark derived from a [redacted] agreement that was eventually amended to include ringtones, which are also subject to statutory rates under Subpart A. According to Dr. Eisenach, under this agreement "[redacted][26] Dr. Eisenach assumes that [redacted] would pay a royalty to [redacted] of [redacted] per ringtone based on the assumption that [redacted] According to Dr. Eisenach, the [redacted] royalty is inclusive of both the royalty payment for sound recording and

[26] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 89.

musical work rights; [redacted] would pass through [redacted] for the mechanical royalty for musical works based on the Subpart A statutory rate; and SME would retain [redacted] for sound recording rights. This results in a sound recording to musical work royalty ratio of [redacted].[28] Dr. Eisenach concludes:

> While this agreement implicates the compulsory rate for ringtones, the negotiation was conducted by [redacted] such that the topline rate is not subject to regulation. Thus, the [redacted]e agreement provides a benchmark of the relative values of the sound recording and musical works rights as negotiated between a record label and a service, in which the musical works component was established through compulsory license, but the *relative* value of the musical works and sound recording rights was the result of voluntary negotiation.[29]

33. First, Dr. Eisenach's conclusion regarding the applicability of the ringtone benchmark is based, in part, on the facts that the "topline rate is not subject to regulation" and the "relative value of the musical works and sound recording rights was the result of the voluntary negotiation"—but these facts also hold true for the PDD-based benchmark. The topline rate of 70% of the retail price of a PDD was also freely negotiated between Google and record labels and was not subject to regulation; and the relative value of the sound recording and musical work royalties—6.31:1 in 2006 and 7.07:1 in 2015—were also the result of a voluntary negotiation. Dr. Eisenach does not explain why his ringtone benchmark is valid, but a PDD-based benchmark is not. In fact, throughout his report, Dr. Eisenach explains how there has been a shift from

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[27] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 89.

[28] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶¶ 89-90.

[29] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 91.

digital downloads to streaming;[30] implying that there is a relationship between these two types of music consumption. But, again, he ignores any type of benchmark analysis based on downloads.

34. Second, ringtones and interactive music streaming services are not comparable. Ringtones, for example, are short excerpts of songs that are played on a mobile device when receiving an incoming phone call,[31] which is different than when a person engages in interactive music streaming by choosing a specific song to listen to at a specific point in time. As Dr. Eisenach acknowledges, interactive music streaming is more in line with an actual download of a complete song.

35. Third, Dr. Eisenach's selectively chooses [redacted] as the price that [redacted] charges for ringtones. Dr. Eisenach acknowledges that "retail prices for ringtones have historically been above $2 per ringtone (which would require a higher payment from [redacted] to [redacted] and that [redacted] currently sells many (but not all) ringtones for [redacted].[32] The [redacted] price is from 2016, and does not reflect the complete set of ringtone prices charged in the period following the 2007 amendment that included ringtones. In fact, the total price that a customer paid for a ringtone, introduced by iTunes in 2007, was [redacted].[33] Furthermore, at a price of only [redacted] and a total

[30] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 45 ("The next major transformation of the music industry occurred with the shift from digital downloads to both interactive and non-interactive streaming services."); ¶ 65 ("More recently, the transition from downloads to streaming has further inhibited royalty payments."); ¶ 69 ("Second, more recently, the transition from downloads to streaming appears to have further limited royalty payments, and dissatisfaction regarding compensation to publishers and songwriters is a widely recognized phenomenon.").

[31] Verizon Wireless, a mobile telecommunications provider, describes ringtones as "a fun way to customize your phone and show off your style while getting notified of incoming calls." See "Ringtones: How to Get and Use Them," Verizon Wireless, February 4, 2015.

[32] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 89.

[33] I note that this price consists of the price of $0.99 for a digital download in 2007 and the price to obtain the ringtone for $0.99, because the ringtones offered by iTunes may only be purchased after the ringtone's song is purchased. See "iPhone Ringtones Will Cost You," Josh Lowenson, CNET, June 27, 2007; and "Apple Unveils the iTunes Wi-Fi Music Store," Apple Press Info, September 5, 2007.

royalty to record companies and music publishers of [redacted], [redacted] would make only [redacted] per ringtone before accounting for any other costs. Thus, it is unlikely that [redacted] would make any profits on such a ringtone sale. Instead, if we assume a price of approximately $2.00 for a ringtone, [redacted] total royalty payment to [redacted] would be [redacted]; [redacted] would pass through [redacted] for the mechanical royalty for musical works, retaining [redacted]; and the sound recording to musical work royalty ratio would be [redacted] Furthermore, historically the average selling price of a ringtone for the entire industry has remained just below $2.50, with prices in 2006 as high as $3.50.[34] Based on the ringtone royalty terms in the [redacted] agreement, and assuming a retail price for ringtones of approximately [redacted] in 2015, the total royalty payment to the record label would be [redacted]; the record label would pass through [redacted] for the mechanical royalty for musical works, retaining [redacted]; and the sound recording to musical work royalty ratio would be [redacted]. These alternative calculations illustrate how Dr. Eisenach's [redacted] ratio is sensitive to his selective assumption of a [redacted] ringtone price.

36. Fourth, the payment of [redacted] for a ringtone, defined as "a phonorecord of a partial musical work,"[35] is significantly higher than the rate of $0.091 for PDDs, a full reproduction of a musical work. This makes little economic sense unless the economic context of ringtones is substantially different than that of digital downloads (and streaming). Given that Dr. Eisenach does not address these differences, ringtones are an invalid benchmark. Prior to the statutory regulation of ringtone payments in 2006, many ringtone sellers had entered into privately-negotiated licensing arrangements with publishers at rates well above the statutory rate for the

[34] Exhibit 5. For the $3.50 price, see "Ringtones: The Sound of Money," Paul R. La Monica, CNN Money, April 12, 2006.

full use of the song.[36] But in the ensuing rate setting proceeding before the CRB, music publishers were able to introduce the previously negotiated agreements as marketplace benchmarks, and as a result secured a much higher rate for ringtones than the rate for full songs.[37] Furthermore, in the proceeding it was determined that the ringtone and PDD markets "differ significantly in terms of the ultimate product consumed."[38]

d. Synchronization Rights Are Not Useful for Establishing a Benchmark Ratio

37. Dr. Eisenach's analysis also looks outside of the market for audio content altogether and considers audiovisual content licensing. Dr. Eisenach states: "While these licenses [synch and micro-synch licenses] do not apply to music streaming services as such, in my opinion they provide relevant benchmarks because they are negotiated completely outside the shadow of a compulsory license, and thus serve to establish a market-based lower bound on the ratio of sound

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[35] 37 CFR §385.2.

[36] Mechanical and Digital Phonorecord Delivery Rate Adjustment Proceeding, 71 Fed. Reg. 64,303, 64,308-09 (Nov. 1, 2006) (discussing "voluntary license agreements granting the labels the right to create ringtones at specified mutually-negotiated royalty rates.").

[37] Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, 74 Fed. Reg. at 4517-18; 4522 (explaining that those licenses constitute "valuable rate evidence from the marketplace for" ringtones but not for "other products at issue in this proceeding (*i.e.*, CDs and permanent downloads).").

[38] Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, 74 Fed. Reg. at 4518 ("While the proposed mastertone benchmark certainly offers valuable rate evidence from the marketplace for one of the types of products covered by the Section 115 license that is the subject of this proceeding (i.e., ringtones), it is much less persuasive when that benchmark is applied to the other products at issue in this proceeding (i.e., CDs and permanent downloads) that are, at best, only in small part similar in nature and ultimate consumer use. For example, although CDs and permanent downloads may be easily perceived as substitutes by consumers, it is unlikely that consumers would regard a CD as a very good substitute for a mastertone or vice versa. In short, we find that although substantial empirical evidence shows that sound recording rights are paid similar multiple times the amounts paid for musical works rights in most ringtone markets, that proposed benchmark evidence is far from dispositive of what the size of that multiple might be for other types of products such as CDs and permanent downloads. While similar sellers and sometimes even similar buyers might be participants in both the proposed benchmark ringtone market and the target CD and permanent downloads market, the benchmark and target markets differ significantly in terms of the ultimate product consumed.").

recording valuations to musical work valuations."[39] Dr. Eisenach uses synchronization licenses to establish his lower bound sound recording to musical work royalty ratio of [redacted].[40]

38. As an initial matter, if synchronization rights are truly a comparable economic context to streaming, why is the [redacted] ratio so much smaller than the ratio that Dr. Eisenach (and the other Copyright Owners' experts) settle on? The answer is that synchronization rights are not comparable to streaming and thus Dr. Eisenach is incorrect to suggest that they are.

39. Synchronization licenses are not comparable for interactive streaming licenses. The lack of comparability arises because synchronization differs in important economic respects from streaming. Synchronization rights pertain, for example, to music used in films, and the historical tradition of publishing rights and sound recording rights being valued equally arises from the particular conditions faced in that industry. The filmmakers may have a certain musical work in mind as a good fit for a particular scene in the film. The filmmakers always have the option of making their own sound recording of that musical work, and for this reason, cover songs are quite common in films.[41] Thus, the contribution (value) of the sound recording is less valuable as compared to the musical work in this particular market. Additionally, in the case of synchronization rights, the marketplace for these particular rights is more competitive than other music licensing contexts because individual musical works compete against one another for

[39] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 93.

[40] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶¶ 95, 98-99.

[41] Indeed, many television shows and films use cover songs. Cover songs are viewed as a "low-risk, high-reward option available to anyone with well-produced renditions of classic songs." See "Cash for Covers: Make Money Licensing Cover Songs for Film, TV, and Advertising and Collecting Performance Royalties," DIY Musician, April 19, 2011. Cover songs may even be more appealing to films since they can be customized to "give the audience something to grab onto within the first 10 seconds of hearing it." See "Why Are Movie Trailers Using So Many Creepy Pop Covers? A Music Director Explains," Slate, July 30, 2015.

inclusion in the final product (e.g., a film), as opposed to a streaming service where compositions are licensed to build a catalog of many works that can then be streamed to listeners.

40. Furthermore, the fact that these agreements are market-based is a reason why they are less relevant for purposes of establishing the Section 115 statutory rates for interactive streaming, contrary to Dr. Eisenach's opinion. Market-based benchmarks do not necessarily account for the 801(b)(1) factors and, thus, have an incomparability problem. In contrast, it is precisely the fact that certain statutory rates, including the renewal of the current Subpart A rates for PDDs, already account for the 801(b)(1) factors that make them more comparable than the markets rates contained in the synch and micro-synch agreements used by Dr. Eisenach.

e. Dr. Eisenach's Use of Google's YouTube Agreements with Publishers Is Inappropriate

41. Dr. Eisenach states that certain "YouTube agreements represent reasonably comparable benchmarks for the purpose of assessing the relative value of sound recordings and musical works rights."[42] Based on these YouTube agreements, Dr. Eisenach calculates a sound recording to musical work royalty ratio of [redacted]. His ratio is based on the following assumptions: (1) YouTube pays [redacted] of ad revenue for User Video[s] with commercial sound recording to publishers; (2) YouTube pays a total royalty of [redacted] of ad revenue to all content providers; and (3) this implies that YouTube pays [redacted] of ad revenue for User Video[s] with commercial sound recording to record labels.[43] Dr. Eisenach's ratio of [redacted] is equal to the [redacted] implied royalty paid to record labels divided by the [redacted] actual royalty paid to publishers for the supposedly

[42] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 100.

[43] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶¶ 101-102. I understand that Google has recently produced its YouTube agreements with record labels. I reserve the right to amend my opinions accordingly after I have had time to review these agreements.

comparable User Video[s] with commercial sound recording content. Dr. Eisenach's use of Google's YouTube agreements with publishers is flawed for several reasons.

42. First, Dr. Eisenach's analysis assumes that User Video[s] with commercial sound recording content is comparable to the audio-only, interactive streaming content that is subject to the Section 115 statutory rates. I disagree with Dr. Eisenach's conclusion on the comparability between these two types of content.

43. YouTube's publisher agreements define User Videos with Commercial Sound Recordings as [redacted][44] A User Video is defined as [redacted][45] In contrast, YouTube's publisher agreements define a Publisher Audio-Only Track, which is subject to the Section 115 statutory rates, as "[redacted]"[46] An Audio-Only Track is defined as "[redacted]

[44] GOOG-PHONOIII00002538 at 551.

[45] GOOG-PHONOIII00002538 at 550.

[46] GOOG-PHONOIII00002538 at 549.

[redacted] [47] User-posted, audio-visual content (i.e., User Videos with Commercial Sound Recordings) is not similar to an audio-only, interactive streaming content (i.e., Publisher Audio-Only Tracks). Furthermore, Dr. Eisenach completely ignores Publisher Audio-Only Tracks despite the fact that they are specifically addressed in the YouTube agreements. I note that consideration of the 10.5% royalty for Publisher Audio-Only Tracks, and the rates paid for the sound recordings associated with such tracks, generates a substantially higher sound recording to musical work royalty ratio that is in line with the ratio reflected in the existing Section 115 license.

44. Second, the publisher agreements reviewed by Dr. Eisenach also contain payment terms for other types of content, and Dr. Eisenach does not explain why these other forms of content are less comparable to the audio-only, interactive streaming content subject to Section 115. [48] For example, YouTube's publisher agreements require YouTube to pay [redacted] of ad revenue for "Publisher Label Videos," which are defined as [redacted]

[47] GOOG-PHONOIII00002538 at 547.

[48] Regarding record Label Videos, Dr. Eisenach notes that "because the label is likely also serving as the producer of the music video – and thus is providing additional value not at issue in this proceeding, it is not possible to discern the relative value of musical works rights and sound recording rights without evidence as to the relative value of video production." See Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, fn. 93. This may or may not be true, but in any event is also the case with User Videos, in which the uploader of the video also provides value through their video production. While users uploading videos to YouTube have been historically pegged to low-production value (through home-produced videos), that trend is less apparent with the increasing competitive nature of YouTube entertainers and the growth of YouTube as a standard medium. YouTube content creators (i.e., Users) have opted for higher production value in order to sustain and grow their audience base. See "Why Production Value Matters in Online Video," Valentina Vee, We Make Movies, February 23, 2015. User videos that feature music also compete with music videos with high post-production standards, such that "it has become a reality for all musicians that music videos on YouTube should look polished and visually striking…practically, this means synchronizing footage from multiple HD cameras, adding subtle visual FX …, and advanced color grading to get visual consistency throughout." See "Post-production tips for Youtubers," Videopixie, October 12, 2013.

[redacted]."[49] A Label Video is defined as "[redacted][50] I note that using the 10% royalty for Publisher Label Videos, and the corresponding royalty rates for the sound recordings embodied in such videos, generates a substantially higher sound recording to musical work royalty ratio that is in line with the ratio reflected in the existing Section 115 license. The higher ratios derived from Publisher Audio-Only Tracks and Publisher Label Videos illustrates the unreliable nature of Dr. Eisenach's ratio based solely on User Videos with Commercial Sound Recordings, which are not comparable to the interactive music streaming services subject to Section 115.

45. Third, the [redacted] (assumption) and [redacted] of ad revenue rates that form the basis of Dr. Eisenach's [redacted] ratio are both market rates that do not necessarily account for the 801(b)(1) factors and, thus, have an incomparability problem for purposes of establishing the Section 115 statutory rates for interactive streaming. Furthermore, although Dr. Eisenach states that the ratio based on the YouTube agreements "reflects the relative valuations of sound recording and musical works rights arrived at in free market negotiations," several of the Copyright Owners' other witnesses in this proceeding have suggested the YouTube licenses Dr. Eisenach relies on are not the result of a truly unregulated market.[51] In contrast, it is precisely the fact that certain

[49] GOOG-PHONOIII00002538 at 550.

[50] GOOG-PHONOIII00002538 at 548.

[51] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 102; Witness Statement of Peter S. Brodsky, October 28, 2016, ¶ 108 (stating that both the record labels and music publishers [redacted]

statutory rates already account for the 801(b)(1) factors, including the renewal of the current Subpart A rates for PDDs, that make them more comparable than the markets rates contained in the YouTube agreements used by Dr. Eisenach.

46. Fourth, when constructing his [redacted] ratio, Dr. Eisenach relies on an inaccurate assumption concerning sound recording royalty rates for user generated videos. Though Dr. Eisenach assumes that the payment to sound recording rights holders for this category of content would always be [redacted], the actual rates paid by YouTube to record labels vary according to the terms of YouTube's different sound recording contracts.[52] In many cases, the sound recording rates are higher than suggested by Dr. Eisenach, and thus the corresponding ratio of sound recording payments to publishing payments is also higher.

f. Dr. Eisenach's Use of [redacted] Agreements for Non-Interactive Services Is Inappropriate

47. According to Dr. Eisenach:

> [redacted] While their right to do so was in question throughout most of the ensuing five years, the agreements nevertheless were negotiated with at least some expectation that they would not be subject to rate court review. Moreover, the markets and parties involved in the [redacted] agreements are comparable to the markets and parties involved in the Section 115 licenses at issue here. Thus, these agreements provide significant insight into the relative value of the sound recording and musical works rights in this proceeding.[53]

[redacted] See also Witness Statement of David Kokakis, October 28, 2016, ¶ 102.

[52] GOOG-PHONOIII-0004017-GOOG-PHONOIII-00005323.

[53] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 103.

Dr. Eisenach calculates the annual midpoint rate of musical work royalties based on [redacted]. These results are presented in his Table 6, produce a ratio range for sound recordings and musical works from [redacted] in 2012 to 4[redacted] in 2018 with a general downward trend.[54] Dr. Eisenach states: "Had DOJ decided otherwise – i.e., if the shadow of the compulsory license had been lifted permanently and completely – it is reasonable to expect that the adjustment towards equilibrium, market-based rates would have continued."[55] As a result, Dr. Eisenach "performed a simple linear regression to forecast how musical work payments as a share of sound recording payments would have progressed if the potential for re-imposition of the compulsory license that affected negotiated rates from 2012-2018 had been removed entirely."[56] Based on his regression results, Dr. Eisenach forecasts the ratio of sound recording to musical works royalties to decrease from [redacted], with an average ratio over the five-year period equal to [redacted].[57] Dr. Eisenach's use and analysis of [redacted] with publishers is flawed for several reasons.

48. First, in using just the headline rates from the opt-out agreements that Dr. Eisenach has reviewed, he relies on the assumption that the midpoint of the rates from these agreements is an accurate representation of the actual market rates paid by [redacted] to publishers for musical works. However, an alternative approach to avoid the assumptions made by Dr. Eisenach is instead to rely on [redacted] for the musical work payments, as found in their 10-K reports. To quote Dr. Eisenach, "from an economic perspective, the most relevant and reliable information is not the schedule of prices that may have been agreed to but rather the price

[54] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, Table 6.

[55] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 126.

[56] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 127.

actually paid."[58] Using the actual market rates for musical work payments as a percentage of revenue reported by [redacted] in its 10-K, I re-calculated the ratio of sound recording to musical work royalties presented in Dr. Eisenach's Table 6. I also corrected Dr. Eisenach's mistake for 2012 and 2013 by using [redacted]s content costs and revenue values for these years as reported in Pandora's 10-K covering these years. This resulted in the following ratios compared to Dr. Eisenach's ratios: (1) 2012: [redacted] ratio; (2) 2013: [redacted]; (3) 2014: [redacted] versus Dr. Eisenach's [redacted] ratio; and (4) 2015: [redacted] ratio.[59] Note that in all of these years Dr. Eisenach's ratio is lower than the calculated ratio based on [redacted]s actual data presented in its 10-Ks.

49. Second, Dr. Eisenach assumes that the ratios of sound recording to musical work royalties reached in [redacted] with music publishers, which range from [redacted], do not already reflect "equilibrium, market-based rates." Put another way, Dr. Eisenach is of the opinion that, absent the DOJ's decision to not permit withdrawals by publishers, the ratio of sound recording to musical work royalties would continue to decline towards some hypothetical equilibrium, market-based level. Dr. Eisenach does not offer any evidence to support his claim that adjustment toward equilibrium, market-based rates would have continued beyond 2018, or what the equilibrium, market-based rate would actually be. An alternative interpretation, one that Dr. Eisenach does not address, is that the ratio of sound recording to musical work royalties has already settled at a

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[57] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 128, Table 8.

[58] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 145.

[59] Exhibit 6.

market-based equilibrium in the range of [redacted].

50. I note that the recent drop in the ratio of sound recording to musical work royalties based on [redacted] with music publishers is a result, in part, of the publishers exercising market power and the significant uncertainty that existed in the market with respect to the repeated withdrawals by publishers from ASCAP and BMI. As noted in judicial opinions and Department of Justice filings, [redacted] was subjected to systematic attempts by publishers to raise [redacted] through either partial or very temporally short withdrawals of catalog from BMI and ASCAP. Publishers had on several occasions withdrawn their rights from either BMI or ASCAP with the aim of using their market power to extract public performance rates well above long-standing rates for non-interactive services.[60] After the courts stymied publishers' partial withdrawals, publishers petitioned the Department of Justice in an attempt to amend the ASCAP and BMI consent decrees to allow for such partial withdrawals of catalog from ASCAP and BMI. Notably, even the [redacted] would have been negotiated while that DOJ review was pending and the possibility of future partial withdrawals of catalog from ASCAP and BMI was being weighed by the DOJ.[61] I understand from testimony provided by [redacted] that, in negotiating the opt-out rates that Dr. Eisenach relies upon, publishers used uncertainty and the threat of future withdrawals, including full withdrawals, from ASCAP and

[60] See, e.g., In re Petition of Pandora Media, Inc., Nos. 12 Civ. 8035(DLC), 41 Civ. 1395(DLC) (S.D.N.Y. 2014), p. 97 (Noting that following partial withdrawals, "Sony and UMPG each exercised their considerable market power to extract supra-competitive prices."). Because of the uncertainty and exercise of market power inflicted by the withdrawals, the ASCAP rate court ultimately did not consider publishers' direct agreements with Pandora as benchmarks in setting a public performance rate for Pandora. See id. At 105-06 ("UMPG's 7.5% industry-wide rate implied an ASCAP rate of 3.42%. This was even higher than the ASCAP rate for interactive music services, which was set at 3.00%. If there was one principle regarding rate structure on which the parties agreed at trial it was that the rate for customized radio should be set below the rate for on-demand interactive services.").

BMI to extract supracompetitive rates from [redacted].[62] The large degree of uncertainty surrounding the [redacted] agreements contradicts any suggestion by Dr. Eisenach that the rates reflected in the agreements reflect a fair market-based equilibrium.

51. Third, Dr. Eisenach's projection into the future assumes, without any basis, that the same historical trend from 2012 to 2018 in the ratio of sound recording to musical work royalties (as calculated by Dr. Eisenach) would continue into the future (i.e., through 2022 and beyond). However, I understand that the recent Web IV decision increased the sound recording rates and, therefore, calls into question whether the ratio of sound recording to musical work royalties will continue to decline.[63] [redacted][64] As a result, it is possible that musical works rates are less likely to increase in the future, again calling into question whether the ratio of sound recording to musical work royalties will continue to decline.

52. Dr. Eisenach's projection into the future also assumes that the ratio of sound recording rates to musical work rates is a function of only one factor – the time trend. It is incorrect to assume that this historical trend in the ratio is the only factor affecting the ratio; the ratio in the future may also be affected by many other factors including, for example, future technological innovations made by service providers that would affect both the future sound recording and

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[61] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 123.

[62] [redacted]

[63] In re Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (2016-2002), December 16, 2015, p. 1.

musical work royalties paid by these providers to rightsholders (i.e., record labels and publishers). Additionally, I note that Dr. Eisenach uses only forecasted ratios to derive his average ratio of [redacted] for the period from 2018-2022, and chooses to ignore in his average calculation the actual ratio for 2018 of [redacted], which is higher than his forecasted ratio of [redacted] for the same year. Dr. Eisenach does not explain why it is more appropriate to use a forecasted ratio for 2018 when, in fact, he has the actual 2018 ratio based on [redacted] actual agreements with music publishers.

53. Fourth, the ratios calculated by Dr. Eisenach based on the [redacted] opt-out agreements compare regulated sound recording rates determined under the willing buyer/willing seller standard with regulated musical work rates subject to the ASCAP/BMI consent decrees. Therefore, neither of these rates necessarily account for the 801(b)(1) factors and, thus, have an incomparability problem for purposes of establishing the Section 115 statutory rates for interactive streaming. As discussed previously, in contrast, it is precisely the fact that certain statutory rates already account for the 801(b)(1) factors, including the renewal of the current Subpart A rates for PDDs, that make them more comparable for purposes of establishing the Section 115 rates.

5. Dr. Eisenach's Methods and Corresponding Calculations for Estimating the Royalty for the Mechanical Right for Musical Works Are Unreliable

a. Method 1 (Per Play)

54. As previously discussed, Dr. Eisenach's Method 1 assumes that the difference between rates paid for sound recordings for interactive streaming services and rates paid for sound recordings for non-interactive streaming services represents an implicit rate for mechanical rights

[64] [redacted]

for sound recordings. Dr. Eisenach calculates the rates paid for sound recordings for interactive streaming services for different interactive streaming service providers (i.e., an average of [redacted] and calculates the average rates paid for sound recordings for non-interactive streaming services (i.e., [redacted]). He then divides the difference between these two figures by the ratios of sound recording to musical work royalty payments derived from his benchmarks (with a focus on the YouTube and [redacted]) to calculate an implied rate for mechanical rights for musical works. Dr. Eisenach's Method 1 results in a range of implied rates for mechanical rights for musical works of [redacted].[65] In addition to the issues discussed in the previous sections regarding the lack of comparability of Dr. Eisenach's benchmark ratios of sound recording to musical work royalty payments, Dr. Eisenach's Method 1 suffers from further errors and is unreliable.

55. First, Dr. Eisenach's underlying assumption for his Method 1—"the difference between the all-in sound recording royalty for interactive services and the performance-only sound recording royalty (i.e., 20 cents/hundred streams)…is the implicit mechanical rate for sound recordings"[66]—makes no economic sense. Both of these figures represent the rates paid by service providers for all of the sound recording rights necessary (i.e., all-in rights) to stream music interactively and non-interactively, respectively. As discussed in my opening reports, mechanical and performance rights are perfect complements—neither has value without the other and there is no meaningful economic way to allocate musical work royalties between public performance and mechanical rights. Therefore, it is most meaningful to talk about an "all-

[65] Expert Report of Jeffrey A. Eisenach, October 31, 2016, ¶¶ 140-141, 151-153.

[66] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 141.

in" rate for musical works.[67] Service providers view these two rights as a single bundle to be licensed at the same time, and a service is only concerned with securing whatever rights in sound recordings are necessary for streaming. Therefore, the difference between these two figures does not represent some hypothetical mechanical-only, sound recording right. Instead, it represents a difference in the value of a sound recording between when it is offered in an interactive streaming service and when it is offered in a non-interactive streaming service (this difference in value, in turn, is related to differences in consumer willingness-to-pay for the two types of services). While Dr. Eisenach assumes, without any support, that the rates paid for public performance rights for sound recordings by interactive service providers and the rates paid for public performance rights for sound recordings by non-interactive service providers are equal, this is inconsistent with another of his opinions that that there is incremental value in interactivity:

[67] However, to the extent that a separate mechanical-only rate exists, one approach to identifying such a rate would be to look to Sections 112 and 114, where I understand that the server copy (i.e., mechanical) is valued at 5% of the overall (i.e., mechanical plus public performance) payment. See *In re* Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), Docket No. 14-CRB-0001-WR (2016-2020), December 16, 2015, pp. 191-192 ("The Judges accept SoundExchange's proposal to continue the current bundling of the Section 112 and 114 rates. The Judges find persuasive the designated testimony of Dr. Ford and the license agreements that SoundExchange cites in its PFFCL that willing buyers and willing sellers would prefer that the rates for the two licenses be bundled and that they would be agnostic with respect to the allocation of those rates to the Section 112 and 114 license holders. The Judges also find that the minimum fee for the Section 112 license should be subsumed under the minimum fee for the Section 114 license, 5% of which shall be allocable to the Section 112 license holders, with the remaining 95% allocated to the Section 114 license holders."); and 200 ("In accordance with the Judges' analysis *supra*, section VII, the royalty rate for ephemeral recordings under 17 U.S.C. § 112(e) applicable to commercial webcasters shall be included within, and constitute 5% of the royalties such webcasters pay for performances of sound recordings under section 114 of the Act."). See also Statement of Marybeth Peters The Register of Copyrights before the Subcommittee on Courts, The Internet and Intellectual Property of the House Committee on the Judiciary, United States House of Representatives, 108th Congress, 2d Session, March 11, 2004, p. 23 ("I can also see no justification for providing a compulsory license which covers ephemeral reproductions of sound recordings needed to effectuate a digital transmission and not providing a similar license to cover intermediate copies of the musical works embodied in these same sound recordings, but that is what Section 112 does in its current form. Parallel treatment should be offered for both the sound recordings and the musical works embodied therein, which are part of a digital audio transmission.").

> In 2015, Spotify paid about [redacted] in sound recording rights for about [redacted], or about [redacted] for its ad-supported interactive service. This rate is essentially equal to the ad-supported rate paid by statutory webcasters for non-subscription uses (which was $0.14 per 100 plays for pureplay webcasters such as Pandora in 2015 and was set to $0.17 per 100 plays starting in 2016). That is, if this rate were taken at face value, it would indicate that there is essentially no value in interactivity, which cannot be the case.[68]

This is also inconsistent with the Pandora v. ASCAP decision.

- "Because ASCAP considers its music to be more valuable to the services it classifies as interactive, it has licensed them at a higher rate than non-interactive services."[69]
- "the historical division between interactive and non-interactive internet music services requires that Pandora be licensed well below the 3.0% rate at which ASCAP licenses interactive music services."[70]
- "If there was one principle regarding rate structure on which the parties agreed at trial it was that the rate for customized radio should be set below the rate for on-demand interactive services."[71]

56. Thus, what Dr. Eisenach claims is a hypothetical mechanical royalty is in fact just the difference in the value of a sound recording in the context of interactive streaming. Dr. Eisenach does not address this issue. Additionally, the sound recording royalty rates for interactive services are set in a market not subject to the 801(b)(1) factors or other regulatory constraints and reflect the exercise of market power by record companies, while the sound recording royalty rates for non-interactive services are set under the willing buyer, willing seller standard by the CRB. Therefore, a comparison of these two types of rates may not be an apples-to-apples comparison, and further does not reflect the considerations of the 801(b)(1) factors.

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[68] Expert Report of Jeffrey Eisenach, October 31, 2016, fn. 127.

[69] In Re Petition of Pandora Media, Inc. related to United States of America v. American Society of Composers, Authors, and Publishers, 12 Civ. 8035 (DLC), 41 Civ. 1395 (DLC), March 14, 2014, p. 32.

[70] In Re Petition of Pandora Media, Inc. related to United States of America v. American Society of Composers, Authors, and Publishers, 12 Civ. 8035 (DLC), 41 Civ. 1395 (DLC), March 14, 2014, p. 91.

[71] In Re Petition of Pandora Media, Inc. related to United States of America v. American Society of Composers, Authors, and Publishers, 12 Civ. 8035 (DLC), 41 Civ. 1395 (DLC), March 14, 2014, p. 106.

57. Second, Dr. Eisenach's actual calculation of the sound recording royalty payments to record labels for certain interactive streaming service providers is unreliable. Dr. Eisenach improperly excludes [redacted] paid for sound recording rights in his calculations for Method 1 "[b]ecause the bargains between [redacted] [and] in my opinion they do not constitute reliable benchmarks and I do not include them in the calculations below."[72] [redacted], Dr. Eisenach's weighted average sound recording rate per 100 plays across the interactive service providers that he considers artificially increases from [redacted].[73] Dr. Eisenach provides no reliable evidence that the rates negotiated between [redacted]"[74] In fact, [redacted] are in line with Rhapsody's rates,[75] and Rhapsody is not owned by any record labels.[76] I note that another of the Copyright Owners' experts in this matter, Dr. Rysman, does not exclude [redacted] from his calculations.[77] Furthermore, Dr. Eisenach is inconsistent in his decision to exclude the rates from service providers that are partially owned by record labels. For example, Deezer, which has some of the higher rates in Dr. Eisenach's calculation and which he does not remove from his calculation, is partially owned by Sony,

[72] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 150.

[73] Expert Report of Jeffrey Eisenach, October 31, 2016, Table 11.

[74] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 150.

[75] Expert Report of Jeffrey Eisenach, October 31, 2016, Table 11.

[76] As of 2015, RealNetworks owned 43% of issued and outstanding common stock of Rhapsody. See RealNetworks 2015 Form 10-K. Additionally, Crunchbase, an aggregator of private company information, acknowledges three investors of Rhapsody – Columbus Nova Technology Partners, Real Networks, and Telefonica, https://www.crunchbase.com/organization/rhapsody#/entity.

[77] Expert Report of Marc Rysman, October 28, 2016, Table 1, ¶ 66.

Universal Music, and Warner,[78] [redacted].[79] Tidal, which also has some of the higher rates in Dr. Eisenach's calculation and which he does not remove from his calculation, is known for being owned by successful recording artists, and is also reported in 2015 to be partially owned by record labels.[80] Dr. Eisenach offers no explanation for why [redacted] should be removed from his calculations, while service providers such as Deezer and Tidal, which have some of the higher sound recording rates, should remain in the calculations. Based on Dr. Eisenach's calculations in his Table 11, the appropriate weighted average sound recording rate per 100 plays should include [redacted]

58. Dr. Eisenach also chooses to exclude from his calculation ad-supported interactive streaming service providers even though there is data available to calculate their effective sound recording rates from the sources that he uses to calculate the rates for the other service providers in his Table 11. [redacted] s:

> The data indicate that the rate [redacted]. This rate is

[78] "Music streaming service Deezer plans Paris listing," Leila Abboud, Reuters, September 22, 2015: "Three music labels, Warner Music, Sony Music and Universal Music, part of Vivendi, together own about 15 percent of the shares."

[79] "Sony BMG, Universal Music, Warner Music, EMI and Merlin…bought at the time in to Spotify – for a pittance." See "This Is Quite Possibly The Spotify Cap Table," TechCrunch, August 7, 2009. "Warner, along with the other big music labels, owns minority equity stakes in services like Spotify and Soundcloud…" See "Warner Music Says it Will Share Its (Theoretical) Spotify Payday with its Artists," Recode, February 4, 2016.

[80] "Jay Z on Competing With Jimmy Iovine: 'I Don't Have To Lose...For You Guys To Win'," Tony Gervino and Andrew Hampp, Billboard, March 30, 2015: "[16 artists] are believed to have been gifted 3% equity in the company, with the remaining stakes owned by Jay Z, another investor and the record labels."

[redacted] to the ad-supported rate paid by statutory webcasters for non-subscription uses (which was $0.14 per 100 plays for pureplay webcasters such as Pandora in 2015 and was set to $0.17 per 100 plays starting in 2016). That is, if this rate were taken at face value, it would indicate that there is essentially no value in interactivity, which cannot be the case. In my opinion, [redacted] Further, in my opinion it would not be appropriate to base a rate on an average that included non-subscription services. Using a lower, blended rate would risk causing the sort of disruption I have discussed above – a rate that is too low for subscription services could lead to disruptive and distortionary changes in the interactive service segment, but a rate that may be too high for non-subscription services would not, simply because of the asymmetric nature of those risks.[81]

I disagree with Dr. Eisenach's reasons for excluding ad-supported, free services, [redacted] As discussed above, [redacted] —both Deezer and Tidal are partially owned by record labels— [redacted] Rhapsody's subscription-based rates, and Rhapsody is not owned by record labels. With regards to [redacted] ad-supported service, Dr. Eisenach's statement that "it would not be appropriate to base a rate on an average that included non-

[81] Expert Report of Jeffrey Eisenach, October 31, 2016, fn. 127.

subscription services" makes no economic sense.[82] The Copyright Owners' proposal does not differentiate between subscription-based or ad-supported services; in other words, subscription and ad-supported services pay the same per-play or per-user rate. Therefore, it does make sense to base the proposed "one size fits all" rate on a blended rate that accounts for both the rates that subscription services and ad-supported services have been paying. Therefore, in my opinion it is incorrect to exclude the ad-supported services from Dr. Eisenach's calculations. Including the ad-supported service providers available in the data used by Dr. Eisenach [redacted] results in a weighted average sound recording rate per [redacted]

59. Dr. Eisenach also does not include in his calculations several subscription-based interactive streaming service providers even though there is data available to calculate their effective sound recording rates from other sources available in this proceeding. These paid subscription service providers include, for example, Rdio and Slacker. Including the paid subscription service providers and ad-supported service providers for which data is available in Dr. Eisenach's calculations, and including Spotify (both its paid subscription and ad-supported service), [redacted]

60. Applying the corrected sound recording per-play rate of [redacted] per 100 plays, and the comparable sound recording to musical work royalty ratios of [redacted] of sound recording payments based on the current Section 115 regulations), [redacted] of sound recording payments based on the 2006 Subpart A benchmark), and [redacted] of sound recording

[82] Expert Report of Jeffrey Eisenach, October 31, 2016, fn. 127.

[83] Exhibit 2a.

[84] Exhibit 2a.

payments based on the 2015 Subpart A benchmark), results in the corrected musical work mechanical right royalty rates based on Dr. Eisenach's Method 1 presented in Exhibit 2e. Note that the results are all substantially lower than the Copyright Owners' proposal of $0.0015 per play.

b. Method 2 (Per Play)

61. As previously discussed, Dr. Eisenach's Method 2 divides the rates paid for sound recordings for interactive streaming services for different interactive streaming service providers (i.e., an average of [redacted] per 100 plays, [redacted]) by the ratios of sound recording to musical work royalty payments derived from his benchmarks (with a focus on the YouTube and [redacted] benchmarks) to calculate an implied all-in rate for musical works. Then, he subtracts from this result the public performance rates paid for musical works (i.e., an average of [redacted] per 100 plays, [redacted], calculated using the same data as for his calculation of the [redacted] per 100 plays sound recording rate) to calculate an implied rate for mechanical rights for musical works. Dr. Eisenach's Method 2 results in a range of implied rates for mechanical rights for musical works of [redacted] per 100 plays (i.e., [redacted] per play) to [redacted] per 100 plays (i.e., [redacted] per play).[85] In addition to the issues discussed in the previous sections regarding the lack of comparability of Dr. Eisenach's benchmark ratios of sound recording to musical work royalty payments, Dr. Eisenach's Method 2 suffers from further errors and is unreliable.

62. First, the all-in sound recording royalty rates for interactive services are set in a market not subject to the 801(b)(1) factors or other regulatory constraints and reflect the exercise of market power by record companies, and therefore are not appropriate benchmarks to use to

[85] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶¶ 142-143, 154-158.

calculate the mechanical musical work royalty rates, which should reflect the considerations of the 801(b)(1) factors.

63. Second, Dr. Eisenach's Method 2 relies on the same calculation of the sound recording royalty payments to record labels for certain interactive streaming service providers used in his Method 1, and therefore, suffers from the same errors discussed above—i.e., a more appropriate rate would include all available data for paid subscription and ad-supported service providers, including Spotify.

64. Third, Dr. Eisenach also makes mistakes in his calculation of the musical work public performance royalty payments for certain interactive streaming service providers. Specifically, he inappropriately (1) [redacted] paid subscription service ([redacted] per 100 plays[86]); (2) excludes ad-supported interactive streaming service providers, [redacted]; and (3) does not include paid subscription interactive streaming service providers for which data is available. Including [redacted] and the ad-supported service providers for which data is available from the sources used by Dr. Eisenach, changes Dr. Eisenach's weighted average musical work public performance rate per 100 plays to [redacted].[87] Including Spotify (both its paid subscription and ad-supported service), and the ad-supported and paid subscription service providers for which data is available, further changes Dr. Eisenach's weighted average musical work public performance rate per 100 plays to [redacted][88]

[86] Expert Report of Jeffrey Eisenach, October 31, 2016, Table 13.

[87] Exhibit 2b.

[88] Exhibit 2b.

65. Applying the corrected sound recording per-play rate of [redacted] per 100 plays, the corrected musical work public performance per-play rate of [redacted] per 100 plays, and the comparable sound recording to musical work royalty ratios of [redacted] of sound recording payments based on the current Section 115 regulations), [redacted] of sound recording payments based on the 2006 Subpart A benchmark), and [redacted] of sound recording payments based on the 2015 Subpart A benchmark), results in the corrected musical work mechanical right royalty rates based on Dr. Eisenach's Method 2 presented in Exhibit 2f. Note that the results are all substantially lower than the Copyright Owners' proposal of $0.0015 per play.

c. Method 2 (Per User)

66. Dr. Eisenach also uses his Method 2 to analyze the Copyright Owners' $1.06 per user proposal. "I implement Method 2, except that the magnitudes are expressed on a per-user basis rather than a per play basis."[89] Dr. Eisenach's Method 2 on a per-user basis suffers from similar errors as his Method 2 on per-play basis and is, therefore, unreliable.

67. For example, Dr. Eisenach inappropriately (1) [redacted] service and various other paid subscription services that he considered in his Method 2 per-stream analysis (see Dr. Eisenach's Tables 11 and 13); (2) [redacted] and (3) does not include paid subscription interactive streaming service providers for which data is available. [redacted], and the other ad-supported service providers for which data is available from the sources used by Dr. Eisenach, changes Dr.

[89] Expert Report of Jeffrey Eisenach, October 31, 2016, ¶ 159.

Eisenach's weighted average sound recording rate per user to [redacted]; and changes his weighted average musical work public performance rate per user to [redacted].[90] Further including the additional ad-supported and paid subscription service providers for which data is available changes Dr. Eisenach's weighted average sound recording rate per user to [redacted]; and changes his weighted average musical work public performance rate per user to [redacted].[91]

68. Applying the corrected sound recording per-user rate of [redacted], the corrected musical work public performance per-user rate of [redacted], and the comparable sound recording to musical work royalty ratios of [redacted] of sound recording payments based on the current Section 115 regulations), [redacted] of sound recording payments based on the 2006 Subpart A benchmark), and [redacted] of sound recording payments based on the 2015 Subpart A benchmark), results in the corrected musical work mechanical right royalty rates based on Dr. Eisenach's Method 2 presented in Exhibit 2f. Note that the results are all substantially lower than the Copyright Owners' proposal of $1.06 per user.

6. Dr. Eisenach's Opinion that the Current Section 115 Statutory Rates Act as a Ceiling, But Not a Floor, for the Rates Actually Paid by Interactive Music Service Providers Is Incorrect

69. Dr. Eisenach states the following opinion with regards to the current Section 115 statutory rates acting as a ceiling, but not a floor, for the actual rates paid by interactive streaming service providers.

> Under the Section 115 compulsory license, rightsholders are not permitted to withhold a license from a licensee who is prepared to pay the statutory rates. Licensees, on the other hand, have the option of not taking a license. The practical effect of this aspect of the compulsory license is that, if the rates and terms in the statutory license establish a higher value for the license than licensees

[90] Exhibits 2c-2d.

[91] Exhibits 2c-2d.

> are willing to pay, licensees have the legal right to walk away from the statutory rate and force a renegotiation of terms. In this circumstance, both parties would have an incentive to agree to a lower but still mutually beneficial rate. By contrast, if the statutory rate is set "too low," licensors have an incentive to negotiate different terms, but they lack legal standing to force a renegotiation. As the Copyright Office puts it, "while copyright owners and users are free to negotiate voluntary licenses that depart from the statutory rates and terms, in practical effect the CRB-set rate acts as a ceiling for what the owner may charge."[92]

70. Dr. Eisenach's opinion is based on the assumption that an interactive streaming service provider could threaten "to walk away from the statutory rate and force a renegotiation." A threat has an effect on the outcome of a negotiation only if it is "credible" as that term is used in the game theory literature. However, an interactive streaming service provider's threat to walk away from the statutory rate in negotiations likely would not be credible because it would mean foregoing offering a streaming service entirely or having a less attractive service offering than competing interactive streaming service providers that had already accepted the statutory rate. Thus, the statutory rate likely acts as both a ceiling and a floor for the actual rates paid by interactive music streaming service providers. The conclusion that the statutory rate acts a floor is consistent with the testimony of Google's Zahavah Levine, who described 10.5% of service revenue as currently defined as representing the "floor" for publishers in negotiations with Google; that is, it has been the copyright owners, not Google, that have used the Section 115 compulsory license as leverage in the negotiations.[93]

71. Dr. Eisenach's opinion is also based on the assumption that "if the statutory rate is set 'too low,' licensors have an incentive to negotiate different terms, but they lack legal standing to force a renegotiation." However, Dr. Eisenach ignores two potential actions that the copyright

[92] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 29.

owners could take to force a renegotiation. First, if the copyright owners/publishers believed that they were not being properly compensated for the mechanical rights for their musical works, then they could threaten to walk away from the negotiation for the public performance rights for their musical works. Indeed, I understand that publishers have threatened to withdraw from ASCAP and BMI and negotiate directly with the service providers for musical work public performance rights. Second, as discussed in my opening reports, the major record labels share common corporate ownership with the major music publishers.[94] When a single entity controls the musical work rights and sound recording rights, and that entity believes it is not being properly compensated for the mechanical rights for their musical works, the entity could threaten to walk away from the negotiation for the sound recording rights. Thus, it is clear that the current statutory rates can also act as a floor for what the copyright owners may charge.

7. Dr. Eisenach Incorrectly Attributes Certain Changes in the Overall Music Industry to Interactive Streaming

72. Dr. Eisenach discusses extensively the changes in the music industry that "have limited compensation to rightsholders by transforming the quantity and means by which consumers access music."[95] But the changes discussed by Dr. Eisenach cannot be attributed to interactive streaming as Dr. Eisenach suggests. One of the changes addressed by Dr. Eisenach is "[t]he transition from physical to digital formats [that] has shifted sales from albums to singles, meaning that rather paying 91 cents for a 10-song album containing one or two very popular songs and eight or nine less popular ones, consumers often purchase just the few popular

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[93] Written Direct Testimony of Zahavah Levine (On behalf of Google Inc.), October 31, 2016, ¶ 49.

[94] In fact, of the top 15 songs on Billboard's "Hot 100" list, 11 songs have overlap in the affiliated record label and music publisher ownership. Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶ 18; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶ 18; "The Hot 100," Billboard, http://www.billboard.com/charts/hot-100, last accessed February 9, 2017.

songs."[96] I note, first, that this statement refers to changes brought about by digital downloads, not streaming, and, second, that the phenomenon being discussed represents an increase in consumer welfare.

73. As I discussed in my opening reports, Apple's launch of the iTunes Music Store in April 2003 broke up the record industry's long-standing, preferred product bundle, the album, and allowed customers to legally buy just the songs they wanted.[97] While this change may have impacted industry revenues, it was not related to interactive streaming. As illustrated in Exhibit 6a of my opening reports, between 2005 and 2010 total U.S. music industry revenues declined by 43% from $12.3 billion to $7.0 billion. This decline in revenues was predominantly driven by the decline in revenues from CD sales, which were $10.5 billion in 2005 but decreased to $3.4 billion in 2010. Exhibit 6a also shows that between 2005 and 2010, CD unit sales declined from 705.4 million shipments to 253.0 million shipments, while Download Single unit sales increased from 366.9 million shipments to 1,177.4 million shipments. Therefore, between 2005 and 2010, the decline in total U.S. music industry revenues was a result, in large part, of consumers switching from purchasing CDs (bundled albums) to individual tracks due to the unbundling of albums and the rise of digital download services such as iTunes. Services such as iTunes enabled consumers to purchase and download individual tracks rather than being limited to purchasing only the entire album, a factor which resulted in declining music industry revenue as

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[95] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 65.

[96] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 65.

[97] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶¶ 105-106; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶¶ 107-108; "iTunes Store at 10: How Apple Built a Digital Media Juggernaut," The Verge, April 26, 2013.

the increased sales of individual tracks did not offset losses from full album sales.[98] It is important to note that consumers benefited substantially from this development.

74. In summary, the shift from consumers purchasing bundled albums to unbundled individual tracks, which led to a decrease in total U.S. music industry revenues, had nothing to do with interactive music streaming services. As a result, there is no valid economic reason that the Copyright Owners' proposal for the Section 115 statutory rates should compensate publishers for the shift from bundled albums to unbundled individual tracks that was caused by factors other than interactive streaming, including the popularity of download services such as iTunes, as suggested by Dr. Eisenach.[99]

75. Dr. Eisenach also states that "[m]ore recently, the transition from downloads to streaming has further inhibited royalty payments."[100] As I discussed in my opening reports (see Exhibit 6b of my opening reports) after falling steadily after 1999, starting in 2010 the downward trend leveled off, and total U.S. music industry revenues have remained relatively flat despite revenues from CD sales continuing to decline and revenues from Download Single sales remaining relatively flat. It is important to note that the reason that total U.S. music industry revenues have remained relatively constant since 2010 is because revenues from music streaming services—captured in categories including Paid Subscriptions, payments to SoundExchange, and free On-

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[98] Elberse, Anita, "Bye-Bye Bundles: The Unbundling of Music in Digital Channels," *Journal of Marketing* 74, no. 3 (May 2010), p. 108; "More Artists Steer Clear of iTunes," The Wall Street Journal, August 28, 2008; "Who Killed the Music Industry," Pando, August 5, 2013; "A Decade of iTunes Singles Killed the Music Industry," CNN Money, April 25, 2013.

[99] I note that Dr. Eisenach acknowledges that the shift from albums to singles was caused, in part, by iTunes. "First, the growth of digital music distribution that began with the iTunes Music Store has resulted in an increase in sales of individual tracks relative to albums." Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 66.

[100] Expert Report of Jeffrey A. Eisenach, Ph.D., October 31, 2016, ¶ 65.

Demand Streaming[101]—have all increased substantially since 2010. As a result, interactive streaming has, in fact, been a source of increasing royalty payments in recent years, putting an end to what had been a downward trend, rather than inhibiting royalty payments as Dr. Eisenach suggests.

76. Goldman Sachs' October 4, 2016 report titled, "Music in the Air: Stairway to Heaven," provides support for the conclusion that interactive streaming has been a positive development for the overall music industry (including for publishers).[102]

- "The music industry is on the cusp of a new era of growth after nearly two decades of disruption. The rising popularity and sophistication of streaming platforms like Spotify and Pandora is ushering in a second digital music revolution – one that is creating value rather than destroying it like the piracy and unbundling that came before."[103]
- "We believe new technology changes such as the emergence of internet radio and music streaming are driving a new era of growth for the recorded music industry. New tech enablers such as Spotify, Apple or Pandora have disentangled music content from its delivery. The resulting convenience, accessibility and personalization has driven more consumption of legal music and greater willingness to pay for it, at a time of improving connectivity and growing consumer preference for accessing rather than owning music. Unlike its predecessor, this "second" digital revolution creates more value for rights holders (rather than destroys it), shifting revenue streams from structurally declining markets (physical, download sales) to a significantly larger new revenue pool (ad-funded and subscription streaming). This shift has enabled the recorded music market to return to growth in 2015 following almost two decades of value destruction led by piracy and unbundling."[104]
- "By revolutionizing the listening experience, making it seamless and personalized, streaming improves the monetization of music content through 1) a range of subscription streaming options with multiple price points that address consumers willing to pay for better access and convenience, and 2) ad-funded, free streaming that addresses consumers not able or willing

[101] "News and Notes on 2015 Mid-Year RIAA Shipment and Revenue Statistics," The Recording Industry Association of America, 2015.

[102] I note that one of Copyright Owners' other experts, Dr. Gans, relies heavily on data contained in the Goldman Sachs report.

[103] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 1.

[104] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 3.

to pay (therefore reducing piracy). Moreover, streaming improves the discoverability of catalogues and increases their value."[105]

- "The incumbent publishers, who so far have been more insulated from digital disruption, are also likely to gain as they receive around 10% of the platforms' revenue as mechanical and performance royalties. We forecast their revenue pool to grow to $7 bn in 2030 from $4 bn in 2015, with streaming alone adding $3 bn of revenue. The main pool at risk (i.e. physical mechanical royalties) is currently worth $0.6 bn on our estimates. Assuming margin remains broadly unchanged at 30% as publishers do not benefit from the same margin uplift in streaming as the labels, we forecast profit to double to $2 bn in 2030."[106]
- "Streaming improves discoverability and monetization of back catalogues, thus turning a one-off transaction into an annuity of cash flows. Catalogue songs (i.e., older than 18 months) accounted for 70% of all streaming volume in 2015, compared to 50% of overall physical and digital album sales (Nielsen). This comes at a time when physical sales of current albums have come under significant pressure, which led the overall share of current album sales (physical + downloads) to decrease from 63% in 2005 to less than 50% today (Nielsen). Warner Music in its 2015 10K report said that it sees greater monetization of its catalogue songs in streaming and higher margins (given lower marketing cost)."[107]

77. Dr. Eisenach may be making the fundamental economic error of looking only at mechanical royalties when he should be looking at total royalties for musical works. From this perspective, streaming has helped copyright owners.

C. Specific Criticisms of the Rysman Expert Report

1. Overview of the Rysman Expert Report

78. In his report, Dr. Rysman proposes that the Section 115 rates should be per-play and per-user rates rather than based on a percentage of revenue.[108] Dr. Rysman argues that a revenue-based royalty structure is economically inappropriate because songwriters and publishers receive lower royalty payments when streaming providers choose to forgo higher revenue by using lower

[105] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 3.

[106] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 13.

[107] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, pp. 37-38.

[108] Expert Report of Marc Rysman, October 28, 2016, ¶ 34.

pricing models to attract users.[109] Therefore, such a structure results in royalty revenue to songwriters and publishers that is dependent on the pricing model of the service.[110]

79. Dr. Rysman claims that the statutory policy objectives support a higher rate and the proposed per-play and per-user rates are in line with these objectives.[111] Specifically, Dr. Rysman argues that the proposed per-play and per-user rates would not reduce the creative works available to the public since they are in the range of or higher than the current or historical rates paid by services.[112] Dr. Rysman also argues that the proposed per-play and per-user rates are in line with the policy objectives of fair returns and support the objective of rewarding the relative role of songwriters.[113] Dr. Rysman further claims that the proposed rates would not be disruptive since music streaming services have the ability to quickly adapt and change strategy to offset the impact of a rate increase, and they may not even need to adjust given that the industry is very robust.[114]

80. In the following sections, I provide specific criticisms of the Rysman Expert Report.

2. Revenue-Based Royalty Payment Structures Are the Most Commonly Used Methodology

81. Dr. Rysman claims that a revenue based royalty structure is not appropriate because it is likely to be manipulated by music streaming services by defining revenue in opportunistic ways

[109] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 35-41.

[110] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 35-41.

[111] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 69-70.

[112] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 69-70.

[113] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 77-79, 85-89.

[114] Expert Report of Marc Rysman, October 28, 2016, ¶ 92.

and such a royalty structure is inconsistent with the objective of fair return.[115] However, contrary to Dr. Rysman's opinion, in my experience, revenue-based royalty payment structures are, in fact, extremely common in intellectual property licenses.[116] Additionally, a percentage of revenue structure has been selected in both of the previous Phonorecords matters pertaining to interactive streaming, where a percentage of revenue headline rate was part of the Section 115 rate structure, and in the PSS/SDARS II proceeding that set a rate as a percentage of gross revenue.[117] Furthermore, a percentage of revenue structure is particularly relevant for purposes of accounting for the "relative roles" of the copyright owner and interactive streaming service provider, as contemplated under the third 801(b)(1) factor,[118] because the compensation to both the copyright owner and service provider is proportional to the growth in interactive streaming.

82. With regards to the music streaming industry at issue, a revenue-based rate structure makes economic sense because songwriters and interactive streaming service providers collectively share in both the upfront investments in the service offering and in the upside (or downside) rewards associated with those investments. Moreover, a percentage of revenue structure provides an adjustment to the royalty for a streaming service depending on the willingness-to-pay of the consumer segment that the service is targeting.

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[115] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 44, 77-79.

[116] See, for example, Richard Razgaitis, "Valuation and Dealmaking of Technology-Based Intellectual Property: Principles, Methods, and Tools," Wiley (2nd Edition), 2009, p. 508, "The classic Cash As payment structure is a running royalty. … A very common form of this calculation is a running rate defined as a percentage, and the base as the revenue (aka 'sales') in dollars of the products made by the technology licensed." Also see Parr and Smith, "Intellectual Property: Valuation, Exploitation, and Infringement Damages," Wiley (2005), p. 672.

[117] In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2011-1 CRB PSS/Satellite II, February 14, 2013.

[118] I note that the third 801(b)(1) factor is consistent with the type of analysis required under *Georgia-Pacific* Factor 13 in a patent infringement matter. *Georgia-Pacific* Factor 13 states: "The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements; the manufacturing process, business risks, or significant features or improvements added by the infringer." *Georgia-Pacific Corp. v. United States Plywood Corp.*, 18 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

3. There Is No Evidence, and Dr. Rysman Presents No Evidence, That Interactive Service Providers Have Artificially Lowered Their Prices to Attract Users, Resulting in Lower Royalty Payments to Songwriters

83. In his report, Dr. Rysman claims that music streaming services "charge prices that do not maximize current direct profits, but instead charge lower prices today in order to build a customer base that leads to greater long-run profitability…or greater profitability from selling other products or services to its customers."[119] Dr. Rysman proposes that there are four features of the music streaming services that "might lead a music service to accept lower prices or revenue today with the intent of collecting higher revenue through the music service in the future," including network effects, economies of scale, learning about consumers, and switching costs.[120] However, the four features described by Dr. Rysman merely indicate the importance of user base growth for music services, but he provides no reliable support for the claim that firms are actually choosing to forgo current profits in order to gain user base. There is no evidence, nor does Dr. Rysman provide any evidence, that music streaming service providers "set artificially low prices now in the hopes of being able to realize higher returns at some point in the future."[121] For example, there is no evidence that, e.g., Spotify, which currently charges $10 per month for a subscription, has plans to increase this price in the future. Thus, Dr. Rysman just engages in speculative theorizing without actually showing that such theories apply in this case.

84. Dr. Rysman claims that a "get big fast" strategy foregoes current profits and thus does not properly compensate songwriters. Even if we assume that streaming services are currently charging low prices to build their installed base, unsupported though this assumption is by any

[119] Expert Report of Marc Rysman, October 28, 2016, ¶ 13.

[120] Expert Report of Marc Rysman, October 28, 2016, ¶ 29.

[121] Expert Report of Marc Rysman, October 28, 2016, ¶ 28.

evidence, there is nothing "artificial" or economically wrong about such a strategy. Indeed, promotional pricing is widespread in the marketplace, with price discounts among the most widely employed sales promotion tactics.[122] Promotional pricing strategies are commonly used by companies in various industries, such as video streaming services, cell phone companies, internet providers, fitness clubs, and electronic newspapers and magazines, all of which are comparable to streaming services in terms of the subscription business model.[123] This is particularly true early in a product's lifecycle,[124] where it can be utilized to learn consumer price sensitivities and preferences, and attract the core group of consumers.[125] The purpose of such a strategy is to "invest" today (with lower prices) with the return coming in terms of a larger installed base in the future. In the case of streaming, that would benefit copyright owners by increasing the royalties paid in the future. Because copyright owners would share in the rewards from such a strategy, they should also share in the costs of the "investment." That is, to the extent that streaming services are currently charging lower prices to build installed base, copyright owners should receive lower royalties with the return coming in the form of higher

[122] See Chen, Marmorstein, Tsiros, and Rao, "When More Is Less: The Impact of Base Value Neglect on Consumer Preferences for Bonus Packs over Price Discounts," Journal of Marketing (2012), p.1. Also see Carl Shapiro and Hal R. Varian, "Information Rules," Harvard Business School Press (1998), pp. 35, 42-43, 78-81.

[123] For example, Hulu, a video streaming service, lowered the price since October 2016 from $8 to $6 a month for new subscribers for the first year since they subscribed. "Hulu Drops Price to $6 Per Month," CNET, https://www.cnet.com/news/hulu-promotion-6-dollars-per-month/. The Economist offers price discounts and student subscription plan for its digital version. "Choose Your Subscription to The Economist," The Economist, https://subscription.economist.com/DA/AFF-GLB-PH/GLOBALAFF/PH. 24 Hours Fitness, a leading fitness club with more than 400 clubs across the U.S., provides new member offer, family/friend add-on offer, and other special offers. "Specials," 24 Hour Fitness, http://www.24hourfitness.com/membership/offers/specials.html.

[124] Gitman and McDaniel, "The Future of Business: The Essentials," Cengage Learning, 3rd edition (March 23, 2007), pp. 392-393. "Product Life Cycle Strategies (PLC) and Characteristics – Managing Each PLC Stage," Marketing Insider, https://marketing-insider.eu/product-life-cycle-strategies/.

[125] Carl Shapiro and Hal R. Varian, "Information Rules," Harvard Business School Press (1998), pp. 35, 42-43, 78-81.

royalties in the future. However, as noted above, Dr. Rysman has provided no evidence that the streaming services, or Google in particular, are actually engaging in such a strategy.

4. There Is No Evidence, and Dr. Rysman Presents No Evidence, That Interactive Service Providers Have Defined Revenue in Opportunistic Ways to Manipulate Revenues, Resulting in Lower Royalty Payments to Songwriters

85. Dr. Rysman claims that a revenue based royalty structure is not appropriate since it is also likely to be manipulated by music streaming services by "defining revenue in opportunistic ways."[126] As Dr. Rysman claims, Amazon Prime Music [redacted] to music streaming because it treated the music streaming service as a gift to subscribers, or multi-product firms such as Apple and Google use their music streaming services as a loss leader to drive sales and traffic towards other parts of the company.[127] He argues that publishers, as a result, would not be able to realize revenue even in the long run.[128] As discussed below, Dr. Rysman does not provide any reliable evidence that music streaming service providers define revenue in opportunistic ways.

86. Furthermore, while Dr. Rysman's concerns might have more theoretical merit if directed against a rate proposal that was purely expressed as a percentage of revenue, Dr. Rysman ignores the fact that the existing Section 115 rate structure, and the proposal put forth by Google, both contain a greater of structure with certain minimum payments that protect songwriters against the supposed risk arising from the uncertainty related to the revenue of the interactive streaming service. Specifically, the minimums included in Section 115 consider a specified percentage of the total amount expensed by the service provider for sound recording rights and per-subscriber

[126] Expert Report of Marc Rysman, October 28, 2016, ¶ 44.

[127] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 43-44.

per-month minimum rates. This protects songwriters against the supposed risk arising from the uncertainty related to the financial performance of the interactive streaming service and other potential transparency issues. For example, if the revenues earned by a service are too low such that 10.5% of the revenues earned for the service falls below the lesser of the percentage of sound recording payments and per-subscriber minima, then the service pays pursuant to the minima, which ultimately protect songwriters against the downside risk of the financial performance of the interactive streaming service. Therefore, even Dr. Rysman's theoretical concerns about the transparency issues of services revenues are misguided.

a. The Examples Used by Dr. Rysman Are Not Valid

87. None of the examples that Dr. Rysman uses provide reliable evidence that firms define revenue in opportunistic ways. Dr. Rysman claims that Amazon Prime Music has reported [redacted]g because it treated the music streaming service as a gift to subscribers.[129] He ignores again that the musical work royalty payments for Amazon Prime Music are equal to [redacted], and thus are effectively [redacted].[130] Again, the current Section 115 royalty structure and Google's proposal both include a percentage of sound recording rights fees prong.

88. Dr. Rysman also argues that multi-product firms such as Apple and Google use their music streaming services as a loss leader to drive sales and traffic towards other parts of the company.[131] His argument implies that, for example, the sales of Google's music streaming

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[128] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 47-48.

[129] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 43-44.

[130] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶ 62; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶ 64.

[131] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 43-44.

services drive the sales or use of other Google services. However, Dr. Rysman does not provide any evidence or economic analysis to show such a causal relationship actually exists, i.e., that Google Music subscriptions drive use of other Google services. In fact, to the extent that there is such a causal link, it is the opposite direction – Google Music subscriptions are likely driven by usage of other Google services such as Google Search, which have existed much longer than Google Music, and the Google brand name, which was well established before Google Music. For example, Google's websites hit more than one billion unique visitors per month in mid-2011, even before the launch of Google Music.[132] The growth in the user base of Google Music followed the growth in the user base of other Google services, not vice-versa. Indeed, Google Music was able to benefit from the user base and brand recognition of the company due to Google's existing services. This result is consistent with existing services driving new services, rather than the reverse. Moreover, the price of Google Play Music is consistent with the standard industry rate charged by pure-play streaming companies such as Spotify and Rhapsody. This demonstrates that Google is not using Google Music as a "loss leader" to drive other businesses. Additionally, evidence that Google operates Google Play Music at a loss, and yet still pricing the service at the standard industry rate, would only suggest that the current Section 115 rates are set too high under the 801(b)(1) factors.

b. Investment in the Short Run Would Benefit Songwriters in the Long Run

89. Dr. Rysman's claim that publishers would not be able to realize revenue even in the long run rests upon the incorrect assumption that services would define revenues in opportunistic ways.[133] As discussed above, this assumption does not have any support. In fact, given that the

[132] "Google Notches One Billion Unique Visitors Per Month," The Wall Street Journal, June 21, 2011.

[133] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 47-48.

goal of short term investment is to ultimately increase user base and revenue in the longer run, it is economically reasonable that the investment in the short run would benefit songwriters in the long run.

90. Dr. Rysman also argues that musical works that are popular in the present would not be able to benefit from revenues created by services in the future.[134] This argument is flawed for two reasons. First, songwriters generally continue to write songs, and thus are able to benefit over the long run. Among many other examples, songwriter Max Martin has had success writing songs for about two decades. Songs written by Martin have appeared in the Billboard Top 10 songs since the 1990s and his most recent No. 1 song was in May of 2016.[135] Moreover, hit songs of a moment may have a "resurgence of interest" at later time points, and thus would be able to benefit in the future.[136] Second, publishers could take it upon themselves to reallocate royalties intertemporally so as to smooth payments to songwriters over time. This is, in fact, actually done in the form of advanced payments that are made by publishers to songwriters.[137]

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[134] Expert Report of Marc Rysman, October 28, 2016, ¶ 50.

[135] "Max Martin's Hot 100 No. 1s as a Songwriter" Billboard, May 23, 2016. "Ask Billboard: Max Martin Has Written How Many Hot 100 Top 10s?!" Billboard, August 18, 2015.

[136] According to Gregg Barron, the Senior Director of Licensing at BMG Rights Management: "Some of our significant synchronization placements … can lead to a resurgence of interest in an older song. For example, after the iPhone ad, "Time In A Bottle" entered the Billboard Rock Charts and Hot Rock Songs charts 40 years after it had topped the Billboard Hot 100." See Witness Statement of Gregg Barron, ¶¶ 24-25.

[137] Advances are usually made to the songwriter to induce them to enter into an exclusive deal in which the writer gives up the right to exploit their songs or license others to do so. In an Exclusive Term Agreement, which was the most common kind of publisher-songwriter agreement for many years, the songwriter agrees to assign the exclusive right to administer all compositions that they write during a specified term. In return, the publisher pays a songwriter an advance at the beginning of the contract which is recoupable against the writer's royalties. Additional advance payments are usually due if the publisher exercises options to extend the contract. This is similar to Co-Publishing agreements, a more standard form of publisher-songwriter agreement. See "Now You Know Everything About Music Publishing," Steve Gordon, Digital Music News, August 26, 2015.

5. Dr. Rysman's Opinion That a Revenue-Based Royalty Structure Gives Interactive Streaming Services an Unfair Competitive Advantage over Permanent Download Services at the Expenses of Rightsholders is Incorrect

91. Dr. Rysman claims that a revenue-based royalty structure gives streaming services an unfair competitive advantage over download services at the expense of copyright owners because it enables streaming services to offer consumers more consumption without raising the price while music downloads require a fee for each download.[138] This claim is fundamentally flawed.

92. First, Dr. Rysman fails to recognize that payment for per-play is fundamentally different from payment for per-download. Payment for per-download allows unlimited access to a given song, while payment for per-play allows for only a single play. Notably, streaming and digital downloads both allow "more consumption" (indeed unlimited consumption of the musical work) once a fixed fee is paid. Put another way, digital downloads do not operate under the per-play structure that Dr. Rysman is proposing should apply to streaming. Thus, the premise of his claim is incorrect.

93. Second, as discussed elsewhere in this report and in my opening reports, interactive streaming services and digital download services are not homogenous; they are differentiated, with different characteristics, and appeal to different customer segments consisting of customers with different preferences and willingness to pay for music.[139] For example, Amazon's streaming music service offerings are unique in the digital music industry. Amazon's Music Unlimited for Echo only allows users to access music through one of Amazon's proprietary smart speakers and is also differentiated from other streaming services by its lower monthly

[138] Expert Report of Marc Rysman, October 28, 2016, ¶ 51.

[139] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶¶ 83-91; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶¶ 85-93.

subscription fee of only $3.99.[140] Amazon Prime Music only grants users access to a limited music catalog of two million songs and is offered as ad-free with no cost to Amazon Prime members.[141] Due to the unique features of Amazon's streaming services, evidence on usage data has shown that streaming usage patterns differ between Amazon and Spotify, with Amazon Prime Music users streaming tracks far fewer times per month than Spotify's users.[142] As such, there is no economic basis for the claim that the royalty rates (on a per-stream or per-user basis) should be the same across the different types of services.

6. A Per-Play Royalty Rate Structure Is Not in Line with the "All You Can Eat" Subscription Service Plan of Interactive Streaming Services

94. As discussed in my opening reports, the subscription streaming services provided by companies such as Spotify and Google offer "all you can eat" plans, where subscribers pay a fixed monthly fee and then choose the desired amount of streaming.[143] Under the current royalty structure, in which the royalty is based on a percentage of the subscriber fee (subject to minimums), the royalty, like the subscriber fee, is a fixed amount per subscriber. This gives the service certainty about both its revenues and a major cost component on a per-subscriber basis. If the royalty structure were changed to a per-stream basis, on the other hand, the royalty cost component on a per-subscriber basis would be uncertain because it would depend on the amount of usage of the subscribers. Moreover, with per-stream royalties, services would have the incentive to minimize their costs by taking measures to limit usage by each subscriber, including possibly imposing usage limits. This incentive could even result in services themselves starting

[140] Expert Report of Dr. Glenn Hubbard, November 1, 2016, p. 17.

[141] Expert Report of Dr. Glenn Hubbard, November 1, 2016, pp. 18-19.

[142] Expert Report of Dr. Glenn Hubbard, November 1, 2016, Exhibit 3.

[143] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶ 124; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶ 126.

to charge users on a per-stream basis, which would also tend to limit usage. Streaming services that rely on advertisements to generate revenue likely would face similar disruption from a change to per-stream royalties. Notably, Netflix, which is an online video streaming service provider and used by Dr. Rysman as a benchmark of platforms that properly rewards rightsholders, employs a lump-sum licensing structure, rather than a per-play or per-user royalty payment structure.[144]

95. Furthermore, under the "all you can eat" plans, the user pays a fixed fee for "access" and then a zero marginal price for each stream. Given that the marginal cost of provision of musical work rights for an additional stream is essentially zero, a fixed access fee/zero marginal cost pricing structure has good economic efficiency properties.[145] A per-play royalty structure would give services incentives to change their pricing models to less efficient ones. Nor is a per-play royalty structure necessary to give songwriters the appropriate incentives to write popular songs. The fixed subscriber access fee is allocated by publishers among tracks based on number of

[144] Netflix describes their licensing structure as lump sum: "Our licensing is all time-based, so that we might pay, for example, $200,000 for a 4 year exclusive subscription video-on-demand (SVOD) license for a given title. At the time of renewal, we evaluate how much the title has been viewed as well as member rating feedback to determine how much we are willing to pay." Netflix Long Term View, Netflix, April. 25, 2013.

[145] A second best optimum can be reached by imposing a constraint (such as the number of firms and/or pricing structure) on the first-best optimum, where the firms set their price constant equal to the marginal price and get subsidized by the government for their losses. D. W. Carlton and J. M. Perloff, "Modern Industrial Organization," Pearson (4th Edition), 2004, p. 213. Two-part tariffs, which include a fixed access fee with a constant marginal price, are well-known devices to improve the efficiency of pricing when average cost is decreasing. Yew-Kwang Ng and Mendel Weisser, "Optimal Pricing with a Budget Constraint--The Case of the Two-part Tariff," The Review of Economic Studies, Vol. 41, No. 3 (1974), p. 337. With regards to pricing, "[i]f the marginal price is set equal to the marginal cost and the resulting annual charge does not cause any potential consumers to prefer no purchase at all, the allocation of resources is Pareto efficient." See Martin S. Feldstein, "Equity and Efficiency in Public Sector Pricing: The Optimal Two-Part Tariff," Quarterly Journal of Economics, Vol. 86, No. 2 (1972), p. 175. Therefore, given that under the current structure the pricing of streaming services follows the two-part tariffs structure and the royalty payment from services to publishers/songwriters is in the form of revenue-based lump-sum payment that is consistent with the pricing model, the current royalty payment structure is economically efficient.

streams.[146] This gives songwriters the incentive to write popular songs (that would be streamed more).

7. Dr. Rysman Incorrectly Calculates the Mechanical Per-Play Royalty Rates Paid by Certain Interactive Streaming Service Providers

96. Dr. Rysman claims that the Copyright Owners' proposed per-play rate of $0.0015 for mechanical royalties is reasonable and is "within the historic range of rates paid by services,"[147] and that [redacted][148] To support his conclusion, Dr. Rysman analyzes the mechanical per-play royalty rates paid by a select group of subscription-based interactive streaming services over the last four years.[149] Dr. Rysman's analysis, however, suffers from numerous errors including the exclusion of data from ad-supported models and paid locker services, as well as the exclusion of data from other relevant subscription-based service providers and time periods. After correcting for these multiple methodological errors, the evidence shows that the historical rates paid by a comprehensive set of interactive streaming

[146] The mechanical royalty allocated to each song is calculated as a per-play allocation multiplied by the number of plays of each music work, where the per-play allocation is obtained by dividing the payable royalty pool by the total number of plays of all musical works. 37 CFR Part 385, *Determination of Rates and Terms for Making and Distributing Phonorecords* (Phonorecords III), Federal Register 48371 Vol. 81 No. 142, July 25, 2016. The payable royalty pool is traditionally split 50/50 among publishers and songwriters. Donald S. Passman, "Publishing Companies and Major Income Sources," (Chapter 16), *All You Need to Know about the Music Business*, Eighth Edition, Simon and Schuster, 2013, p. 220. Therefore, the per-song mechanical royalty payable to songwriters is a proportion of the total per-song mechanical royalty, which is obtained based on the number of streams.

[147] Expert Report of Marc Rysman, October 28, 2016, ¶ 68.

[148] Expert Report of Marc Rysman, October 28, 2016, ¶ 64.

[149] Expert Report of Marc Rysman, October 28, 2016, ¶ 62. In Dr. Rysman's Figure 7, he shows historical mechanical royalties per play for "Other Paid Services", but in his ultimate analysis of historical per-stream rates that he compares to the Copyright Owners' proposal of $0.0015 per stream presented in his Table 1, Dr. Rysman "highlight[s] some of the larger services and historical effective per-play rates." Expert Report of Marc Rysman, October 28, 2016, ¶ 62, Figure 7, ¶ 64, Table 1.

service providers—both ad-supported and paid subscription business models—are well below the rates proposed by the Copyright Owners, contrary to Dr. Rysman's claim.

97. As an initial matter, before correcting for Dr. Rysman's multiple methodological errors in the following sections, based on his results presented in Table 1 of his report the weighted average per-stream mechanical royalty from 2012 to 2015 for "some of the larger services" is [redacted]. Therefore, Dr. Rysman's claim that the Copyright Owners' proposed per-play rate of $0.0015 for mechanical royalties is "within the historic range of rates paid by services" is misleading because the weighted average rate across even the select group of paid subscription interactive streaming services that he analyzes is [redacted] the Copyright Owners' proposal of $0.0015 per play.[150]

a. Dr. Rysman Ignores the Presence of Ad-Supported Models and Paid Locker Services and Bases His Calculation Solely on a Select Group of Paid Subscription Interactive Streaming Services

98. In performing his calculations, Dr. Rysman ignores the presence of ad-supported models and paid locker services and instead bases his analysis on a select group of larger paid subscription interactive streaming services.[151] For instance, when calculating Spotify's rates, Dr. Rysman excludes data related to Spotify's ad-supported service from his calculation, without providing any justification.[152] However, given that the Copyright Owners' proposed $0.0015 per-stream royalty would apply to both paid subscription and ad-supported interactive streaming

[150] Furthermore, as previously discussed, I understand that the Copyright Owners' proposal requires royalty payments for all streams, including promotional streams, while the current Section 115 regulations do not require royalty payments for promotional streams. Therefore, when comparing the historical range of rates paid by interactive streaming service providers to the $0.0015 per-play proposal, Dr. Rysman should have adjusted for the fact that the historical rates do not account for promotional streams while the $0.0015 per-play proposal does account for promotional streams. By not making this adjustment, Dr. Rysman's comparison of historical per-stream mechanical royalty rates and the $0.0015 per-play proposal is not an apples-to-apples comparison.

[151] Expert Report of Marc Rysman, October 28, 2016, ¶ 62, Table 1.

services, and Dr. Rysman is comparing historical mechanical royalties per play to this proposed rate in an attempt to establish its reasonableness, both paid subscription and ad-supported services should be included in Dr. Rysman's calculation of historical mechanical per-play rates.[153] By choosing not to include ad-supported services in his historical mechanical per-play rate calculation Dr. Rysman is artificially biasing his results upwards in an attempt to show that the Copyright Owners' $0.0015 per-play proposal is in line with historical rates actually paid by interactive streaming services when, in fact, it is not in line with actual historical rates. When Dr. Rysman's calculation is corrected to include data from Spotify's ad-supported service, Spotify's weighted average per-stream mechanical royalty rate for both its paid subscription and ad-supported services is equal to [redacted] from 2012 to 2016,[154] compared to Dr. Rysman's figure based only on Spotify's paid subscription service of [redacted] from 2012 to 2015.

99. Dr. Rysman also excludes data from Amazon's paid locker services when calculating Amazon's royalty rate in his Table 1. Under the Copyright Owners' proposal, the $0.0015 per-stream rate would apply to all Subpart B and C business models, including paid locker services.[155] Therefore, when calculating his rate Dr. Rysman should have included data from

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[152] Expert Report of Marc Rysman, October 28, 2016, fn. 56.

[153] I note that ad-supported streaming generated nearly a quarter of the industry's interactive streaming revenue according to 2015 data from the RIAA. Specifically, in 2015, on-demand streaming generated 24% of revenue as a share of on-demand streaming and paid subscriptions revenue. See "U.S. Sales Database," The Recording Industry Association of America, last accessed September 21, 2016; "News and Notes on 2015 Mid-Year RIAA Shipment and Revenue Statistics," The Recording Industry Association of America, 2015. Furthermore, Spotify, which is the largest streaming service provider, currently has 70 million ad-supported listeners, which translates to 70% of its overall users. See "Spotify Looks to Ramp Up Ad Business," The Wall Street Journal, June 20, 2016.

[154] Exhibit 3a.

[155] "The ten different Subpart B and C categories, each with a different rate and rate structure, resulted from the settlements of the prior *Phonorecords I* and *II* proceedings. These categories are no longer applicable given that the copyright owners propose that the same rates and rate structure should apply to all offerings of interactive streams and/or limited downloads, regardless of the business model employed." *See* "Copyright Owners'

Amazon's paid locker service in addition to Amazon's Prime Music subscription service; data that was readily available in Dr. Rysman's source documentation for 2014 that he nevertheless chose to exclude. When data from Amazon's paid locker service are included, Amazon's per-stream mechanical royalty rate covering both its paid subscription and paid locker services is equal to [redacted] in 2014,[156] compared to Dr. Rysman's figure based only on Amazon's paid subscription service of [redacted] in 2014.

b. Dr. Rysman Excludes Data from Other Service Providers from His Analysis

100. In conducting his ultimate analysis of historical per-stream rates (see Dr. Rysman's Table 1), Dr. Rysman excludes data for smaller service providers (referred to by Dr. Rysman as "Other Paid Services" in his Figure 7) without any explanation.[157] I have included these other service providers in my corrections to Dr. Rysman's analysis in his Table 1. The weighted average per-stream mechanical royalty rate for all of the other service providers is [redacted] from 2012 to 2016.[158]

c. Dr. Rysman Excludes Data from 2016

101. Finally, Dr. Rysman also excludes readily-available 2016 mechanical royalty and streaming data. Although royalty data for the first two quarters of 2016 are available in the source documents relied upon for Apple, Dr. Rysman chooses to exclude these data from his

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Proposed Rates and Terms," *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016, p. B-4.

[156] Exhibit 3a. Note that paid locker services data is unavailable for 2015.

[157] Expert Report of Marc Rysman, October 28, 2016, Figure 7.

[158] Exhibit 3a.

calculations.[159] Apple's per-stream mechanical royalty rate declined in 2016 compared to 2015, dropping from [redacted] by the Copyright Owners. In 2016, Amazon's per-stream mechanical royalty rate exhibited [redacted]. Although 2016 royalty data are available in the source documents relied upon by Dr. Rysman, these data are nevertheless excluded from his calculations. Amazon's per-stream mechanical royalty rate [redacted]. I have also included 2016 per-stream mechanical royalty rates for Spotify, Tidal, and the other service providers in my corrections to Dr. Rysman's analysis. Spotify's rate (including its paid subscription and ad-supported services) [redacted]

d. Corrections to Dr. Rysman's Table 1

102. I present my comprehensive set of corrections to Dr. Rysman's Table 1, as discussed above, in Exhibit 3a. As previously discussed, before correcting for Dr. Rysman's multiple methodological errors, based on his results presented in Table 1 of his report the weighted average per-stream mechanical royalty rate from 2012 to 2015 for "some of the larger services" is [redacted]. After correcting for all of Dr. Rysman's errors, the weighted average per-stream mechanical royalty rate from 2012 to 2016 is [redacted] the Copyright Owners' proposal of $0.0015 per stream.[161]

[159] Instead, Dr. Rysman includes royalty data only for 2015 Q3-Q4 in his analysis. Expert Report of Marc Rysman, October 28, 2016, Table 1.

[160] Exhibit 3a.

[161] I have also presented my comprehensive set of corrections to Dr. Rysman's Table 1, but excluding Subpart C-related services (e.g., Amazon's paid locker service). See Exhibit 3a. The results of this scenario are consistent with the results of the scenario where I included Subpart C-related services.

8. Dr. Rysman's Calculation to Justify the $1.06 Monthly Per-User Rate Suffers from Multiple Errors

103. Dr. Rysman claims that a monthly per-user mechanical royalty rate of $1.06 is justified because it is consistent with the product of the $0.0015 per-play rate and the current number of monthly streams per user.[162] However, in formulating his calculation, Dr. Rysman only considers limited monthly streams per user data from three paid subscription interactive service providers ([redacted] for a single year (2015), and chooses to exclude data from other relevant industry providers, service offerings, and time periods. Furthermore, as discussed in the previous section, Dr. Rysman's analysis of historical per-play rates paid by certain interactive streaming service providers is incomplete and does not support the Copyright Owners' proposal of $0.0015 per play. Rather, a corrected version of Dr. Rysman's analysis supports a lower per-play rate (e.g., a weighted average per-stream mechanical royalty rate from 2012 to 2016 of [redacted]).

104. [redacted] Additionally, Dr. Rysman chooses to present per-user streaming rates only for 2015, although there is information available for both [redacted] and [redacted] from 2012 to 2015. Similarly, there is data available for [redacted] and [redacted] for 2016, which Dr. Rysman nevertheless chooses to exclude from his calculation.

105. Dr. Rysman also excludes data from other industry interactive streaming service providers, including providers referenced in his Table 1 and Figure 7, when calculating historical

[162] Expert Report of Marc Rysman, October 28, 2016, ¶ 66.

mechanical per-play royalties. These providers include [redacted] identified in his Table 1, and the smaller providers identified by Dr. Rysman as "Other Paid Services" in his Figure 7.[163]

106. The inclusion of per-user streaming data from other relevant industry service providers, service offerings, and time periods results in a weighted average streams per user of 368. Applying this figure results in a weighted average per-user rate of [redacted] (based on the Copyright Owners' unsupported proposal of $0.0015 per stream, i.e., $0.0015 per stream * 368 streams per user) and [redacted] (based on the result of my corrections to Dr. Rysman's analysis of [redacted] per stream, i.e., [redacted] * 368 streams per user).[164]

107. An alternative way to calculate the per-user mechanical royalties is to simply divide the service providers' actual mechanical royalties by their actual users. This can be done using the data that was available to Dr. Rysman as discussed above. My calculation of the per-user mechanical rates using this approach for the service providers analyzed by Dr. Rysman, and for the additional service providers, service offerings, and time periods that I have included in my corrections to Dr. Rysman's Table 1, is provided in Exhibit 3c. The results indicate that the historical per-user mechanical royalties paid by interactive streaming service providers—i.e., [redacted] per user—are well below the Copyright Owners' proposal of $1.06 per user.[165]

[163] Expert Report of Dr. Rysman, October 28, 2016, Figure 7, Table 1.

[164] Exhibit 3b. I have also presented my comprehensive set of corrections to Dr. Rysman's per-user analysis, but excluding Subpart C-related services (e.g., Amazon's paid locker service). See Exhibit 3b. The results of this scenario are consistent with the results of the scenario where I included Subpart C-related services.

[165] I have also performed this analysis excluding Subpart C-related services (e.g., Amazon's paid locker service). See Exhibit 3c. The results of this scenario are consistent with the results of the scenario where I included Subpart C-related services.

9. Dr. Rysman Presents No Evidence or Analysis that Increasing the Statutory Royalty Rate Would Have Any Significant Effect on the (Quality-Adjusted) Number of Songwriters and Songs

a. The Number of Songwriters and Songs Has Been Increasing Under the Current Rate Structure

108. Dr. Rysman speculates that increasing the mechanical royalty rate would increase the amount and quality of music, providing incentives to songwriters to write more songs and inducing potential songwriters to leave other professions to devote time to writing songs.[166] However, Dr. Rysman provides no empirical evidence to support his speculation. In fact, as discussed in my opening reports, under the current industry rate structure, the number of songwriters and songs has continued to increase over time based on data collected from the largest PROs.[167] Thus, there is no evidence that the existing royalty structure has adversely affected the creation of compositions. Moreover, even if the number of songwriters and songs were to increase as a result of an increase in mechanical royalties, they likely would be the marginal songwriters and songs, in terms of quality (the high quality songwriters are already writing songs given current incentives). Thus, the increase in quality-adjusted song quantity would be minimal.

b. An Increase in Royalty Payments May Further Adversely Affect Service Providers' Low Profitability, Leading to Potential Exit from the Market

109. On the other hand, an increase in the royalty rate would further increase service providers' costs, leading to potential exit from the market. As discussed in my opening reports, digital interactive streaming service providers have had a history of not being profitable, despite

[166] Expert Report of Marc Rysman, October 28, 2016, ¶ 69.

[167] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶ 94; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶ 96.

the rapid growth in the user base and corresponding subscription revenue.[168] Google Play Music, as an example, has incurred significant costs on infrastructure and music royalties, and has historically generated operating losses of approximately [redacted] per quarter for its U.S. operations.[169] An increase in royalty rates may make service providers unable to sustain their businesses and be forced to exit the market. It may also raise barriers to entry faced by new ad-based services, imposing a further disruptive effect on the music streaming industry. A decrease in the number of suppliers would adversely affect consumers who preferred the defunct suppliers and thus could result in a decrease in the consumption of music. This is particularly true given the product differentiation among streaming providers. For example, if Amazon were to exit the streaming market, current Amazon Prime users may not be willing to pay for a Spotify subscription and, as a result, may stop streaming music.

c. An Increase in Royalty Payments May Lead to Higher Prices for Interactive Streaming Services, Which May, In Turn, Adversely Affect Demand for Interactive Streaming Services and Suppress the Number of Songwriters and Songs

110. Dr. Rysman claims that "services have strategic options to offset the impact of changes to rates."[170] He fails to consider what impact these "strategic options" themselves may have on the industry. As discussed above, an increase in royalty rates may lead some suppliers to exit the market, which may increase the price to consumers as well as eliminate their preferred provider. Service providers who remain in the market may also choose to increase their prices or increase the number of ads to adjust for the increase in costs. Even worse, the services may be forced to

[168] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶ 96; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶ 98.

[169] Written Direct Testimony of Elliot Alyeshmerni, November 1, 2016, ¶¶ 17-18.

[170] Expert Report of Marc Rysman, October 28, 2016, ¶ 93.

change the characteristics of their services, e.g., move away from "all you can eat" plans. These impacts would substantially harm consumers and reduce the consumption of music. They may also harm songwriters, thereby offsetting at least in part the benefits to songwriters from an increase in the mechanical royalty rate.

10. Dr. Rysman Presents No Evidence or Analysis that a Decrease in the Number of Interactive Music Service Providers Would Not Result in a Reduction in the Number of Songwriters and Songs

111. Lastly, Dr. Rysman claims that an increase in royalties would not reduce the creative works available to the public. He argues that even if the rates may lead some services to reduce investment or exit the market entirely, the remaining services "will increase their market share to fill the void, causing no lasting effect on the overall availability of musical works to the public."[171] However, Dr. Rysman does not provide any evidence or economic analysis to support his arguments. Moreover, his argument assumes that interactive streaming services are homogeneous. As I discuss elsewhere, this assumption is incorrect. Streaming services are differentiated, and thus there is no reason to believe that remaining services will "fill the void." Again, Amazon Prime and Spotify are not homogeneous and thus Amazon Prime is unlikely to be a suitable substitute for many Spotify customers. Finally, with a smaller number of providers, competition is likely to be reduced, which could lead to fewer subscribers and plays and thus lower royalties (under Copyright Owners' proposal) to copyright owners.

[171] Expert Report of Marc Rysman, October 28, 2016, ¶¶ 69-70.

D. Specific Criticisms of the Gans Expert Report

1. Overview of the Gans Expert Report

112. Dr. Gans asserts that the statutory royalty rates for mechanical rights are lower than the royalty rates that would prevail in a market setting, i.e., if mechanical rights licenses were negotiated outside of the regulatory structure, and in particular that the royalty rates for mechanical rights have been depressed relative to the royalty rates for sound recording rights. He proposes a "Shapley value" approach to determining appropriate rates for mechanical rights.

113. As an initial matter, I disagree with Dr. Gans' premise that the statutory royalty rates for mechanical rights for interactive streaming should reflect rates that would prevail in a market setting. Rather, these rates should reflect the considerations addressed in the 801(b)(1) factors.

114. In the following sections, I provide additional specific criticisms of the Gans Expert Report.

2. Dr. Gans' Opinion That Sound Recording Rights and Musical Work Rights Have Equal Value Is Incorrect

115. Dr. Gans' opinions, and his Shapley value analysis in particular, are premised on the assumption that sound recording rights and musical works rights have equal value and thus record labels and music publishers should receive royalties that result in equal profits for each. For example, Dr. Gans claims: "It is easy to draw parallels between sound recording rights and musical work rights;"[172] "one right cannot…hold any value…absent the other right;"[173] and "the

[172] Expert Report of Joshua Gans, October 31, 2016, ¶ 14.

[173] Expert Report of Joshua Gans, October 31, 2016, ¶ 14.

value of sound recording rights and musical work rights for interactive streaming are equal" because "[t]hese two rights are perfect complements to one another."[174]

116. However, Dr. Gans presents no support for this crucial assumption. In fact, the assumption is incorrect, leading to incorrect conclusions on Dr. Gans' part. Popular artists contribute more value than songwriters and thus would be expected to capture a larger share of the profits from royalties in a market outcome. This is due to the fact that a popular artist has many potential substitute songs that he or she could record, while a songwriter has a smaller number of potential substitutes for a popular artist to record his or her song. Indeed, it is not uncommon for a prominent artist to be pitched thousands of songs for one album.[175] Songs in an album are also likely to be "inside" songs written by the artist, producer or someone else involved in the project, leaving only one or two slots available for "outside" songwriters.[176] Moreover, research has shown that, as a music style increases in popularity, it becomes less instrumentally complex and more homogeneous;[177] composers aiming to write a hit song have to compete in a market with little variety and high interchangeability. When two parties negotiate over the split of a pie, the party with the more attractive set of alternatives generally earns a larger share of the pie. Because the artist has a greater set of alternatives (including writing his or her own songs), the artist would be expected to earn a larger share of the pie than the songwriter.

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[174] Expert Report of Joshua Gans, October 31, 2016, ¶ 23.

[175] Cornelius Cowles, "Music, Money, and The Middleman: The Relationship Between The Songwriter and The Publisher," Vanderbilt Journal of Entertainment Law and Practice (1999), p. 102.

[176] "I Know I've Got A Great Song: Now What?," BMI, March 25, 2014; "Now What? Inside Songwriting," TAXI, August 2008.

[177] Gamaliel Percino, Peter Klimek, and Stefan Thurner, "Instrumentational Complexity of Music Genres and Why Simplicity Sells," PLOS ONE, (2014); "Scientists Just Discovered Why All Pop Music Sounds Exactly the Same," Mic, January 7, 2015.

117. An analogy can be made to film actors and screenwriters. An actor in a starring role typically makes substantially greater compensation from a film than the screenwriter. Star actors can make $25 million from a single movie, while a screenwriter who sells a movie to a major studio earns about $100,000, and the few most in demand writers can make up to $5 million annually, but this is still well below the compensation earned by the biggest stars.[178] Actor's reputation, as a key feature of a motion picture, is often perceived as a sign of quality prior to its release as well as a predictor of the film's level of success.[179] Describing casting on the movie "Cast Away," former chairman of 20th Century Fox, Bill Mechanic, stated, "To me, 'a guy stranded on an island' without Tom Hanks is not a movie. Hanks got $20 million for the role. With another actor, it would gross $40 million. With Tom Hanks it grossed $200 million. There's no way to replace that kind of starpower."[180]

118. Furthermore, the fact that sound recording rights are set in a market not subject to the 801(b)(1) factors or other regulatory constraints and reflect the exercise of market power by record companies, while musical work rights are set to reflect the economic considerations addressed in the 801(b)(1) factors, further supports the point that the royalty rates paid for each respective right (i.e., their "value") should not be the same.

[178] "Hollywood Salaries Revealed, From Movie Stars to Agents (and Even Their Assistants)," Hollywood Reporter, October 2, 2014.

[179] Anita Elberse, "The Power of Stars: Do Star Actors Drive the Success of Movies?," Journal of Marketing, Vol. 71, No. 4 (2007), p. 103

[180] "Actors Savor Star Bucks," Variety, April 1, 2002.

3. Dr. Gans' Claim That the Compulsory Licensing Rates for Mechanical Rights for Musical Works Have Been Depressed Relative to the Market-Determined Rates for Sound Recordings Is Incorrect

119. Dr. Gans argues that the royalty rates for musical works have been depressed relative to the royalty rates for sound recordings, and that the reason for this is the compulsory licensing framework that applies to musical works, but not to sound recordings.[181] Dr. Gans further argues that the compulsory royalty rates have set a ceiling for negotiated royalty rates for musical works and have thus "skewed perceptions,"[182] which then have anchored subsequently set compulsory royalty rates for musical works.[183] In short, Dr. Gans argues that there is a negative feedback loop between the statutorily set and negotiated rates.

120. However, Dr. Gans' arguments are unsupported. He has failed to provide any empirical evidence that "anchoring" has actually occurred and, more to the point, that any anchoring has led to compulsory royalty rates for musical works rights that deviate from rates that are appropriate under the 801(b)(1) factors. As a logical matter, the mere existence of a close relationship (anchoring) between the compulsory rate and negotiated rates by itself does not demonstrate that the compulsory rate differs from what the appropriate rate is under the 801(b)(1) factors. A close relationship would be expected to exist even when the compulsory rate is equal to the appropriate rate: negotiated rates would appear to be anchored to the compulsory rate and subsequently set compulsory rates would appear to be anchored to the previously negotiated rate and the previously set compulsory rate.

[181] Expert Report of Joshua Gans, October 31, 2016, ¶ 22.

[182] Expert Report of Joshua Gans, October 31, 2016, ¶ 10.

[183] Expert Report of Joshua Gans, October 31, 2016, ¶ 20.

121. Dr. Gans is implicitly arguing that the CRB has repeatedly set the wrong compulsory rate for musical works. To the extent he argues this because he thinks the CRB should have set market rates instead of appropriate rates under the 801(b)(1) factors, he is incorrect. Moreover, he ultimately brushes aside the important fact that the copyright owners agreed to settle for a Subpart A mechanical rights royalty of 9.1 cents per digital download. Thus, this rate was not statutorily set; it was agreed to by the copyright owners in negotiations with services even though the copyright owners had the opportunity to challenge the rate in the regulatory proceeding and, in particular, make the arguments Dr. Gans now makes. It is not as if significant new information is now available that was not available in 2016 when copyright owners agreed to settle Subpart A for 9.1 cents per digital download.[184]

122. According to the Goldman Sachs report that Dr. Gans relies on for the calculations in his Table 3, publishers earn approximately the same profits from streaming as a percentage of streaming revenues as they earn from CDs as a percentage of CD revenues.[185] Thus, there is no basis to claim that publishers are doing less well under streaming than under CDs. Labels appear to be earning greater profits on streaming (as a percentage of streaming revenue) than they do on CDs,[186] but that is a consequence of labels' ability to retain cost-savings that result from digital distribution as opposed to physical distribution. Labels' ability to retain, rather than pass on, cost-savings is likely a consequence of their market power. As discussed below, the labels' market power is one of the reasons that Dr. Gans is incorrect to assume in his Shapley value analysis that publishers are entitled to the same profit as the labels.

[184] Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-0003-PR (2018-2022).

[185] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 58.

[186] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 54.

4. Dr. Gans' Opinion That the Mechanical Rights Value for Streaming Services Should Be Higher Due to Unbundling Is Incorrect

123. Dr. Gans argues that the unbundling of albums has resulted in consumers frequently purchasing and downloading only a subset of the tracks on an album. He concludes that, therefore, the mechanical royalty rate for the downloaded unbundled tracks should be higher than the mechanical royalty rate that applied to the tracks on the bundled album of tracks.[187] He further claims that the mechanical rate under unbundling should be at least 93% higher than the mechanical royalty rate under album bundling.[188]

124. As an initial matter, Dr. Gans does not appear to recognize that streaming services do not "unbundle" in the same sense that digital download services do. In the "all you can eat" streaming service, a consumer pays a subscription fee for unlimited access to the entire library—all of the tracks on a given album. Whether the streaming service consumer chooses to listen to all of the tracks, or only a subset, is up to the consumer. In contrast, a digital download consumer pays a fee for unlimited access only to particular tracks and has no access to other tracks.

125. Dr. Gans' calculations in Table 2 can be summarized in the following example, which makes a few changes for ease of explication, but without changing the essence of the calculations:

- Consider an album with three tracks. Under album bundling, when the album was purchased by a consumer, the publishers would have received mechanical royalties equal to (3 tracks)*(9.1 cents/track) = 27.3 cents. Having purchased the album, the consumer was entitled to listen to each individual track as often as desired (or not at all).

[187] Expert Report of Joshua Gans, October 31, 2016, ¶ 24.

[188] Expert Report of Joshua Gans, October 31, 2016, Table 2.

- Suppose that when the three tracks were made available through a streaming service, of all streams of the three tracks by a consumer, on average the first track accounted for 75% of the streams, the second track accounted for 25% of the streams, and the third track accounted for 0% of the streams.
- Dr. Gans claims first that the 27.3 cent album royalty under bundling should be allocated across the three tracks based on their percentage of streams. This results in a "repriced mechanical" rate of 75%*27.3 = 20.5 cents for the first track, 6.8 cents for the second track, and zero for the third track. Note that the sum of the "repriced mechanical" rates across the three tracks equals the 27.3 cent album royalty.
- Dr. Gans now goes a step further. He calculates a "weighted average repriced mechanical rate" as 75%*(20.5 cents) + 25%*(6.8 cents) = 17.1 cents. He appears to argue that this figure can be compared to the 9.1 cent actual mechanical rate for digital downloads. In particular, he seems to claim that the appropriate mechanical royalty payment for a streaming customer that streams the first two tracks is 2*17.1 cents, or 34.2 cents. Note that this figure exceeds the 27.3 cent royalty that would have been paid under album bundling.

126. Dr. Gans' calculations are flawed for a number of reasons. First, as noted, his calculations imply that the total mechanical royalty paid for tracks associated with an album under streaming (34.2 cents in my example) should be larger than the total mechanical royalty paid for the same tracks under album bundling (27.3 cents). This is despite the fact that the listening behavior of the consumer who would have bought the album under bundling, and thereby explicitly sought to obtain rights to listen to all of the songs on the album, is likely to be at least as intensive, and perhaps more intensive, than the streaming consumer who also has access to all tracks of the album, chooses to stream some or all of the tracks, but may not have chosen to purchase the entire album under bundling. This makes no economic sense.

127. Second, as noted, some streaming consumers who choose to listen to tracks from an album may not have purchased the entire bundled album in a world with only bundled albums. Thus, streaming expands the number of consumers listening to at least a subset of tracks from the album. The copyright owners whose musical works enjoy a greater level of listening benefit by receiving a greater share of musical works royalties.

128. Third, Dr. Gans' calculations mix and match figures related to bundled album sales, digital downloads, and streaming, respectively, without any basis to assume that the figures are comparable. For example, a consumer who purchases a bundled album may listen to each track as often as desired. The publishers receive 9.1 cents per track on the album regardless of how many times each track is listened to. A consumer who purchases a digital download track may listen to the track as often as desired. The publishers receive 9.1 cents for the track regardless of how many times it is listened to. A Google Music subscriber pays $10 per month and may listen to any track on a given album as often as desired. The publishers generally receive $1.05 per subscriber per month in total regardless of which tracks are listened to. Dr. Gans applies the 9.1 cents per track from album and digital download sales to streaming without any adjustment even though mechanical royalties for streaming are not calculated on a per stream basis.[189] If they were, as discussed in my opening reports, that would present a serious challenge for the streaming service business model and likely result in changes to the "all you can eat" plans, which would then change the streaming usage patterns on which Dr. Gans relies.

129. Fourth, Dr. Gans ignores the fact that Google Play pays royalties to publishers under a formula where the binding prong is based on a percentage of subscriber revenue. To the extent that unbundling and other aspects of streaming make the streaming service more attractive to consumers, Google Play is able to charge a higher subscription fee than it otherwise would. The publishers, in turn, receive a higher royalty per subscriber (if the percentage of royalty prong of the current statutory formula binds). Dr. Gans does not provide any reason to suggest that

[189] In my opening reports, I use the 9.1 cent mechanical royalty for digital downloads as a benchmark for the appropriate all-in musical works royalty rate for streaming services, but only after expressing it as a percentage of digital download revenue, which puts it on the same footing as streaming services, where royalties are also calculated as a percentage of sales. This adjustment avoids the problems that arise with Dr. Gans' calculations.

unbundling entitles publishers to a larger *share* of service revenues (as compared to the labels and the services). The contribution of the copyright owners is the same with and without bundling. It is the technologies and investments of the service providers that made the unbundling possible. Moreover, the unbundling has generated other benefits that Dr. Gans does not consider, e.g., a reduction in incentives for piracy.[190] According to the Goldman Sachs report on which Dr. Gans relies, publishers' share of revenues is approximately the same for streaming services as it is for (bundled) CDs.[191] Moreover, the Goldman Sachs report notes that streaming has benefited rights owners, including musical works rights owners.

5. Dr. Gans' Asserted Benchmarks Are Invalid

130. Dr. Gans points to the sound recording to musical work royalty ratios for synchronization licenses as evidence that the sound recording to musical work royalty ratios for streaming are too high.[192] Generally, under synchronization license agreements, musical works and sound recordings receive equal royalties. I note, however, that this "proves too much" for Dr. Gans. Dr. Gans claims elsewhere that the *profits* from streaming royalties, not the royalties themselves, should be equal for musical works and sound recordings.[193] In fact, Dr. Gans concludes from his Shapley value analysis that, for streaming, sound recording royalties should be 2.5x the musical works royalties.[194] If the synchronization licenses were valid comparables for streaming, they would imply that sound recording royalties should be 1x the musical works royalties.

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[190] Koh, Byungwan, Hann, Il-Horn and Raghunathan, Srinivasan, "Digitization, Unbundling, and Piracy: Consumer Adoption amidst Disruptive Innovations in the Music Industry," Robert H. Smith School Research Paper 2015.

[191] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 58.

[192] Expert Report of Joshua Gans, October 31, 2016, ¶ 28.

[193] Expert Report of Joshua Gans, October 31, 2016, ¶ 68.

[194] Expert Report of Joshua Gans, October 31, 2016, ¶ 79.

131. The discrepancy between Dr. Gans' Shapley analysis and the synchronization licenses, which Dr. Gans makes no effort to explain, demonstrates that the synchronization licenses are, in fact, not valid comparables for streaming. As previously discussed, the lack of comparability arises because synchronization differs in important economic respects from streaming. Synchronization rights pertain, for example, to music used in films. The filmmakers may have a certain musical work in mind as a good fit for a particular scene in the film. The filmmakers always have the option of making their own sound recording of that musical work and, for this reason, cover songs are quite common in films. Thus, the contribution (value) of the musical work is greater for synchronization than in the situation where a popular recording artist is choosing among musical works to record.

132. More generally, Dr. Gans' claim that a "normally functioning" market can serve as a benchmark for streaming is incorrect. A potential benchmark market must be demonstrated to be sufficiently comparable in terms of, among other things, the rights being exchanged, the outside options available to the parties, regulatory constraints (such as the 801(b)(1) factors), and other contract terms before it can provide a valid benchmark. Notably, a "normally functioning" market may not account for the 801(b)(1) factors.

133. Dr. Gans asserts that sound recording rights provide a benchmark for mechanical rights.[195] As noted above, to the extent that he claims that the two sets of rights are of equal value, this is an unsupported and incorrect assumption on his part. Moreover, under Dr. Gans' own theory, sound recording rights are "too high." If, as Dr. Gans maintains, mechanical rights royalties have been depressed by regulation, that would increase the profit pie that was the

[195] Expert Report of Joshua Gans, October 31, 2016, ¶¶ 38-39.

subject of the negotiations between the labels and the streaming services. Thus, the labels would obtain greater royalties than they "should" have received absent the regulation of mechanical rights royalties (according to Dr. Gans), and indeed these "undeserved" royalties would represent royalties that "should" have gone to the publishers (according to Dr. Gans). Thus, it is inconsistent from an economics point of view for Dr. Gans to claim, on the one hand, that the mechanical rights royalty has been depressed, while on the other hand claiming that the sound recording rights royalty is a valid benchmark.

134. Dr. Gans is also incorrect to claim that the sound recording rights royalty is a valid benchmark for the mechanical rights royalty because the labels may be able to exploit market power. Indeed, the Web IV proceedings acknowledged that sound recordings rates are not currently negotiated in an "effectively competitive" environment due to the market power of the music labels.[196] As also pointed out in a Goldman Sachs analyst report, "labels generally take a higher percentage of that pie than publishers, as is the case with physical and digital sales. This harkens back to the industry perspective that labels invest much more to sell the 'single' than publishers so they are entitled to more."[197] Similarly, as discussed above, artists often also hold more bargaining power than other players, such as songwriters, in the music industry.

6. Dr. Gans Incorrectly Applies the "Efficient Component Pricing Rule" (ECPR)

135. Dr. Gans has a section of his report that discusses the ECPR. Although he ultimately uses the Shapley value approach instead of an ECPR-based approach, I note a few flaws with Dr. Gans' discussion of the ECPR. First, Dr. Gans claims that mechanical rights for a given musical

[196] Determination, *Web IV*, at 66-67.

[197] "Music in the Air: Stairway to Heaven," Goldman Sachs, October 4, 2016, p. 29.

work is analogous to an "essential facility."[198] This is incorrect for the reasons discussed above—an artist has the choice among many songs to record. No one song is "essential" in the way that the term is used in competition economics. Application of the antitrust laws should prevent any one party (e.g., a publisher) from aggregating rights to enough songs that it could become an essential facility. It is also worth noting that the essential facility doctrine is applied in only the rarest of circumstances in the United States.

136. Second, Dr. Gans claims that a rightsholder is "forced to grant access."[199] While it is, strictly speaking, true that the compulsory license requires the copyright owner to give a license to mechanical rights to its musical works, this does not mean that the musical works rightsholder is forced to grant access. First, as discussed above, the rightsholder may withhold performance rights to the musical work or, if it also shares common ownership with the owner of the sound recording rights, it may threaten to withhold sound recording rights. Either of these options would result in withholding access. Moreover, this is unlike the situation where, for example, a firm that is a monopolist in an upstream network service competes with other firms in a downstream market and is forced to grant access to its upstream network to its downstream competitors. Here, the copyright owners do not compete with the potential licensees in the provision of music to consumers. The only way that the copyright owners can earn a return on their musical works is by entering into license agreements with the music service providers. As long as there are gains to trade, the copyright owners and licensees should be able to work out an agreement that makes them both better off. Dr. Gans appears to recognize this important

[198] Expert Report of Joshua Gans, October 31, 2016, ¶ 44.

[199] Expert Report of Joshua Gans, October 31, 2016, ¶ 44.

distinction,[200] but ignores it. I note that William Baumol makes a similar point, writing that the ECPR applies to the situation where "a copyright owner [] competes with licensees in a downstream market."[201] In cases where "holders of such copyrights often have no intention of competing in such a market (e.g., the songwriter who cannot sing)," one may need to turn to other pricing models such as Ramsey pricing.[202]

137. Implicitly recognizing the absence of direct competition, Dr. Gans asserts that the royalty should at least be equal to the opportunity cost from licensing, where the opportunity cost of licensing one party would be equal to the foregone royalty on sales this party would cannibalize from other licensees.[203] However, he provides the incorrect ECPR formula for this situation. The formula he provides assumes a 100% cannibalization rate and thus is incorrect if the cannibalization rate is anything less than 100%.[204] With differentiation between digital downloads or CDs, on the one hand, and streaming on the other, one would expect something far less than 100% cannibalization. Dr. Gans provides no evidence to support 100% (which would imply that streaming has not expanded the market at all) and, indeed, substantial evidence (such as streaming turning around the fortunes of the music industry) suggest that the cannibalization rate is well below 100%.

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[200] Expert Report of Joshua Gans, October 31, 2016, ¶ 44.

[201] William J. Baumol (2004) "The Socially Desirable Size of Copyright Fees," *Review of Economic Research on Copyright Issues,* **1**(1): 83-92, at 91.

[202] William J. Baumol (2004) "The Socially Desirable Size of Copyright Fees," *Review of Economic Research on Copyright Issues,* **1**(1): 83-92, at 91.

[203] Expert Report of Joshua Gans, October 31, 2016, ¶ 50.

[204] See, e.g., R. Gilbert, "The Protected Profits Benchmark: A Refusal to Deal Metric?" *Antitrust Law Journal*, 2013.

138. Dr. Gans claims that, under the ECPR, royalty rates should not be set differently for different business models.[205] This is clearly incorrect once product differentiation is accounted for as the correct ECPR formula demonstrates—different business models address different market segments; they therefore compete with each other to different extents, i.e., cannibalization rates differ across pairs of business models; and different levels of cannibalization lead to different rates under the ECPR formula. Moreover, as I discussed in my opening reports, different prices for different business models addressing different customer segments with different willingness to pay can lead to expanded consumption of music, which is one of the factors I understand the CRB must consider. For example, there is evidence that a significant portion of consumers are unwilling to pay for music, beyond the "cost" of being subject to advertising.[206] In the absence of streaming, some of these consumers may switch to piracy or other forms of "free" music for which publishers would receive no compensation.

139. Dr. Gans claims that "neutrality" (i.e., equal rates) arises in "normally functioning" markets.[207] This claim is at odds with the economic reality of many markets—it is quite common in "normally functioning markets" for different prices to be charged for the "same" good in different market segments. This is called "price discrimination."

[205] Expert Report of Joshua Gans, October 31, 2016, ¶ 53.

[206] In its 2015 US study, Nielsen reported that 78 percent of respondents said they were somewhat unlikely or very unlikely to pay for a streaming service in the next six months. See "2015 Nielsen Music U.S. Report," *Nielsen*, 2015, p. 25. About 60% of survey respondents do not want to pay for streaming services. See "Keep on Streaming in the Free World: Results from 4th Annual RBC Online Music Survey," *RBC Capital Markets*, June 30, 2016, p. 6.

[207] Expert Report of Joshua Gans, October 31, 2016, ¶ 54.

7. Dr. Gans Incorrectly Argues that the Musical Works Royalty Rates Should Be the Same for All of the Service Providers' Business Models

140. Dr. Gans claims that the same musical works or mechanical royalty rate should apply in all situations, regardless of the business model of the service provider.[208] I addressed this point in my opening reports. Essentially, different rate structures and even different rates for different business models will result in more efficient outcomes because the different business models address consumers with different preferences and willingness to pay for music and the different business models obtain their revenues in different ways. One size fits all is not efficient.

141. Dr. Gans ignores the fact that it is very common for intellectual property owners and licensees to negotiate different rates and rate structures in different licensee contexts, even for the same intellectual property.

8. Dr. Gans' Shapley Value Analysis Is Unreliable

142. In his Table 3, Dr. Gans applies a "Shapley value" analysis to determine what he believes is the appropriate mechanical rights royalty. The approach works as follows:

- Dr. Gans asserts that, under the Shapley value approach and his assumption that the value of the musical work rights is equal to the value of the sound recording rights, the profits that the publishers receive from streaming royalties should equal the profits that the labels receive from streaming royalties.
- He calculates the hypothetical royalty revenues that the publishers would need to receive to bring their profits up to the level of the profits of the labels. He calculates the ratio of the actual royalty revenues of labels to the hypothetical royalty revenues for publishers to be 2.5 to 1.
- He assumes that the additional royalty revenues for publishers (i.e., the difference between the hypothetical royalty revenues and the actual royalty revenues) should all be generated through additional mechanical royalties as opposed to performance royalties.[209]

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[208] Expert Report of Joshua Gans, October 31, 2016, ¶¶ 57-58.

[209] Fixing this issue reduces the mechanical royalty. In addition, Dr. Gans also erred in omitting data on ad-supported streaming services (which are included in the publisher and label revenue data Dr. Gans relies upon).

- He calculates the per-stream and per-subscriber mechanical royalties that would produce the hypothetical royalty revenues he has postulated.

143. Dr. Gans' calculations are unreliable for a number of reasons. First, as discussed above, his assumption that the value of the musical work rights is equal to the value of the sound recording rights is incorrect. This assumption is crucial to his calculations and his calculations are invalid without this assumption.

144. Second, Dr. Gans' application of the Shapley value model is misplaced. He claims that he can use the Shapley value model "to assess how royalties for musical works would compare to sound recording royalties if they were to be negotiated freely in a non-compulsory market."[210] However, the Shapley model is an axiomatic approach to allocating "surplus" among parties; the Shapley values may or may not correspond to a market outcome depending on the underlying economics.[211] For example, suppose there are three parties; party 1 is necessary for there to be surplus, while parties 2 and 3 are perfect substitutes for each other and only one of the two is needed to generate surplus (this is Dr. Gans' glove example).[212] In this case, the Shapley values (expressed as fractions of the surplus) are 2/3, 1/6, and 1/6. Under the Shapley model, both parties 2 and 3 are "paid" even though only one of them would be involved in the actual creation of the surplus. It is a rare market outcome in which a party that did not actually participate in production receives compensation from those that did. Instead, in a real market situation, party 1 is likely to play parties 2 and 3 against each other and bargain them down to a lower level of compensation, with the result that party 1 receives more than 2/3 of the surplus. Moreover, Dr.

[210] Expert Report of Joshua Gans, October 31, 2016, ¶ 68.

[211] The Shapley model is a method to "define a fair allocation of a given pie." Watt, R., "Fair Copyright Remuneration: The Case of Music Radio," Review of Economic Research on Copyright Issues (2010), Vol. 7, No. 2, p. 22.

Gans' formulation of the Shapley value model in the context of the music industry is much too simple. It ignores the fact that value can vary substantially across musical works and sound recordings. It ignores the possibility of substitution among various musical works and among various sound recordings. Yet, the outcome of his approach depends crucially on these unrealistic assumptions. Furthermore, the Shapley value approach is inappropriate because it ignores the considerations of the 801(b)(1) factors and, in particular, does not consider consumers.

145. Third, under Dr. Gans' assumptions, the Shapley value for the service providers should also be equal to the Shapley value for the labels, i.e., the service providers should earn the same profits as the labels (so that the surplus is divided three ways). The services are as "necessary" as the musical work and the sound recording under Dr. Gans' formulation. Yet, Dr. Gans never considers the service providers' profits. Given that the service providers' profits appear to be negative (e.g., Spotify), the royalty payments from the service providers to the labels and, potentially, the publishers must decrease in order to equilibrate the profits of the service providers to those of the labels and publishers. I have recalculated Dr. Gans' results under the assumption that the Shapley value for the publishers is 1/3 of the sum of the actual profits of the publishers and labels. This assumes that the publishers, labels, and streaming services are each entitled to one-third of the surplus and that the streaming services currently earn zero profits (which is conservative since they currently earn negative profits). Under these assumptions, the ratio of sound recordings to musical works Shapley-based royalties increases to 4.7 from 2.5.[213]

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[212] Expert Report of Joshua Gans, October 31, 2016, ¶ 70.

[213] Exhibit 4.

146. Fourth, Dr. Gans equates the profits of the publishers and labels after these entities have paid, respectively, the songwriters and artists. However, it is the combined "profits" of the songwriters and publishers, on the one hand, and the combined "profits" of the artists and labels, on the other hand, that are relevant. The publishers receive payments only because of the efforts of the songwriters, and similarly for the labels with respect to the artists. By excluding the profits of the songwriters and artists, Dr. Gans is missing an important piece of the puzzle. However, there is no data on the costs of the songwriters and artists (including the opportunity cost of their time) and thus no way to fix Dr. Gans' calculations. The absence of the necessary data does not justify the use of incomplete and thus flawed data.

147. Fifth, as discussed above, under Dr. Gans' theory, labels are overcompensated and thus do not provide a valid benchmark for publishers. In addition, labels' profits may reflect some degree of market power and thus again would not provide a valid benchmark for publishers particularly under the 801(b)(1) factors.

9. Dr. Gans' Argument That a Single Per-Play Rate is "Fair" Is Incorrect

148. Dr. Gans argues that a single per-play rate is "fair" and that this conclusion is supported by the fact that different streaming services have historically paid different effective per-play rates.[214] Dr. Gans is incorrect. As discussed above and in my opening reports, different services have customers with different preferences and different willingness to pay for music. Given that context, applying a single per-play rate to every service would not be economically efficient. Dr. Gans again makes the implicit assumption that the cannibalization rate between services is

[214] Expert Report of Joshua Gans, October 31, 2016, ¶ 84.

100%. He has no support for such an assumption, and indeed it is incorrect given the differentiation among the services.

10. Dr. Gans Failed to Address the Four Factors

149. Dr. Gans does not analyze the Copyright Owners' proposal (or his Shapley value results) in the context of the four 801(b)(1) factors that I understand the CRB considers in determining the appropriate royalty rate. As discussed in my opening reports, a change to per-stream and per-user royalty rates and the substantial increase in royalty payments that would result from the Copyright Owners' proposal (see Section III.A. of this report) would disrupt the streaming service providers and reduce the consumption of music. Moreover, the 801(b)(1) factors do not imply an unconstrained market standard nor a "willing buyer/willing seller" standard. Instead, the 801(b)(1) factors argue for a rate that can maximize consumer surplus, which may not be achieved under an unconstrained market.

IV. REVIEW AND CRITICISMS OF THE EXPERT REPORTS ON BEHALF OF APPLE

A. Apple's Proposal

150. I understand that for Subpart B interactive streaming and limited download services, Apple is proposing an all-in, per-play rate of $0.00091, which is based on the $0.091 per download statutory rate for Subpart A phonorecord deliveries, permanent digital downloads, and ringtones and an assumed streams-to-download ratio of 100:1.[215]

[215] "Apple Inc. Proposed Rates and Terms," In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III), p. 1-2; Expert Report of Anindya Ghose, November 1, 2016, ¶ 33.

151. I understand that for Subpart C paid locker services, Apple is proposing an all-in, per-subscriber monthly rate of $0.17 for paid locker services.[216]

152. Both of Apple's experts in this matter, Dr. Ghose and Dr. Ramaprasad, endorse Apple's Subpart B and Subpart C proposals.

B. Specific Criticisms of the Ghose Expert Report

1. Overview of the Ghose Expert Report

153. In his Expert Report, Dr. Ghose proposes that a per-play rate rather than a revenue-based royalty structure should be adopted given that "[a] per-play rate structure appropriately balances the rewards to songwriters and streaming services."[217] In contrast, Dr. Ghose proposes that the current percentage of revenue-based royalty structure "does not always appropriately balance the rewards to songwriters and streaming services"[218] in part because it supposedly exposes songwriters to risks such as the financial performance of the interactive streaming service and the decoupling of demand for their songs from the manner in which they are compensated for those songs.[219]

154. Dr. Ghose is also of the opinion that a percentage of revenue-based royalty structure is inappropriate because "it may expose songwriters to variable compensation across different streaming services even if the demand for their songs does not vary."[220] Furthermore, according

[216] "Apple Inc. Proposed Rates and Terms," *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III),* p. 1-2; Expert Report of Anindya Ghose, November 1, 2016, ¶ 34.

[217] Expert Report of Anindya Ghose, November 1, 2016, ¶ 60.

[218] Expert Report of Anindya Ghose, November 1, 2016, ¶ 62.

[219] Expert Report of Anindya Ghose, November 1, 2016, ¶¶ 63-64.

[220] Expert Report of Anindya Ghose, November 1, 2016, ¶ 65.

to Dr. Ghose, a loss-leader strategy (e.g., a freemium business model) does not properly compensate songwriters.[221]

155. Dr. Ghose further states that a "per-play rate structure for interactive streaming is consistent with the rate structures for other prominent forms of music distribution," citing to permanent downloads.[222] Dr. Ghose also posits that because per-unit rates are well-established for different forms of music distribution it would minimize the disruptive impact on the structures of the industries involved.[223]

156. Finally, Dr. Ghose also believes that a percentage of revenue-based structure "make[s] the calculation of royalty rates complicated"[224] and is "opaque to songwriters"[225] but that a per-play-based structure is simpler and easier to understand.[226]

157. In the following sections, I provide specific criticisms of the Ghose Expert Report.

2. Dr. Ghose's Opinions Regarding a Per-Play Rate Structure for Subpart B Interactive Streaming Services Are Unsupported

a. Dr. Ghose Incorrectly Concludes that a Per-Play Rate Structure Appropriately Balances the Rewards to Songwriters and Interactive Streaming Service Providers

158. Dr. Ghose states that "[a] per-play rate structure appropriately balances the rewards to songwriters and streaming services."[227] With respect to songwriters, according to Dr. Ghose:

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[221] Expert Report of Anindya Ghose, November 1, 2016, ¶ 67.

[222] Expert Report of Anindya Ghose, November 1, 2016, ¶ 4.

[223] Expert Report of Anindya Ghose, November 1, 2016, ¶ 84.

[224] Expert Report of Anindya Ghose, November 1, 2016, ¶ 80.

[225] Expert Report of Anindya Ghose, November 1, 2016, ¶ 81.

[226] Expert Report of Anindya Ghose, November 1, 2016, ¶ 83.

[227] Expert Report of Anindya Ghose, November 1, 2016, ¶ 60.

> As long as the per-play rate is appropriately determined and streams are measured in a way that is indicative of demand (e.g., by considering the streams that are longer than 30 seconds to eliminate accidental streams or streams of snippets of songs where users are merely sampling a song), payments to songwriters are likely to be commensurate with the demand for their songs. If the demand for their songs were to increase (i.e., if their songs are streamed more), their income also would increase.[228]

With respect to interactive streaming service providers, according to Dr. Ghose:

> If a streaming service makes certain decisions (e.g., to invest in developing a new feature that benefits consumers), and its revenues increase because of that decision, the streaming service alone should receive the additional revenue attributable to that innovation because it is not connected to any particular songwriter. Accordingly, increased revenue due to any innovation specific to the service should not have to be shared with songwriters.[229]

159. First, Dr. Ghose's premise that a per-play rate structure appropriately balances the rewards to songwriters and interactive streaming service providers assumes that the per-play rate is "appropriately determined." As I will discuss below, Dr. Ghose and Dr. Ramaprasad do not appropriately determine the per-play rate for numerous reasons, including, their use of a streams-to-download ratio of 100:1 that is unsupported. Furthermore, this ratio is artificially too low and results in a per-play rate that is too high and in favor of songwriters so that it does not appropriately balance the rewards to songwriters and interactive streaming service providers.

160. Second, the demand for a particular song is not due to just the song itself. The demand for a particular song within a given streaming service is also a function of the service provider's innovations and investments such as playlists, social recommendation features, bundling of value-added services, infrastructure, and plan offerings as well as the willingness to pay of the

[228] Expert Report of Anindya Ghose, November 1, 2016, ¶ 60.

[229] Expert Report of Anindya Ghose, November 1, 2016, ¶ 61.

users of the service. For example, as discussed in my opening reports, Spotify's social media integration is one feature credited as a reason for its success. Spotify allows users to integrate their existing Facebook and Twitter accounts, enabling access to their friend's music and sending tracks and playlists.[230] Furthermore, in July 2015, Spotify launched its Discover Weekly feature enabling users to receive new 30-track playlists each week tailored to each user based on a machine-learning algorithm.[231] Discover Weekly quickly became one of Spotify's most successful features with over 40 million listeners in May 2016.[232] One of Google Play Music's unique advantages is its human playlist curation. Google Play Music is one of the best music-streaming services at predicting what listeners want to hear and personalizing playlist recommendations.[233] Google Play Music offers human-curated playlists based on your mood, activity, or the time of day.[234] Amazon's key advantage is the integration of its streaming music service, Amazon Prime Music, into Amazon Prime, the company's $99-per-year premium bundle of services.[235] Amazon's strategy has been to win over casual listeners with smaller willingness to pay for music, who do not highly value having access to 30 million songs (Amazon's catalog is roughly 1 million songs), by offering bundled services at a lower price.[236]

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[230] "Spotify: The Next Step in Digital Music Innovation," Northwestern Business Review, January 3, 2012.

[231] "Spotify's Discover Weekly: How It Works," The Guardian, August 1, 2016.

[232] "Why Spotify's Discover Weekly Is So Addictive," Vogue, May 30, 2016. As of April 2016, 3% of all streams on Spotify come from Discover Weekly playlists. Half of those who try their Discover Weekly playlist end up listening to at least 10 of its 30 songs, adding at least one to a personal playlist. John McDermott, "How Spotify Solved for the 'Paradox of Choice,'" John McDermott, LinkedIn, April 12, 2016. Spotify published in May 2016 that more than 1 billion streams per week come from Spotify's curated playlists. "Spotify Playlists: Now playing… More than 1 Billion Streams a Week," Spotify Artists, May 26, 2016.

[233] "Google Might Have the Best Music App in the World," Business Insider, April 27, 2016.

[234] "It's Tuesday Morning, Play Music for a Bright, Sunshiny Day," Android Blog, October 21, 2014.

[235] "Why You Should Give Amazon Prime Music a Second Chance," Make Use Of, February 17, 2016.

[236] "Amazon's Streaming Music Aims for More Casual Listeners," The New York Times, November 10, 2015.

The "all you can eat" plan structure also likely expands the demand for music, as I discussed in my opening reports.

161. Therefore, when a consumer subscribes to a streaming service, it is not only to obtain music, but also to obtain the convenience of the resulting method of access to music, plus the other features of the service, such as listening suggestions, curated playlists, or bundling with other products or services. The method of access and features are provided by the services. The copyright owners have benefited from the existence of the services and their innovations, just as the services have benefited from having music to stream. See ¶¶ 75-76 of this report where I provide support for the conclusion that interactive streaming services have been a positive development for the overall music industry, publishers, and copyright owners.

162. Moreover, different services and different plans appeal to customers with different preferences and different willingness to pay for music.

163. As a result of these economic realities, it is not necessarily the case, even with an appropriately determined rate, that a per-play rate structure properly balances the rewards to songwriters and service providers across all plans and services. A per-play rate may overcompensate songwriters for benefits that are actually attributable to innovations and features developed by the interactive streaming service providers. Furthermore, a per-play rate structure does not properly balance the risks between songwriters and service providers because it guarantees the songwriter a certain royalty regardless of the level of success of the service provider, while the service provider bears all of the downside risk of the service.[237] Since the service is the combination (synergy) of the contributions of the musical works rights owners and

the service providers, both parties (as well as the sound recording rights owners) should share in both the risks and rewards of the services. A percentage of revenue appropriately achieves such risk- and reward-sharing. Finally, a per-play rate structure fails to account for the fact that different services and plans appeal to customers with different willingness to pay for music. By definition, a given musical work has lower value to customers with a lower willingness to pay. The musical work should therefore receive a lower royalty for such a customer. However, the per-play rate structure proposed by Apple does not allow for this. In contrast, a percentage of revenue royalty structure does result in lower royalties in the situation of a service or plan targeted toward lower WTP customers because such a service will generally charge a lower price (so that applying a given percentage of revenue would result in a lower royalty).

b. Dr. Ghose Incorrectly Concludes That a Percentage of Revenue Rate Structure Does Not Appropriately Balance the Rewards to Songwriters and Interactive Streaming Service Providers

164. Dr. Ghose states:

> a percent-of-revenue structure does not always appropriately balance the rewards to songwriters and streaming services…A percent-of-revenue structure exposes songwriters' compensation to two additional types of risk, however. First, there also is risk arising from uncertainty related to the financial performance of the streaming service…Second, the percent-of-revenue rate structure also gives rise to risk if the songwriters' compensation is decoupled from the demand for their songs.[238]

Dr. Ghose's statements are based on his opinions that songwriters should not bear any of the downside risk of the streaming service, and that the value of a musical work stream is the same in all economic contexts. Both opinions are incorrect. Dr. Ghose's statements also ignore the

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[237] It is also important to note that the songwriters are able to diversify the risks inherent in any one service by having their songs available on multiple services.

[238] Expert Report of Anindya Ghose, November 1, 2016, ¶¶ 62-64.

fact that the streaming services have fundamentally different business models than digital download services and that these differences are responsible for the success of streaming (which in turn has benefited copyright owners). Given the different business models, use of the same royalty structure for all models makes no economic sense.

165. First, a percentage of revenue rate structure makes economic sense in the context of streaming because songwriters and interactive streaming service providers collectively share in both the upfront investments in the service offering and in the upside (or downside) rewards associated with those investments. As discussed above, the demand for a stream of a particular song, and ultimately the revenues and profits generated from users of the particular service, are both a function of the demand for the song itself and the characteristics of the service offering provided by the provider, including the method of accessing the music and other features of the service including listening suggestions, curated playlists, bundling with other products or services, and the full access to the music library (in the case of "all you can eat" plans). Therefore, it makes economic sense that songwriters and service providers should share in both the upside, or downside, of the financial performance of the interactive streaming service that attracted consumers in the first place. A percentage of revenue rate structure accomplishes this balance.

166. Furthermore, Dr. Ghose ignores the fact that the existing Section 115 rate structure, and the proposal put forth by Google, both contain a greater of structure that protects songwriters against the supposed risk arising from the uncertainty related to the financial performance of the interactive streaming service. Specifically, the minimums included in Section 115 consider a specified percentage of the total amount expensed by the service provider for sound recording rights and per-subscriber per-month minimum rates. This protects songwriters against the

supposed risk arising from the uncertainty related to the financial performance of the interactive streaming service. For example, if the revenues earned by the Google Play Music subscription service, or Spotify's ad-supported service, are too low such that 10.5% of the revenues earned for the service falls below the lesser of the percentage of sound recording payments or per-subscriber minimum, then the songwriters receive the result of the lesser-than clause as the Section 115 all-in royalty payment and are ultimately protected against the downside risk of the financial performance of the interactive streaming service. Therefore, even though it is my opinion that songwriters should bear some of the downside risk associated with the financial performance of the service offering, Dr. Ghose's concerns about the percentage of revenue rate structure on this issue are accounted for by the existence of the existing and proposed percentage of sound recording payments and per-subscriber minimums in the Section 115 regulations.

167. Second, I disagree with Dr. Ghose that the value of a stream should remain constant regardless of any other factors, such as a service provider's business model and plan offerings, the preferences and willingness to pay of the consumers it is targeting, and the service provider's business decisions. Specifically, according to Dr. Ghose:

> Another feature of the percent-of-revenue structure is that it may expose songwriters to variable compensation across different streaming services even if the demand for their songs does not vary. Because different streaming services may have different business models (e.g., ad-supported, subscription-based), and may make different business decisions such as how to price their services (for subscription-based services) or how to place and what to charge for ads (for ad-supported services), their revenues may vary. It is plausible that different streaming services might pay different royalties to the same songwriter for the same number of streams under the percent-of-revenue structure.[239]

[239] Expert Report of Anindya Ghose, November 1, 2016, ¶ 65.

There is no valid economic reason why songwriters should receive the same exact dollar royalty for the streams that occur on different interactive streaming services or on different types of plans. As previously discussed, the demand for a given stream depends on the song itself, the innovations and features offered by the interactive streaming service, and the preferences of the consumers that were targeted by the particular service. These innovations and features can include, for example, the specific method of access to music of the service, plus the other features of the service, such as listening suggestions, curated playlists, bundling with other products or services, the way in which the user pays for the service (i.e., a monthly fee), and the nature of access to music. Since each interactive streaming service is different in terms of the features that it offers to consumers, and the demand for these features varies across consumers, it makes economic sense that a stream on one service by one consumer may generate a different value, and resulting mechanical royalty, than a stream on a completely different service by a different consumer.

168. Dr. Ghose also states that a loss-leader strategy, or freemium offering, does not properly compensate songwriters. According to Dr. Ghose: "Because such a loss leader, or free service, will have lower revenues (by definition) relative to a subscription-based service, the compensation to songwriters for the use of their songs on that service is also lower, although such use may ultimately be highly beneficial to the service."[240] As previously discussed in this report, promotional pricing strategies (freemium offerings are a form of such strategies) are accepted strategies that are widespread in the music marketplace and various other industries, with price discounts among the most widely employed sales promotion tactics, and that copyright owners would, in fact, benefit from these same strategies. Furthermore, Dr. Ghose

makes no showing that, for example, Google Music is a "loss leader" in the sense that Dr. Ghose uses that term. Finally, Dr. Ghose also ignores the per subscriber minimum prong of Google's proposal, which addresses Dr. Ghose's concern.

169. Third, Dr. Ghose focuses only on the supposed risks that songwriters may be exposed to under a percentage of revenue rate structure, and ignores the risks that interactive streaming service providers would be exposed to under a per-play rate structure. As discussed in my opening reports, a change to the structure of the royalties under the Section 115 compulsory license from the current percentage of revenue to Apple's proposed per-stream royalty rates likely would cause substantial disruption to streaming services, particularly given that the services made investments in developing their services likely with the reasonable expectation that the existing royalty rate structure would not change substantially. The subscription streaming services provided by companies such as Spotify and Google offer "all you can eat" plans, where subscribers pay a fixed monthly fee and then choose the desired amount of streaming. Under the current royalty structure, in which the royalty is based on a percentage of the subscriber fee (subject to minimums), the royalty, like the subscriber fee, is a fixed amount per subscriber. This gives the service certainty about both its revenues and a major cost component on a per-subscriber basis. If the royalty structure were changed to a per-stream basis, on the other hand, the royalty cost component on a per-subscriber basis would be uncertain because it would depend on the amount of usage of the subscribers. Moreover, with per-stream royalties, services would have the incentive to minimize their costs by taking measures to limit usage by each subscriber, including possibly imposing usage limits. This incentive could even result in services themselves starting to charge users on a per-stream basis, which would also

[240] Expert Report of Anindya Ghose, November 1, 2016, ¶ 67.

tend to limit usage. Streaming services that rely on advertisements to generate revenue likely would face similar disruption from a change to per-stream royalties. These changes would disrupt both providers and users, and would limit the availability of copyrighted works.

c. Dr. Ghose Does Not Present Any Evidence that a Per-Play Rate Structure Is More Simple and Transparent Than a Percentage of Revenue or Hybrid Rate Structure

170. Dr. Ghose states that the "number and variety of factors to consider under the percent-of-revenue structure or the hybrid structure make the calculation of royalty rates complicated."[241] Furthermore, Dr. Ghose states that the current percentage of revenue rate structure is "opaque to songwriters," complex, and confusing; and, in particular, "[t]he determination of service revenue for streaming could be particularly challenging when the service provider offers a streaming service as part of a larger bundle of services for which it charges a single price."[242] In contrast, Dr. Ghose believes that a per-play rate structure is simple to understand, easy to administer, and transparent.[243]

171. Dr. Ghose's characterization of the current Section 115 percentage of revenue rate structure is inconsistent with the fact that interactive streaming service providers have been paying royalties under this type of structure since at least 2009.[244] The CRB has approved such a percentage of revenue structure for interactive streaming services twice, in each of the past Phonorecords proceedings. Therefore, the actions of the CRB and the ability of service providers to successfully pay royalties under a percentage of revenue structure does not support

[241] Expert Report of Anindya Ghose, November 1, 2016, ¶ 80.

[242] Expert Report of Anindya Ghose, November 1, 2016, ¶¶ 78-81.

[243] Expert Report of Anindya Ghose, November 1, 2016, ¶ 83.

Dr. Ghose's opinion that such a structure is too complicated to implement. Furthermore, Dr. Ghose presents no evidence that the calculation of mechanical royalties based on a percentage of revenue rate structure has been opaque to songwriters, and that a per-play rate structure would somehow be less opaque to songwriters.

d. Dr. Ghose Endorses Dr. Ramaprasad's Flawed Calculation of a Per-Play Rate for Subpart B Interactive Streaming Services

172. Dr. Ghose reviewed Dr. Ramaprasad's calculation of a per-play rate for Subpart B interactive streaming services, which is based on the $0.091 per download Subpart A rate and a supposed comparable benchmark for streams-to-downloads of 100:1, and which resulted in a rate for Subpart B interactive streaming services of $0.00091 per stream consistent with Apple's proposed rate. Dr. Ghose concludes that "Dr. Ramaprasad's finding is sound and I therefore conclude that Apple's proposal is also reasonable in that it is consistent with accepted benchmarks."[245]

173. As I will discuss below under my specific criticisms of the Ramaprasad Expert Report, Dr. Ramaprasad's calculation, which Dr. Ghose endorses, is based on an outdated streams-to-download ratio of 100:1.

C. Specific Criticisms of the Ramaprasad Expert Report

1. Overview of the Ramaprasad Expert Report

174. Dr. Ramaprasad is of the opinion, similar to Dr. Ghose, that the value of a stream is the same regardless of the interactive streaming service's business model, and that a per-play rate

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[244] 37 CFR Part 385, *Determination of Rates and Terms for Use of Musical Works Under Compulsory License for Making and Distributing of Physical and Digital Phonorecords* (Phonorecords I), Docket No. 2006-3 CRB DPRA, Federal Register Vol. 74 No. 15, January 26, 2009.

[245] Expert Report of Anindya Ghose, November 1, 2016, ¶ 85.

structure "would make royalty payments to songwriters simpler, less variable, and more predictable (for a give number of streams)."[246]

175. Dr. Ramaprasad also gives the opinion that the interactive streaming industry is a robust and mature industry and, therefore, "payments to songwriters by interactive streaming services should be consistent with a robust industry and similar to royalty structures of other major forms of music delivery."[247] Dr. Ramaprasad further asserts that because interactive streaming and downloads are substitutes, "songwriters need predictable and fair compensation for interactive streaming commensurate with their compensation for digital downloads."[248] As evidence for the fact that interactive streaming and downloads are substitutes, Dr. Ramaprasad points to industry sales trends from the RIAA and academic research from Luis Aguiar and Joel Waldfogel.[249] According to Dr. Ramaprasad, because revenues from digital downloads have been declining since 2013 while revenues from interactive streaming have been increasing since 2013, interactive streaming services could be considered a substitute for digital downloads.[250] Dr. Ramaprasad also asserts, without support, that given the investments and technological innovations made by interactive streaming service providers, a per-play rate structure provides a fair return to songwriters and interactive streaming service providers.[251]

176. Based on her opinion that digital downloads are a substitute for interactive streaming, Dr. Ramaprasad references Subpart A rates for downloads. Dr. Ramaprasad specifically uses a

[246] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 49.

[247] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 68.

[248] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 61.

[249] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 60.

[250] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 60.

[251] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 84.

streams-to-download ratio of 100:1 in her calculation when applying Subpart A rates for downloads (i.e., $0.091 per download) to interactive streaming, resulting in a per-stream royalty rate of $0.00091 (= $0.091 / 100).[252] As I will discuss further below, Dr. Ramaprasad adopts, without explanation, an outdated streams-to-download ratio of 100:1 rather than the more current rates used in the industry.

177. In the following sections, I provide specific criticisms of the Ramaprasad Expert Report.

2. Dr. Ramaprasad's Calculation of a Per-Play Rate for Subpart B Interactive Streaming Services Is Based on an Outdated 100:1 Streams-to-Download Ratio

178. Dr. Ramaprasad's calculation of a per-play rate for Subpart B interactive streaming services relies on a 100:1 streams-to-download ratio used by the U.K. Official Singles Chart in its calculation of the best-selling U.K. singles. Specifically, Dr. Ramaprasad divides the Subpart A $0.091 per download royalty rate by 100 streams to calculate a per-stream rate of $0.00091, consistent with the per-stream rate being proposed by Apple for Subpart B interactive streaming services.[253] Dr. Ramaprasad's calculation, as well as Apple's calculation, is based on an outdated streams-to-download ratio; and more current ratios, including ones identified in Dr. Ramaprasad's own report, are higher than 100:1 and result in much lower per-stream rates based on the Subpart A $0.091 per download benchmark. Furthermore, the U.K.-based ratio used by Dr. Ramaprasad has recently increased to 150:1, effective January 2017,[254] further illustrating that Dr. Ramaprasad's 100:1 ratio is outdated.

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[252] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 95.

[253] Expert Report of Jui Ramaprasad, November 1, 2016, ¶¶ 91-92.

[254] "Chart Company Changes Formula to Reflect Rise in Streaming," BBC News, December 19, 2016. ("Currently, 100 streams count as one 'sale' of a song. From January, the ratio will become 150:1.") ("Announcing the changes to the chart formula, Martin Talbot, chief executive of the Official Chart Company, said: 'It is testament

179. Dr. Ramaprasad identifies two other streams-to-download benchmarks in her report. First, she identifies a streams-to-download ratio of 137:1 based on academic research; in particular, a paper by Luis Aguiar and Joel Waldfogel entitled, "Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?"[255] In this paper, the authors found that Spotify use displaces permanent downloads – specifically, 137 Spotify streams appear to reduce digital track sales by 1 unit; but the losses from displaced sales are roughly outweighed by the gains in streaming revenue. In addition, they also showed that Spotify use displaces music piracy. Second, Dr. Ramaprasad identifies a streams-to-download ratio of 150:1, which is used by Billboard in the creation of its Top 200 Albums chart. Dr. Ramaprasad notes that in 2013 Billboard actually used a streams-to-download ratio of 200:1.[256]

180. Therefore, as discussed above and in the Ramaprasad Expert Report, benchmark streams-to-download ratios vary from 100:1 to 200:1. Dr. Ramaprasad relies on the lowest such ratio (i.e., 100:1); and a ratio that is outdated as it was recently changed to 150:1. Dr. Ramaprasad provides no explanation for why 100:1 is the most appropriate benchmark ratio. In my opinion,

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to the rapidly changing nature of music consumption in the UK - and the huge shift we are seeing towards streaming - that we are updating the way we measure the contribution of streams to the make-up of the official charts as quickly as we are.'").

[255] Expert Report of Jui Ramaprasad, November 1, 2016, ¶¶ 93-94; Luis Aguiar and Joel Waldfogel, "Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?" Working Paper, National Bureau of Economic Research, October 2015.

[256] Expert Report of Jui Ramaprasad, November 1, 2016, ¶¶ 88-90. I note that on February 1, 2016, the RIAA announced that it would use streams to calculate its gold and platinum album awards for the first time. It also announced a change in its 2013 formula for singles from 100 on-demand streams for 1 download to 150 on-demand streams to 1 download. The reason given was "to reflect the enormous growth of streaming consumption in the two plus years since that ratio was set." The Chairman and CEO, Cary Sherman, said of the change: "We know that music listening – for both albums and songs – is skyrocketing, yet that trend has not been reflected in our album certifications." The RIAA emphasized that the formula is based on consumption patterns, not on the financial value of streams and downloads. See "RIAA Debuts Album Award with Streams," RIAA, February 1, 2016; "RIAA Adds Digital Streams to Historic Gold & Platinum Awards," RIAA, May 9, 2013.

other benchmarks are just as relevant for purposes of establishing a Subpart B interactive streaming per-stream royalty rate. For example:

- 137:1 – Based on the academic research relied on by Dr. Ramaprasad, which measures the change in music consumption behaviors from PDDs to streaming of a representative user.
- 150:1 – Based on the ratio used by Billboard and the RIAA, and now used by the U.K. Officials Singles Chart, which is the source used by Dr. Ramaprasad.

181. I have calculated the per-stream royalty rates based on the Subpart A $0.091 rate and using 137:1 and 150:1 streams-to-download ratios. The results are per-stream rates equal to $0.00066 and $0.00061, respectively. The resulting per-stream royalty rates for interactive streaming are substantially lower than Dr. Ramaprasad's and Apple's proposed $0.00091 per-stream rate.

3. Dr. Ramaprasad's Opinions Regarding a Per-Play Rate Structure for Subpart B Interactive Streaming Services Are Unsupported

a. There Is No Valid Economic Reason Why Songwriters Should Receive the Same Exact Royalty for Every Stream of a Song

182. Dr. Ramaprasad states that due to the various factors (e.g., number of streams by users, number of streams by songs, relevant service revenues, number of subscribers, and sound recording royalty payments) necessary to calculate mechanical royalties for musical works under the current Section 115 percentage of revenue structure, "songwriters are unable to reconcile the number of times their songs have been streamed with the ultimate compensation they receive for mechanical royalties."[257] In contrast, according to Dr. Ramaprasad, "Apple's per-play rate for

[257] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 47.

interactive streaming would make royalty payments to songwriters simpler, less variable, and more predictable (for a given number of streams)."[258]

183. This opinion is simply incorrect. As I understand it, an interactive streaming service's royalty payments to publishers are allocated among musical works based on the number of times each work was streamed. Thus, contrary to Dr. Ramaprasad's claim, there is a direct link between the payment a musical work receives and the number of times it was streamed. In contrast, with a digital download, while there is a link between the payment and the number of downloads, there is no link between the payment and the number of times the track is actually played. Dr. Ramaprasad ignores this fact.

184. In addition, Dr. Ramaprasad's opinion is similar to one of Dr. Ghose's opinions; in particular, that the value of a stream should remain constant regardless of any other factors, and that variability in the royalties received by songwriters is problematic and typically caused by different business models of service providers (e.g., paid subscription based versus ad-supported). As I previously discussed in my rebuttal of the Ghose Expert Report, there is no valid economic reason why songwriters should receive the same exact royalty for the streams that occur on different interactive streaming services or on services with different business models.

[258] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 49.

b. Dr. Ramaprasad's Claim that Apple's Proposal, "Compensates Both Songwriters and Interactive Streaming Service Providers for Their Contributions Given the Recent Developments in the Music Industry," Is Unsupported

i. Dr. Ramaprasad's Claim that the Interactive Streaming Industry Is a Robust and Strong Industry and, Therefore, This Necessitates a Reassessment of How Royalties for Songwriters Should Be Determined, Has No Economic Support

185. Dr. Ramaprasad states:

> The evolution of the interactive streaming industry over the last few years, and the fact that interactive streaming services are attracting an increasing number of paying subscribers, indicates that the streaming industry has outgrown its nascent stage and is showing the sort of sustained growth consistent with a robust, strong industry. Therefore, the royalty rate and the royalty structure for payments to songwriters by interactive streaming services should be consistent with a robust industry and similar to the royalty structures of other major forms of music delivery.[259]

I disagree with Dr. Ramaprasad's opinion.

186. Dr. Ramaprasad's analysis of the interactive streaming industry focuses primarily on the growth in paying subscribers, and ignores the fact that interactive streaming service providers have not yet reached any level of profitability, let alone sustained profitability, in part due to the royalty burden faced by providers. See my opening reports where I discuss the lack of profitability of interactive streaming service providers.[260] Therefore, given the current and foreseeable lack of profitability for the interactive music streaming industry as whole, Dr. Ramaprasad's premise that the interactive streaming industry is a robust and strong industry is incorrect.

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[259] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 68.

[260] Expert Witness Statement of Dr. Gregory K. Leonard, November 1, 2016, ¶¶ 96-99; Amended Expert Witness Statement of Dr. Gregory K. Leonard, January 25, 2017, ¶¶ 98-101.

ii. Dr. Ramaprasad Ignores the Investments and Technological Innovations Made by Interactive Streaming Service Providers and Others that Have Driven the Success of Interactive Streaming

187. Although Dr. Ramaprasad discusses extensively the investments, technological innovations, and interactive streaming features developed by service providers that have led to the success of interactive streaming, she does not justify how Apple's $0.00091 per-stream proposal properly compensates service providers for these investments, innovations, and features. Rather, she simply states, without support, that "[a] per-play rate structure [including what is proposed by Apple] also would provide a fair return to interactive streaming services."[261]

188. For example, Dr. Ramaprasad makes the following statements regarding the innovations and technical developments made by interactive streaming service providers:

- "It is clear that interactive streaming services have increased consumer access to a larger catalogue and, therefore, a greater variety of music."[262]
- "Finally, there is a large list of features around catalogue and variety that are increasing in popularity among Spotify users, including the depth of the catalogue, the integration with online social networks, the creation and sharing of playlists, and recommendations. In addition to Spotify, whose purchase of EchoNest demonstrated their investment in music recommendations, the other main interactive streaming sites are investing in improving their 'intelligent' recommendation systems: Google purchased Songza and Apple acquired Semetric."[263]
- "Together, it is clear that due to the size and variety of the catalogue available, interactive streaming services provide enhanced opportunities for music discovery."[264]
- "Academic research has found that interactive streaming leads to a 43% increase in overall music consumption, and the benefits offered by interactive streaming services, including the increased variety of music and the reduced search costs to discover new music, increase consumer welfare."[265]

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[261] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 84.

[262] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 72.

[263] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 73.

[264] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 74.

[265] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 75.

- "Research has shown that because of music discovery and the enhanced experience enabled by interactive streaming services, smaller, or more 'niche' artists are more likely to be discovered and sampled."[266]
- "Academic research has also found that expansion in listening variety could ultimately increase competition, such that niche artists would have an opportunity to compete with mainstream artists."[267]
- "Thus, interactive streaming services have played, and will continue to play, an important role in enabling consumers to discover music and enabling musicians to reach larger and more diverse audiences. Interactive streaming services have had to incur costs to test and create a product that would offer benefits to consumers and musicians. Therefore, they would expect to earn a fair economic return for their contributions, without which their incentive to innovate would decrease."[268]

189. Dr. Ramaprasad performs no analysis to establish that interactive streaming service providers are properly compensated for all of these types of investments and innovations/technical developments, or would be under Apple's proposal. As a result, her analysis of Apple's proposal, and her claim that it compensates both songwriters and interactive streaming service providers for their contributions is unsupported.

[266] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 76.

[267] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 77.

[268] Expert Report of Jui Ramaprasad, November 1, 2016, ¶ 81.

Before the
United States Copyright Royalty Judges
The Library of Congress
Washington, D.C.

In the Matter of:	**Docket No. 16-CRB-0003-PR (2018-2022)**
Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)	

Declaration of Gregory K. Leonard

I, Gregory K. Leonard, declare under penalty of perjury that the statements contained in my written rebuttal statement in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15th day of February, 2017 in San Francisco, California.

Gregory K. Leonard

Appendix A

GREGORY K. LEONARD

Gregory K. Leonard is a Partner at Edgeworth Economics specializing in applied microeconomics and econometrics.

Dr. Leonard has written widely in the areas of antitrust, industrial organization, econometrics, intellectual property, class certification, and labor economics. His publications have appeared in the *RAND Journal of Economics*, the *Journal of Industrial Economics*, the *Journal of Econometrics*, the *International Journal of Industrial Organization*, the *Journal of Public Economics*, *Annales Economie et de Statistique*, the *Journal of Labor Economics*, the *International Journal of the Economics of Business*, *Antitrust Law Journal*, *Antitrust*, *Antitrust Source*, the *Journal of Economic Analysis & Policy*, *Journal of Competition Law and Economics*, the *Journal of Economic Surveys*, *法学家(Jurists' Review)*, *Antitrust Chronicle*, the *Berkeley Technology Law Journal*, the *Columbia Science and Technology Law Review*, the *European Competition Law Review*, *les Nouvelles*, *Landslide*, *Managing Intellectual Property*, *Legal Issues of Economic Integration*, *Kokusai Shoji Houmu (International Business Law and Practice)*, and the *George Mason Law Review*. Dr. Leonard authored two chapters and co-authored another chapter in the American Bar Association Section of Antitrust Law (ABA) volume *Econometrics* (2nd Ed., 2014), co-authored two chapters in the ABA volume *Issues in Competition Law and Policy*, and co-authored the "Econometrics and Regression Analysis" chapter of the ABA volume *Proving Antitrust Damages* (2nd Ed., 2010). He co-edited *Economic Approaches to Intellectual Property: Policy, Litigation, and Management* and authored or co-authored three of its chapters. One of these chapters (co-authored with Lauren J. Stiroh) was cited by the Court of Appeals for the Federal Circuit in its *Uniloc* decision. Dr. Leonard is a Senior Editor of the *Antitrust Law Journal* and has served as a referee for numerous economics journals.

Dr. Leonard was invited to speak on merger simulation at the 2004 US Department of Justice and Federal Trade Commission (FTC) Merger Workshop, the econometrics of evaluating competition in local retail markets at the 2008 FTC Retail Mergers Workshop, and the calculation of patent damages at the 2009 FTC Hearings on the Evolving IP Marketplace. The 2011 FTC report resulting from the latter hearings cited Dr. Leonard extensively. In 2005, Dr. Leonard served as a consultant on the issue of immunities and exemptions to the Antitrust Modernization Commission (AMC), which was tasked by Congress and the President with developing recommendations for changes to the US antitrust laws. He testified before the AMC in December 2005. Dr. Leonard gave an invited presentation on the use of natural experiments in antitrust at the European Commission's Directorate General for Competition (DG Comp) in 2014.

Dr. Leonard has extensive experience with international antitrust and intellectual property issues, particularly in Asia. He has been retained by the Anti-Monopoly Bureau of China's Ministry of Commerce (MOFCOM) as an outside economics expert to assist in merger reviews. Dr. Leonard has given invited presentations at MOFCOM, the Supreme People's Court of China, Renmin University, the Chinese Academy of Social Sciences, and the University of Political Science and Law. He was a member of ABA and US Chamber of Commerce delegations to joint workshops with the Chinese antitrust agencies, MOFCOM, NDRC, and SAIC, and served on the working groups of the ABA's Sections of Antitrust Law and International Law that prepared comments on MOFCOM's and SAIC's draft regulations. Dr. Leonard has also given presentations to the Japan Fair Trade Commission and the India Competition Commission.

Dr. Leonard has experience in a broad range of industries, including pharmaceuticals, telecommunications, airlines, semiconductors, hedge funds, securities, commercial and recreational fishing, medical devices, professional sports, credit card networks, payment systems, information services, computer software, computer hardware, chemicals, plastics, flat glass, retailing, advertising, beef processing, fertilizers, printing, petroleum, steel, beer, cereals, cosmetics, athletic apparel, film, milk, canned fish, vitamins, animal feed supplements, tissue, paperboard, industrial gas, concrete, automobiles, contact lens cleaners, sports beverages, soft drinks, diapers, tobacco products, graphite and carbon products, and modems, among others.

Dr. Leonard has provided written and oral testimony and presentations before federal and state courts, government agencies, and arbitration panels on issues involving antitrust, damages estimation, statistics and econometrics, surveys, valuation, and labor market discrimination.

Prior to joining Edgeworth, Dr. Leonard was a Senior Vice President at NERA and Lexecon Inc., a founding member and Director of Cambridge Economics, Inc., and an Assistant Professor at Columbia University, where he taught statistics, econometrics, and labor economics.

Dr. Leonard received an Sc.B. in Applied Mathematics-Economics from Brown University and a Ph.D. in Economics from the Massachusetts Institute of Technology, where he was a National Science Foundation Graduate Fellow and an Alfred P. Sloan Foundation Fellow.

EDUCATION

Massachusetts Institute of Technology

PhD, Economics, 1989
Alfred P. Sloan Foundation Fellowship, 1988-1989
National Science Foundation Graduate Fellowship, 1985-1988

Brown University

ScB, Applied Mathematics-Economics, 1985
Rohn Truell Memorial Premium in Applied Mathematics, 1985

PROFESSIONAL EXPERIENCE

2012-	Partner, Edgeworth Economics
2008-2012	Senior Vice President, NERA Economic Consulting
2004-2008	Vice President, NERA Economic Consulting
2000-2004	Senior Vice President, Lexecon, Inc.
1991-2000	Director, Cambridge Economics, Inc.

1990-1991 Senior Analyst, NERA Economic Consulting

1989-1990 Assistant Professor, Columbia University (Teaching Areas: Econometrics, Statistics, Labor Economics)

PAPERS AND PUBLICATIONS

"A Proposed Method for Measuring Competition Among Imperfect Substitutes," *Antitrust Law Journal* 60, 1992, pp. 889-900 (with J. Hausman and D. Zona).

"Issues in the Contingent Valuation of Environmental Goods: Methodologies for Data Collection and Analysis," in *Contingent Valuation: A Critical Assessment*, Ed. by J. A. Hausman, North Holland Press, 1993 (with D. McFadden).

"Assessing Use Value Losses Due to Natural Resource Injury," in *Contingent Valuation: A Critical Assessment*, ed. by J. A. Hausman, North Holland Press, 1993 (with J. Hausman and D. McFadden).

"Does Contingent Valuation Measure Preferences? Experimental Evidence," in *Contingent Valuation: A Critical Assessment*, ed. by J. A. Hausman, North Holland Press, 1993 (with P. Diamond, J. Hausman, and M. Denning).

"Competitive Analysis with Differentiated Products," *Annales d'Economie et de Statistique* 34, 1994, pp. 159-180 (with J. Hausman and D. Zona).

"A Utility Consistent, Combined Discrete Choice and Count Data Model: Assessing Recreational Use Losses Due to Natural Resource Damage," *Journal of Public Economics* 56, 1995, pp. 1-30 (with J. Hausman and D. McFadden).

"Market Definition Under Price Discrimination," *Antitrust Law Journal* 64, 1996, pp. 367-386 (with J. Hausman and C. Vellturo).

"Achieving Competition: Antitrust Policy and Consumer Welfare," *World Economic Affairs* 1, 1997, pp. 34-38 (with J. Hausman).

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"Superstars in the NBA: Economic Value and Policy," *Journal of Labor Economics* 15, 1997, pp. 586-624 (with J. Hausman).

"Efficiencies From the Consumer Viewpoint," *George Mason Law Review* 7, 1999, pp. 707-727 (with J. Hausman).

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"Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?" *Antitrust Law Journal* 70, 2002, pp. 463-484 (with J. Hausman and J. G. Sidak).

"On Nonexclusive Membership in Competing Joint Ventures," *RAND Journal of Economics* 34, 2003 (with J. Hausman and J. Tirole).

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"A Practical Guide to Damages," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management*, ed. by G. Leonard and L. Stiroh, 2005 (with L. Stiroh).

"Applying Merger Simulation Techniques to Estimate Lost Profits Damages in Intellectual Property Litigation," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management*, ed. by G. Leonard and L. Stiroh, 2005.

"Antitrust Implications of Pharmaceutical Patent Litigation Settlements," in *Economic Approaches to Intellectual Property, Policy, Litigation and Management*, ed. by G. Leonard and L. Stiroh, 2005 (with R. Mortimer).

"Framework for Policymakers to Analyze Proposed and Existing Antitrust Immunities and Exemptions," report to the Antitrust Modernization Commission, October 24, 2005 (with D. Bush and S. Ross).

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"Applying Econometrics to Estimate Damages," in *Econometrics: Legal, Practical and Technical Issues*, ABA Section of Antitrust (2nd Edition), 2014 (with J. Langenfeld, W. Li, and J. Morris).

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"A Comparison of the Almost Ideal Demand System and Random Coefficients Logit Models For Use with Retail Scanner Data," NERA Working Paper, 2007 (with F. Deng).

PRESENTATIONS

"Merger Analysis with Differentiated Products," paper presented to the Economic Analysis Group of the US Department of Justice, April 1991 (with J. Hausman and D. Zona).

"Assessing Use Value Losses Due to Natural Resource Injury," paper presented at "Contingent Valuation: A Critical Assessment," Cambridge Economics Symposium, April 3, 1992 (with J. Hausman and D. McFadden).

"Contingent Valuation and the Value of Marketed Commodities," paper submitted to the Contingent Valuation Panel of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, August 12, 1992 (with J. Hausman).

"Economic Analysis of Differentiated Products Mergers Using Real World Data," paper presented to the George Mason University Law Review Antitrust Symposium, October 11, 1996 (with J. Hausman).

"Documents Versus Econometrics in Staples," paper presented to a program of the Economics Committee of the ABA Antitrust Section, September 5, 1997 (with J. Hausman).

Discussant, "New Developments in Antitrust" session, AEA meetings, January 7, 2000.

"In Defense of Merger Simulation," Department of Justice and Federal Trade Commission Merger Workshop, Unilateral Effects Session, February 18, 2004.

Discussant, "Proving Damages in Difficult Cases: Mock Trial & Discussion," NERA Antitrust & Trade Regulation Seminar, July 10, 2004.

"Network Effects, First Mover Advantage, and Merger Simulation in Damages Estimation," LSI Workshop on Calculating and Proving Patent Damages, July 16, 2004.

"Early Exchange of Documents," LSI Workshop on Pre- and Early Stage Patent Litigation, July 23, 2004.

"Lessons Learned From Problems With Expert Testimony: Antitrust Suits," LSI Workshop on Effective Financial Expert Testimony, November 4, 2004.

"Price Erosion and Convoyed Sales," LSI Workshop on Calculating & Proving Patent Damages, January 19, 2005.

"Economic Analysis of Rule 23(b)(3)," LSI Litigating Class Action Suits Conference, June 6, 2005.

"Early Exchange of Documents," LSI Workshop on Pre- & Early-Stage Patent Litigation, July 22, 2005.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2005, Practicing Law Institute, September 30, 2005.

"Antitrust Issues in Standard Setting and Patent Pools," Advanced Software Law and Practice Conference, November 3, 2005.

"New Technologies for Calculating Lost Profits," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2006.

"Estimating Antitrust Damages," Fair Trade Commission of Japan, April 21, 2006.

"Economic Analysis of Rule 23(b)(3)," LSI Litigating Class Action Suits Conference, May 11, 2006.

"Permanent Injunction or Damages: What is the Right Remedy for Non-Producing Entities?," San Francisco Intellectual Property Law Association/Los Angeles Intellectual Property Law Association Spring Seminar, May 20, 2006.

"Antitrust Enforcement in the United States" and "Economic Analysis of Mergers," Sino-American Symposium on the Legislation and Practice of Anti-Trust Law, Beijing Bar Association, Beijing, People's Republic of China, July 17, 2006.

"Economic Analysis in Antitrust," Chinese Academy of Social Sciences, Beijing, People's Republic of China, July 20, 2006.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2006, Practicing Law Institute, September 26, 2006.

"Comparison of the Almost Ideal Demand System and Random Coefficient Models for Use With Retail Scanner Data," Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007 (with F. Deng).

Discussant, "Applied Economics" Session, Pacific Rim Conference, Western Economic Association, Beijing, People's Republic of China, January 12, 2007.

"Balancing IPR Protection and Economic Growth in China," International Conference on Globalization and the Protection of Intellectual Property Rights, Chinese University of Political Science and Law, Beijing, People's Republic of China, January 20, 2007.

"The Use and Abuse of Daubert Motions on Damages Experts: Lessons from Recent Cases," LSI Workshop on Calculating & Proving Patent Damages, February 27, 2007.

"Will Your Licenses Ever be the Same? Biotechnology IP Strategies," BayBio 2007 Conference, April 26, 2007.

"Tension Between Antitrust Law and IP Rights," Seminar on WTO Rules and China's Antimonopoly Legislation, Beijing, People's Republic of China, September 1, 2007.

"Issues to Consider in a Lost Profits Damages Analysis," Patent Litigation 2007, Practicing Law Institute, September 25, 2007.

Discussant, "Dominance and Abuse of Monopoly Power" Session, China's Competition Policy and Anti-Monopoly Law, J. Mirrlees Institute of Economic Policy Research, Beijing University, and the Research Center for Regulation and Competition, Chinese Academy of Social Sciences, Beijing, People's Republic of China, October 14, 2007.

"Opening Remarks," Seminar on China's Anti-monopoly Law and Regulation on Abuse of Intellectual Property Rights, Beijing, People's Republic of China, April 26, 2008.

"Issues to Consider in a Reasonable Royalty Damages Analysis," Patent Litigation 2008, Practicing Law Institute, October 7, 2008.

"Econometric Evaluation of Competition in Local Retail Markets," Federal Trade Commission and National Association of Attorneys General Retail Mergers Workshop, December 2, 2008

"Merger Review Best Practices: Competitive Effects Analysis," International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008.

"The Use of Natural Experiments in Antitrust," Renmin University, Beijing, People's Republic of China, December 18, 2008.

"China's Antimonopoly Law: An Economist's Perspective," Bloomberg Anti-Monopoly Law of China Seminar, January 29, 2009.

Panelist, "Standards for Assessing Patent Damages and Their Implementation by Courts," FTC Hearings on the Evolving IP Marketplace, February 11, 2009.

"Economic Analysis of Agreements Between Competitors" and "Case Study: FTC Investigates Staples' Proposed Acquisition of Office Depot," Presentation to Delegation of Antitrust Officials from the People's Republic of China, Washington, DC, March 23, 2009.

"Reasonable Royalties in the Presence of Standards and Patent Pools," LSI Workshop, April 20, 2009.

Presentations on Unilateral Effects, Buyer Power, and the Intellectual Property-Antitrust Interface to Delegation from the Anti-Monopoly Bureau of MOFCOM of the People's Republic of China, Washington, DC, May 10-11, 2009.

Panelist, "The Use of Economic and Statistical Models in Civil and Criminal Litigation," Federal Bar Association, San Francisco, May 13, 2009.

"Trends in IP Rights Litigation and Economic Damages in China," Pursuing IP in the Pacific Rim, May 14, 2009.

Presentation on the Economics of Antitrust, National Judicial College of the People's Republic of China, Xi'an, People's Republic of China, May 25-26, 2009.

"Case Study: The Use of Economic Analysis in Merger Review," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, May 27, 2009.

"Economics and Antitrust Law," China University of Political Science and Law, Beijing, People's Republic of China, September 21, 2009.

"Case Study: Economic Analysis of Coordinated Interaction," Presentation to the Anti-Monopoly Bureau of MOFCOM, Beijing, People's Republic of China, September 22, 2009.

"Relevant Market Definition," 4th Duxes Antitrust Law Seminar, Beijing, People's Republic of China, September 26, 2009.

"Expert Economic Testimony in Antitrust Litigation," Supreme People's Court, Beijing, People's Republic of China, February 2, 2010.

"New Case Law for Patent Damages," Law Seminars International Telebriefing, April 28, 2010.

"China/India: Sailing in Unchartered Waters: Regulating Competition in the Emerging Economies – New Laws, New Enforcement Regimes and No Precedents," The Chicago Forum on International Antitrust Issues, Northwestern University School of Law Searle Center, May 20, 2010.

"Antitrust and Intellectual Property," Supreme People's Court, Beijing, People's Republic of China, May 26, 2010.

"Cartel Enforcement Trends in the United States," 2nd Ethical Beacon Anti-Monopoly Summit, Beijing, People's Republic of China, May 27, 2010.

Panelist, "The Future of Books and Digital Publishing: the Google Book Settlement and Beyond," 2010 American Bar Association Annual Meeting, August 7, 2010.

"Coordinated Effects" and "Non-Horizontal Mergers," Presentations to Delegation from India Competition Commission, US Chamber of Commerce, Washington, DC, October 26, 2010.

"UPP and Merger Simulation," Annual Conference of the Association of Competition Economics, Norwich, UK, November 11, 2010.

"Uniloc v. Microsoft: A Key Ruling For Patent Damages," Law Seminars International Telebriefing, January 21, 2011.

"Correlation, Regression, and Common Proof of Impact," New York City Bar Association, January 19, 2011.

"Private Litigation Under China's New Antimonopoly Law," Bar Association of San Francisco, February 17, 2011.

"Competition Law and State Regulation: Setting the Stage and Focus on State-Owned Enterprises," Competition Law and the State: International and Comparative Perspectives, Hong Kong, People's Republic of China, March 18, 2011.

Panelist, “Booking it in Cyberspace: The Google Book Settlement and the Aftermath,” American Intellectual Property Law Association, San Francisco, May 13, 2011.

“Econometric Estimation of Cartel Overcharges,” ZEW Conference on Economic Methods and Tools in Competition Law Enforcement, Mannheim, Germany, June 25, 2011.

Panelist, “Antitrust and IP in China,” Antitrust and IP in Silicon Valley and Beyond, American Bar Association and Stanford University, Palo Alto, October 6, 2011.

Panelist, University of San Diego School of Law Patent Law Conference: The Future of Patent Law Remedies, January 18, 2013.

“Economics Framework,” US-China Workshop on Competition Law and Policy for Internet Activities, China’s State Administration for Industry and Commerce (SAIC) and the U.S. Trade and Development Agency (USTDA), Shenzhen, People’s Republic of China, June 4-5, 2013.

Panelist, “China Inside and Out,” American Bar Association, Beijing, People’s Republic of China, September 16-17, 2013.

Panelist, “Remedies in Patent Cases,” Fifth Annual Conference on The Role of the Courts in Patent Law & Policy, Berkeley and Georgetown Law Schools, November 1, 2013.

“Royalty Base,” LeadershIP Conference, Qualcomm Incorporated, March 21, 2014.

“Reflections on Natural Experiments,” DG Comp, April 8, 2014.

Panelist, “Antitrust in Asia: China,” American Bar Association Section of Antitrust Law, Beijing, People’s Republic of China, May 21-23, 2014.

Panelist, “Patent Damages Roundtable,” 2015 Intellectual Property Institute, University of Southern California Gould School of Law, Los Angeles, March 23, 2015.

Panelist, “IP and Antitrust - The Current State of Economic Analysis,” Global Competition Review Live 2nd Annual IP & Antitrust USA, Washington, DC, April 14, 2015.

Panelist, “FRAND Royalty Rates After Ericsson v. D-Link,” American Bar Association, May 15, 2015.

PROFESSIONAL ACTIVITIES

Member, American Economic Association

Member, Econometric Society

Member, American Bar Association

Contributor, www.antitrust.org

Contributor, ABA Section of Antitrust Law, *Econometrics*, 2005

Associate Editor, *Antitrust*, 2007-2010

Senior Editor, *Antitrust Law Journal*, 2012-; Associate Editor, 2010-2012

Co-Editor, ABA Section of Antitrust Law Economics Committee Newsletter, 2009-2012

Member, Economics Task Force, ABA Section of Antitrust Law, 2011-2012

Member, ABA Delegation to International Seminar on Anti-Monopoly Law: Procedure and Substantive Assessment in Merger Control, Beijing, People's Republic of China, December 15-17, 2008

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the MOFCOM Draft Guidelines for Definition of Relevant Markets," 2009

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the SAIC Draft Regulations on the Prohibition of Acts of Monopoly Agreements and of Abuse of Dominant Market Position," 2009.

Member, Working Group for drafting the "Joint Comments of the American Bar Association Section of Antitrust Law and Section of International Law on the SAIC Draft Regulations on the Prohibition of Acts of Monopoly Agreements and of Abuse of Dominant Market Position," 2010.

Referee: *Econometrica*, *Review of Economics and Statistics*, *International Journal of Industrial Organization*, *Review of Industrial Organization, Journal of Sports Economics*, *Journal of Environmental Economics and Management*, *Research in Law and Economics*, *Labour Economics*, *Eastern Economic Journal*, *Journal of Forensic Economics, Antitrust, Antitrust Law Journal, Journal of Competition Law and Economics, Advances in Econometrics.*

TESTIMONY IN THE LAST FIVE YEARS

In re: Budeprion XL Marketing and Sales Practices Litigation, Civil Action 2:09-CV-2811, MDL Docket No. 2017, 2011 (Deposition).

Convolve, Inc. v. Dell Inc., et al., United States District Court, Eastern District of Texas, Marshall Division, Case No. No. 2:08-cv-244, 2011 (Deposition, Trial Testimony).

In the Matter of CERTAIN WIRELESS COMMUNICATION DEVICES, PORTABLE MUSIC AND DATA PROCESSING DEVICES, COMPUTERS AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-745, 2011 (Deposition).

In the Matter of CERTAIN MOBILE DEVICES, ASSOCIATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-744, 2011 (Deposition).

Oracle America, Inc. v. Google, Inc., United States District Court, Northern District for California, Case No. 3:10-CV-03561-WHA, 2011 (Deposition), 2016 (Deposition, Trial Testimony).

In the Matter of CERTAIN GAMING AND ENTERTAINMENT CONSOLES, RELATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-752, 2011 (Deposition).

General Atomics v. Paul Banks and TetraVue, Inc., Superior Court of the State of California, Case No. 37-2009-00084081-CU-BC-CTL, 2011 (Deposition, Trial Testimony).

Apple Inc., v. Motorola, Inc., United States District Court, Western District of Wisconsin, Case No. 10-CV-662 (BBC), 2011 (Deposition).

Genentech, Inc. and City of Hope v. Glaxo Group, Limited, et al., United States District Court, Central District of California, Western Division, Case No. 2:10-CV-02764-MRP (FMOx), 2011 (Deposition).

In the Matter of CERTAIN HANDHELD COMPUTING DEVICES, RELATED SOFTWARE, AND COMPONENTS THEREOF, before the United States International Trade Commission, Investigation No. 337-TA-769, 2011 (Deposition, Trial Testimony).

In the Matter of CERTAIN EQUIPMENT FOR COMMUNICATIONS NETWORKS, INCLUDING SWITCHES, ROUTERS, WIRELESS ACCESS POINTS, CABLE MODEMS, IP PHONES, AND PRODUCTS CONTAINING SAME, before the United States International Trade Commission, Investigation No. 337-TA-778, 2012 (Deposition).

Plantronics, Inc. v. Aliph, Inc., United States District Court for the Northern District of California, San Francisco Division, Case No. C09-01714 BZ, 2012 (Deposition).

Commonwealth Scientific and Industrial Research Organization v. Lenovo, Inc., et al., United States District Court for the Eastern District of Texas, Tyler Division, Case No. 6:09-cv-00400-LED, 2012 (Deposition).

Bayer HealthCare LLC v. Pfizer Inc., United States District Court, Northern District of Illinois, Eastern Division, Civil Action No. 1:12-cv-00630, 2012-2013 (Deposition).

L-7 Designs, Inc. v. Old Navy, Inc., United States District Court, Southern District of New York, Civil Action No. 09 Civ. 1432 (DC), 2012 (Deposition).

Apple, Inc. v. Motorola, Inc., United States District Court, Northern District of Illinois, Case No. 11-c-08540, 2012 (Deposition).

ITT Manufacturing Enterprises, Inc. v. Cellco Partnership, et al., United States District Court, District of Delaware, Civil Action No. 09-190-LPS, 2012 (Deposition).

Shelbyzyme LLC v. Genzyme Corporation, United States District Court, District of Delaware, Civil Action No. 09-768 (GMS), 2012 (Deposition, Trial Testimony).

In the Matter of CERTAIN DEVICES FOR IMPROVING UNIFORMITY USED IN A BACKLIGHT MODULE AND COMPONENTS THEREOF AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-805, 2012 (Deposition, Trial Testimony).

Rachel Eastman, et al. v. First Data Corporation, et al., United States District Court, District of New Jersey, Case No. 2:10-cv-04860 (WHW) (MCA), 2012 (Deposition).

In the Matter of CERTAIN COMMUNICATIONS EQUIPMENT COMPONENTS THEREOF, AND PRODUCTS CONTAINING THE SAME, INCLUDING POWER OVER ETHERNET TELEPHONES, SWITCHES, WIRELESS ACCESS POINTS, ROUTERS AND OTHER DEVICES USED IN LANs, AND CAMERAS, before the United States International Trade Commission, Investigation No. 337-TA-817, 2012 (Deposition).

Fujitsu Limited v. Belkin, et al., United States District Court, Northern District of California, San Jose Division, Case No. 10-cv-03972-LHK(PSG), 2012 (Deposition, Trial Testimony).

Medivation, Inc. v. The Regents of the University of California, et al., Superior Court of the State of California, Case No. CGC-11-510715, 2012 (Deposition, Trial Testimony).

In Re Photochromic Lens Antitrust Litigation (Direct Purchaser Action), United States District Court for the Middle District of Florida, Tampa Division, MDL Docket No. 2173, 2012 (Deposition, Hearing Testimony).

In Re Photochromic Lens Antitrust Litigation (Indirect Purchaser Actions), United States District Court for the Middle District of Florida, Tampa Division, MDL Docket No. 2173, 2012 (Deposition, Hearing Testimony).

In the Matter of CERTAIN PRODUCTS CONTAINING INTERACTIVE PROGRAM GUIDE AND PARENTAL CONTROL TECHNOLOGY, before the United States International Trade Commission, Investigation No. 337-TA-845, 2012 (Deposition, Trial Testimony).

In the Matter of CERTAIN COMPUTERS AND COMPUTER PERIPHERAL DEVICES AND COMPONENTS THEREOF AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-841, 2012-2013 (Trial Testimony).

Gemalto SA v. HTC Corporation, et al., United States District Court for the Eastern District of Texas, Tyler Division, Civil Action No. 6:10-CV-561-LED, 2013 (Deposition).

Adobe Systems Incorporated v. Wowza Media Systems, LLC, et al., United States District Court for the Northern District of California, Oakland Division, Case No. cv 11-02243, 2013 (Deposition).

In the Matter of CERTAIN AUDIOVISUAL COMPONENTS AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-837, 2013 (Deposition).

Ericsson Inc., et al. v. D-Link Corporation, et al., United States District Court for the Eastern District of Texas, Tyler Division, Civil Action No. 6:10-cv-473, 2013 (Deposition, Trial Testimony).

Edwards Lifesciences v. Medtronic CoreValve, et al., United States District Court for the District of Delaware, Case No. 12-23 (GMS), 2013 (Deposition, Trial Testimony).

Intellectual Ventures I LLC v. Trend Micro Incorporated and Trend Micro, Inc. (USA), United States District Court for the District of Delaware, C. A. No. 12-cv-1581-LPS, 2013 (Deposition).

The Money Suite Company v. Insurance Answer Center, LLC, et al., United States District Court for the Central District of California, Southern Division – Santa Ana, Lead Case No. 11-SACV-01847 AG (JPRx), 2013 (Deposition).

ParkerVision Inc. v. Qualcomm Incorporated, United States District Court for the Middle District of Florida, Jacksonville Division, Case No.: 3:11-cv-719-J-37-TEM, 2013 (Deposition, Trial Testimony).

Medtronic, Inc. v. Edwards Lifesciences Corporation, et al., United States District Court for the Central District of California, Case No.: SACV 12-00327 JVS (JPRx), 2013 (Deposition).

Microsoft Corporation v. Motorola Inc., et al., United States District Court for the Western District of Washington, Seattle Division, Case No. C10-1823JLR, 2013 (Deposition, Trial Testimony).

In the Matter of CERTAIN INTEGRATED CIRCUIT CHIPS AND PRODUCTS CONTAINING SAME, before the United States International Trade Commission, Investigation No. 337-TA-859, 2013 (Deposition, Trial Testimony).

Realtek Semiconductor Corporation v. LSI Corporation and Agere Systems, Inc., United States District Court Northern District of California, San Jose Division, Case No. 5:12-cv-03451 RMW, 2013 (Deposition, Trial Testimony).

Acer Inc., Acer America Corporation, and Gateway Inc. v. Technology Properties Limited, Patriot Scientific Corporation, and Alliacense Limited, United States District Court for the Northern District of California, San Jose Division, Case No. 5:08-cv-00877 PSG, 2013 (Deposition).

Intervet Inc. d/b/a Merck Animal Health, The Arizona Board of Regents on behalf of The University of Arizona v. Boehringer Ingelheim Vetmedica, Inc., United States District Court for the District of Delaware, Case No. 11-595-LPS, 2013 (Deposition).

In Re Innovatio IP Ventures, LLC Patent Litigation, United States District Court for the Northern District of Illinois, Case No. 1:11-cv-09308, 2013 (Deposition, Trial Testimony).

In the Matter of CERTAIN OMEGA-3 EXTRACTS FROM MARINE OR ACQUATIC BIOMASS AND PRODUCTS CONTAINING THE SAME, before the United States International Trade Commission, Investigation No. 337-TA-877, 2013 (Deposition).

Open Text SA v. Box Inc., United States District Court for the Eastern District of Virginia, Norfolk Division, Civil Action No. 2:13-CV-00319-MSD-DEM, 2013-2015 (Deposition, Trial Testimony).

Apple Inc. and Apple Sales International v. Motorola Mobility LLC, United States District Court for the Southern District of California, Case No. 3:12-cv-00355-GPC-BLM, 2013 (Deposition).

iControl Networks, Inc. v. Alarm.com Incorporated and Frontpoint Security Solutions, LLC, United States District Court for the Eastern District of Virginia, Alexandria Division, Case No. 1:13cv834 (LMB-IDD), 2013 (Deposition).

Affinity Labs of Texas, LLC v. General Motors LLC, United States District Court for the District of Eastern District of Texas, Beaumont Division, C.A. No. 1:12-cv-00582-RC, 2014 (Deposition).

W.L. Gore & Associates, Inc. v. C.R. Bard, Inc. and Bard Peripheral Vascular, Inc., United States District Court for the District of Delaware, C.A. No. 11-515-LPS-CJB, 2014 (Deposition).

Richard Noll and Rhythm Motor Sports, LLC v. eBay Inc., eBay Europe S.A.R.L., and eBay International AG, Inc., United States District Court for the Northern District of California, San Jose Division, Case No. 5:11-CV-04585-EJD, 2014 (Deposition).

Bristol-Myers Squibb Company v. Genentech Inc. and City of Hope, United States District Court for the Northern District of California, Western Division, Case No. 2:13-CV-05400-MRP (JEMx), 2014 (Deposition).

Eli Lilly and Imclone v. Genentech Inc. and City of Hope, United States District Court for the Northern District of California, Western Division, Case No. 2:13-CV-07248-MRP, 2014 (Deposition).

Graftech International Ltd. and Graftech International Holdings Inc. F/K/A UCAR Carbon Company Inc. v. Carbone Savoie, Alcan France and Rio Tinto Alcan, International Chamber of Commerce, International Court of Arbitration, Case Ref.: 19798/AGF, 2014 (Hearing Testimony).

Samsung Electronics Co., Ltd. (Korea) v. Nokia Corporation (Finland), International Chamber of Commerce, International Court of Arbitration, Case Ref.: 19602/AGF/RD (c.19638/AGF), 2015 (Hearing Testimony).

In the Matter of CERTAIN NETWORK DEVICES, RELATED SOFTWARE, AND COMPONENTS THEREOF (I), before the United States International Trade Commission, Investigation No. 337-TA-944, 2015 (Deposition).

Broadband iTV, Inc. v. Hawaiian Telecom, Inc., Oceanic Time Warner Cable, LLC, and Time Warner Cable, Inc., United States District Court for the District of Hawaii, Case No. 14-00169 ACK-RLP, 2015 (Deposition).

In the Matter of CERTAIN NETWORK DEVICES, RELATED SOFTWARE, AND COMPONENTS THEREOF (II), before the United States International Trade Commission, Investigation No. 337-TA-945, 2015 (Deposition, Hearing Testimony).

SRI International, Inc. v. Cisco Systems, Inc., United States District Court for the District of Delaware, Case No. 13-1534 (SLR), 2016 (Deposition, Trial Testimony).

ChriMar Systems, Inc., et al. v. Cisco Systems, Inc., et al., United States District Court for the District of Northern California, Oakland Division, Case No. 4:13-cv-01300-JSW, 2016 (Deposition).

TCL Communication Technology Holdings, LTD., et al., v. Telefonaktiebolaget LM Ericsson, et al., United States District Court for the Central District of California, Southern Division, Case No. SACV14–00341 JVS (DFMx), 2016 (Deposition).

Chervon North America, Inc., Positec Tool Corporation, Positec USA, Inc. and Hilti, Inc. v. Milwaukee Electric Tool Corporation, United States Patent and Trademark Office Before the Patent Trial and Appeal Board, Case IPR2015-00595, Case IPR2015-00596, and Case IPR2015-00597, 2016 (Deposition).

Sanofi-Aventis U.S. LLC and Regeneron Pharmaceuticals, Inc. v. Genentech, Inc. and City of Hope, United States District Court, Central District of California, Western Division, Case No. 2:15-CV-05685, 2016 (Deposition).

Irori Technologies, Inc. v. Procopio, Cory, Hargreaves & Savitc, LLP, and Eleanor Musick, JAMS Arbitration Reference No. 1240022033, 2016 (Deposition).

SD3, LLC and SawStop LLC v. Black and Decker (U.S.), Inc., et al., United States District Court for the Eastern District of Virginia, Civil Action No.: 1:14-cv-00191, 2016 (Deposition).

Intellectual Ventures II LLC v. Nextel Operations, Inc., Sprint Spectrum L.P., Boost Mobile LLC, and Virgin Mobile USA, L.P., United States District Court for the District of Delaware, Civil Action No. 13-cv-1635-LPS, 2016 (Deposition).

In Re Lidoderm Antitrust Litigation, United States District Court for the District of Northern California, Case No. 14-MD-02521-WHO, 2016 (Deposition).

The Dow Chemical Company, Dow Global Technologies Inc. and Dow Chemical Canada ULC v. Nova Chemicals Corporation, Federal Court of Canada, Federal Court File No.: T-2051-10, 2016 (Trial Testimony).

SELECTED MERGER EXPERIENCE

R.R. Donnelley/Meredith Burda (1990-1993): Merger of printing companies. Reviewed by the FTC. Preliminary Injunction Hearing. Part III Hearing.

Kimberly-Clark/Scott (1995): Merger of manufacturers of tissue products. Reviewed by the DOJ and the European Commission.

Staples/Office Depot (1996-1997): Proposed merger of office supply retailers. Reviewed by the FTC. Preliminary injunction hearing.

IMC/Western Ag (1997): Merger of mining companies. Reviewed by the DOJ.

Dow/Union Carbide (1999-2001): Merger of chemical manufacturers. Reviewed by the FTC.

Volvo/Scania (2000): Merger of truck manufacturers. Reviewed by the European Commission.

First Data/Concord (2003-2004): Merger of companies involved in merchant acquiring and payment networks. Reviewed by the DOJ.

Bumble Bee/Connors (2004): Merger of canned seafood manufacturers. Reviewed by the DOJ.

Sonaecom/Portugal Telecom (2006): Merger of telecommunications companies. Reviewed by the Portuguese Competition Authority.

Graphic Packaging/Altivity (2007-2008): Merger of paperboard manufacturers. Reviewed by the DOJ.

Inbev/Anheuser-Busch (2008): Merger of beer manufacturers. Reviewed by the DOJ, the UK Competition Commission, and MOFCOM.

Serta/Simmons (2009): Merger of mattress manufacturers. Reviewed by the FTC.

Coty/OPI (2010): Merger of nail polish manufacturers. Reviewed by the DOJ.

Knowles/NXP (2011): Knowles acquired the speaker/receiver business of NXP. Reviewed by MOFCOM.

AT&T/T-Mobile (2011): Consulted for the DOJ regarding the proposed deal between the two wireless service providers.

Confidential engagement for consumer product manufacturer (2012): Consulted for a consumer product manufacturer considering an acquisition with potential overlap in various jurisdictions around the world.

Confidential engagement for consumer product manufacturer (2012): Consulted for a consumer product manufacturer considering an acquisition with potential overlap in numerous product lines in the US.

UPS/TNT (2013): Consulted for the Ministry of Commerce of the People's Republic of China regarding the proposed deal between two package delivery services.

Thermo Fisher/Life Technologies (2014): Consulted for the Ministry of Commerce of the People's Republic of China regarding the proposed deal.

Seagate/Samsung (2014-2015): Consulted for Ministry of Commerce of the People's Republic of China regarding whether "hold separate" conditions should be lifted.

Western Digital/Hitachi (2014-2015): Consulted for Ministry of Commerce of the People's Republic of China regarding whether "hold separate" conditions should be lifted.

Confidential engagement for consumer product manufacturer (2016): Consulted for a consumer product manufacturer concerning possible acquisition in the US.

Appendix B

Appendix B
Documents Considered

Bates Documents

APL-PHONO_00006700	KOBALT00000408	KOBALT00000950	KOBALT00001340
APL-PHONO_00006828	KOBALT00000409	KOBALT00000951	KOBALT00001341
APL-PHONO_00006829	KOBALT00000410	KOBALT00000952	KOBALT00001342
APL-PHONO_00006830	KOBALT00000411	KOBALT00000953	KOBALT00001343
APL-PHONO_00006831	KOBALT00000412	KOBALT00000954	KOBALT00001344
APL-PHONO_00006832	KOBALT00000413	KOBALT00000955	KOBALT00001345
APL-PHONO_00009021	KOBALT00000414	KOBALT00000956	KOBALT00001346
APL-PHONO_00009168	KOBALT00000415	KOBALT00000957	KOBALT00001347
GOOG-PHONOIII-00000197	KOBALT00000416	KOBALT00000958	KOBALT00001348
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GOOG-PHONOIII-00000319	KOBALT00000418	KOBALT00000960	KOBALT00001350
GOOG-PHONOIII-00000320	KOBALT00000419	KOBALT00000961	KOBALT00001351
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GOOG-PHONOIII-00000322	KOBALT00000421	KOBALT00000963	KOBALT00001353
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GOOG-PHONOIII-00000326	KOBALT00000425	KOBALT00000967	KOBALT00001357
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Exhibits

Exhibit 5
U.S. Music Industry Sales of Ringtones and Ringbacks

2005 - 2015

	2005 (a)	2006 (b)	2007 (c)	2008 (d)	2009 (e)	2010 (f)	2011 (g)	2012 (h)	2013 (i)	2014 (j)	2015 (k)
Revenue (M)	$ 422	$ 774	$ 1,056	$ 977	$ 703	$ 448	$ 276	$ 167	$ 98	$ 66	$ 55
Units (M)	170	315	434	405	294	189	115	69	39	27	22
Average Price	$ 2.48	$ 2.46	$ 2.43	$ 2.41	$ 2.39	$ 2.38	$ 2.39	$ 2.41	$ 2.49	$ 2.49	$ 2.49

Source: "U.S. Sales Database," The Recording Industry Association of America, https://www.riaa.com/u-s-sales-database/. Last accessed September 21, 2016.

Before the
United States Copyright Royalty Judges
The Library of Congress
Washington, D.C.

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Index of Google's Exhibits

Exhibit	Sponsoring Witness	Description	Bates
Google Reb. Ex. 1	Zahavah Levine	Slide deck entitled "Google Play: Music Research Overview"	GOOG-PHONOIII-00003668
Google Reb. Ex. 2	Zahavah Levine	Recode Article dated Mar. 18, 2014 entitled "The Price of Music"	GOOG-PHONOIII-00003712
Google Reb. Ex. 3	Zahavah Levine	Slide deck entitled "Play Music: Dormant User Study"	GOOG-PHONOIII-00003743
Google Reb. Ex. 4	Zahavah Levine	Slide deck entitled "Google Play Music Strategy: Play Product Steering Forum"	GOOG-PHONOIII-00003055

Google Rebuttal Exhibits 1, 3-4 Withheld as Restricted

Google Rebuttal Exhibit 2

GENERAL MEDIA MUSIC

The Price of Music

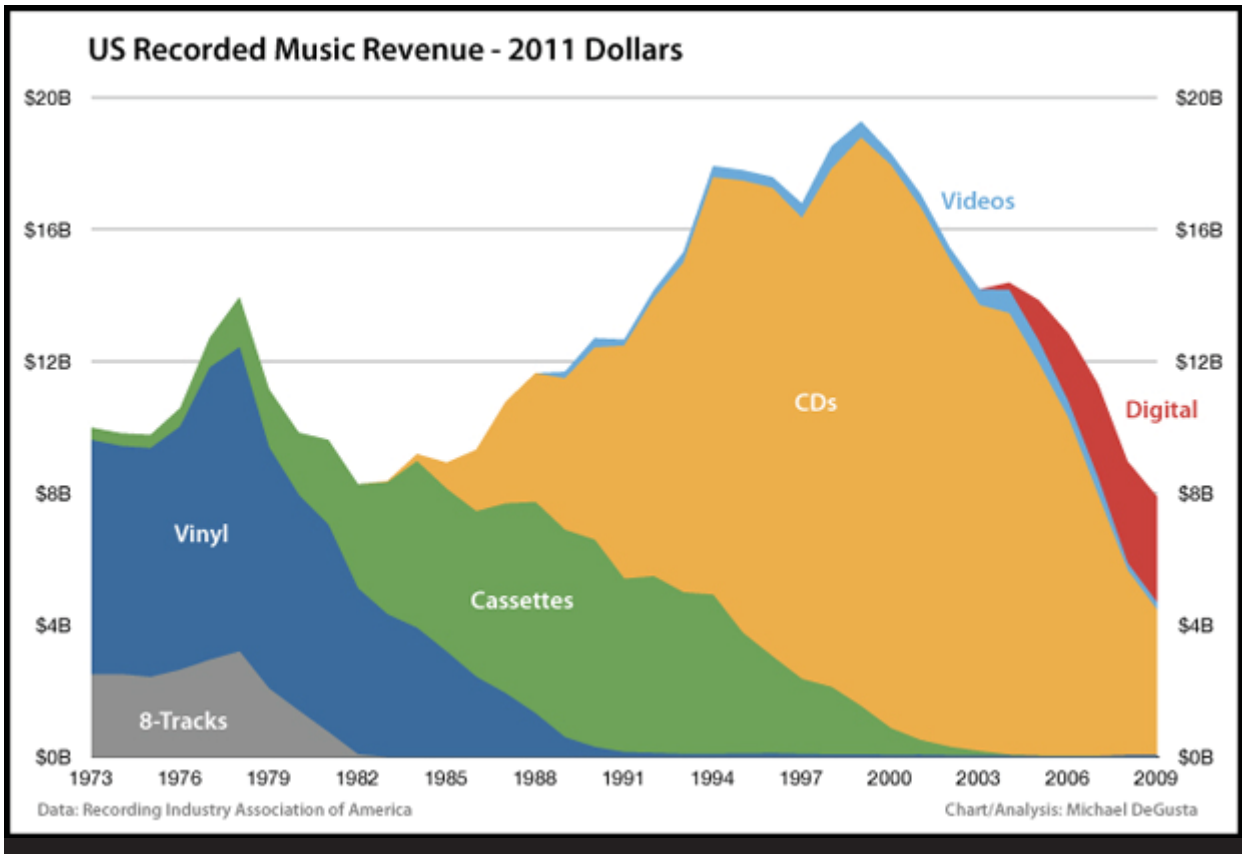
Based on the patterns of consumer spending on music, streaming services are priced too high.

BY DAVID PAKMAN | MAR 18, 2014, 1:00PM EDT

Igor Zubkis / Shutterstock

Will the recorded music industry ever grow again? Since 1999, the industry has been in rapid decline as CDs became unbundled into downloaded singles. The digital download market never came close to the size of the physical music market. Now we are in the midst of another format transition, this time from downloaded singles to streaming.

The question many people ask — like the thoughtful Marc Geiger — is how big will the streaming market be? I think the answer lies not in consumers' appetite for streaming songs, but in the price services charge consumers for streaming.



At the 1999 peak of the recorded music market, about $40 billion of recorded music was sold. How much did the average consumer spend per year on recorded music? Hundreds of dollars? Nope. At the time, according to the music trade group International Federation for the Phonographic Industry, across the total 18-and-over population (both across many countries or individually within one), the average amount spent came to $28 per consumer.

But that includes people who did not buy any music that year. If we look at just the consumers who bought music, they spent $64 on average that year. And that was at a time when one had to buy a bundle of 12 songs in the form of a CD in order to get access to just one or two. What has happened since?

Once the bundle broke, the average spending per consumer decreased. This is predictable, since bundles artificially raise the amount of total dollars a consumer spends. The chart below shows the average spending per capita in various countries according to IFPI (in U.K. pounds):

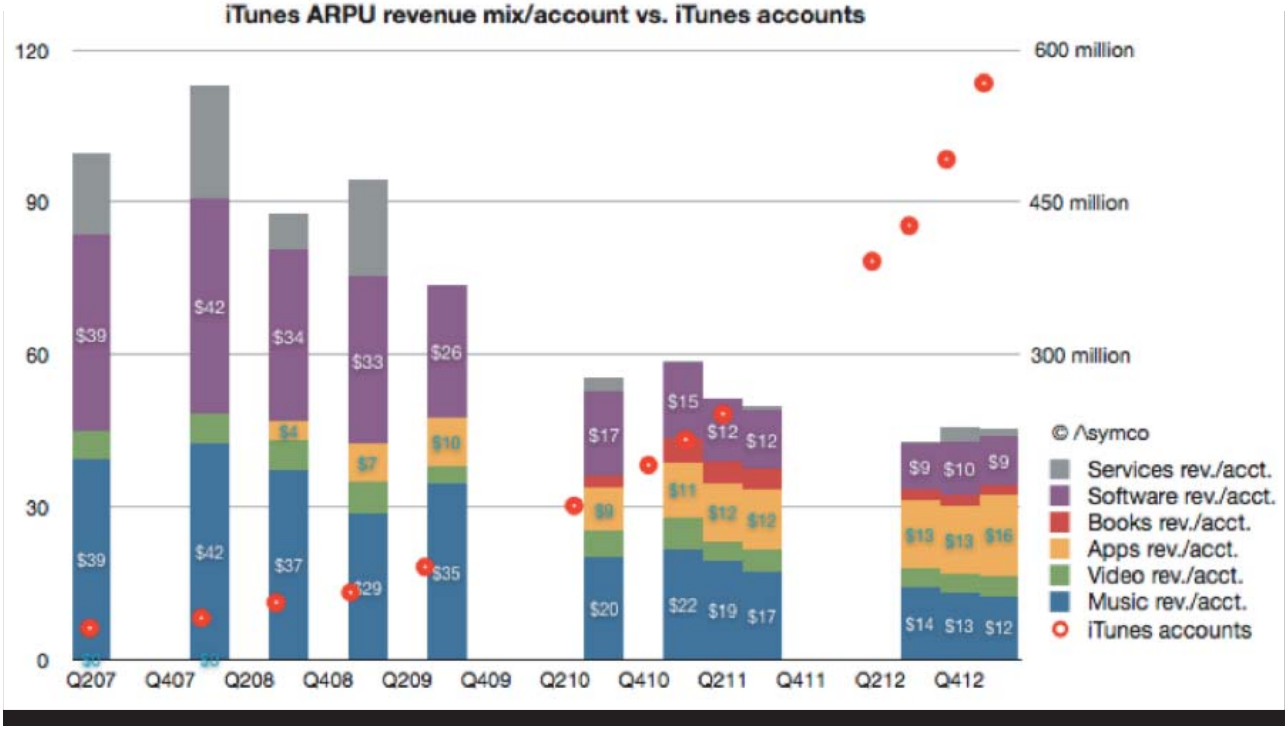
Top 20 markets based on per capita music sales, 2009 and 2010				
	2009	2010	Change (US$)	Change (%)
Japan	45.99	42.07	-3.92	-8.5
Norway	39.88	37.22	-2.67	-6.7
UK	34.70	32.35	-2.35	-6.8
Australia	31.19	28.04	-3.15	-10.1
Switzerland	31.35	27.99	-3.35	-10.7
Denmark	29.62	27.75	-1.88	-6.3
Austria	28.73	25.80	-2.93	-10.2
Germany	25.39	24.69	-0.69	-2.7
US	24.50	23.06	-1.44	-5.9
Iceland	24.80	22.78	-2.02	-8.2
Ireland	22.89	22.34	-0.55	-2.4
Sweden	21.85	22.03	0.17	0.8
France	21.20	20.44	-0.77	-3.6
Belgium	20.16	19.78	-0.38	-1.9
Netherlands	21.17	18.49	-2.67	-12.6
Finland	19.32	18.26	-1.06	-5.5
New Zealand	21.15	16.87	-4.28	-20.2
Canada	17.98	16.24	-1.73	-9.6
Hong Kong	8.75	8.05	-0.70	-8.0
South Korea	6.61	7.46	0.85	12.8
Note: Figures are based on average 2010 exchange rates				
				Sources: IFPI, Music & Copyright

Another study by NPD Group in 2011 found similar spending, about $55 per music buyer per year on all forms of recorded music (they note that this spending is slightly higher among P2P music service users).

Per Capita Spend: Annual 2011: NPD		
Category	Non-P2P User 18-35 Music Buyer	P2P User 18-35 Music Buyer
Physical CDs	$24	$23
Paid Downloads	$29	$35
Subscription Fees	$2	$5
Subtotal	*$55*	*$63*
Merchandise	$20	$52
Concert Tickets	$63	$91
Grand Total	**$138**	**$206**

But the one retailer on the planet who would really know what consumer are willing to spend on recorded digital music today is Apple. The largest music retailer in the world, their data is very consistent — about $12 per iTunes account per quarter is spent on music, or about $48 per year.

Note that this figure declines year by year as iTunes users are confronted with many more choices on which to spend their disposable income, like apps and videos. Also note that total disposable spending, on average, is decreasing per account as iTunes gets bigger and bigger. *As a service becomes truly mass market, it reaches fewer and fewer consumers willing to spend as much as previous consumers.*



So, the data tells us that consumers are willing to spend somewhere around $45–$65 per year on music, and that the larger a service gets, the lower in that range the number becomes. And these numbers have remained consistent regardless of music format, from CD to download.

Curiously, the on-demand subscription music services like Spotify, Deezer, Rdio and Beats Music are all priced the same at more than twice consumer spending on music. They largely land at $120 per year (although Beats has a family-member option for AT&T users at $15 per month.)

This is because the three major record labels, as part of their music licenses, have mandated a minimum price these services must charge. While it may seem strange that suppliers can dictate to retailers the price they must charge end users for their service, this is common practice in digital music. The services are not able to charge a price they believe will result in maximum adoption by consumers.

The data shows that $120 per year is far beyond what the overwhelming majority of consumers will pay for music, and instead shows that a price closer to $48 per year is likely much closer to a sweet spot to attract a large number of subscribers.

For this reason, I believe the market size for these services is limited to a subset of music buyers, which in turn is a subset of the population. This means that there will

be fewer subscribers to these services than there are purchasers of digital downloads unless one of two things happens:

- (a) Consumers decide to spend more than two times their historical spend on recorded music, or
- (b) major record labels allow the price of subscription music services to fall to $3–$4 per month.

I think the former is highly unlikely, given the overwhelming number of choices competing for consumers' disposable income combined with the amount of free music available from YouTube, Vevo, Pandora and many others. The data shows consumer spending per category decreases in the face of many disparate entertainment choices.

The latter is the big question. My experience with the major labels when I was CEO of eMusic was that they largely did not believe that music was an elastic good. They were unwilling to lower unit economics, especially for hit music, to see if more people would buy. Our experience at eMusic taught us that music *is*, in fact, elastic, and that lower prices lead to increased sales. If the major labels want to see the recorded music business grow again, I believe the price of music must fall.

After 12 years as an Internet entrepreneur, David Pakman joined Venrock in 2008 as a partner, and focuses on early-stage Internet and digital media companies. He is on the board of Dstillery, Dollar Shave Club, Smartling and other Internet companies. Reach him at his blog and @pakman.

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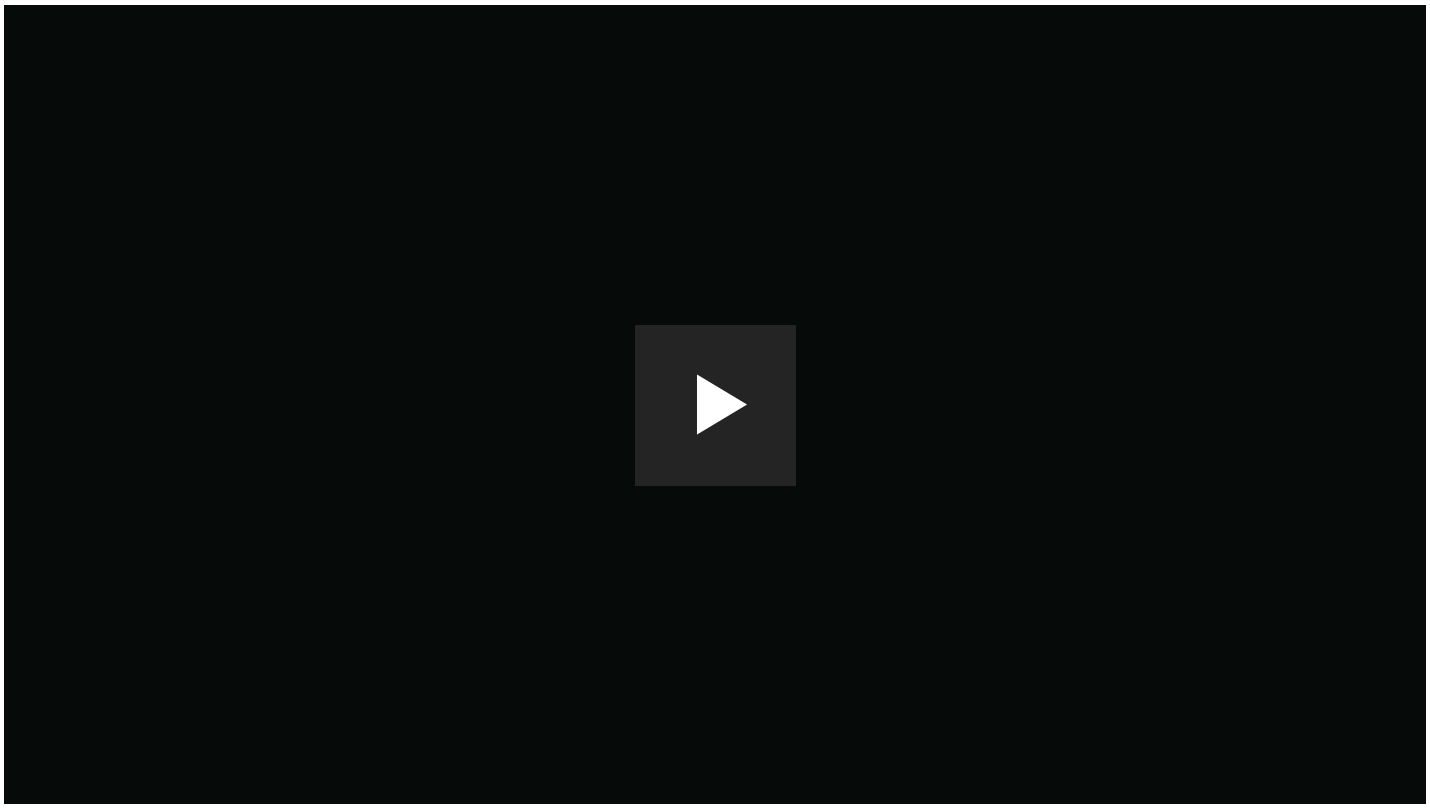

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BY AUBREY BLANCHE

THE VERGE

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Certificate of Service

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In the Matter of: **Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)**	**Docket No. 16-CRB-0003-PR (2018-2022)**

Redaction Log for the Written Rebuttal Statement of Google Inc.

Google submits the following list of redactions from its written rebuttal statement filed February 15, 2017. In compliance with 37 C.F.R. § 350.4(e)(1), and based on the Declaration and Certification of David P. Mattern, the redacted materials listed below meet the definition of "Restricted" contained in the Protective Order.

Document	Page/Para/ Exhibit	General Description
Introductory Memo	p. 1-2	Contains material, non-public information about Google's license terms and royalty obligations, and Google's business strategy
	p. 3	Contains material, non-public information about Google's license terms and royalty obligations, and information designated as Restricted by other participants in this proceeding
	p. 5	Contains material, non-public proprietary information about Google's business strategy and products and services
	p. 6	Contains material, non-public information about Google's license terms and royalty obligations
	p.7	Contains material, non-public information about Google's license terms and royalty obligations, and information designated as Restricted by other participants in this proceeding
	p. 8	Contains material, non-public information about Google's license terms and royalty obligations, and information designated as Restricted by other participants in this proceeding

Document	Page/Para/ Exhibit	General Description
	p. 9	Contains information designated as Restricted by other participants in this proceeding
Written rebuttal statement of Zahavah Levine	¶ 8	Contains material, non-public proprietary information about Google's business strategy and products and services
	¶ 9	Contains material, non-public proprietary information about Google's business strategy and products and services
	¶ 11	Contains material, non-public proprietary information about Google's business strategy and products and services
Expert rebuttal report of Gregory K. Leonard	p. ii	Contains information designated as Restricted by other participants in this proceeding
	p. 2	Contains information designated as Restricted by other participants in this proceeding
	p. 3	Contains material, non-public information about license terms and royalty obligations subject to confidentiality restrictions
	p. 4	Contains information designated as Restricted by other participants in this proceeding
	¶ 8	Contains material, non-public proprietary information about Google's business strategy and products and services
	¶ 9	Contains material, non-public proprietary information about Google's business strategy and products and services
	¶ 10	Contains material, non-public information about Google's license terms and royalty obligations
	¶ 14	Contains material, non-public information designated Restricted by other participants in this proceeding

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	¶ 26	Contains material, non-public information about Google's license terms and royalty obligations, and information designated Restricted by other participants in this proceeding
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	¶ 49	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 50	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 51	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 52	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 53	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 54	Contains material, non-public information about Google's license terms and royalty obligations, and information designated Restricted by other participants in this proceeding
	¶ 55	Contains material, non-public information designated Restricted by other participants in this proceeding

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	¶ 107	Contains material, non-public information designated Restricted by other participants in this proceeding
	¶ 109	Contains material, non-public information about Google's license terms and royalty obligations
	Exs. 1-4, 6	Contains material, non-public information about Google's license terms and royalty obligations, and information designated Restricted by other participants in this proceeding
Google Reb. Exhibits	Exs. 1-4	Contains material, non-public proprietary information about Google's business strategy and products and services

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

In the Matter of: **Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)**	**Docket No. 16-CRB-0003-PR (2018-2022)**

Declaration and Certification of David P. Mattern

1. I am counsel for Google Inc. in the above-captioned case. I submit this declaration and certification pursuant to Rule 350.4(e)(1) of the Copyright Royalty Judges Rules and Procedures, and per the terms of the Protective Order issued July 28, 2016. I am authorized by Google to submit this Declaration.

2. I have reviewed Google's Written Rebuttal Statement, witness statements, and exhibits. I have also reviewed the definitions and terms provided in the Protective Order. After consultation with my client, I have determined that to the best of my knowledge, information, and belief, that portions of Google's Written Rebuttal Statement, witness statements, and accompanying exhibits contain information that is "Restricted" material as defined by the Protective Order.

3. The Restricted materials include testimony and exhibits related to (a) contracts, terms, and contract strategy that are proprietary, not available to the public, highly sensitive, and subject to confidential provisions with third parties; (b) confidential internal business information, 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 Google at a commercial and competitive disadvantage, unfairly advantage other parties, and jeopardize Google's business interests. Information related to confidential contracts or relationships with third-party content providers could be used by Google competitors, or by other content providers, to formulate rival bids, bid up Google payments, or otherwise unfairly jeopardize Google commercial and competitive interests.

5. With respect to the financial information in the Restricted materials, I understand that Google has not disclosed to the public or the investment community the financial information that it seeks to restrict here, including specific royalty payment information. As a result, neither Google's competitors nor the investing public has been privy to that information, which Google has viewed as highly confidential and sensitive, and has guarded closely. In addition, when Google does disclose information about the Company's finances to the market as required by law, the Company provides accompanying analysis and commentary that contextualizes disclosures by its officers. The information that Google 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 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 Google's directors, as such sensitive disclosures usually are, or accompanied by the typical disclaimers that usually accompany such disclosures. Google could experience negative market repercussions, competitive disadvantage, and even possible legal exposure were this confidential financial information released publicly without proper context or explanation.

6. The written rebuttal statement of Zahavah Levine, Vice President of Partnerships for Google Play, contains material, non-public information concerning Google's business of music streaming, Google's rate proposal, and Google Play Music's services. None of this information is publicly known or available. Disclosure of the financial details of these contractual arrangements and non-public financial data would, for reasons discussed in paragraphs 4 and 5 above among others, competitively disadvantage Google.

7. The written rebuttal statement of Gregory K. Leonard contains material, non-public information concerning the particular rates agreed to by specific Google direct licensors, and material non-public internal financial data concerning payments to publishers and record labels, sales and marketing costs, revenue, and similar information for other services that has been designated as "Restricted." None of this information is publicly known or available. Disclosure of this information would, for reasons discussing in paragraphs 4 and 5 above, competitively disadvantage Google.

8. Under Rule 350.4(e)(1), I therefore declare that to the best of my knowledge, information, and belief, the materials described in this declaration that are marked with the "Restricted" label meet the definition in the Protective Order.

9. The information designated as "Restricted" must be treated as restricted "Protected Material" to prevent business and competitive harm that would result from the disclosure of such information while, at the same time, enabling Google 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 declare under the penalty of perjury that, to the best of my knowledge, information, and belief, the foregoing is true and correct.

DATED: Washington, DC
February 17, 2017

Respectfully submitted,

KING & SPALDING LLP

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