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

In The Matter Of:	)	
Determination of Rates and Terms for Making and Distributing Phonorecords	)	Docket No. 16-CRB-0003-PR (2018–2022) "Phonorecords III"

WRITTEN REBUTTAL STATEMENT OF APPLE INC. (PUBLIC VERSION)

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Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

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

INTRODUCTORY MEMORANDUM TO APPLE INC.'S WRITTEN REBUTTAL STATEMENT

Pursuant to 17 U.S.C. § 803(b)(6)(C), 37 C.F.R. § 351.11, and the Copyright Royalty Judges' ("Judges") Orders in this proceeding, Apple Inc. ("Apple") hereby submits this Introductory Memorandum in support of its Written Rebuttal Statement to the Judges in the above-captioned proceeding.

I. INTRODUCTORY STATEMENT

Apple and the Copyright Owners (which are comprised of the National Music Publishers' Association and the Nashville Songwriters Association International) are in agreement on three basic points: (1) music has an inherent value that is independent of an interactive streaming services' business model, (2) the statutory royalty should be simplified and more transparent, and (3) the royalty rate for interactive streaming services should include a per-play rate. (CO WDS Intro. Memo. at A-6 & A-7; Apple WDS Intro. Memo. at 1-2.) Notwithstanding these points of agreement, however, the Copyright Owners' proposal differs markedly from that of Apple in ways that are unfair to digital music providers and fail to properly consider the contributions they make to the music industry.

Relying on the royalty rate for downloads, which the Copyright Owners already have approved for the upcoming rate period, and industry standards for converting streams to downloads (benchmarks upon which Pandora and Spotify also rely), Apple proposes an all-in rate of $0.00091 per play. The Copyright Owners, on the other hand, propose a *mechanical-only* royalty equal to the greater of (1) a per-play rate of $0.0015 and (2) a per-user rate of $1.06 per month.

As a preliminary matter, because the Copyright Owners are proposing a mechanical-only rate, rather than an all-in rate like that in the current regulations, the Copyright Owners' proposal will inflate tremendously the royalties that interactive streaming services must pay publishers and songwriters. That is because after paying the compulsory licensing fee for the mechanical right, interactive streaming services will have to pay an *additional* royalty fee for the performance right that is not limited by an all-in headline figure. This could result in total royalty payments that are exponentially higher than the already-high $0.0015 per-play mechanical-only royalty rate the Copyright Owners are proposing. It also will create considerable uncertainty for interactive streaming services, which will no longer be able to rely on the statutory rate to determine total royalty payments to publishers and songwriters. In addition, the Copyright Owners' proposal of a mechanical-only royalty, with a separate negotiation to determine the total royalty owed to publishers and songwriters, undermines the simple royalty calculation and need for transparency that the Copyright Owners claim to endorse. Given these concerns, it is no surprise that the Copyright Owners are the only participants proposing a mechanical-only rate.

Moreover, as Apple's witnesses explain in their rebuttal testimony, the Copyright Owners' proposed per-play rate is based on highly speculative analyses that appear intentionally

designed to skew the results toward [redacted]. *First*, the Copyright Owners claim that their proposed rate is reasonable based on rates interactive streaming services have paid historically. The Copyright Owners' analysis of historical rates is skewed, however, as it excludes royalties paid by ad-supported services, such as Spotify, and royalties paid from student and family plans. When these additional streams are included in the analysis, the historic average effective mechanical-only per-play rate from 2015 is [redacted] (Note this [redacted] mechanical-only per-play rate is [redacted] Apple's proposed all-in rate of $0.00091 per-play.) In other words, contrary to the Copyright Owners' claim, their proposed mechanical-only per-play rate not reasonable as it is [redacted] Indeed, the Copyright Owners' proposed rate is [redacted] meaning that the Copyright Owners want the services to pay [redacted] they did just a little over one year ago. [redacted]

Second, the Copyright Owners' expert, Dr. Jeffrey A. Eisenach, supports the Copyright Owners' per-play rate by analyzing the ratio of the value of musical works to the value of sound recordings and then using this ratio to convert the royalties that interactive streaming services pay for sound recordings to a per-play rate for the mechanical royalty for musical works. This analysis is flawed for several reasons. As Apple's Senior Director of Music, David Dorn, and its expert, Dr. Jui Ramaprasad, explain, sound recordings and musical compositions are fundamentally different goods that are typically owned and created by different entities. Moreover, there is no fixed ratio of the value of sound recordings to the value of musical works. Indeed, even the Copyright Owners' own flawed analysis suggests that the ratio is anywhere

from 1:1 to 4.76:1. Given this high degree of fluctuation, it is clear that the ratio in one context says nothing about what the ratio should be in a different context. The Copyright Owners are wrong to claim otherwise.

Compounding the problem, Dr. Eisenach *excludes* royalties paid for downloads from his analysis, even though the royalty rate paid to publishers for downloads is one of the few royalties that has been determined based on the same statutory objectives that the Judges must consider in this proceeding. When downloads are considered, the ratio of the value of a musical work to the value of a sound recording is as high as [redacted] the 4.76:1 "upper bound" that Dr. Eisenach identifies in his analysis. Dr. Eisenach's analysis also is flawed because, among other things, he excludes Spotify, one of the largest streaming services in the market, from his analysis of the average royalties paid for sound recordings, a decision that serves only to [redacted] the mechanical per-play royalty.

Third, the Copyright Owners use a "Shapley value" analysis conducted by their expert Dr. Joshua Gans to support their per-play rate. As Apple's expert, Dr. Anindya Ghose, explains, that analysis also is highly speculative. As a preliminary matter, the Shapley value calculation is designed for situations where market participants behave *cooperatively*. In the interactive streamlining industry, however, the various publishers and labels may be acting selfishly to maximize personal profits, rather than cooperatively to divide profits fairly. Further, Dr. Gans' analysis is based on an artificial world where the only players in the industry are a label, a publisher, and two interactive streaming services, whereas in the real world there are numerous publishers and labels, all with different catalogs and market power. This makes it unlikely that Dr. Gans' simplified analysis would translate into the real world. Moreover, like Dr. Eisenach, Dr. Gans *excludes* royalties that Spotify and other ad-supported services have paid, thus ignoring

a significant portion of the interactive streaming market and improperly increasing the per-play mechanical royalty that results from his Shapley value calculation. Finally, Dr. Gans assumes for purposes of his analysis, without any basis, that in free market negotiations between publishers and interactive streaming services (1) publishers would recoup the same profits as labels, (2) all increases in publisher royalties would come at the expense of interactive streaming services rather than labels, and (3) all increases in publisher royalties would be for mechanical royalties rather than performance royalties. As Dr. Ghose shows, Dr. Gans' Shapley value analysis is completely unreliable, as minor changes in these assumptions lead to drastically different per-play mechanical royalty rates. In the end, all Dr. Gans has done is calculate a mechanical-only per-play rate that satisfies the assumptions he arbitrarily imposes on the industry. That is not how proper Shapley value calculations are supposed to be conducted.

Fourth, the Copyright Owners argue that their high per-play mechanical-only royalty is proper because [redacted]

In addition to the proposed per-play rate being unreasonably high, there are several other problems with the Copyright Owners' proposal. The Copyright Owners' rate proposal also includes a *per-user* rate. Services must calculate royalties based on both the per-user and per-play rates and then pay whichever royalty amount is higher. As Dr. Ghose, Mr. Dorn, and Rob Wheeler, the iTunes Controller, explain, this adds complexity to the rate calculation—something the Copyright Owners claim they are trying to rectify with their proposal—and also leads to *even higher* per-play rates than the Copyright Owners are proposing. A per-user rate also decouples compensation and demand for music. Indeed, with a per-user rate, as consumption of music decreases, royalties do not necessarily change; publishers and songwriters may receive the same amount of royalties for less usage. This is not fair to the interactive streaming services that have invested in developing platforms that offer numerous features to attract consumers to their products above and beyond the ability to hear music. The proposed per-user rate also is too high. Like the per-play rate, it is a mechanical-only rate. Further, the Copyright Owners' experts' analyses of the per-user rate suffer from the same problems as their analyses of the per-play rate, including the failure to include Spotify in the analyses and the reliance on several unsupported assumptions.

The Copyright Owners also are proposing that music locker services, which allow users to store and access music that they previously purchased, pay the same rate as interactive streaming services, whereas Apple (and all of the other services) is proposing a separate rate for music locker services. As Dr. Ramaprasad and Mr. Dorn explain, because music lockers and interactive streaming services are fundamentally different, in that one allows users to hear only music they own and the other allows users to hear any song in the service's catalog, royalties for those services should not be the same. Moreover, the Copyright Owners' proposal would lead to

double-compensation for publishers and songwriters. This is because, by definition, music locker users can listen only to songs they own, for which publishers and songwriters already have been fully compensated through the royalty paid at the time the user purchased the song.

Finally, the Copyright Owners are proposing a 1.5% per month late fee. As a threshold matter, this number is exorbitant as it amounts to an 18% late fee per year, well-above the typical late fee for almost any other business. The Copyright Owners put forward no economic basis for the idea that they have been injured to the tune of 18% per year because of any late payments. This number operates more as an improper penalty than an economically-driven figure. In addition, the proposal does not take into account extenuating circumstances. For example, the late fee would apply even in situations where the owner of the copyrighted work is unknown, even though the licensee has made every effort to determine the owner of the work. Or, it would apply even to a service that is having a difficult financial time, such as a new market entrant that is just beginning to attract customers, thus compounding the company's financial struggles and acting as a deterrent penalty to new businesses entering the marketplace.

For the foregoing reasons, although Apple agrees with the Copyright Owners that the Judges should adopt a per-play royalty for interactive streaming and limited downloads, the remainder of the Copyright Owners' proposal is unfair to interactive streaming services and could lead to considerable disruption in the industry. Consequently, it fails to meet the Section 801(b) objectives. Moreover, the Copyright Owners' analysis is highly speculative and unnecessarily complicated, particularly given that the download rate and industry-accepted benchmarks for converting streams to downloads (on which Apple and several other services rely) provide a straight-forward method for determining the proper per-play rate, as explained in

Apple's Written Direct Statement. Accordingly, the Copyright Owners' proposal should be rejected.

II. REBUTTAL WITNESSES

Apple is offering four rebuttal witnesses, all of whom offered written direct testimony. A brief description of their rebuttal statements are below.

David Dorn, Apple's Senior Director of Music, testifies regarding why adopting a mechanical-only rate is inconsistent [redacted] He also explains that the Copyright Owners' proposed rate is higher than the rate that industry benchmarks show is appropriate. He further testifies that using sound recording royalties as a benchmark for a musical composition license, as the Copyright Owners have done, is improper because a sound recording is a different good, owned and created by different entities, than are musical compositions, and because the ratio of the value of a musical composition to the value of a sound recording varies widely depending on the type of use. Mr. Dorn also explains that a per-user rate is inappropriate because it functions only to drive up the per-play rate, and that the Copyright Owners' proposal to eliminate the separate royalty category for music lockers does not make sense given that music lockers provide users with access only to songs they own. Finally, Mr. Dorn testifies that the Copyright Owners' proposed late fee would unfairly apply in situations where the copyright owner cannot be determined through no fault of the copyright user.

Rob Wheeler, Apple's iTunes Controller, evaluates the per-user prong of the Copyright Owners' proposal and explains that this portion of the proposal is complicated and could lead to exorbitant per-play rates.

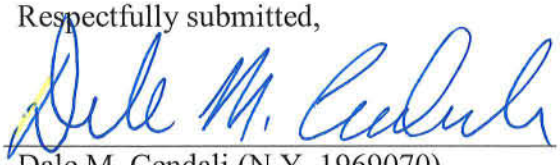
Dr. Jui Ramaprasad, Associate Professor in Information Systems at McGill University's Desautels Faculty of Management, explains the myriad flaws in Dr. Eisenach's analysis of the appropriate per-play and per-user rates, including, among other things, Dr. Eisenach's decision to exclude Spotify's ad-supported service from his analysis and his failure to consider the ratio of the value of musical works to the value of sound recordings in the download context. Dr. Ramaprasad also criticizes the Copyright Owners' proposal to eliminate the music locker royalty category because, as she explains, music lockers and interactive streaming services are fundamentally different services. She further criticizes the adoption of a mechanical-only rate, as interactive streaming services must acquire both mechanical and public performance rights in order to operate their services. Adopting a mechanical-only rate would make it more difficult for interactive streaming services to determine costs and create ambiguity regarding what total royalties owed to music publishers and songwriters might be. Finally, she analyzes the Copyright Owners' disingenuous claim [redacted]

Dr. Anindya Ghose, Professor of Information, Operations, and Management Sciences and Professor of Marketing at New York University's Leonard N. Stern School of Business, evaluates the Copyright Owners' proposed per-user prong in its rate calculation and explains that the per-user prong decouples compensation from consumption and adds complexity to the Copyright Owners' rate proposal. He also evaluates the Copyright Owners' experts' analyses of historical per-play rates and determines that the Copyright Owners' experts' analyses are skewed because they exclude per-play rates that ad-supported services have paid. When more services

are included in the historical analysis, the weighted average mechanical per-play rate for 2015 is [redacted] the $0.0015 mechanical-only per-play rate the Copyright Owners propose. Finally, Dr. Ghose evaluates Dr. Gans' Shapley value analysis, concluding that it has been conducted improperly and is based on several unsupported assumptions. Dr. Ghose's analysis shows that when these assumptions are adjusted slightly, the resulting per-stream rate drops significantly.

Dated: February 15, 2017

Respectfully submitted,



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

REBUTTAL TESTIMONY OF DAVID DORN

1. My name is David Dorn. I am the Senior Director of Apple Music at Apple Inc. ("Apple"). I submit this testimony in support of Apple's Written Rebuttal Statement.

2. I have reviewed the Proposed Rates and Terms submitted by the National Music Publishers' Association and Nashville Songwriters Association International (collectively, the "Copyright Owners") in this proceeding. Based on my review, I understand that they are proposing a mechanical royalty rate equal to the greater of $0.0015 per-play or $1.06 per-user per month for all interactive streaming and limited download services. I also understand that they are proposing elimination of the music locker royalty categories and the imposition of a 1.5% late fee per month for interactive streaming and limited download services.

3. Although both the Copyright Owners and Apple are proposing a per-play rate in this proceeding, there are important differences between the Copyright Owners' rate proposal and Apple's rate proposal that make the Copyright Owners' proposal a poor choice for the statutory rate.

4. *First*, the Copyright Owners' proposed per-play rate is much higher than the $0.00091 all-in per-play rate that Apple is proposing, and unwarrantedly so. As a threshold

matter, unlike the current royalty, which is based on an "all-in" rate, the Copyright Owners are proposing a *mechanical-only* royalty rate with no "all-in" number. Thus, to determine a service's all-in rate, the service would have to take the Copyright Owners' proposed *mechanical-only* rate and add its public performance royalties on top of that number. Because under the Copyright Owners' proposal there is no limit to what that total all-in rate could be, adopting a *mechanical-only* rate, rather than an-all-in, could lead to exorbitant total royalty payments to publishers and songwriters, well in excess of the already high $0.0015 mechanical-only per-play rate the Copyright Owners are proposing. Adopting a mechanical-only rate also would create considerable uncertainty for interactive streaming services. In the past, interactive streaming services could look at the statutory rate to know what their total royalty payments for musical compositions would be. Under the Copyright Owners' proposal, that would no longer be the case.

5. *Second*, the Copyright Owners' proposed mechanical-only per-play rate is much higher than what industry benchmarks suggest is appropriate. As I explained in my opening statement, Apple's proposed rate is based on (1) the royalty rate that publishers and songwriters receive when their songs are downloaded—a rate that both the CRB and the Copyright Owners themselves have approved—and (2) widely accepted industry benchmarks for converting streams into downloads. (Testimony of D. Dorn in Supp. of Apple's WDS ¶¶ 78–81.) Applying these industry-standard conversion rates to the royalty rate for downloads yields an all-in royalty ranging from $0.00061 to $0.00091 per-stream. The Copyright Owners' proposed rate, which, as noted above, is for the *mechanical royalty* only, is far outside of this range.

6. Further, I understand that the Copyright Owners are using the ratio of the value of musical compositions to the value of sound recordings to determine the appropriate mechanical-

only royalty that interactive streaming services should pay for musical compositions. Having worked in this industry for over 25 years, I have never thought of sound recordings and musical compositions in this way. They are different products that are valued independent of one another depending on a variety of factors such as the type of use, the popularity of the artist that has recorded the song, and other costs a distributor may have that put pressure on how much it can afford to pay in total royalties. Given that, it is no surprise that [redacted] The relationship between sound recordings and musical compositions in one context says nothing about the relationship in a different context, and any claim otherwise is pure speculation.

7. *Third*, the Copyright Owners are proposing a *per-user* rate in addition to a per-play rate. This could create an enormous windfall for publishers and songwriters as the total royalty owed under a per-user rate is decoupled from demand for their songs. Indeed, under the Copyright Owners' proposal, a service would have to pay a per-user rate even for a user who did not listen to a single song in a given month, and instead used the service to read posts from their favorite artists. Further, although a per-user rate is calculated on a per-user basis, it is allocated on a per-stream basis. Thus, the per-user prong of the Copyright Owners' proposal could lead to some publishers and songwriters receiving substantially more per-play than the Copyright Owners are proposing under the per-play prong. The per-user calculation also adds complexity to the rate calculation and leads to practical concerns, such as whether interactive streaming services should be charged the full per-user rate for users who either join or leave the service mid-month.

8. *Fourth*, under the Copyright Owners' proposal, music locker services would have to pay the same rate as interactive streaming services. This makes no sense to me. Unlike interactive streaming services, music locker services only allow consumers to listen to music they already own. If music locker services have to pay the same statutory rate as interactive streaming services, this will eliminate any meaningful distinction between the two services, effectively making music locker services obsolete. Moreover, this proposal will lead to double compensation for publishers and songwriters, as they will receive royalties once at the point of purchase and then again every time a song is streamed from the locker. This is yet another example of the Copyright Owners' over-reaching. They want to be paid twice for the same music. And, they want to force service, like Apple, that offer both downloads and interactive streaming, to pay twice for the same music—once for the download and again every time the song is streamed.

9. *Fifth*, the late fee that the Copyright Owners are proposing is incredibly high at 18% per year. Indeed, even the average credit card interest rate is under 18% per year. The Copyright Owners' proposed late fee also is unfair to interactive streaming services because it would apply in situations where the owner of the copyrighted work is unknown through no fault of the interactive streaming service. It is an unjustifiable penalty that, like most of the Copyright Owners' proposal, is designed to pad the pockets of publishers and songwriters at the expense of interactive streaming services rather than promote a fair return for all parties.

I. THE STATUTORY ROYALTY SHOULD INCLUDE AN ALL-IN HEADLINE RATE

10. Publishers and songwriters own several different types of rights in their musical compositions (also known as "musical works"). These include (1) the right to reproduce and distribute their works (often referred to as the "mechanical" right) and (2) the right to publicly

perform their works. Most forms of music distribution implicate only the mechanical *or* the performance right. For example, radio stations and non-interactive streaming services must acquire only public performance licenses from publishers and songwriters. CD sales and music downloads, on the other hand, require only a mechanical license. Interactive streaming services, however, must acquire *both* mechanical and performance licenses in musical compositions in order to operate their services.

11. Consistent with this, the current statutory rate is based on an "all-in" headline rate. This "all-in" rate covers the total royalties that interactive streaming and limited download services must pay to publishers and songwriters for both mechanical *and* performance royalties related to the use of musical compositions. Mechanical royalties are calculated by subtracting performance royalties from this headline rate. (In some circumstances, services may have to pay a mechanical royalty minimum instead.)

12. Apple's [redacted] (Testimony of D. Dorn in Supp. of Apple's WDS ¶ 20, Exs. APL-003, 005, and 006.) [redacted]

13. Consistent with this precedent, Apple is proposing an "all-in" headline rate in this proceeding, albeit an all-in per-stream rate rather than a percentage of revenue rate for reasons described in my opening statement, from which performance royalties would be subtracted in order to determine the portion of the all-in rate attributable to the mechanical royalty.

14. The Copyright Owners, on the other hand, are proposing a *mechanical-only* per-play rate, leaving total royalty payments to publishers and songwriters open-ended. This could lead to a boon for publishers and songwriters who will receive an *additional* royalty payment, with no upper bound, on top of the very high mechanical-only per play royalty rate that the Copyright Owners are proposing.

15. Apple, and I believe all interactive streaming services, are [redacted] If the Copyright Owners' proposal is adopted, rather than being able to use the compulsory royalty to determine total royalties owed to publishers and songwriters as they have done in the past, total royalties will be based on the compulsory rate *plus* whatever amount services are required to pay in performance royalties—a number that will have to be negotiated separate and apart from the amount interactive streaming services are required to pay in mechanical royalties. This could lead to total royalty payments that are exponentially higher than the $0.0015 mechanical-only per play rate that the Copyright Owners are proposing.

16. Moreover, adopting a mechanical-only rate could make it more difficult for interactive streaming services to budget expenses and negotiate licensing agreements for sound recordings, as if they do not know how much they will have to pay for musical compositions, it could be difficult for them to determine how much they can afford to pay for sound recordings.

17. The uncertainty created by the Copyright Owners' proposal is particularly problematic as performance royalties are in a period of volatility. In the past few years, publishers have tried to find ways to increase the performance royalty payments they receive

from the digital performance of their works. In 2011, several publishers withdrew their digital public performance rights from the Performing Rights Organizations ("PRO") ASCAP and BMI so that streaming services would be required to directly negotiate with the publishers in order to obtain performance rights. The effect was to increase the royalties that streaming services had to pay.

18. After two judges ruled that such partial withdrawals were not permissible, publishers threatened to fully withdraw their catalogs from PROs, again in order to force streaming services to enter direct deals with them and drive up royalty costs. Similarly, some publishers have shifted or threatened to shift their catalogs from ASCAP and BMI, which are governed by consent decrees, to SESAC, which is not. The result is that public performance royalties are becoming less predictable and a compulsory license with an all-in rate is more necessary than ever to provide stability for interactive streaming services.

II. THE COPYRIGHT OWNERS' PROPOSED MECHANICAL-ONLY PER-PLAY RATE IS TOO HIGH

A. The Copyright Owners' Proposed Mechanical-Only Royalty Is Out Of Proportion with Industry Benchmarks

19. As described in my Written Direct Statement, the statutory mechanical royalty rate for downloads is an appropriate benchmark for determining the royalty for interactive streaming. (Testimony of D. Dorn in Supp. of Apple's WDS ¶ 78.) Indeed, the download rate is particularly relevant because it was determined based on the same statutory objectives that govern the determination of the mechanical royalty rate for interactive streaming. In addition, the Copyright Owners have decided that the download rate should remain the same for the next five years.

20. The "all-in" royalty rate for downloads is $0.091 per download. This can be converted to an "all-in" per-play rate easily using common industry metrics for converting streams to downloads, such as the Billboard 200 Chart conversion rate and the Official UK Charts Company's conversion rate. (Testimony of D. Dorn in Supp. of Apple's WDS ¶¶ 79-80.) Indeed, even publishers that have submitted statements in this proceeding rely on the Billboard 200 Chart and the Official UK Charts Company's rankings to promote their songwriters. Copies of articles from Sony/ATV Music Publishing LLC, Universal Music Publishing Group, and Warner/Chappell Music, Inc. relying on data from these sources are attached hereto as Exhibits APL–199 through APL–202.

21. Using the Official UK Charts Company's conversion rate of 1 download equals 100 streams, an appropriate all-in per-play rate is $0.00091 (*i.e.*, $0.091 per download times the 1/100 conversion factor). Using the Billboard 200 conversion factor that 1 download equals 150 streams, the appropriate all-in per-play rate is $0.00061 (*i.e.*, $0.091 per download times the 1/150 conversion factor).

22. When each of these "all-in" per-play rates is compared with the Copyright Owners' proposed mechanical-only per-play rate of $0.0015, it is clear that their proposal is well outside the range of appropriate rates based on these industry standards.

B. The Ratio of the Value of Musical Compositions to the Value of Sound Recordings is not an Appropriate Benchmark

23. I understand that the Copyright Owners are using sound recording royalties as a benchmark to support their proposal. I further understand that their analysis depends on first determining the relative values of musical works and sound recordings in various contexts and then using those relative values to assess whether the Copyright Owners' proposed royalty rates are reasonable based on the amount interactive streaming services pay for sound recordings.

24. I do not understand why the Copyright Owners are using sound recording royalties to determine the appropriate royalty for a musical composition license. *First*, a sound recording is a different good from a musical composition. *Second*, the owners and creators of sound recordings (*i.e.*, record labels and artists) often are not the same as the owners and creators of musical compositions (*i.e.*, publishers and songwriters). *Third*, as described below, the ratio of the value of sound recordings to the value of musical works is a poor benchmark, as the ratio varies wildly depending on myriad factors—*e.g.*, the type of use, the popularity of the recording artist, other costs—and, in some cases, is impossible to determine at all. Thus, the ratio of the value of these two goods in one context says nothing about the appropriate relative value of these two goods in a different context. Indeed, that is probably why even the Copyright Owners found that the ratio of the value of musical compositions to the value of sound recordings ranges from 1:1 up to 4.76:1. In other words, one simply can't say that because it was reasonable for the rate to be 4.76:1 for one method of distribution, it is reasonable for the ratio to be 4.76:1 for a different distribution method. Every context is different.

25. Not only is the whole idea of using the ratio in one context to set a rate in a different context antithetical to how licensees view musical compositions and sound recordings, the actual ratio that the Copyright Owners are proposing is inaccurate because it fails to include downloads.

26. Under [redacted]

[redacted] A true and correct copy of Apple's [redacted] are attached hereto as Exhibits APL–186, APL–187, and APL–189.

27. The label [redacted].[1]

28. Using this [redacted] and the 9.1 cents per download royalty paid to publishers shows the relative value of musical compositions to sound recordings in the download context can be [redacted]

29. Apple's royalty payments for downloads also show how [redacted] As described above, the ratio for works with a [redacted] For sound recordings with a [redacted] For sound recordings with a [redacted] Little can be concluded from this other than that the ratio of the value of musical compositions to sound recordings is highly variable.

30. Apple's [redacted] (Apple WDS Exs. APL-003 through APL-006.) [redacted]

[1] For works over five minutes, the royalty for the musical composition is higher, but that is not relevant for this calculation as many works with a wholesale price of $0.91 are under five minutes.

[redacted] True and correct copies of [redacted] are attached hereto as Exhibits APL–190, APL–191, and APL–192. Thus, comparing the royalties paid to labels with the royalties paid to publishers is [redacted]

31. What this tells me is that claiming that one can determine the appropriate per-play rate for musical compositions in the interactive streaming context based on the ratio of the value of musical compositions to the value of sound recordings in other contexts is a highly speculative endeavor. To claim otherwise is misguided.

III. THE STATUTORY ROYALTY SHOULD NOT INCLUDE A PER-USER PRONG

32. The Copyright Owners are proposing a per-user prong as part their rate proposal. All this does is drive up the per-play rate and increase the potential cost of signing up new users.

33. A per-user royalty divorces compensation from demand. Indeed, under the Copyright Owners' proposal, interactive streaming services would have to pay publishers and songwriters a royalty even for users who did not stream a single song in a given month. That means that a user that used Apple Music just to follow her favorite artists' posts on Connect, for example, without ever listening to a song, would nonetheless count as part of the royalty pool.

34. Moreover, because royalties calculated under the per-user prong are, nonetheless, allocated on a per-play basis, rather than being paid based on the songs that were available to be accessed through the service, the per-user rate would effectively be another per-play rate. The effect of adding another per-play royalty for the same musical compositions obviously would be to increase the total per-play rate paid for each song that is played.

35. An example may be helpful. Suppose Apple Music had only one subscriber and that subscriber listened to Song A once and Song B once during the relevant month. Under the

Copyright Owners' proposal, Apple's total mechanical royalty payment would be equal to the greater of (a) $0.0030 (the per-play royalty of $0.0015 multiplied by two plays) and (b) $1.06 (the per-user royalty for one user). Because $1.06 is greater than $0.0030, in this hypothetical Apple would owe $1.06 in total royalties.

36. This $1.06 would then need to be allocated. Under the Copyright Owners' proposal, this allocation is done by dividing the royalty pool by the total number of plays and then multiplying this per-play rate by the number of times a given work was played. Thus, in my hypothetical, the $1.06 payment would be divided evenly between the two songs, Song A and Song B, as they each were played just one time. The resulting per-play rate would be $0.53 per play, which is more than *350 times* the Copyright Owners' proposed per-play rate.

37. Moreover, as is clear from my very simple example, the per-user prong of the Copyright Owners' proposal adds complexity and unpredictability to the royalty calculation. Rather than providing a fixed value for a stream, the Copyright Owners' proposal will lead to per-stream rates that vary from month-to-month and service-to-service, just like the current percentage-of-revenue rate structure.

38. The per-user rate also benefits copyright owners at the expense of interactive streaming services, as it appears from the Copyright Owners' proposal that interactive streaming services would have to pay the same per-user rate whether a user joined on the last day of the month or the first. Similarly, there is no mechanism for accounting for users who quit a service mid-month. Further, the per-user rate is the same whether a user is an individual or part of a family plan. As up to six users can join one of Apple's family plans, Apple's royalties from one family plan could be as high as $6.36 per month.

IV. INTERACTIVE STREAMING SERVICES AND MUSIC LOCKER SERVICES SHOULD NOT PAY THE SAME ROYALTY RATE

39. As described in my opening statement, Apple offers an interactive streaming service called Apple Music. (Testimony of D. Dorn in Supp. of Apple's WDS ¶ 18.) Subscribers to this service can listen to any song in the Apple Music catalog, regardless of whether they previously purchased the song.

40. Apple also offers a music locker service called iTunes Match for $24.99 per year. With iTunes Match, consumers can stream any song *that they own*. The effect is the same as a consumer storing music in the cloud, rather than on any particular device or CD.

41. Because songs consumed on iTunes Match are limited to songs that the user already has purchased, publishers and songwriters already have been paid a royalty for every song consumed on iTunes Match. In other words, at the time the consumer purchased the song, the publisher and songwriter received a royalty that fully compensated them for the purchaser's future use of the song. Typically, when a consumer purchases a song, she can listen to that song as many times as she wants and the publishers and songwriters receive no further royalty payments.

42. Despite this, not only are the Copyright Owners arguing that they should be compensated for music lockers services, they claim that the per-play and per-user royalties for music locker services should be *the same as* the royalties for interactive streaming services. In effect, the Copyright Owners want to be paid a royalty every time a consumer listens to a song she already owns, even though the publishers and songwriters already were paid in full for the use of that song at the time the song was purchased.

43. This demand for double-compensation is emblematic of the one-sided rate proposal that the Copyright Owners have put forward. They are demanding extreme changes to

the current royalty with little regard for whether these changes are fair to the interactive streaming services that make music available to consumers or to the consumers themselves, who just want to be able to listen to the songs they own.

V. THE COPYRIGHT OWNERS' LATE FEE PROPOSAL IS UNFAIR TO COPYRIGHT USERS

44. The Copyright Owners are proposing a 1.5% late fee per month for late interactive streaming and limited download royalty payments. This is an exorbitant penalty for a late payment. Indeed, 1.5% per month translates to 18% per year. This is even higher than the average interest rate that credit cards charge, as indicated by an article from www.bankrate.com, a true and correct copy of which is attached hereto as Exhibit APL–198.

45. Moreover, the proposed late fee applies to all late payments, regardless of why they are late. There is a big difference, however, between an interactive streaming service making a late payment because it did not calculate its payment in a timely manner and an interactive streaming service making a late payment because it does not know who to pay. While the former is within the interactive streaming services' control, the latter is not.

46. Because there often are many different contributors to a particular musical composition, and records for copyright ownership in musical compositions are not always well-kept, it can be difficult to identify the owner of a musical composition. Because of this, an interactive streaming service that properly applies for a compulsory license could nonetheless be "late" paying the owner of a musical composition because the owner is unknown. Applying a late fee in this situation is unfair. The interactive streaming service has done everything right to obtain permission to use the song, and because there is a compulsory license, mechanical rights for the song cannot be withheld, but the interactive streaming service nonetheless has to pay a late fee. Moreover, such a result creates the perverse incentive for copyright owners to keep

their identities hidden in order to accrue late fees, and/or for services to avoid doing too much to investigate the ownership of a work that they want to use.

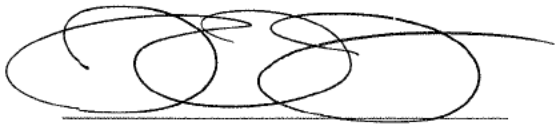
47. I also think the late fee could deter new companies from entering the market, as it may be difficult for new companies to find the money necessary to pay royalties timely while they are building their customer bases and developing the algorithms and data tracking capabilities necessary to calculate royalty payments. Requiring late fees would put these companies even deeper in the hole, deterring them from trying to join the industry in the first place.

VI. CONCLUSION

48. For the foregoing reasons, I believe the Copyright Owners' proposal should not be adopted.

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

Dated: February 10, 2017



David Dorn

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

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

REBUTTAL TESTIMONY OF ROB WHEELER

1. My name is Rob Wheeler. I am the iTunes Controller at Apple Inc. ("Apple"). I submit this testimony in support of Apple's Written Rebuttal Statement.

2. I have reviewed the Proposed Rates and Terms submitted by the National Music Publishers' Association and Nashville Songwriters Association International (collectively, the "Copyright Owners") in this proceeding. I understand that they are proposing a mechanical royalty rate for all interactive streaming and limited download services that is equal to the greater of (a) $0.0015 per play or (b) $1.06 per user per month.

3. From my perspective as someone who would have to implement the Copyright Owners' proposal, I see several problems with that proposal, many of which are the same as those I described in my Written Direct Testimony with respect to a greater-of structure with both a percentage-of-revenue prong and a per-subscriber prong.

4. *First*, because under the Copyright Owners' proposal, royalties are allocated per-play regardless of whether the per-play prong or the per-user prong is used to determine the royalty pool, the per-user prong functions only to drive-up the per-play rate that Apple and other services must pay. For example, suppose Apple had two users, each of whom streamed "Song

A" one time and no other songs. To determine its royalties under the Copyright Owners' proposal, Apple would first determine its potential royalty under the per-play prong. As Song A was streamed two times, and no other songs were streamed, the total royalty under the per-play prong would be $0.0030 (two times the per-play rate of $0.0015). Apple then would determine its potential royalty under the per-user prong. This would be $2.12 (the $1.06 per user rate times two users). Because $2.12 is greater than $0.0030, Apple would owe $2.12 in total royalties. And, because Song A was the only song played, the owner of Song A would receive the entire $2.12 for the two plays of its song. That amounts to $1.06 per play of Song A. That is a substantial windfall to the owner of Song A, especially considering that the per-play rate the Copyright Owners are proposing is $0.0015, a mere 0.14% of the per-play payment the owner of Song A receives in my example.

5. *Second*, the Copyright Owners' per-user prong is a blunt instrument. For example, it does not take into account whether a user starts a service at the beginning of the month or the end of the month, or leaves a service mid-month. The Copyright Owners want to be paid the same amount either way.

6. *Third*, the Copyright Owners' proposal is more complicated than a rate that consists solely of a per-play rate without the per-user prong, as it requires services to engage in multiple calculations to determine the royalties they owe. In addition, services would have to track an additional data point, namely the number of users, in order to implement this proposal. In contrast, a per-play rate would require services to track only one piece of data, namely the number of plays.

7. *Fourth*, the resulting royalty that copyright owners receive under the Copyright Owners' proposal lacks transparency. Because the royalty could be the result of either a per-user

rate or a per-play rate, a copyright owner looking at the royalty payment alone would not be able to determine why it was paid the amount it was paid.

8. *Fifth*, the complexity and lack of transparency are compounded by the fact that the Copyright Owners are proposing a mechanical-only rate, with no all-in headline rate. Interactive streaming services have to pay both mechanical and performance royalties to publishers and songwriters. Thus, under the Copyright Owners' proposal, in addition to calculating the greater of the per-play or per-user royalty for the mechanical right, Apple also would have to perform a second calculation in order to determine the amount it owes to songwriters and publishers with respect to performance royalties. This is much more complicated than calculating a single all-in number and then dividing it between mechanical and performance royalties [redacted]

9. For the foregoing reasons, I believe an all-in per-play rate structure without a per-user prong is preferable to the Copyright Owners' proposal.

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

Dated: February 15, 2017

Rob Wheeler

Before the

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

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

EXPERT REBUTTAL REPORT OF PROFESSOR JUI RAMAPRASAD
FEBRUARY 15, 2017

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I. Assignment

1. My name is Jui Ramaprasad. I previously submitted an expert report in the Phonorecords III proceeding on November 1, 2016 ("Ramaprasad Opening Report").[1] A copy of my CV is provided as Appendix A to the Ramaprasad Opening Report.

2. I have been asked by counsel for Apple Inc. ("Apple") to review and opine on the rate proposal submitted by National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together, the "Copyright Owners"), including the related analyses conducted by their experts Dr. Jeffrey Eisenach and Professor Joshua Gans in their Written Direct Statements.

3. A list of materials I have relied upon in preparation of this rebuttal expert report is provided as Rebuttal Appendix A. I am being compensated at my standard billing rate of $700 per hour. I have been assisted in this matter by staff of Cornerstone Research, who worked under my direction. My compensation in this matter is not in any way contingent or based on the content of my opinion or the outcome of this or any other matter.

II. Summary of Opinions

4. The Copyright Owners are proposing a *mechanical-only* royalty rate for interactive streaming, limited download, and music locker services equal to the greater of (1) $0.0015 per play or (b) $1.06 per user per month. For the reasons described below, I do not believe this rate proposal is appropriate. Moreover, the analyses that the Copyright Owners' experts Professor Joshua Gans and Dr. Jeffrey Eisenach conduct in support of this proposal are deeply flawed and unreliable.

5. Professor Gans and Dr. Eisenach both use sound recording royalties as a benchmark in their analyses. I strongly disagree with this decision. In this proceeding, the Copyright Royalty Board ("CRB") is setting the royalty rate for musical compositions, not sound recordings. Sound recordings and musical works are different products. They often are created and owned by different entities. The rights and protections granted under the U.S. Copyright Act are different for the two products. Moreover, consumers are attracted to each for different reasons (*e.g.*, a

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

particular sound recording may be more popular if it is recorded by a popular a recording artist), Indeed, there is no support for the Copyright Owners' experts' assertion that sound recording royalty rates would be appropriate benchmarks for musical works royalty rates.

6. Further, Dr. Eisenach's use of the "relative value" of sound recordings and musical works in his analysis does not render sound recording royalties an appropriate benchmark. As the first part of his analysis of the "appropriate" per-play rate for mechanical royalties for interactive streaming, Dr. Eisenach determines the relative value of sound recordings and musical works in various contexts, which are not at issue in this proceeding. For example, he considers synchronization licenses used for film and television shows and determines the relative value of the royalties paid for musical works and sound recordings in that context. He also reviews non-interactive streaming royalties (e.g., Pandora agreements) and determines the relative value of the two items in that context. He further considers YouTube licenses and makes the same determination. He then uses these various ratios to convert sound recording royalties to a royalty for musical works. The problem, however, is that there is no evidence that the relative value of sound recordings and musical works in any one of the contexts he examines would be similar to the relative value in the context at issue in this proceeding. In fact, given that the relative value of musical works to sound recordings in the contexts that he examines ranges from 1:1 to 4.76:1, the evidence suggests that the appropriate ratio for one distribution method is not going to be the same for another method. In other words, Dr. Eisenach's own analysis illustrates that the relative value of musical works to sound recordings varies substantially from context to context. Thus, the conceptual foundations of Dr. Eisenach's analyses are fundamentally unsound.

7. Not only is the foundation of Dr. Eisenach's relative value analysis flawed, his calculation of these relative values is flawed as well for various reasons.[2] *First*, Dr. Eisenach underestimates the relative value of sound recordings and musical works by ignoring certain forms of music distribution, such as digital downloads, in his calculation. Using digital downloads would [redacted] the mechanical-only per-play rate Dr. Eisenach calculates substantially. *Second*, Dr. Eisenach fails to consider important differences among the agreements he uses to determine the relative value of musical works and sound recordings. In particular, Dr. Eisenach ignores that the [redacted]

[2] I also believe there are many problems with Professor Gans' calculations, but I understand Dr. Ghose has been asked to address the other portions of Professor Gans' analysis, so I will not address them here.

[redacted]. In other words, although Dr. Eisenach claims to have determined the relative value of sound recordings and musical works based on these agreements, he has not, because [redacted] This renders his entire analysis unreliable. *Third*, Dr. Eisenach's determination of the relative value of sound recordings and musical works in the non-interactive streaming context also is incorrect. In doing this analysis, Dr. Eisenach projects what the ratio of mechanical royalties and sound recording royalties likely would have been going forward if non-interactive streaming services, like Pandora, had to acquire performance rights directly from publishers rather than from Performing Rights Organizations ("PROs"). This projection, however, is erroneous because it assumes the ratio would grow linearly when the data show that it probably would not. A simple correction to this projection changes the ratio in the non-interactive streaming context, leading to a [redacted] mechanical royalty per-play rate than the one Dr. Eisenach calculates.

8. After the above-referenced first step of determining the relative value of sound recordings and musical works (which is flawed, as discussed above), the second step in Dr. Eisenach's calculation of the "appropriate" per-play rate for mechanical royalties for interactive streaming is to use the relative value of sound recordings and musical works to convert the royalties that interactive streaming services pay for sound recordings to a royalty for musical works. This second step in his analysis also is flawed for multiple reasons. *First*, one of the ways Dr. Eisenach conducts this analysis is to look at the difference between sound recording royalties paid by interactive streaming services and sound recording royalties paid by non-interactive streaming services. Dr. Eisenach assumes that the difference between these two numbers is the "mechanical" royalty for sound recordings. In other words, because non-interactive streaming services pay for performance rights only, whereas interactive streaming services pay for both performance and mechanical rights, Dr. Eisenach assumes the difference between the two payments must be the value of the mechanical right for sound recordings. This assumption is baseless. There are many reasons why the two royalties may be different, including the simple fact that sound recording rights for interactive streaming are freely negotiated whereas those for non-interactive streaming are compulsory and set through a statutory proceeding. The Copyright Owners themselves argue that compulsory licenses tend to reduce royalties, but their own expert,

Dr. Eisenach, ignores that explanation for the difference between interactive and non-interactive streaming royalties for sound recordings. By attributing the difference between the interactive and non-interactive streaming sound recording royalties entirely to the mechanical rights, Dr. Eisenach overestimates the appropriate mechanical-only per-play rate. *Second*, Dr. Eisenach, again without justification, excludes Spotify, a large and prominent provider of interactive streaming services, from his analysis. As a result, he [redacted] the average value of sound recording royalties in the interactive streaming industry, and introduces an [redacted] to his estimate of the per-play rate for mechanical royalties.

9. Given the myriad errors, Dr. Eisenach's analysis provides no support for the Copyright Owners' proposed per-play rate for mechanical royalties. It is based on a fundamentally flawed premise that sound recording royalties are an appropriate benchmark for musical works royalties. Further, Dr. Eisenach's execution of his own methodology is riddled with flaws. When just the most glaring errors are corrected, Dr. Eisenach's methodology could be used to show that a per-play rate as low as [redacted] is reasonable. This demonstrates that Dr. Eisenach's approach is fundamentally unsound.

10. In addition to evaluating the mechanical-only per-play rate, Dr. Eisenach also evaluates the "appropriate" per-user rate. His analysis is flawed for many of the same reasons as the analysis of the per-play rate is flawed. *First*, it also relies on sound recordings as a benchmark, which is fundamentally erroneous. *Second*, it is based on the same unreliable analysis of the relative value of sound recordings and musical works. *Third,* Dr. Eisenach excludes Spotify and ad-supported services from this analysis as well. When just some of these errors are corrected, under Dr. Eisenach's approach, a per-user rate as low as [redacted] would be appropriate.

11. Having reviewed the Copyright Owners' proposal, and their experts' analyses, I continue to believe that a more appropriate method for determining a reasonable per-play rate would be to convert the rate for downloads—which already has the § 801(b)(1) objectives factored into it—into a rate for streams using common industry metrics for converting streams to downloads, just as I did in the Ramaprasad Opening Report. This conversion shows that the appropriate all-in per-play rate for interactive streaming ranges from $0.00061 to $0.00091. As the Copyright Owners' proposed *mechanical-only* per-play rate exceeds this range, it clearly is too high.

12. In addition to the artificially elevated mechanical-only per-play and per-user rates, the Copyright Owners' proposal suffers from many other problems. The Copyright Owners propose that interactive streaming services and music locker services should pay the same royalty rate. This proposal, and the supporting testimony from Mr. David Israelite, does not consider fundamental differences between the two services. Interactive streaming services do not allow users to purchase music. Rather, they make music available to users upon demand. By contrast, locker services allow users to store and use music that they already purchased and for which royalties already were paid. By proposing identical royalty rates for interactive streaming and locker services, the Copyright Owners are arguing for a substantial amount of additional royalties *on top of* the royalties already paid to publishers and songwriters at the time the music stored in the locker was purchased. In other words, the Copyright Owners want to be paid the same amount every time a person listens to a song, regardless of whether that person paid to download the song and then stored it in a locker and listened to it from there, or whether that person *never* paid to download the song in the first place. Treating these two situations as the same will increase the costs of locker services and disrupt their businesses, thus depriving consumers of this beneficial method of listening to and storing music.

13. Further, as noted above, the Copyright Owners propose a *mechanical-only* royalty rate rather than an "all-in" rate (i.e., a combined rate for mechanical and performance royalties). As a preliminary matter, because of this, the Copyright Owners' proposal is misleading. Under the Copyright Owners' proposal, publishers and songwriters would not receive just $0.0015 per-play or $1.06 per-user from interactive streaming services. Rather, they would receive $0.0015 per-play or $1.06 per-user *plus* some unknown, separately negotiated amount in performance royalties. This could lead to unreasonably high combined royalties for publishers and songwriters. Moreover, the current rate structure has an all-in rate, and [redacted]

Finally, setting a mechanical-only rate means there would be no "cap" on total royalties paid by interactive streaming services for musical compositions. This would lead to greater uncertainty for interactive streaming services regarding their total royalty costs. In the current climate, where performance royalties may not be constrained by consent decrees, this uncertainty is

particularly troubling as it is very hard to predict what performance royalties will be going forward.

14. Finally, Copyright Owners misleadingly claim that mechanical royalties to songwriters and publishers have [redacted] over the years. Though total mechanical royalties received by songwriters and publishers [redacted] between 2014 and 2015, this was driven in large part by the [redacted] in distribution of *physical* phonorecords, as the industry changed. In contrast, mechanical royalties received from *streaming* services [redacted] over the same period. Moreover, any [redacted] in mechanical royalties was more than offset by a [redacted] in performance royalties. This makes sense as consumer preferences shift from downloads and CDs to streaming services, which must pay performance royalties. In total, publisher revenue from 2014 to 2015 [redacted], which strongly undercuts the Copyright Owners' claim that the future of the publishing and songwriting industries is in jeopardy if royalties from interactive streaming do not increase.

15. For the foregoing reasons, I do not believe the Copyright Owners' proposal should be adopted. It is unlikely to satisfy the objectives set forth in Section 801(b)(1) of the U.S. Copyright Act.

III. Sound Recording Royalty Rates Are Not an Appropriate Benchmark for Musical Work Mechanical Royalty Rates

16. Professor Joshua Gans and Dr. Jeffrey Eisenach, the Copyright Owners' experts, claim that sound recording royalty rates serve as an appropriate benchmark for a "fair" value of mechanical royalty rates.[3] They try to support this claim by stating that there are parallels between musical works rights and sound recording rights, such as "the relationships of the parties, the geographic coverage of the markets, etc."[4] Professor Gans also states that "[i]n both cases, an enterprise stands between the artist and streaming service to facilitate transaction;" that "[t]hose enterprises (record companies and music publishers) are both compensated in the same way;" and that "the markets in which record companies and music publishers exist are very similar."[5] Therefore, according to Professor Gans and Dr. Eisenach, because sound recording

[3] Expert Report of Joshua Gans, October 31, 2016, ¶9 ("Expert Report of Joshua Gans"); Expert Report of Jeffrey Eisenach, October 31, 2016, ¶8 ("Expert Report of Jeffrey Eisenach").
[4] Expert Report of Jeffrey Eisenach, ¶37.
[5] Expert Report of Joshua Gans, ¶14.

royalty rates are freely negotiated, they serve as an appropriate benchmark for musical work royalty rates.[6] I have reviewed the expert reports of Professor Gans and Dr. Eisenach, and based on my experience, it is my opinion that it is not appropriate to use sound recording royalty rates as benchmarks for musical work mechanical royalty rates.

17. While it is true that musical works and sound recordings are complements, they are different products. A *musical work* is the composition of a song (the melodies and harmonies), the arrangement of the instruments (what parts the piano plays, etc.) and the lyrics, whereas a *sound recording* is an actual recording of a song.[7]

18. While a musical work is a necessary input into a sound recording, it cannot be "consumed" without first being converted into a sound recording. In other words, an artist records a musical composition written by a songwriter, thus creating a sound recording, which is marketed or distributed by a record label or music service.[8] Sound recordings of a particular musical composition can differ greatly in sound and style. For example, Jimi Hendrix's sound recording of the musical composition "All Along the Watchtower" sounds very different from Bob Dylan's original sound recording of that composition. Consumers may like and may want to purchase or listen to a particular sound recording of a musical composition done by one artist (especially an artist that is popular), but not another sound recording of the same composition.

19. Further, sound recordings and musical compositions typically are created and owned by different entities. Labels and artists generally create and own sound recordings.[9] Music publishers and songwriters generally create and own musical compositions.[10]

20. Under U.S. Copyright law, copyrights in sound recordings differ from the copyrights in musical compositions. For example, only sound recordings that were created after 1972 are

[6] Expert Report of Joshua Gans, ¶27; Expert Report of Jeffrey Eisenach, ¶37.
[7] United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1073, a true and correct copy of which is attached hereto as **APL-025**; Expert Report of Jeffrey Eisenach ¶13.
[8] **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1077–1078.
[9] **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1076–1077.
[10] **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1073–1074.

protected.[11] There also is an exemption from the requirement to obtain a license to play a sound recording on terrestrial analog radio, while a license for the underlying musical composition is still required.[12]

21. Given the fundamental differences between musical works and sound recordings in the music industry, there is no reason to believe that one would be a good benchmark for the other in this context.

IV. Dr. Eisenach's Analysis of the Appropriate Per-Play Rate for Mechanical Royalties Is Flawed and Improperly Inflates the Rate

A. Dr. Eisenach's Assessment of the Relative Value of Sound Recordings and Musical Works is Flawed

22. Dr. Eisenach uses the "relative value" of sound recordings and musical works in his calculation of appropriate mechanical per-play rates for interactive streaming. He examines several Section 115 licenses (including licenses for interactive streaming services, locker services, ringtones, and synchronization rights), licenses between Pandora (a non-interactive streaming service) and publishers, and licenses between YouTube and labels and publishers. Dr. Eisenach concludes that the relative value of sound recordings and musical works, measured as the ratio of sound recording royalties and musical works royalties, ranges from 4.76:1 to 1:1, and that this range can be applied to the interactive streaming context.[13]

23. Dr. Eisenach's calculation of this "relative value" is flawed and unsound because he bases it on license agreements from a number of different contexts—such as synchronization licenses, Pandora opt-out licenses, YouTube licenses—which are unrelated to the interactive streaming industry. He provides no explanation as to why "relative values" determined from these disparate contexts would be appropriate benchmarks for the interactive streaming industry. He simply states, "[f]or my purposes, it is sufficient simply to assume that the relative values of the two rights should be stable across similar or identical market contexts."[14] I disagree with Dr. Eisenach's conclusory assumptions. The market conditions in which licensors and licensees of

[11] **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1072.
[12] **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1142–1145.
[13] Expert Report of Jeffrey Eisenach, ¶¶81, 99, 135, 136. Table 9.
[14] Expert Report of Jeffrey Eisenach, ¶79.

synchronization rights, Pandora, a non-interactive streaming service, and YouTube, an audio/video service, operate are neither "similar" nor "identical" to the market conditions in which an interactive streaming service operates. Thus, the relative value of sound recordings and musical works are different depending on the particular context.

24. For example, the market conditions for synchronization rights differ materially from the market conditions of interactive streaming services. As Dr. Eisenach explains, synchronization licenses are used to "synchronize a musical composition to audio-video images on, for example, film and television."[15] Consumers' interactions with songs in a film or a television show are significantly different from their interaction with songs on an interactive streaming service. In a film or a television show, the viewer is watching the video, with a portion of the recorded song playing in the background. Further, the viewer is not consciously choosing to listen to the song, rather the filmmaker has made the decision to include the song in the film or television show for a particular purpose (e.g., for a dramatic effect, to set a mood, etc.) and the viewer has no control over that decision. In contrast, users of an interactive streaming service choose to listen to a particular song, and it is not played while watching a film or television show. The relative value of a particular sound recording and the musical work for the filmmaker who decides to use the song in a particular scene is significantly different from the relative value that a listener on an interactive streaming service may derive from listening to the song.

25. Further, the market conditions for non-interactive streaming services, like Pandora, also are different from the market conditions for interactive streaming services. Pandora is a personalized radio service that creates customized radio stations for users based on their expressed preferences.[16] Users can neither play specific songs at specific times, nor can they create their own playlists. An interactive streaming service, however, allows them this flexibility.

26. Further, YouTube allows users to play specific songs at specific times, and to create their own playlists, but songs on YouTube are typically paired with a video file, whereas interactive

[15] Expert Report of Jeffrey Eisenach, ¶94.
[16] "What is Pandora?" *Pandora*, https://help.pandora.com/customer/portal/articles/182180-what-is-pandora-, a true and correct copy of which is attached hereto as **APL-211**.

streaming services are typically audio-only.[17] In addition, YouTube is primarily user-posted content: the service does not need to seek out this content and contract with the users who post the content.[18] Thus, the market conditions for YouTube and an interactive streaming service are different.

27. In fact, Dr. Eisenach's own analysis shows that the relative value of sound recordings and musical works varies widely across contexts. For example, he finds the relative value varies from 1:1 (synchronization licenses) to 2.67:1 (YouTube) to 3.7:1 (Pandora) to 4.76:1 (Section 115 deals).[19] There is no support for his assertion that the relative value of sound recordings and musical works for the interactive streaming context would be close to 1:1 or 4.76:1 or even be in this range. Therefore, the "relative value" framework that Dr. Eisenach uses to establish a relationship between musical works and sound recordings in this context is speculative and conceptually unsound.

28. In summary, it is speculative to assume that the relative value of sound recordings and musical works would be equivalent across different contexts. The relative value from the disparate contexts considered by Dr. Eisenach, such as film and television, non-interactive streaming, and YouTube vary substantially from one another. There is no basis to suggest that these relative values would be applicable to interactive streaming services. To the contrary, the fact that the relative value of sound recordings and musical works varies substantially across different contexts is more indicative of this ratio being determined by the specifics of each context and being not necessarily informative about a different context. Therefore, Dr. Eisenach's conceptual framework for determining mechanical per-play rates for musical works is flawed.

B. Dr. Eisenach Overestimates the Relative Value of Sound Recordings and Musical Works

29. As discussed above, Dr. Eisenach assesses the relative value of sound recordings and musical works across a variety of contexts as part of his analysis to calculate mechanical royalty

[17] "Making the Most Out of YouTube," *YouTube*, https://support.google.com/youtube/answer/3309389, a true and correct copy of which is attached hereto as **APL-209**.
[18] "YouTube Creator Hub," *YouTube*, https://www.youtube.com/yt/creators/?noapp=1, a true and correct copy of which is attached hereto as **APL-212**; "Upload Videos," *YouTube*, https://support.google.com/youtube/answer/57407, a true and correct copy of which is attached hereto as **APL-210**.
[19] Expert Report of Jeffrey Eisenach, Table 9.

per-play rates for musical works.[20] Recognizing that there are differences between musical works and sound recordings, Dr. Eisenach makes "an adjustment to the rates paid for the benchmark [sound recording] rights."[21] Specifically, he calculates the "relative value" of sound recordings and musical works, and adjusts the sound recording royalties to reflect the value of musical works rights.[22] I disagree with Dr. Eisenach's calculation of the range of relative value of sound recordings and musical works for several reasons.

30. First, digital downloads are a more appropriate benchmark for the relative value of sound recordings and musical works for interactive streaming than any of the benchmarks Dr. Eisenach uses. However, Dr. Eisenach ignores digital downloads in his assessment of the relative value of sound recordings and musical works, despite acknowledging that digital downloads and interactive streams are close substitutes.[23] Importantly, unlike some of the contexts discussed above, both digital downloads and interactive streaming allow users to listen to specific recordings when they want and neither form of distribution typically pairs music with video content. It is clear that the digital download context is substantially more similar to interactive streaming than a context like synchronization rights.

31. Further, the royalty rates for digital downloads are subject to this Proceeding.[24] The rate initially was set by the CRB in Phonorecords I and thus reflects the four statutory objectives that the CRB is supposed to consider in this Proceeding.[25] It is noteworthy that the current rate for digital downloads is not contested by the Copyright Owners or by Apple.

32. To calculate the relative value of sound recordings and musical works for digital downloads, one must first calculate the sound recording royalties and mechanical royalties for digital downloads. Record labels typically receive [redacted]

[20] Expert Report of Jeffrey Eisenach, ¶75.
[21] Expert Report of Jeffrey Eisenach, ¶35.
[22] Expert Report of Jeffrey Eisenach, ¶74.
[23] Expert Report of Jeffrey Eisenach, ¶45.
[24] Ramaprasad Opening Report, ¶¶28–30.
[25] Final Determination of Rates and Terms, *In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding*, November 24, 2008, a true and correct copy of which is attached hereto as **APL-071**.

in total royalties.[26] Retail prices of digital downloads are most commonly $0.69, $0.99, and $1.29.[27] This means that labels typically receive between [redacted] per download.[28]

33. Of the total payment received by labels, [redacted].[29] Therefore, [redacted] per download in sound recording royalties.[30] Therefore, the ratio of sound recording royalties to musical works royalties for digital downloads ranges from [redacted] depending on the price of the download, as shown below in **Rebuttal Table 1**.[31] The Amazon Music, Google Play, and Apple iTunes music stores all display popular digital singles predominantly priced at $1.29, indicating that the average ratio is likely closer to the upper end of this range [redacted].[32]

34. Although I do not agree with Dr. Eisenach's flawed methods for calculating mechanical royalty per-play rates, in order to show the impact that excluding digital downloads has on his analysis, I have recreated his calculations using the relative value of sound recordings and musical works in the digital download context. As shown in **Rebuttal Table 1**, when the [redacted] ratio of the value of sound recordings and the value of musical works for digital downloads is used in Dr. Eisenach's methods, the resulting mechanical royalty per-play rate is [redacted] (when

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[26] See, for example, [redacted] APL-PHONO_00005273-93 at 80, a true and correct copy of which is attached hereto as **APL-188**; [redacted], APL-PHONO_00004529-639 at 541, 571, a true and correct copy of which is attached hereto as **APL-186**; [redacted], AMZN00001435-616 at 479, a true and correct copy of which is attached hereto as **APL-185**.

[27] Ramaprasad Opening Report, Table 1.

[28] To calculate the widest range of possible payments, assume that the [redacted] floor exists for the digital downloads priced at $0.69, and that the [redacted] floor exists for downloads priced at $1.29. The [redacted]

[29] 37 C.F.R. § 385.3; **APL-188**, [redacted], APL-PHONO_00005273-93 at 77; **APL-186**, [redacted] APL-PHONO_00004529-639 at 538, 617.

[30] [redacted] minus the $0.091 per download to publishers, and [redacted] minus $0.091.

[31] [redacted]

[32] See, for example, "Amazon Best Sellers, Top 100 Paid," *Amazon*, https://www.amazon.com/Best-Sellers-MP3-Downloads/zgbs/dmusic/digital-music-track/ref=zg_all?pf_rd_p=1818777362&pf_rd_s=center-2&pf_rd_t=2101&pf_rd_i=dmusic&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=TDPF0ZQBW63J6YT8ZN73, a true and correct copy of which is attached hereto as **APL-213**; "Today's Top Tunes," *Google Play*, https://play.google.com/store/music/collection/topselling_paid_track?hl=en, a true and correct copy of which is attached hereto as **APL-215**; "Prices - Single," *Apple*, https://itunes.apple.com/us/album/price-single/id449623583, a true and correct copy of which is attached hereto as **APL-218**.

applying what Dr. Eisenach describes as his "Method 1" calculation) and [redacted] (when applying what Dr. Eisenach describes as his "Method 2" calculation).[33] The resulting mechanical royalty per-play rates for other ratios that arise in the download context are listed below.

[redacted]

35. These resulting per-play rates are, on average, [redacted] than those in Dr. Eisenach's calculations, which instead range from [redacted] per 100 plays up to [redacted] per 100 plays. The results of my calculation also are [redacted] than the mechanical per-play rates the Copyright Owners are proposing. Thus, it is clear that Dr. Eisenach overestimated the range of appropriate mechanical royalty per-play rates by excluding the download context from his analysis.

36. Second, Dr. Eisenach's analysis of [redacted] is flawed. Specifically, Dr. Eisenach analyzes [redacted]

[33] It is noteworthy that these rates are [redacted] than the musical works per-play royalty rate for interactive streaming of $0.00091 proposed by Apple. Apple Inc. Proposed Rates and Terms, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016 ("Apple Inc. Proposed Rates and Terms"), p. 2.

[34] These numbers were calculated [redacted]

[35] These are illustrative floors based on **APL-186**, [redacted], APL-PHONO_00004529-639 at 571.

[36] Expert Report of Jeffrey Eisenach, ¶87.

[redacted].

37. One area in particular that highlights the [redacted]

38. Third, Dr. Eisenach determines the relative value of sound recordings and musical works by using a straight-line projection of the ratio of musical works royalties and sound recording royalties in Pandora's agreements for its non-interactive streaming service, and then inverting this ratio. Dr. Eisenach's projection is wrong. A non-linear projection fits the data more accurately.

39. Specifically, in conducting his analysis of the relative value in the non-interactive streaming context, Dr. Eisenach examines twelve Pandora licenses, with effective dates beginning in 2012.[39] These agreements were negotiated by the publishers directly with Pandora after the publishers withdrew their digital music performance rights from the PROs.[40] The relative value of sound recordings to musical works, averaged across these licenses for each year,

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[37] See [redacted] APL-PHONO_00005388-98 at 89, a true and correct copy of which is attached hereto as **APL-005**; [redacted], a true and correct copy of which is attached hereto as **APL-003**; [redacted], a true and correct copy of which is attached hereto as **APL-006**.

[38] [redacted], APL-PHONO_00008976-9020 at 8978, 8982, a true and correct copy of which is attached hereto as **APL-191**; [redacted], APL-PHONO_00009021-79 at 23, 29, a true and correct copy of which is attached hereto as **APL-192**; [redacted] APL-PHONO_00008928-75 at 30, 34, a true and correct copy of which is attached hereto as **APL-190**.

[39] Expert Report of Jeffrey Eisenach, ¶116.

[40] Expert Report of Jeffrey Eisenach, ¶¶103-104, 106.

ranges from [redacted].[41] Dr. Eisenach focuses on the inverse of this relative value for his analysis, i.e., the ratio of the musical works royalties and sound recording royalties, [redacted] between 2012 and 2018.

40. Dr. Eisenach's projection of the future ratio in the non-interactive streaming context is not correct.[42] Dr. Eisenach [redacted].[44]

41. However, Figure 13 in Dr. Eisenach's expert report [redacted] There are other methods to project the trend that are statistically a better fit than Dr. Eisenach's straight line projection, and would result in a more accurate projection. In particular, [redacted]

[41] Expert Report of Jeffrey Eisenach, Table 6.
[42] The trend in the ratio of musical works royalties and sound recording royalties is a consequence of publishers partially withdrawing their catalogues from the PROs. However, as Dr. Eisenach notes in his expert report, the Department of Justice "announced that it would not agree to partial withdrawals." Therefore, whether this trend in ratios would continue in the future is not known. Expert Report of Jeffrey Eisenach, ¶126.
[43] Expert Report of Jeffrey Eisenach, Table 7, Table 8, ¶128.
[44] Expert Report of Jeffrey Eisenach, ¶128.
[45] [redacted] Expert Report of Jeffrey Eisenach, Table 7.
[46] The average of the inverse of the mechanical works to sound recording royalties ratio in 2018 and the forecasted ratios in 2019-2022 is [redacted] per 100 plays. **Rebuttal Figure 1**; Expert Report of Jeffrey Eisenach, ¶128.

[redacted][47]

42. In summary, Dr. Eisenach's calculations for the relative value of sound recordings and musical works are flawed. By excluding downloads, and conducting a faulty projection of the non-interactive streaming ratio, he [redacted] the relative value of sound recordings and musical works, which results in an [redacted] mechanical royalty per-play rate for musical works.

47 [redacted]

C. Dr. Eisenach's Calculation of the Mechanical Royalty Per-Play Rate Relies on Speculative Assumptions and Is Improperly Inflated

43. After his analysis to determine the relative value range (which, as discussed above, is flawed), Dr. Eisenach uses two methods to calculate the mechanical royalty per-play rate. As discussed below, both methods are unreliable and unsound.

44. In the first method, identified as "Method 1" in his report, Dr. Eisenach calculates the difference between the all-in sound recording royalties ("S.R.") for interactive streaming and the performance-only sound recording royalties for non-interactive streaming. He then divides this difference by the relative value of sound recordings and musical works ("S.R./M.W. Ratio"):[48]

$$\frac{All\text{-}InS.R._{interactivestreaming} - Performance\text{-}OnlyS.R._{noninteractivestreaming}}{S.R./M.W.\ Ratio}$$

45. In the second method ("Method 2"), Dr. Eisenach calculates a mechanical royalty per-play rate by dividing the all-in sound recording royalties for interactive streaming by the relative value of sound recordings and musical works. He then subtracts a performance-only musical works ("M.W.") royalty.[49]

$$\frac{All\text{-}InS.R._{interactivestreaming}}{S.R./M.W.\ Ratio} - Performance\text{-}OnlyM.W.$$

46. There are conceptual and implementation problems with both of Dr. Eisenach's methods. In Method 1, Dr. Eisenach assumes that the difference between interactive streaming sound recording royalties and non-interactive streaming sound recording royalties is exactly equal to the value of the mechanical rights for sound recordings.[50] This assumption is unfounded. Dr. Eisenach ignores other reasons for the difference between interactive streaming and non-interactive streaming sound recording royalties. For example, part of this difference is likely due to the fact that the non-interactive streaming sound recording royalty is a compulsory rate, whereas the interactive streaming sound recording is negotiated in the free market.[51] The Copyright Owners themselves argue throughout their experts' reports and witness statements that

[48] Expert Report of Jeffrey Eisenach, ¶¶140-141.
[49] Expert Report of Jeffrey Eisenach, ¶¶142-143.
[50] Expert Report of Jeffrey Eisenach, ¶141.
[51] Expert Report of Joshua Gans, Section III; **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1190.

compulsory licenses tend to reduce royalties,[52] but Dr. Eisenach ignores that explanation for the difference between interactive and non-interactive streaming royalties for sound recordings. By attributing the difference entirely to the mechanical right for sound recordings, Dr. Eisenach is overstating the value of the mechanical right for sound recordings.

47. Further, both Method 1 and Method 2 rely on an erroneous estimate of all-in sound recording royalties for interactive streaming. Dr. Eisenach's calculation of that estimate is incorrect because it excludes a large and prominent service: Spotify. Dr. Eisenach's estimate of the all-in sound recording royalty, which excludes Spotify, is [redacted] per 100 plays.[53] However, including Spotify (both the Premium tier and the ad-supported tier), [redacted] this estimate to [redacted].[54]

48. Dr. Eisenach tries to justify his exclusion of the ad-supported tier of Spotify from his calculations, arguing that Spotify's sound recording royalties for its ad-supported tier are [redacted].[55] He speculates that this may be due to the fact that record labels have an equity stake in Spotify, and that the ad-supported tier is "designed to draw users to Spotify in hopes of growing market share and promoting the subscription service, thereby enhancing Spotify's company valuation and long-run profitability."[56] In other words, Dr. Eisenach posits that record labels are willing to receive [redacted] royalties for Spotify's ad-supported tier because they will get a benefit from their equity stake as Spotify's business grows. It may not make sense for record labels to sacrifice guaranteed royalties in the present in the hopes of some future, uncertain gain. Dr. Eisenach does not provide a proper economic analysis of the incentives faced by record labels and their decision-making given this tradeoff. His explanation is unsatisfactory, and his assumption to exclude Spotify, speculative.

49. In addition, Dr. Eisenach provides no proper justification for excluding the premium, subscription tier of Spotify—an assumption that is critical to his estimate of sound recording royalties of [redacted] per 100 plays. If he were to include this Spotify data, the sound recording royalty rate would be [redacted] per 100 plays, and this would [redacted] the calculated mechanical royalty per-play rate in Dr. Eisenach's analyses.

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[52] See, for example, Expert Report of Joshua Gans, ¶¶9-10, 18-21.
[53] Expert Report of Jeffrey Eisenach, Table 11.
[54] See Chart 1.
[55] Expert Report of Jeffrey Eisenach, footnote 127.
[56] Expert Report of Jeffrey Eisenach, footnote 127.

50. For example, Dr. Eisenach's range of mechanical royalty rates based on his Method 1 is [redacted] per 100 plays with a midpoint of [redacted] per 100 plays.[57] Setting aside all other flaws in Dr. Eisenach's calculations, simply using the sound recording royalty per 100 plays of [redacted] and the relative value of 9.00:1 for downloads (discussed in Section IV.B), [redacted] this range to [redacted] per 100 plays with a midpoint between [redacted] and [redacted] per 100 plays (see **Rebuttal Table 2**).

[redacted]

51. Similarly, Dr. Eisenach calculates that, based on his Method 2, the range of mechanical royalty rates is [redacted] per 100 plays with a midpoint of [redacted] per 100 plays.[58] Using the sound recording royalty of [redacted] per 100 plays and the relative value of [redacted] for downloads [redacted] the range of mechanical royalty per-play rates to [redacted] per 100 plays with a midpoint between [redacted] per 100 plays (see **Rebuttal Table 3**).

[57] Expert Report of Jeffrey Eisenach, Table 12.
[58] Expert Report of Jeffrey Eisenach, Table 14.

52. The fact that Dr. Eisenach's own method (when he includes the Spotify data) yields a mechanical royalty per-play rate of [redacted] demonstrates the absurdity of his approach. Correcting other flaws in Dr. Eisenach's analysis would [redacted] the range of mechanical royalty per-play rates he calculates even further.

D. Dr. Eisenach's Analysis of the Mechanical Royalty Per-User Rate Suffers from the Same Flaws as His Analysis of the Mechanical Royalty Per-Play Rate

53. Dr. Eisenach's approach to calculate the mechanical royalty per-user rate is the same as his approach to calculate the mechanical royalty per-play rate, and therefore, it suffers from the same flaws. *First*, it also relies on sound recordings as a benchmark, which is fundamentally erroneous, as discussed above. *Second*, it is based on the same unreliable analysis of the relative value of sound recordings and musical works, as discussed above. *Third*, Dr. Eisenach unjustifiably excludes Spotify and ad-supported services from this analysis as well, as discussed above.

54. Correcting just some of the flaws in Dr. Eisenach's analysis [redacted] his estimate of the mechanical royalty per-user rate. Specifically, in Table 15 of his expert report, Dr. Eisenach calculates that the average sound recording royalty per user is [redacted] excluding Spotify Premium and [redacted] including Spotify Premium.[59] Instead of using a [redacted] number that includes Spotify

[59] Expert Report of Jeffrey Eisenach, Table 15.

Premium [redacted], Dr. Eisenach proceeds with the [redacted] number ([redacted]) for sound recording per-user royalty in his analysis, a decision that [redacted] the resulting per-user rate.[60]

55. Similarly, he calculates that the average per-user performance royalty for mechanical works is [redacted] excluding Spotify Premium, and [redacted] including Spotify Premium.[61] Instead of using a [redacted] number that includes Spotify Premium ([redacted]), Dr. Eisenach proceeds with the [redacted] number ([redacted]) for performance royalty per-user rate in his analysis.[62] This is a decision that, once again, [redacted] the resulting per-user mechanical-only rate.[63]

56. I adjust Dr. Eisenach's analysis to include Spotify Premium, for which he already has the data. Further, consistent with my correction to Dr. Eisenach's analysis of mechanical royalty per-play rates, I also include the relative value of sound recording and musical works for digital downloads, which I calculated above. These corrections [redacted] the range of the mechanical royalty per-user rate calculated by Dr. Eisenach from [redacted] (See Dr. Eisenach's Table 18) to [redacted] (see **Rebuttal Table 4** below).

[redacted]

[60] Expert Report of Jeffrey Eisenach, Table 16.
[61] Expert Report of Jeffrey Eisenach, Table 17.
[62] Expert Report of Jeffrey Eisenach, Table 18.
[63] Because the performance royalty is subtracted from Dr. Eisenach's determination of the appropriate all-in rate in order to determine the mechanical-only rate, choosing a lower performance royalty will lead to a higher mechanical-only rate. See Expert Report of Jeffrey Eisenach, ¶164, Table 18.

V. Interactive Streaming and Music Lockers Are Fundamentally Different Services and Should Not Be Governed By the Same Royalty Rate Structure

57. The Copyright Owners' proposal that one royalty structure should cover all formats in Subpart B (interactive streaming services) and Subpart C (locker services) is nonsensical because the services are very different.[64] Interactive streaming services do not allow users of the service to purchase a copy of the digital music file.[65] Music on locker services, however, has already been *purchased* by the user, at which time download royalty rates were paid.[66]

58. In support of their proposal, Mr. David Israelite, the President and Chief Executive Officer of the NMPA, describes the Subpart C Configurations as "different methods for delivering or offering interactive streams and/or limited downloads," like the Subpart B Configurations.[67] Mr. Israelite also argues that "because each play has an inherent value," "all forms of interactive steaming [*sic*] and limited downloading" should have the same royalty rate.[68] This is the only rationale that Mr. Israelite provides, and it is not persuasive. Mr. Israelite ignores important differences between interactive streaming services and locker services (which Mr. Israelite classifies under the "interactive streaming" umbrella) and how music is (or is not) purchased.

59. Mr. Israelite himself also highlights another important difference between the interactive streaming services and locker services: interactive streaming services "provide consumers with something of incredible value that they never had before: instant access to virtually every song ever recorded."[69] A locker service cannot provide the same access to a catalog of songs as an interactive streaming service unless the user purchases all those songs available on the

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[64] Introductory Memorandum of National Music Publishers' Association And Nashville Songwriters Association International, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016, pp. A-6, A-7; In the Code of Federal Regulations, physical phonorecords, permanent digital downloads, and ringtones are described as Subpart A Configurations. Subscription services (and free or ad-supported versions of the same) through which users can listen to interactive streams are described as Subpart B Configurations. Specifically, these include (i) standalone non-portable subscription – streaming only; (ii) standalone non-portable subscription – mixed; (iii) standalone portable subscription services; (iv) bundled subscription services; and (v) free nonsubscription / ad-supported services. Locker services are described as Subpart C Configurations. 37 C.F.R. §385.13(a); 37 C.F.R. §385.22.

[65] Ramaprasad Opening Report, ¶19; "Learn About Digital Music," *Music Matters*, http://whymusicmatters.com/pages/about-digital-music, a true and correct copy of which is attached hereto as **APL-135**.

[66] Ramaprasad Opening Report, ¶¶23–24.

[67] Witness Statement of David Israelite, November 1, 2016, ¶¶1, 30 ("Witness Statement of David Israelite").

[68] Witness Statement of David Israelite, ¶48.

[69] Witness Statement of David Israelite, ¶65.

interactive streaming service and then puts them on the locker service. Moreover, another "incredible value" provided by interactive streaming services is music discovery features, which are not offered by locker services.

60. Further, using the same royalty rate for music on a locker service and for the music on an interactive streaming service would result in an improper windfall for the Copyright Owners. The royalty rate for a locker service should be lower because a royalty is already paid to the Copyright Owners when a user purchases the music before putting it in a music locker. Using a higher royalty rate that is the same as the rate for streaming services would increase costs for music locker services and be disruptive to their businesses. Indeed, the Copyright Owners' proposal likely would remove any meaningful distinction between the two services. Thus, in my opinion, royalty rates for interactive streaming services should not be the same as royalty rates for music locker services.

VI. Maintaining an All-In Rate, Instead of a Mechanical-Only Rate, Is More Appropriate for Musical Works Royalties Paid By Interactive Streaming Services

61. In a radical departure from the "all-in" (i.e., sum of mechanical and performance) royalty rate format of the Section 115 regulations and from the Apple per-play proposal, the Copyright Owners have proposed a per-play rate specifically for mechanical rights only.[70] They have not addressed the rationale for doing so, nor have they provided a reason to believe that a mechanical-only royalty rate is more appropriate than an all-in royalty rate. As a result, the Copyright Owners' experts consider only mechanical royalties in their analyses.

62. I disagree with Copyright Owners' approach. The current royalty rate for songwriters is specified as an all-in rate, and thus the music industry is familiar with the use of an all-in rate.

[redacted]

[70] Introductory Memorandum of National Music Publishers' Association and the Nashville Songwriters Association International, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016, p. A-6; 37 C.F.R. § 385.12.

[71] 37 C.F.R. § 385.12. Also see, for example, **APL-005**, [redacted], APL-PHONO_00005388-98 at 89; **APL-003**, [redacted] APL-PHONO_00005380-86 at 81; **APL-006**, [redacted] APL-PHONO_00005399-404 at 400; [redacted] GOOG-PHONOIII-00000172-82 at 72, a true and correct copy of which is attached hereto as **APL-193**; [redacted]

[redacted][73]

63. Moreover, an all-in rate allows streaming services to predict royalty payments to publishers and songwriters with greater accuracy. Setting a mechanical rate instead of an all-in rate would increase the uncertainty around the performance royalties that streaming services would need to pay. Predictability is particularly important currently because publishers have been trying to find ways to increase their digital performance royalties in the past few years. For example, a few years ago, publishers partially withdrew their catalogues from PROs so that digital streaming services would have to directly negotiate digital performance royalties with publishers, leading to an increase in such royalties. After this practice was rejected by the courts (at least with respect to those PROs that are governed by consent decrees, namely, ASCAP and BMI), publishers "threatened" to fully withdraw their catalogues from ASCAP and BMI, or to move their catalogues to SESAC, a PRO that is not subject to a consent decree.[74] If publishers follow through on these threats, it will be very difficult to predict what performance royalties will be in the future. The only certainty is that they will increase, thus increasing the costs of streaming services.[75] Accordingly, an all-in royalty is particularly important in order to combat this uncertainty regarding future performance royalty payments. Therefore, there is no justification to depart from the current practice of setting an all-in rate.

VII. The Copyright Owners Misleadingly State That Mechanical Royalty Rates Have Decreased Over Time

64. The Copyright Owners blame a decline in mechanical royalty rates for the songwriters' alleged inability to "make a fair wage today."[76] This is one of the reasons provided by Mr.

[redacted], GOOG-PHONOIII-00000197-208 at 197, a true and correct copy of which is attached hereto as **APL-194**.

[72] 37 C.F.R. 385.12(b)(2)–(3). Performance royalties are subtracted from an "all-in royalty pool" to create the "payable royalty pool" of mechanical royalties.

[73] See, for example, Witness Testimony of Dr. Michael Katz, November 1, 2016, ¶43.

[74] Ed Christman, "Universal Music Publishing Group, Ole Pulling Production Music Catalogs From ASCAP," April 1, 2016, *Billboard*, http://www.billboard.com/articles/business/7318702/umpg-ole-pull-film-production-music-ascap-sesac, a true and correct copy of which is attached hereto as **APL-214**; **APL-025**, United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, February 2015, NMPA00001047–1291 at 1094-1095.

[75] **APL-214**, Ed Christman, "Universal Music Publishing Group, Ole Pulling Production Music Catalogs From ASCAP," April 1, 2016, *Billboard*, http://www.billboard.com/articles/business/7318702/umpg-ole-pull-film-production-music-ascap-sesac.

[76] Witness Statement of David Israelite, ¶¶70–71.

Israelite to justify an increase in mechanical royalty rates, and is [redacted].[77] However, the situation is not as dire as Copyright Owners portray because, as discussed below, both royalties from streaming services and total royalties [redacted].

65. Mr. Israelite is correct in noting that mechanical royalties for the music publishing industry as a whole [redacted] from 2014 to 2015.[78] As a preliminary matter, this is not a large number, considering that this [redacted] represents all sources of mechanical royalties. Further, this decline is largely driven by the [redacted] in the distribution of physical phonorecords as the industry has changed, as I noted in the Ramaprasad Opening Report.[79] However, while physical distribution has [redacted], distribution by digital streaming has [redacted].[80] In fact, while the mechanical royalties from physical media declined by [redacted] a large portion of this [redacted] was offset by the [redacted] of [redacted] in mechanical royalties from streaming.[81] The Copyright Owners seem to have ignored this fact.

66. Furthermore, streaming services also pay performance royalties, unlike physical sales and digital albums and tracks. Performance royalties for digital services have [redacted] between 2014 and 2015.[82] In other words, from 2014 to 2015, the [redacted] in digital performance royalties was [redacted] in mechanical royalties, undermining the Copyright Owners' conclusions.

67. As interactive streaming services have to pay both performance and mechanical royalties, it only makes sense to consider their impact on *both* of these revenue sources when evaluating the effect that interactive streaming services are having on publisher and songwriter revenue. By focusing solely on mechanical royalties, the Copyright Owners' are ignoring half of the picture.

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[77] Witness Statement of David Israelite, ¶78; Witness Statement of Peter S. Brodsky, October 28, 2016, ¶67; Witness Statement of Liz Rose, October 28, 2016, ¶¶2-3; Witness Statement of David Kokakis, October 28, 2016, ¶48.
[78] Witness Statement of David Israelite, ¶70; "Industry Revenue Comparisons 2013-2015," CO Exhibit 1.1, NMPA00001424.
[79] Ramaprasad Opening Report, Section VII.A.1.
[80] Ramaprasad Opening Report, Section VII.A.1.
[81] See Witness Statement of David Israelite; "Industry Revenue Comparisons 2013-2015," CO Exhibit 1.1, NMPA00001424. Mechanical royalties from permanent digital downloads [redacted] between 2014 and 2015. Meanwhile, mechanical royalties from streaming have [redacted] over the same time period.
[82] Witness Statement of David Israelite; "Industry Revenue Comparisons 2013-2015," CO Exhibit 1.1, NMPA00001424.

68. When all sources of royalties are considered, total royalties from 2014 to 2015 [redacted] million, further undercutting the Copyright Owners' portrayal of the publishing industry.[83]

VIII. Conclusion

69. The analyses by the Copyright Owners' experts, Professor Gans and Dr. Eisenach, in support of the Copyright Owners' proposed mechanical royalty per-play rate for musical works is flawed and unsound. They use sound recordings as a benchmark for musical works. However, sound recordings and musical works represent two different products, governed by different sets of rights and protections under the U.S. Copyright Act, and one cannot be used as a benchmark for the other. Their analyses are, therefore, fundamentally unsound.

70. Moreover, as part of his calculation of mechanical royalty per-play rate for interactive streaming, Dr. Eisenach applies the relative value of sound recordings and musical works obtained from different contexts to interactive streaming. There is no reason to believe that the relative value of sound recordings and musical works would be stable across contexts or can be applied from different contexts to interactive streaming. His analysis is, therefore, conceptually flawed.

71. Even if it were appropriate to apply the relative value of sound recordings and musical works from different contexts to interactive streaming, Dr. Eisenach's calculation of the relative value is incorrect, and therefore, his calculation of the mechanical royalty per-play rate is incorrect and biased upward. Among other things, Dr. Eisenach ignores certain forms of music distribution, glosses over important details in the licensing agreements he supposedly is analyzing, and miscalculates the projection of future royalties from non-interactive streaming. Simple corrections to his analysis [redacted] his calculated mechanical royalty per-play rate.

72. Dr. Eisenach also errs in converting the royalties for sound recordings to royalties for musical works. In particular, he excludes Spotify (and all ad-supported services) from his calculation of the average royalty interactive streaming services pay for sound recordings. Because his estimate of sound recording royalty per-play rate is [redacted], the resulting mechanical-only royalty rate for musical works also is [redacted]. He also fails to account for the

[83] Witness Statement of David Israelite; "Industry Revenue Comparisons 2013-2015," CO Exhibit 1.1, NMPA00001424.

many reasons why the sound recording royalties paid by interactive streaming services may be higher than those paid by non-interactive streaming services, and instead attributes the entire difference to the value of mechanical royalty. For example, Dr. Eisenach ignores the fact that non-interactive streaming services are subject to a compulsory license for sound recordings, and interactive streaming services are not. Dr. Eisenach's flawed assumptions serve to [redacted] his calculated mechanical-only per-play rate.

73. Dr. Eisenach's analysis of the appropriate mechanical royalty per-user rate is similarly flawed because it is based on the same assumptions he makes in his analysis of the mechanical royalty per-play rate. Dr. Eisenach makes the same erroneous assumption of using sound recordings as a benchmark, uses the same unreliable analysis of the relative value of sound recordings and musical works, and excludes Spotify and ad-supported services from this analysis as well. Dr. Eisenach's flawed assumptions [redacted] his estimate of the appropriate mechanical royalty per-user rate.

74. Further, the Copyright Owners erroneously assert that interactive streaming and locker services should have the same royalty rate. There are fundamental differences between these services. The music on locker services is already purchased by the user, and royalties are paid on that purchase. That is not the case with interactive streaming. Applying the same royalty rate for interactive streaming and locker services would add substantial royalties to the royalties already paid for the music stored in locker services. This would increase the costs of locker services and disrupt their businesses.

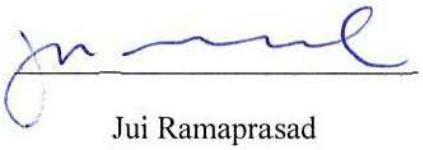
75. The Copyright Owners propose to disrupt the current rate structure by setting a mechanical-only royalty rate, rather than an "all-in" rate (i.e., combined mechanical and performance rate). The current rate structure, [redacted] based on an all-in rate. An all-in rate makes streaming services' payments more predictable. Setting a mechanical-only rate in the current climate, where performance royalties may not be constrained by consent decrees, would remove the "cap" on performance royalties paid by streaming services, and create uncertainty for interactive streaming services regarding what their total royalties for musical compositions might be.

76. Lastly, in support of their rate proposal, Copyright Owners cite the fact that mechanical royalties to songwriters have [redacted] over the years to justify their request for a higher royalty

rate for interactive streaming in this Proceeding. Though total mechanical royalties received by songwriters [redacted] between 2014 and 2015, this was driven in large part by the [redacted] in distribution of physical phonorecords, as the industry changed. In contrast, mechanical royalties received from streaming services [redacted] over the same period. Moreover, both performance royalties from digital services, and total revenues of publishers and songwriters, [redacted] between 2014 and 2015. This undercuts the Copyright Owners' claim that the future of the publishing and songwriting industries is in jeopardy if royalties from interactive streaming do not increase.

77. For the foregoing reasons, it is my opinion that the Copyright Owners' proposal should not be adopted. The Copyright Owners' proposal is unlikely to satisfy the objectives set forth in Section 801(b)(1) of the U.S. Copyright Act. Instead, Apple's proposal is more reasonable and satisfies these objectives.

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



Jui Ramaprasad

February 15, 2017

Date

Chart 1
Adjusted Eisenach Table 11
Sound Recording Royalty Payments to
Record Labels Per 100 Plays by Service Offering
2012–2016

Documents Relied Upon

Document Title, Bates Numbers	Document Date
Motions and Legal Pleadings	
Apple Inc. Proposed Rates and Terms, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*	November 1, 2016
Final Determination of Rates and Terms, *In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding*	November 24, 2008
Introductory Memorandum of National Music Publishers' Association and the Nashville Songwriters Association International, *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*	November 1, 2016
Agreements	
[redacted] AMZN00001435-616	July 24, 2007
[redacted] APL-PHONO_00004529-639	July 1, 2011
[redacted] APL-PHONO_00005388-98	June 5, 2015
[redacted] APL-PHONO_00005399-404	June 6, 2015
[redacted] APL-PHONO_00005273-93	April 28, 2006
[redacted] GOOG-PHONOIII-00000172-82	November 12, 2013
[redacted] GOOG-PHONOIII-00000197-208	July 11, 2013
[redacted] APL-PHONO_00005380-86	June 4, 2015
[redacted] APL-PHONO_00008976-9020	June 6, 2015
[redacted] APL-PHONO_00009021-79	June 6, 2015
[redacted] APL-PHONO_00008928-75	June 3, 2015
Expert Reports	
Expert Report of Jeffrey Eisenach, and backup documents	October 31, 2016

Document Title, Bates Numbers	Document Date
Expert Report of Joshua Gans, and backup documents	October 31, 2016
Expert Report of Jui Ramaprasad	November 1, 2016

Witness Statements/Testimony

Witness Statement of Peter S. Brodsky	October 28, 2016
Witness Statement of David Israelite	November 1, 2016
Witness Statement of David Kokakis	October 28, 2016
Witness Statement of Liz Rose	October 28, 2016
Witness Testimony of Dr. Michael Katz	November 1, 2016

Publicly Available Documents

"Amazon Best Sellers, Top 100 Paid," *Amazon*, https://www.amazon.com/Best-Sellers-MP3-Downloads/zgbs/dmusic/digital-music-track/ref=zg_all?pf_rd_p=1818777362&pf_rd_s=center-2&pf_rd_t=2101&pf_rd_i=dmusic&pf_rd_m=ATVPDKIKX0DER&pf_rd_r=TDPF0ZQBW63J6YT8ZN73

"Learn About Digital Music," *Music Matters*, http://whymusicmatters.com/pages/about-digital-music

"Making the Most Out of YouTube," *YouTube*, https://support.google.com/youtube/answer/3309389

"Prices - Single," *Apple*, https://itunes.apple.com/us/album/price-single/id449623583

" Today's Top Tunes," *Google Play*, https://play.google.com/store/music/collection/topselling_paid_track?hl=en

"Upload Videos," *YouTube*, https://support.google.com/youtube/answer/57407

"What is Pandora?" *Pandora*, https://help.pandora.com/customer/portal/articles/182180-what-is-pandora-

"YouTube Creator Hub," *YouTube*, https://www.youtube.com/yt/creators/?noapp=1

37 C.F.R. § 385

United States Copyright Office, "Copyright and the Music Marketplace," Register of Copyrights Report, NMPA00001047–1291 — February 2015

Ed Christman, "Universal Music Publishing Group, Ole Pulling Production Music Catalogs From ASCAP," *Billboard*, http://www.billboard.com/articles/business/7318702/umpg-ole-pull-film-production-music-ascap-sesac — April 1, 2016

Miscellaneous

NMPA00001647

NMPA00001664

All other sources, charts, and tables mentioned within the report

Before the

UNITED STATES COPYRIGHT ROYALTY JUDGES

The Library of Congress

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

REBUTTAL EXPERT REPORT OF PROFESSOR ANINDYA GHOSE
FEBRUARY 15, 2017

Table of Contents

I. ASSIGNMENT

1. My name is Anindya Ghose. I previously submitted an expert report in this matter on November 1, 2016 ("Ghose Opening Report"). I understand that the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together, the "Copyright Owners") have retained several experts to address the appropriate royalty rates and terms for the compulsory mechanical license for making and distributing phonorecords. I have been asked by counsel for Apple Inc. ("Apple") to evaluate and comment upon the Written Direct Statements by two of the Copyright Owners' experts, Professor Marc Rysman and Professor Joshua Gans.

2. My qualifications and prior testimony are provided in the Ghose Opening Report. A list of materials I have relied upon in forming my opinions in this rebuttal report is attached as Rebuttal Appendix A.[1] I am being compensated at my standard billing rate of $800 per hour. I have been assisted in this matter by staff of Cornerstone Research, who worked under my direction. I receive compensation from Cornerstone Research based on its collected staff billings for its support of me in this matter. Neither my compensation in this matter nor my compensation from Cornerstone Research is in any way contingent or based on the content of my opinion or the outcome of this or any other matter.

II. SUMMARY OF OPINIONS

3. As a preliminary matter, after reviewing the Written Direct Statements submitted by Professor Marc Rysman and Professor Joshua Gans on behalf of Copyright Owners in the Phonorecords III proceeding, I maintain my original opinion that Apple's proposed all-in per-play rate of $0.00091 for interactive streaming is appropriate.

4. I understand that the Copyright Owners are proposing a mechanical-only royalty rate equal to the greater of (a) $0.0015 per-play or (b) $1.06 per-user per month. This proposal is not appropriate. In particular, I disagree with the opinions offered by Professors Rysman and Gans—the two Copyright Owner experts whose testimony I was asked to opine on—in the following three respects.

[1] A list of my prior testimony is provided as Rebuttal Appendix B.

5. *First*, contrary to Professor Rysman's position, in my opinion, a per-user rate is not appropriate. Under a per-user rate structure, the payment that an interactive streaming service must make for a particular user is delinked from that user's streaming behavior. Thus, the value publishers and songwriters receive does not reflect the demand for their music. Rather, with a per-user rate structure, a streaming service has to pay the same royalty for a user who plays very little music as a user who streams all-day. This is not appropriate because the two users have different demands for music. Moreover, per-user royalty calculations are more cumbersome than per-play royalty calculations because royalties calculated under a per-user rate still need to be allocated among publishers and songwriters based on the demand for their songs, *i.e.*, the number of streams of their songs. In other words, royalties calculated on a per-user basis still are allocated on a per-play basis, which makes the per-user royalty calculation more complicated than the per-play royalty calculation. Further, this effective mechanical-only per-play rate used for the allocation of royalties under the per-user prong of the Copyright Owners' proposal would be *higher* than the $0.0015 mechanical-only per play rate that the Copyright Owners propose.

6. *Second*, Professors Rysman and Gans claim that the Copyright Owners' proposed per-play rate of $0.0015 is reasonable because it is in line with rates historically paid by digital streaming services. This claim is not correct. As a preliminary matter, historical rates may not be a good benchmark for what the per-play rate should be because data shows that [redacted] Thus, the historic average [redacted] because the historic average [redacted] Moreover, contrary to Professors Rysman's and Gans' claims, the Copyright Owners' proposed per-play mechanical-only rate of $0.0015 is [redacted] that the historical average mechanical-only per-play rate. In their analysis of historical mechanical royalty per-play rates, Professors Rysman and Gans exclude rate data for ad-supported streaming services, such as ad-supported Spotify, that account for a large number of streams. They also exclude data regarding the per-play rate for Apple's student plan and trial period. When this data is included in the analysis, the effective mechanical-only per-play rate for 2015 is [redacted] the Copyright Owners' proposed mechanical-only rate of $0.0015. Indeed, even the effective *all-in* (*i.e.*, mechanical and performance) per-play rate for 2015 (the latest period for which all-in data

is available for large services such as Google Play, Rhapsody, Deezer, Rdio, and Xbox Music) is [redacted] the Copyright Owners' proposed mechanical-only royalty. By contrast, [redacted] Specifically, the average all-in per-play rate from 2015 was [redacted] which is [redacted] Apple's proposed all-in per-play rate of $0.00091.

7. *Third*, Professor Gans claims to have performed a calculation based on the "Shapley value" concept. Shapley value is a concept from cooperative game theory and can be used to divide economic surplus among participants. The validity of a Shapley value in a specific context rests on the validity of the assumptions made by the researcher. As a preliminary matter, Professor Gans does not set forth why a concept from *cooperative* game theory is appropriate in a royalty determination context where the various players may be maximizing their own profits rather than working cooperatively. As the Copyright Royalty Board ("CRB") explained in the determination of rates and terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services ("SDARS")—another proceeding applying the Section 801(b)(1) factors and setting royalties that owners of a copyrighted work (in that case, record labels) should receive pursuant to a compulsory license—rather than work cooperatively, it is possible that the various players in this setting might act "independently to maximize their own profits. In other words, a *noncooperative* game approach may have been more appropriate under the circumstances" (emphasis added). Given this, the Shapley value approach, even if conducted correctly, is not necessarily an appropriate tool for evaluating the proper mechanical royalty rate in this proceeding.

8. Moreover, Professor Gans bases his methodology in part on a hypothetical streaming industry with only one record label and one publisher. There is no basis for saying that a Shapley value solution from such an oversimplified example would translate into an accurate mechanical royalty rate for an industry with numerous players.

9. Further, even though Professor Gans starts his analysis with a discussion of the Shapley value concept in a hypothetical example, he fails to follow through and undertake an actual Shapley value analysis when performing his calculations. A proper Shapley value analysis allocates value (in this case, industry profits) to each player based on their contributions, *without*

making any assumptions about what the resulting share of each player would be. Professor Gans, on the other hand, makes certain assumptions about what the resulting level of publisher profits and revenues would be in his hypothetical world and performs a calculation to find the mechanical royalty-rate that would generate those asserted levels of publisher profits and revenues. Professor Gans' finding of a per-play mechanical royalty that [redacted] the per-play rate the Copyright Owners are proposing is driven directly by the assumptions he makes about the resulting level of profits and is not the result of a proper Shapley value analysis.

10. Setting aside whether the Shapley value analysis is appropriate for this proceeding, and whether Professor Gans properly conducted a Shapley value analysis, Professor Gans' results are also unreliable because a number of the assumptions underlying his analysis are unsupported. These include:

- One of the inputs Professor Gans uses in his Shapley value calculation is the average royalty rate for sound recordings, which was determined by a different Copyright Owners expert, Dr. Jeffrey Eisenach. Dr. Eisenach's analysis, however, excludes data from Spotify, one of the largest interactive streaming providers. Adjusting Dr. Eisenach's calculation to include the Spotify data [redacted] the per-play mechanical royalty rate implied by Professor Gans' Shapley value calculation from [redacted] per 100 plays (*i.e.,* a [redacted]
- Professor Gans assumes that, in a world where Shapley values allocate industry profits to industry participants, publisher profits would increase to the exact same level as current record label profits. This assumption is based on a hypothetical world where there is only one publisher collective and one record label collective negotiating, each of whom have equal market power. In the real world, however, there are multiple publishers and record labels that all negotiate separately rather than collectively. In addition, these record labels and publishers have music catalogues of varying sizes and popularity, and, as such, each record label and publisher potentially creates a different value for interactive streaming services and contributes differently to overall industry profits. Thus, it is possible that publisher profits would not rise to record label profits in real world, free market negotiations.

- Professor Gans inappropriately assumes that the *mechanical* royalties paid to publishers and songwriters in his hypothetical market[2] would *increase* from their current level, while the *performance* royalties paid to those same entities would *stay the same*. Again, this assumption is speculative because there is no reason to assume that the equilibrium level of performance royalties in the "but-for" world would not change, while the equilibrium level of mechanical royalties would be substantially higher.

11. Thus, not only is the Shapley value approach not necessarily an appropriate tool in this proceeding, but also Professor Gans' purported execution of the Shapley value calculation is speculative and unreliable. While adjusting the three assumptions discussed above does not correct Professor Gans' flawed analysis, it [redacted] Professor Gans' calculated mechanical royalty rate substantially from [redacted] per 100 plays, [redacted] well below the Copyright Owners' proposed mechanical royalty of $0.15 per 100 plays. This demonstrates that even small changes to Professor Gans' underlying assumptions substantially impact his calculated mechanical royalty rate. This brings his speculative and unreliable conclusions into sharp focus.

III. A PER-USER RATE STRUCTURE FOR MECHANICAL ROYALTY PAYMENTS IS NOT APPROPRIATE

12. The Copyright Owners propose a royalty rate structure under which streaming services would need to pay the greater of either a per-play rate or a per-user rate.[3] The Copyright Owners' expert, Mr. Lawrence Miller, contends that this structure is more equitable for songwriters and publishers than the current structure, and "will provide more transparency in the services' accounting."[4] Professor Marc Rysman, another expert for the Copyright Owners, argues that a per-user rate "align[s] directly with a critical value in the marketplace, namely

[2] The "hypothetical market" or "but-for world" refers to the market for which Professor Gans performs his Shapley value calculation. Professor Gans also refers to this market as the "hypothetical non–compulsory market" and "an unconstrained market," indicating that in his "but-for" world mechanical royalties would not be subject to mandatory rate determinations. (Expert Report of Joshua Gans, October 31, 2016 ("Expert Report of Joshua Gans"), ¶¶61, 63).
[3] Introductory Memorandum of National Music Publishers' Association and the Nashville Songwriters Association International, *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, November 1, 2016, p. A-6.
[4] Expert Report of Lawrence S. Miller, October 30, 2016, ¶13 ("Expert Report of Lawrence S. Miller").

access to music."[5] Contrary to these assertions, a per-user rate for mechanical royalty payments for interactive streaming services is not appropriate.

13. As described in the Ghose Opening Report, it is fundamental that publishers and songwriters should be compensated an amount that is commensurate with the demand for their songs.[6] Under a per-user rate structure, however, the royalty that an interactive streaming service pays for a particular user is independent of that user's streaming behavior. For example, suppose a user streams 100 songs in one month, and only 50 songs in the next month. Under a per-user rate regime, the interactive streaming service's royalty for that user will not change despite the user's decrease in consumption.[7] In other words, under the Copyright Owners' proposal, costs for interactive streaming services may not decrease even when consumption decreases, and payments to publishers and songwriters may not decrease even when demand for their songs decreases.

14. In fact, payments to publishers and songwriters may *increase* as consumption decreases. For example, if in month A, a streaming service has one subscriber and that subscriber has 800 streams, the interactive streaming service will owe $1.20 in mechanical royalties for month A (the $0.0015 per-play rate times 800 plays, which is greater than the $1.06 per user rate). Then, if in month B, the streaming service has two subscribers, each of whom stream only 100 songs, the total royalty for month B will be $2.12 (two users times the per-user rate of $1.06), because this per-user royalty is greater than the per-play royalty total of $0.30 (200 times $0.0015). In other words, in this example, even though the number of streams *decreases* by 600 streams, the interactive streaming service's royalty payments *increase* by 77 percent.

15. In addition, it is possible that a streaming service would have to pay royalties based on the per-user rate even though some users did not stream any music. For example, in my hypothetical above, if in month B, one subscriber streamed 100 songs and the other subscriber streamed zero songs, the royalty for that month still would be $2.12, the per-user rate for two users, even though one of those users did not stream any music. Thus, although a per-user rate may guarantee a minimum payment to publishers and songwriters based on the number of users,

[5] Expert Report of Marc Rysman, October 28, 2016, ¶58 ("Expert Report of Marc Rysman").
[6] Expert Report of Anindya Ghose, November 1, 2016, ¶60 ("Ghose Opening Report").
[7] I am assuming, for simplicity, that the per-play prong of the Copyright Owners' proposal does not apply here.

because it is unrelated to the demand for their songs, it is not an appropriate royalty rate structure.

16. A per-user royalty prong also has the problem that it leads to services paying effective per-play rates higher than the Copyright Owners' proposed mechanical-only per-play rate of $0.0015. That is because the Copyright Owners' proposal involves a "greater of" structure (i.e., greater of a per-user rate and a per-play rate). When royalties are paid under the per-user prong, those royalties would be greater than the royalties paid under the per-play prong. Further, even though the total royalty pool is calculated on a per-user basis, it is divided among publishers and songwriters based on the number of times their songs are streamed, i.e., the allocation among publishers and songwriters is done on a per-play basis. Thus, under the Copyright Owners' proposal, any time a streaming service would pay royalties based on the per-user prong, the effective per-play rate paid by that service would be *greater than* the $0.0015 mechanical-only per-play rate proposed by the Copyright Owners.

17. Finally, as I just described, royalties calculated on a per-user basis are allocated to publishers and songwriters based on demand for songs, measured by how often consumers *actually play* the songs, *i.e.*, they are allocated on a per-play basis. Therefore, a much simpler—and more transparent—royalty structure is one that directly uses the number of streams of a song to determine the publishers' and songwriters' compensation. This is what a per-play rate does, which makes it an appropriate rate structure.[8]

IV. THE MECHANICAL ROYALTY RATE OF $0.0015 PER-PLAY PROPOSED BY COPYRIGHT OWNERS BASED ON AN ANALYSIS OF HISTORICAL RATES IS TOO HIGH

A. The Copyright Owners' Analysis of Historical Rates is Flawed Because It Leaves Out Ad-Supported Services and Other Interactive Streaming Uses

18. To support the Copyright Owners' proposal, Professors Gans and Rysman conduct an analysis of historical mechanical per-play royalty rates paid by interactive streaming services from 2012 through 2016.[9] However, their analysis excludes ad-supported interactive streaming

[8] Ghose Opening Report, ¶83.
[9] Expert Report of Joshua Gans, Table 6 and Expert Report of Marc Rysman, Table 1. Professor Rysman excludes 2016 data.

services that account for a large number of the total streams performed across the industry.[10] Also, they exclude the mechanical-only per-play royalties that [redacted] of the total streams across the industry.[11] In effect, by focusing on a narrow subset of interactive streaming service usage, Professor Gans and Professor Rysman overlook a large segment of the market.[12] When the additional streams supplied by the services ignored by Professors Gans and Rysman are accounted for, it is evident, as I discuss below, that the Copyright Owners' per-play rate [redacted] historical rates.

19. The most prominent ad-supported streaming service excluded from Professors Gans and Rysman's historical mechanical royalty per-play analysis is the ad-supported version of Spotify. Spotify's ad-supported service accounted for [redacted] in 2015, which was comparable to [redacted] Other streaming services excluded by Professors Gans and Rysman in their analysis of historical mechanical per-play rates include SoundCloud, Slacker, Rdio, Xbox Music, certain tiers of Rhapsody, Apple's trial plan, and Spotify Desktop.[13] These services accounted for a total of [redacted] In other words, the services and tiers of services excluded by

[10] Expert Report of Joshua Gans, Table 6 and Expert Report of Marc Rysman, Table 1. Professor Gans also excludes ad-supported streaming services from his analysis of per-play rates as part of the Shapley value approach. Expert Report of Joshua Gans, Table 4.

[11] [redacted] Michael Addady, "Apple Music Expands Its Student Discount to 25 More Countries," November 30, 2016, *Fortune*, http://fortune.com/2016/11/30/apple-music-student-discounts/, a true and correct copy of which is attached hereto as **APL-205**.

[12] Expert Report of Marc Rysman, ¶¶63-64; Expert Report of Joshua Gans, ¶84, Table 6.

[13] Professor Gans also excludes Deezer and Apple Music's family subscription tier in his analysis, though Professor Rysman does not. Deezer accounted for [redacted] streams in 2015, and Apple Music family for [redacted]. SoundCloud, Slacker, Rdio, and Xbox Music all have ad-supported tiers. These four services and Deezer were selected because they have [redacted] The tiers of Rhapsody excluded by Professors Gans and Rysman are standalone non-portable streaming only, standalone non-portable mixed use, bundled service, and limited offering tiers.

Professors Gans and Rysman [redacted] streams in 2015, accounting for at least [redacted] percent of the total streams in the industry.[14]

20. There is no credible reason for Professors Gans and Rysman to exclude ad-supported streaming services from their assessment of per-play rates. Publishers and songwriters receive royalties from ad-supported streaming services, so the royalties these services pay are relevant to an analysis of historic per-play rates.

21. The Section 801(b)(1) factors also direct the CRB to "minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices."[15] A rate structure based on an analysis that excludes ad-supported services, student plans, family plans, and trial periods would not be representative of the streaming services industry, and is likely to yield results that, if adopted, may have a disruptive impact on those types of services and plans.

22. The effective mechanical royalty per-play rate for Spotify's ad-supported service, and other services excluded by Professor Gans and Professor Rysman in their analysis, such as the Apple Music family subscription, Deezer, Rdio, and SoundCloud, is shown in Chart 1.[16] These numbers demonstrate that there are many interactive streaming services that have [redacted] For example, Professors Gans and Rysman only include Spotify's Standalone Portable Mixed Use service (which is its paid subscription service), which had an effective mechanical-only per-play rate of [redacted] in 2015.[17] In contrast, Spotify's ad-supported service in 2015 had the [redacted]

[14] Since Professor Gans excluded Apple Music's family subscription tier and Deezer (in addition to the services excluded by Professor Rysman), his analysis excluded services that accounted for [redacted] or at least [redacted] of total streams in the industry.

[15] 17 U.S.C. § 801(b)(1).

[16] This table recreates Table 6 in the Expert Report of Joshua Gans, and adds the following services: Apple Music's family and student subscription tiers; Rhapsody's standalone non-portable streaming only, standalone non-portable mixed use, bundled service, and limited offering tiers; Spotify's standalone non-portable streaming only and ad-supported tiers; SoundCloud (all tiers); Slacker (all tiers); Rdio (all tiers); Deezer (all tiers); and Xbox Music (all tiers). The first three services were only partially included in Professors Gans and Rysman's analysis, therefore, I included the remaining tiers associated with those services in my analysis. Further, I selected SoundCloud, Slacker, Rdio, Deezer, and Xbox Music because [redacted] Note that Professor Rysman includes Deezer in his analysis, but Professor Gans does not. Also, in order to keep my analysis as close to the Copyright Owners' as possible, I rely on data provided in the backup files to the Copyright Owners' expert report, and supplement this with other sources relied upon by the Copyright Owners when necessary. I, however, have no basis for verifying the accuracy of this data.

[17] Expert Report of Marc Rysman, Table 1; Expert Report of Joshua Gans, Table 6.

[redacted][18] See **Rebuttal Table 1** below. Each of the mechanical-only per-play rates listed [redacted], yet all but the [redacted] per play rate from Spotify's Standalone Portable Mixed Use service in 2015 were ignored in Professors Gans' and Rysman's analyses.

[redacted]

23. As **Rebuttal Table 1** above shows, the mechanical-only per-play rates that interactive streaming services have paid are as low as [redacted] The expanded version of **Rebuttal Table 1** in Chart 1 displays mechanical-only per-play rates as low as [redacted] Professors Gans and Rysman, however, did not include any per-play rates [redacted] (again, for Standalone Portable Mixed Use service of Spotify) in their analysis. By ignoring [redacted] per-play rates, Professors Gans and Rysman present estimates of the weighted average per-play rate for interactive streaming services that [redacted]

[18] Chart 1.

24. Combining the services listed in Chart 1, including both paid subscription services and ad-supported services, the effective weighted average mechanical-only per-play rate in 2015 was [redacted] approximately [redacted] of the rate proposed by the Copyright Owners. Therefore, Professors Rysman's and Gans' claim that the Copyright Owners proposed mechanical-only per-play rate is consistent with those historically paid by interactive streaming services is demonstrably inaccurate.

25. Not only is the Copyright Owners' proposed rate [redacted] the *all-in* (*i.e.*, mechanical and performance) per-play rate that interactive streaming services paid in 2015. As shown in Chart 2, the weighted average *all-in* per-play rate in 2015 was [redacted].[19] This is approximately [redacted] of the *mechanical-only* per-play rate ($0.0015) the Copyright Owners propose. In other words, the Copyright Owners propose that the interactive streaming services should pay [redacted] Because, under the Copyright Owners' proposal, streaming services would have to pay mechanical royalties [redacted], it is likely that the Copyright Owners' proposal would disrupt the interactive streaming industry.

26. In contrast to the Copyright Owners' proposed *mechanical-only* per-play rate, Apple's proposed *all-in* per-play rate of $0.00091 is [redacted], and, as such, is unlikely to disrupt the industry. Moreover, as discussed in more detail below, Apple's rate is more appropriate than the Copyright Owners' proposal because it reflects the fact that per-play rates have [redacted] Thus, any historical average likely is [redacted]

[19] The data for 2016 is not available for many services so I calculated an average per-play rate aggregated across different services for 2015.

B. Current Mechanical Royalty Rates Should Not Be Viewed as a Floor

27. Professor Rysman asserts that "in a thriving market such as the current interactive streaming market, recent effective per-play rates should be viewed as a floor, as they provide a fair income to services and cannot be considered disruptive to the growing industry that is seeing numerous major new entrants."[20] He does not further elaborate on the idea of viewing current rates as a floor for the statutory rates at issue in this proceeding, as the remainder of the relevant portions of his report simply point out that some services have historically paid rates as high as those proposed by the Copyright Owners, a point that I addressed in the preceding section. I disagree with Professor Rysman that the recent effective per-play rate should be viewed as a floor.

28. Recent effective per-play rates are based on royalties paid under the current statutory royalty structure, and privately negotiated agreements [redacted] As I discussed in the Ghose Opening Report, one peculiar feature of the current statutory rate, which includes a percentage-of-revenue structure, is that royalty payments are not directly tied to the consumption of music.[21] As a result, royalties to publishers and songwriters may decrease over time. For example, if the number of streams increases, but the number of subscribers remains the same, the effective per-play rate to publishers and songwriters will decrease.

29. The effective per-play rate also will decrease if the number of subscribers increases, but the number of total streams (and hence the number of streams per subscriber) increases at a faster rate. To illustrate, suppose the number of subscribers for a paid streaming service doubled from 1 million to 2 million. If the subscription price for the service is $10 per month, the increase in the number of subscribers would result in an increase in revenue for the service from $10 million to $20 million. Under the current percent-of-revenue structure, the all-in royalty rate (*i.e.*, combined mechanical and performance royalty rate) to songwriters would be 10.5 percent of the paid streaming service's revenue.[22] Therefore, the increase in subscribers would result in all-in royalty payments to songwriters increasing from $1.05 million to $2.1 million. Suppose, however, that while the number of subscribers doubled from 1 million to 2 million, the total

[20] Expert Report of Marc Rysman, ¶11.
[21] Ghose Opening Report, ¶64.
[22] For the purposes of this illustration, for simplicity, I am ignoring the various prongs of the current royalty rate structure, which also include a per-subscriber rate.

number of streams across all subscribers quadrupled from 1 billion to 4 billion. In this case, the effective per-play rate would decrease from $0.00105 to $0.000525, even though the demand for music increased, as reflected in the increase in both subscribers and the total number of streams. As the illustrative example shows, under the current rate structure, per-play rates could decrease as services become more heavily used.

30. [redacted].[24]

31. [redacted].[25]

32. As effective (mechanical-only and all-in) per-play rates have been [redacted], the [redacted]. Juxtaposing the trends in effective (mechanical-only and all-in) per-play rates with the trends in the total number of streams for interactive streaming services (see Chart 3) suggests that [redacted]

[23] Expert Report of Joshua Gans, Table 6.
[24] Expert Report of Marc Rysman, Table 1.
[25] Witness Statement of Peter Brodsky, October 28, 2016, ¶67 ("Witness Statement of Peter Brodsky").

33. This trend in [redacted] effective (mechanical-only and all-in) per-play rates has two significant consequences. First, it means that Professor Rysman's claim that a per-play rate consistent with recent effective mechanical-only royalty rates "cannot be considered disruptive" because the industry is "seeing numerous major new entrants" is incorrect. Services entering the industry reasonably [redacted]. Consequently, it is not appropriate to consider the current effective (mechanical-only and all-in) per-play rates as a floor.

34. Second, it means that the historical average effective (mechanical-only and all-in) royalty rates may be [redacted] all-in rate because the historical average includes the [redacted]. As discussed above, effective per-play rates [redacted].[26] By including services that still are relatively new in the analysis of historical effective per-play rates,[27] the Copyright Owners' experts [redacted].

35. In sum, the Copyright Owners' analysis of the historical effective mechanical-only royalty is flawed. First, the historical weighted average mechanical-only per-play rate is [redacted] because the Copyright Owners' experts exclude ad-supported services and other services from their analysis. Second, the Copyright Owners improperly view the historical average mechanical-only per play rate as a floor. In fact, the appropriate rate likely is [redacted] the historical average because effective per-play rates [redacted]. Thus, [redacted].

36. My analysis indicates that the Copyright Owners' proposal is [redacted] Apple's proposal, on the other hand, is much more in keeping with historical rates and the tendency of per-play rates to [redacted]

[26] Witness Statement of Peter Brodsky, ¶67.
[27] See, for example, Expert Report of Marc Rysman, Table 1.

V. PROFESSOR GANS' PURPORTED "SHAPLEY VALUE APPROACH" IS FLAWED, AND GENERATES SPECULATIVE AND UNRELIABLE RESULTS

37. In Section V.B of his report, Professor Gans states that "the Shapley value approach can be used to estimate the per-play rate for musical works based on sound recording royalty benchmarks."[28] Professor Gans proceeds to perform a calculation that he calls "Calculating Interactive Mechanical Rates Based on Shapley Values."[29] I have reviewed this calculation and, in my opinion, it is improper. *First*, the Shapley value concept is designed to address situations in which various players in a "game" are acting cooperatively. As noted by CRB Judges in a prior proceeding, this is not necessarily the appropriate approach in a rate determination proceeding. *Second*, although Professor Gans states that he uses a "'Shapley value' approach," he fails to undertake an actual Shapley value analysis. Instead, Professor Gans makes certain assumptions about what the resulting level of publisher profits and revenues would be in his hypothetical world and performs a calculation to find the mechanical royalty per-play rate that would generate those asserted levels of publisher profits and revenues. Because these assumptions are not part of a typical Shapley value analysis, Professor Gans' estimated royalty rate is not the result of a Shapley value analysis. *Third,* several assumptions Professor Gans imposes are unsupported. Thus, even if the Shapley value calculation were an appropriate method for evaluating royalties in this context, his analysis is unreliable.[30]

A. The Copyright Royalty Board Has Explained That the Shapley Value Approach May Not Be Appropriate in A Royalty Determination Context Where the Various Players May Be Maximizing Their Own Profits Rather Than Working Cooperatively

38. The "Shapley value" is a concept in cooperative game theory, developed by Professor Lloyd Shapley.[31] It was conceived as a solution to the problem of dividing a fixed value among members of a group that collectively created said value.[32] The Shapley solution allocates the

[28] Expert Report of Joshua Gans, Section V.B.1.
[29] Expert Report of Joshua Gans, Section V.B.1.b.
[30] Professor Gans' Shapley value calculation of the per-user rate suffers from the same problems as his Shapley value calculation of the per-play rate, and therefore his analysis of the per-user rate is also unreliable.
[31] Lloyd S. Shapley, "A Value for N-Person Games," In *The Shapley Value: Essays in Honor of Lloyd S. Shapley*, ed. Alvin E. Roth, Cambridge University Press, 1988, at 31-40, a true and correct copy of which is attached hereto as **APL-204**.
[32] **APL-204**, Alvin E. Roth, "Introduction to the Shapley Value," In *The Shapley Value: Essays in Honor of Lloyd S. Shapley*, ed. Alvin E. Roth, Cambridge University Press, 1988, at 4.

jointly-created value among the group members in a way that reflects the *average* contribution of each player to the group, for every possible group combination (including subgroups) and every possible order of "arrival" of different group members to the bargaining table. Each group member's piece of the total "pie" is called the Shapley value for that member, and the sum of all the Shapley values is equal to the total value to be allocated.[33]

39. Professor Gans states that he uses "the 'Shapley value' approach…to determine the ratio of sound recording royalties to musical works royalties that would prevail in an unconstrained market."[34] He explains the logic of his approach using a hypothetical streaming industry consisting of one publisher, one record label and two service providers that divide the collective profits among them.[35] After performing a series of calculations, Professor Gans ultimately concludes that "Mechanical Royalties Estimated Using Ratio of Record Company to Publisher Revenue Implied by Shapley Values" would be [redacted] per stream.[36] He further states that the Shapley value is "best suited to address" the type of bargaining problem at hand and that "a prior CRB proceeding discussed Shapley value approach with approval for an analogous inquiry."[37]

40. As an initial matter, I note that while Professor Gans references a prior CRB proceeding, Distribution of 1998 and 1999 Cable Television Funds, he fails to acknowledge that the Shapley value approach was not actually used in that proceeding, preventing the Copyright Royalty Judges from opining on the particulars of the implementation of a Shapley value analysis.[38] Further, he fails to mention that the Judges in a different CRB proceeding—the SDARS proceeding—criticized an expert's use of the Shapley value model, stating that "the outcomes of [a Shapley value] model cannot be supported" and that because the various players in the industry (publishers, labels, and distributors) might "act independently to maximize their own profits . . . a noncooperative game approach may have been more appropriate under the

[33] Alternatively, Shapley values can be normalized by dividing each value by the total value, π. In this case, Shapley value of a group member represents the share of the profits to be given to that member. The sum of all Shapley values would be 100%.
[34] Expert Report of Joshua Gans, ¶63.
[35] Expert Report of Joshua Gans, ¶¶70-71.
[36] Expert Report of Joshua Gans, Table 3; NMPA00001660, a true and correct copy of which is attached hereto as **APL-217**.
[37] Expert Report of Joshua Gans, ¶¶64-65, 68.
[38] Expert Report of Joshua Gans, ¶68.

circumstances."[39] Similarly, Professor Gans does not summon any proof that the various players in the interactive streaming industry would act cooperatively rather than to maximize their own profits. Thus, he does not justify why the Shapley value calculation may be appropriate in this proceeding.

41. In addition, Professor Gans argues that the Shapley value approach can be used to analyze the "market prices [produced] through negotiations in the absence of compulsory licensing," invoking a willing buyer/willing seller framework.[40] I understand, however, that such a framework is not the standard for considering terms under the Section 115 license, which is governed by the four policy objectives set forth in Section 801(b)(1) of the Copyright Law.[41] Professor Gans does not explain how the Shapley value approach in general, and his specific calculation methodology in particular, generate outcomes consistent with these Section 801(b)(1) objectives.

42. For example, one of the Section 801(b)(1) objectives is "to reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication." Professor Gans does not explain whether the Shapley value analysis is compatible with this factor. To the contrary, he states that "costs do not change the Shapley values."[42]

43. Professor Gans also asserts for purposes of his analysis that publishers should make the same dollar amount of profits as record labels, without taking into account the differences in factors such as their technological contributions, capital investments, costs or risks.

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[39] Final Determination of Rates and Terms, In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, January 10, 2008, p. 49, a true and correct copy of which is attached hereto as **APL-203**.

[40] Expert Report of Joshua Gans, ¶64.

[41] I also note that, in their Final Determination of Rates and Terms in the prior proceedings, Royalty Board Judges also alluded to this distinction. In evaluating an argument advanced by one of the parties, the Judges wrote, "[w]ere the standard for considering terms under the Section 115 license willing buyer/willing seller, we might be given pause. However, we are directed by the terms of this license to establish reasonable terms that are consistent with the Section 801 (b) factors." Final Determination of Rates and Terms, *In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding,* November 24, 2008 ("Final Determination of Rates and Terms"), p. 68, a true and correct copy of which is attached hereto as **APL-071**.

[42] Expert Report of Joshua Gans, ¶73.

44. Professor Gans similarly does not take interactive streaming services' technological contributions, capital investments, costs, risks, and contributions to the opening of new markets into his analysis. Nor does he consider whether his Shapley model would afford interactive streaming services a fair income, which is supposed to be another consideration under the Section 801(b)(1) objectives.

B. Professor Gans' Purported "Shapley Value Approach" is Not a Proper Shapley Value Solution At All

45. Setting aside the question of whether it is appropriate or probative to use Shapley values in the current context, Professor Gans' purported "Shapley value approach" misapplies the precepts of the Shapley value solution and results in speculative and unreliable estimates. This is because, although Professor Gans states that he uses a "'Shapley value' approach…to determine the ratio of sound recording royalties to musical works royalties that would prevail in an unconstrained market,"[43] he does *not* apply Shapley's solution to divide the industry profits among *all* participants.

46. In a Shapley value calculation, the goal is to find a solution where total value (in this case, industry profits) is divided among all participants based on their contributions. Indeed, the whole point of performing the Shapley value analysis is to determine those individual shares. Instead, Professor Gans' simply *assumes* what the share of publisher profits and revenues would be in his hypothetical world. In a nutshell, Professor Gans does not determine the Shapley value solution but simply asserts what it will be. His assumptions are *not* implied or required by the Shapley value concept; rather they are unsupported and arbitrary choices made by Professor Gans.

C. Professor Gans' Results Are Speculative and Unreliable Because They Are Based on Unsupported Assumptions, and Because Slight Changes to His Assumptions Lead to Substantially Different Results

47. Professor Gans presents calculations based on his purported "Shapley Value Approach" in Table 3 of the Gans Report. I reviewed these calculations, the underlying documents that Professor Gans relied on, and his explanations related to Shapley values in general and his

[43] Expert Report of Joshua Gans, ¶63.

calculations in particular. In my opinion, Professor Gans' approach and related calculations contain several flaws, which I discuss below.

1. Professor Gans Uses a Royalty Rate for Sound Recordings Based on an Analysis That Inappropriately Excludes Spotify

48. One of the inputs Professor Gans uses for the calculations in his Table 3 is an estimate for the "per play royalty rate for sound recordings."[44] His results, *i.e.*, the mechanical royalty rates, are generated by [redacted][45] As such, the estimate of the per play royalty rate for sound recordings has a direct, proportional impact on Professor Gans' results. For example, if Professor Gans' estimate for this input is inflated by, say, 20 percent, his mechanical royalty estimates will also be inflated by 20 percent.

49. Professor Gans explains that he does not himself calculate the per-play royalty rate for sound recordings, but he uses as an assumption a value calculated by Dr. Eisenach: "Dr. Eisenach is providing an analysis of benchmark agreements to arrive at benchmark rates…. I adopt as an assumption provided by counsel the benchmark effective per-play royalty rate for sound recordings of [redacted]."[46]

50. I understand that Professor Ramaprasad reviewed Dr. Eisenach's report and calculations related to the per-play sound recording rate used by Professor Gans. I understand from Professor Ramaprasad that the relevant analysis regarding this per-play sound recording rate is presented in Table 11 of Dr. Eisenach's report. I further understand that when Dr. Eisenach performed the calculation that generated the [redacted] (per 100 plays) value, he failed to include the royalty payments and stream counts of Spotify, one of the largest interactive streaming providers. Professor Ramaprasad provided me with a corrected version of Dr. Eisenach's calculations, which includes Spotify's royalty payments and stream counts, and are attached to her rebuttal report as Chart 1. When Spotify's data is included in the calculation, the effective per-play royalty rate for sound recordings declines from [redacted] (per 100 plays) to [redacted] (per 100 plays), less than [redacted] the number Professor Gans used.

[44] Expert Report of Joshua Gans, ¶78.
[45] Expert Report of Joshua Gans, ¶78; Table 3, line [18].
[46] Expert Report of Joshua Gans, ¶¶ 63, 78.

51. In Chart 4 and **Rebuttal Table 2** below, I illustrate the impact of this change on Professor Gans' per play mechanical royalty rate estimate. In Column I of Chart 4, I rerun Professor Gans' analysis, correcting *only* the failure to include Spotify data (by using a [redacted] sound recording royalty number (per 100 plays) instead of [redacted] (per 100 plays)), and ignoring the other problems with his assumptions and methodology. This one change reduces Professor Gans' calculated mechanical royalty rate from [redacted] to [redacted] (per 100 plays), for a decline of [redacted]

2. Professor Gans' Assumption That Publisher Profits Would Increase to the Exact Level of Record Label Profits Is Unsupported

52. Professor Gans also assumes that (1) in the free market, publisher profits would equal record label profits and (2) the entire increase in publisher profits would come from a decrease in revenues and profits for interactive streaming services.[47] These assumptions do not comport with reality.

53. In his analysis, Professor Gans posits an oversimplified "illustration" of an interactive streaming industry with a *single* publisher, a *single* record company and two interactive streaming services.[48] He contends that any deal for streaming music in this example would need to include both the (single) publisher and the (single) record company. Accordingly, the publisher and the record company have symmetric, equally strong negotiating positions. Professor Gans then concludes that a Shapley value analysis would result in an outcome that allocates equal profits to each.[49]

54. Armed with this oversimplified example, Professor Gans contends that one would "expect the publishers to make the same profit in aggregate from this business as the labels" in the "but-for" hypothetical world he has created where the Shapley value approach is being used to find the solution.[50] Next, Professor Gans assumes that the *magnitude* of the publisher profits in his alternative "but-for" world must be the same as the record label profits in the actual world.[51] In other words, he assumes that in his hypothetical world (1) publishers and labels will

[47] Expert Report of Joshua Gans, ¶¶75–77.
[48] Expert Report of Joshua Gans, ¶71.
[49] Expert Report of Joshua Gans, ¶¶71-74.
[50] Expert Report of Joshua Gans, ¶75.
[51] Expert Report of Joshua Gans, ¶75.

earn the same amount of profits, and (2) their profits will be the same as what labels earn in the real world, *i.e.* labels will have no decrease in their profits to account for the increase in the publishers' share. Consequently, the increase in the publishers' share in Professor Gans' hypothetical world comes entirely from interactive streaming services' share of industry revenue and resulting profits.

55. Professor Gans' assumptions are unrealistic. As an initial matter, Professor Gans does not present any evidence that his hypothetical example (the simple, unrealistic case with only one publisher and one record company) can be generalized to the real world, in which multiple record companies and multiple publishers operate. The real world is further complicated by the fact that different record companies and publishers have catalogues of varying sizes and popularity, and as such, potentially create different values for different streaming services and contribute differently to those services' overall profits.[52] Even assuming that a Shapley value approach may be probative in the present context, several real world considerations would complicate a properly-applied Shapley value analysis. Professor Gans' oversimplified model sweeps such considerations aside, rendering the real-world applicability of his results highly suspect.

56. Professor Gans' oversimplified example is premised on the notion that the hypothetical lone publisher and the hypothetical lone record company have symmetric bargaining power because they each can, individually, shut down the industry (*i.e.*, they each have "veto power"). The parallel to the real world would be a situation where all publishers always acted collectively and all record labels always acted collectively. In such a situation, no individual record company

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Specifically, Professor Gans references a report by Goldman Sachs that estimated that the [redacted] In creating his but-for world, Professor Gans asserts that the record companies would continue to [redacted] even if publisher royalties were negotiated on the free market; asserts that the publishers would [redacted] and asserts that this increase in publisher profits should come solely at the expense of the interactive service providers, with no change in the amount earned by the record labels. (Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted], a true and correct copy of which is attached hereto as **APL-197**; Expert Report of Joshua Gans, ¶¶76-77, Table 3).

[52] *See*, e.g., "With an average monthly net catalogue growth of over 30,000 songs, Sony/ATV's total repertoire has now almost certainly topped 4m. Sony/ATV's nearest competitor in the market, Universal Music Publishing, controls 3.2m copyrights. The third biggest music publisher in the world, Warner/Chappell, is understood to look after somewhere between 1m and 2m songs." Tim Ingham, "Fast-Growing Sony/ATV Now Controls 4 Million Song Copyrights," *Music Business Worldwide*, May 5, 2015, http://www musicbusinessworldwide.com/sonyatv-now-controls-rights-to-4m-songs/, a true and correct copy of which is attached hereto as **APL-206**.

(or publisher) would agree to a deal with a streaming service unless all other record companies (or publishers) also agreed to a deal with that service. Clearly, such a scenario is not consistent with the realities of the industry. Record companies do not act collectively, but individually negotiate and enter into agreements with streaming services.[53]

57. Professor Gans' world is one where the streaming services are substantially worse off, whereas record labels keep all of their current revenues and profits and publishers are better off. Professor Gans provides no support for this assumption (*i.e.* that the equilibrium profits in an alternative world where musical works rights are not constrained by regulation would materialize in the way he posits, with all increase in publisher profits coming from interactive streaming services' share of revenue). Moreover, Professor Gans does not discuss the implications of his assumption on streaming services and their viability. According to the sources Professor Gans relies upon for his calculations, streaming services, on average, pay [redacted] of their revenues as royalties to record labels and publishers, and keep only [redacted].[54] In Professor Gans' but-for world, the total royalty payments by the services would [redacted].[55] In other words, Professor Gans constructs an alternative world where the profits of streaming services (revenues net of royalty payments) are [redacted], with no concurrent change in subscriber count. Professor Gans does not explain how such a precipitous decline in profits of streaming services would be consistent with a sustainable industry.

58. Contrary to Professor Gans' assumption, it is likely that any increase in publisher royalties would be partially or completely offset by reductions in sound recording royalties, rather than by reductions solely in interactive streaming services' profits. For example, one easily can think of a scenario where total royalty payments to publishers and record labels

[53] Evidence that record companies do not act collectively can be seen in, for example, the three separate contracts that were signed between each of the three major labels (Universal Music Group, Warner Music Group, and Sony Music Entertainment) and Spotify. Tim Ingham, "Spotify Is Out of Contract with All Three Major Labels – And Wants to Pay Them Less," August 22, 2016, *Music Business Worldwide*, http://www musicbusinessworldwide.com/spotify-contract-three-major-labels-wants-pay-less/, accessed January 31, 2017, a true and correct copy of which is attached hereto as **APL-207**.

[54] **APL-197**, Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted]

[55] Professor Gans assumes that in his alternative world, publisher revenues [redacted] and record company revenues [redacted] add up to [redacted] of the net revenue of [redacted], leaving the streaming services with [redacted], or [redacted] of net revenues. **APL-197**, Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted] October 4, 2016, p. 54; Expert Report of Joshua Gans, Table 3.

remains constant at the current level (*i.e.*, those two groups collectively [redacted], even if that amount is split differently among publishers and record companies than it currently is.[56]

59. Indeed, Professor Gans acknowledges that in the but-for world, the profits of publishers and record companies do not need to equal the actual level of record company profits.[57] He acknowledges that he cannot truly calculate the total level of profits because "for this market I do not believe that there are reliable estimates of the demand, supply, and competitive conditions needed to implement the calculation – in other words, there is no reliable estimate…making such a calculation [of total profits of publishers and record companies] impossible."[58] This is precisely why Professor Gans' results are unreliable: Even though he recognizes that it is impossible to calculate the but-for level of publisher profits, he proceeds by choosing one profit number (out of many possible values) and using that one number in his calculations. This leads to speculative and unreliable estimates as Professor Gans' results are artifacts of an unsupported assumption.

60. When considering these assumptions, it is important to reiterate that Professor Gans' assertion about the level of profits in the but-for world is *not* a result of the Shapley value analysis. To the contrary, as I explained above, if Professor Gans had undertaken a proper Shapley value analysis, there would have been *no need* to make *any* assumption about the level of profits. Indeed, even when Professor Gans discusses the Shapley value, he uses the Shapley value concept to contend only that publisher and record label profits should be equal to one another. He does *not* claim that his Shapley value calculation determines what that profit level would be. He simply asserts the profit level with no basis.

61. In **Rebuttal Figure 1**, I illustrate the impact that Professor Gans' decision to assign publishers a but-for level of profit equal to real-world record label profits has on Professor Gans' results. I do this by replicating Professor Gans' methodology exactly, but instead of using [redacted] as the assumed level of but-for publisher profits as he does, I use various different publisher

[56] [redacted] **APL-197**, Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted]

[57] Expert Report of Joshua Gans, footnote 40.

[58] Expert Report of Joshua Gans, footnote 40.

profit levels as inputs to his model. Professor Gans' method generates a different mechanical per-play rate for each different but-for publisher profit. The x-axis in **Rebuttal Figure 1** shows different levels of potential publisher profits. The blue line shows the corresponding mechanical royalty rate (per 100 plays). As discussed above (and shown on the Figure), Professor Gans assumes a but-for publisher profit of [redacted], resulting in a mechanical royalty rate (per 100 plays) of [redacted]. If one were to consider a but-for world where publisher profits were [redacted], *i.e.* equal to current publisher profits, the corresponding mechanical royalty rate (per 100 plays) in Professor Gans' calculation would have been [redacted]. Accordingly, as one can assert any publisher profit value between [redacted] and [redacted], Professor Gans method can generate any mechanical royalty rate (per 100 plays) between [redacted] and [redacted], even if everything else about Professor Gans' calculations is kept exactly the same.

[redacted]

62. Additionally, I show in **Rebuttal Figure 1** the results of the analysis described above when the sound recording per-play rate is corrected to [redacted], as discussed in Section V.B.1.

These results are shown as the red line on **Rebuttal Figure 1**. After this correction, as one can assert any publisher profit value between [redacted] Professor Gans' method can generate any mechanical royalty rate (per 100 plays) between [redacted]

63. I also performed another illustration by replicating Professor Gans' methodology (using the correct sound recording per-play royalty rate of [redacted]), and assuming that the publishers and record companies would receive equal profits, while streaming services continue to pay [redacted] of their revenues as royalty payments. In this illustration, if publisher profits increase, record label profits then decrease while streaming services keep their real-world levels of profits. I show the results of this illustration in Column II of Chart 4 and **Rebuttal Table 2**. Coupled with the corrected effective per-play royalty rate for sound recordings discussed in Section V.B.1, this change results in a mechanical royalty rate (per 100 streams) of [redacted] which is [redacted] than Professor Gans' estimate of [redacted].

64. This illustrative example demonstrates the substantial impact that Professor Gans' unsupported assumption on profit levels, as well as his assumption that the entire increase in publisher profits would come out of the interactive streaming services' share, has on his results.

3. Professor Gans Inappropriately Assumes That Mechanical Royalties Would Increase While Performance Royalties Would Stay at Their Current Level

65. The assumptions I discussed in Section V.B.2 allow Professor Gans to estimate publisher revenues in the but-for world, but do not allow him to determine the portion of those revenues that would arise from mechanical royalty payments (as opposed to performance royalty payments). To calculate mechanical royalty payments to publishers in the but-for world, Professor Gans assumes that any increase in publisher revenues would arise solely from the increase in mechanical royalties, and that performance royalties would not change. In Professor Gans' alternative world, mechanical royalties turn out to be [redacted] of all publisher revenues, although he notes that, historically, "mechanical royalties as a percentage of all musical works royalties from 2012 to 2015 [exhibit] little fluctuation … over time ([redacted])"[59]

[59] Expert Report of Joshua Gans, footnote 41.

66. This assumption is speculative. Professor Gans does not establish why performance royalties would be the same in his but-for world as they are in the real world, whereas the mechanical royalties would be substantially higher. In fact, because mechanical and performance royalties are interrelated in interactive streaming—[redacted], and are subject to a single headline rate in the current statutory license—any split between these two types of royalties is artificial.[60]

67. Notably, Professor Gans' reasoning based on the Shapley value concept can neither support nor refute any particular split between the two types of royalties. As discussed above, the Shapley value analysis does not require that publisher profits increase. Similarly, it does not dictate that any increase in publisher profits must come from an increase in mechanical royalties. This is something Professor Gans asserts. He cannot establish the specific breakdown of publisher revenues between mechanical and performance royalties, so he assumes that the entire increase in publisher profits—an increase he also asserted with no basis for purposes of his analysis—is due to an increase in mechanical royalties.

68. Because of the way Professor Gans set up his calculations, his final result (estimated per-play rate for mechanical royalties) depends on the precise value of the breakdown between mechanical and performance royalties. Because this breakdown is asserted by Professor Gans, rather than based in fact, it is yet another reason why Professor Gans' results are speculative and unreliable.

69. I illustrate the impact of Professor Gans' assumption about the relative sizes of mechanical and performance royalties on his results in Column III of Chart 4. In this illustration, I assume that the share of mechanical royalties among all publisher revenues in the alternative world would be [redacted], *i.e.*, its actual level in the real world according to Professor Gans.[61]

[60] 37 C.F.R. § 385.12. Also see, for example, [redacted] APL-PHONO_00005388-98 at 89, a true and correct copy of which is attached hereto as **APL-005**; [redacted] APL-PHONO_00005380-86 at 81, a true and correct copy of which is attached hereto as **APL-003**; [redacted] APL-PHONO_00005399-404 at 400, a true and correct copy of which is attached hereto as **APL-006**; [redacted], GOOG-PHONOIII-00000172-82 at 72, a true and correct copy of which is attached hereto as **APL-193**; [redacted] GOOG-PHONOIII-00000197-208 at 197, a true and correct copy of which is attached hereto as **APL-194**.

[61] Expert Report of Joshua Gans, Table 3, footnote 41.

This change (together with the correction of the effective per-play royalty rate for sound recordings discussed in Section V.B.1), results in a mechanical royalty rate (per 100 streams) of [redacted], which is [redacted] than Professor Gans' estimate of [redacted].

70. In Column IV of Chart 4, I show the collective impact of the three changes I discussed above. When all three changes are implemented, Professor Gans' calculated mechanical royalty rate (per 100 streams) [redacted], from [redacted]. These results are also reported in **Rebuttal Table 2** below.

[redacted]

VI. CONCLUSION

71. After reviewing the Written Direct Statements submitted by Professor Marc Rysman and Professor Joshua Gans on behalf of Copyright Owners in the Phonorecords III proceeding, I maintain my original opinion that Apple's proposed all-in per-play rate of $0.00091 for interactive streaming is appropriate.

72. A per-user rate structure for mechanical royalties is not appropriate. Under a per-user rate structure, royalty payments are independent of a users' streaming behavior, such that the

value publishers and songwriters receive is delinked from the demand for their songs. Indeed, with the per-user prong, an interactive streaming service's costs could increase even as the total number of its streams decreases. Moreover, royalties under the per-user prong of the Copyright Owners' proposal still would be allocated to publishers and songwriters on a per-play basis based on the number of streams of their songs. Thus, applying a per-play rate, rather than a per-user rate that must be converted to a per-play rate, is a simpler and more straightforward calculation.

73. Historical rates may not be a good benchmark for the appropriate per-play rate because under the current royalty structure, per-play rates [redacted] Thus, an interactive streaming service [redacted]

74. Moreover, when Professors Rysman and Gans calculate historical mechanical per-play rates, they use only some streaming services in their analysis and exclude others, such as ad-supported Spotify and Apple's trial, family, and student plans. When the streams from these excluded interactive streaming services are considered, the effective *all-in* (i.e., mechanical and performance) per-play rate for 2015 is calculated as [redacted] *all-in* per-play rate of $0.00091 and much [redacted] the effective *mechanical-only* per-play rate of $0.0015 that the Copyright Owners propose. Indeed, based on this historical analysis, the historic effective mechanical-only rate is [redacted], approximately [redacted] of the Copyright Owners' proposed rate.

75. While Professor Gans claims to have performed a calculation based on the Shapley value concept, he does not explain why Shapley value, a concept from *cooperative* game theory, is appropriate in a royalty determination context where the various players may be acting to maximize their own profits rather than working cooperatively. He also fails to establish that the Shapley value approach in general, and his specific calculation methodology in particular, generate outcomes consistent with the four policy objectives set forth in Section 801(b)(1) of the Copyright Act. Moreover, Professor Gans bases his methodology in part on a hypothetical streaming industry with only one record label and one publisher. There is no basis for saying

that a Shapley value solution from such an oversimplified example would translate into an accurate mechanical royalty rate for an industry with numerous players.

76. Further, Professor Gans fails to conduct an actual Shapley value analysis. A proper Shapley value analysis allocates value (in this case, industry profits) to each player based on their contributions *without* making any assumptions about what the resulting share of each player would be. Professor Gans, on the other hand, makes certain assumptions about what the resulting level of publisher profits and revenues would be in his hypothetical world and performs a calculation to find the mechanical royalty rate that would generate those asserted levels of publisher profits and revenues. In the end, Professor Gans' methodology amounts to calculating a per-play mechanical royalty rate that satisfies the unsupported and arbitrary assumptions he imposes. These assumptions are in no way dictated by the Shapley value calculation itself and, thus, Professor Gans' estimated royalty rate also is not the outcome of an actual Shapley value analysis.

77. That Professor Gans' results are really just a product of the assumptions he makes, rather than the result of a proper Shapley value calculation, is evidenced by the fact that minor changes to his assumptions have a substantial impact on his results. For illustrative purposes, I changed three of Professor Gans' assumptions. Although adjusting just three assumptions does not correct Professor Gans' flawed analysis, it decreases Professor Gans' calculated mechanical royalty rate substantially from [redacted] per 100 plays, a [redacted]. That such small, but entirely reasonable, changes to Professor Gans' assumptions substantially change his calculated mechanical royalty rate underscores the speculative and unreliable nature of his conclusions.

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

Anindya Ghose

February 15, 2017

Date

Chart 1
Adjusted Gans Report Table 6
Historical Mechanical Per-Play Royalty Rates

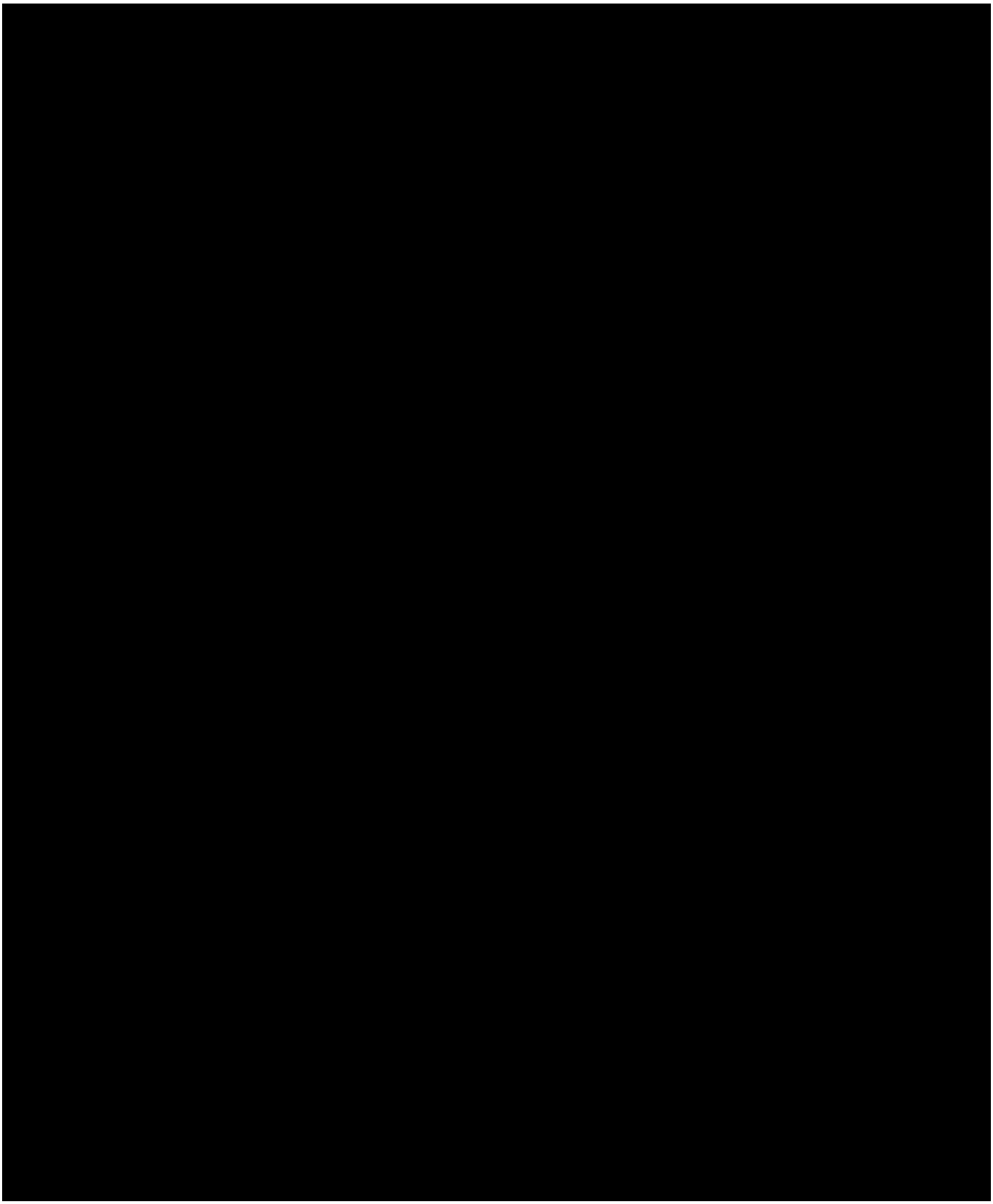

Chart 2
Historical All-In Per-Play Royalty Rates

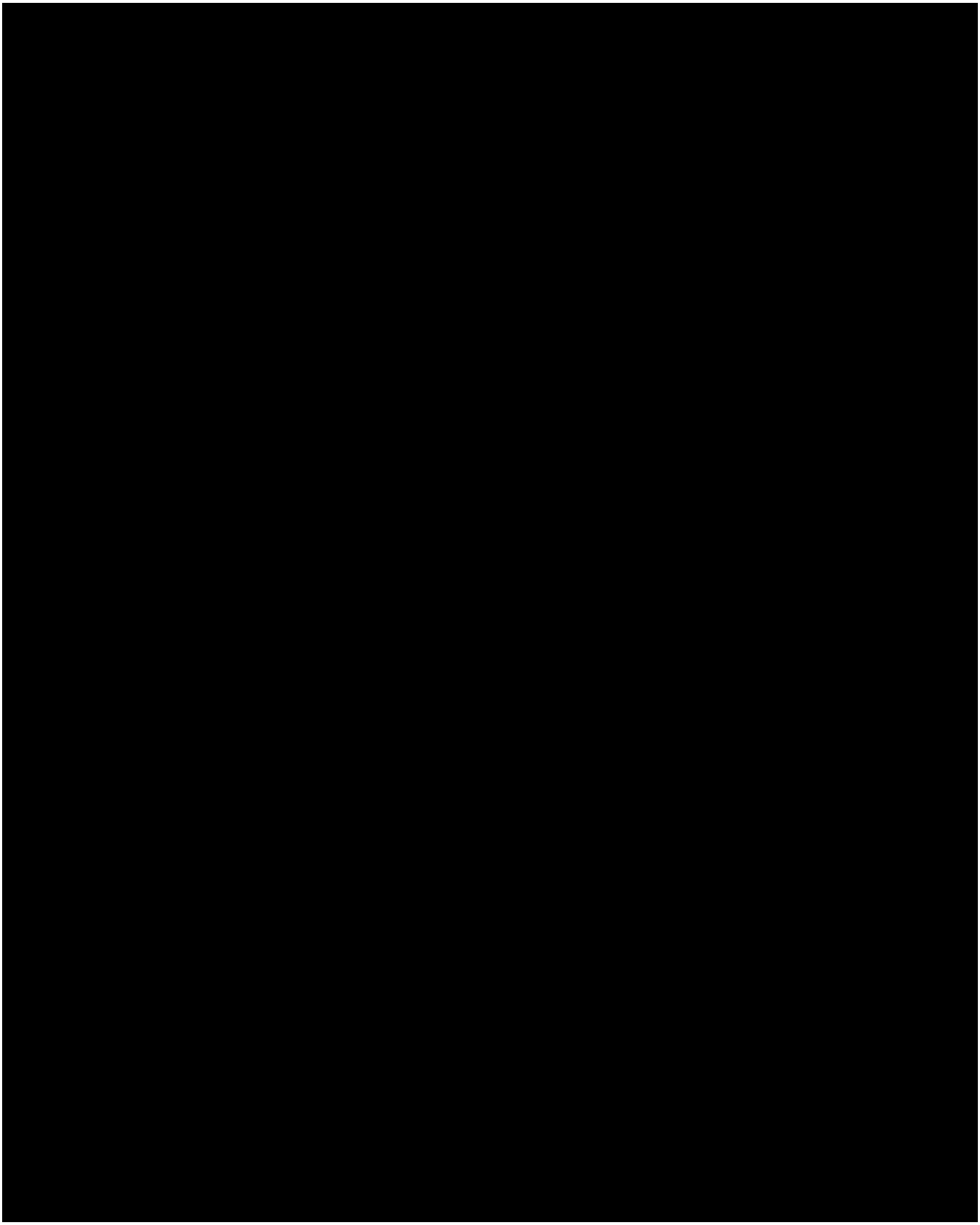

Chart 3
Historical Stream Counts

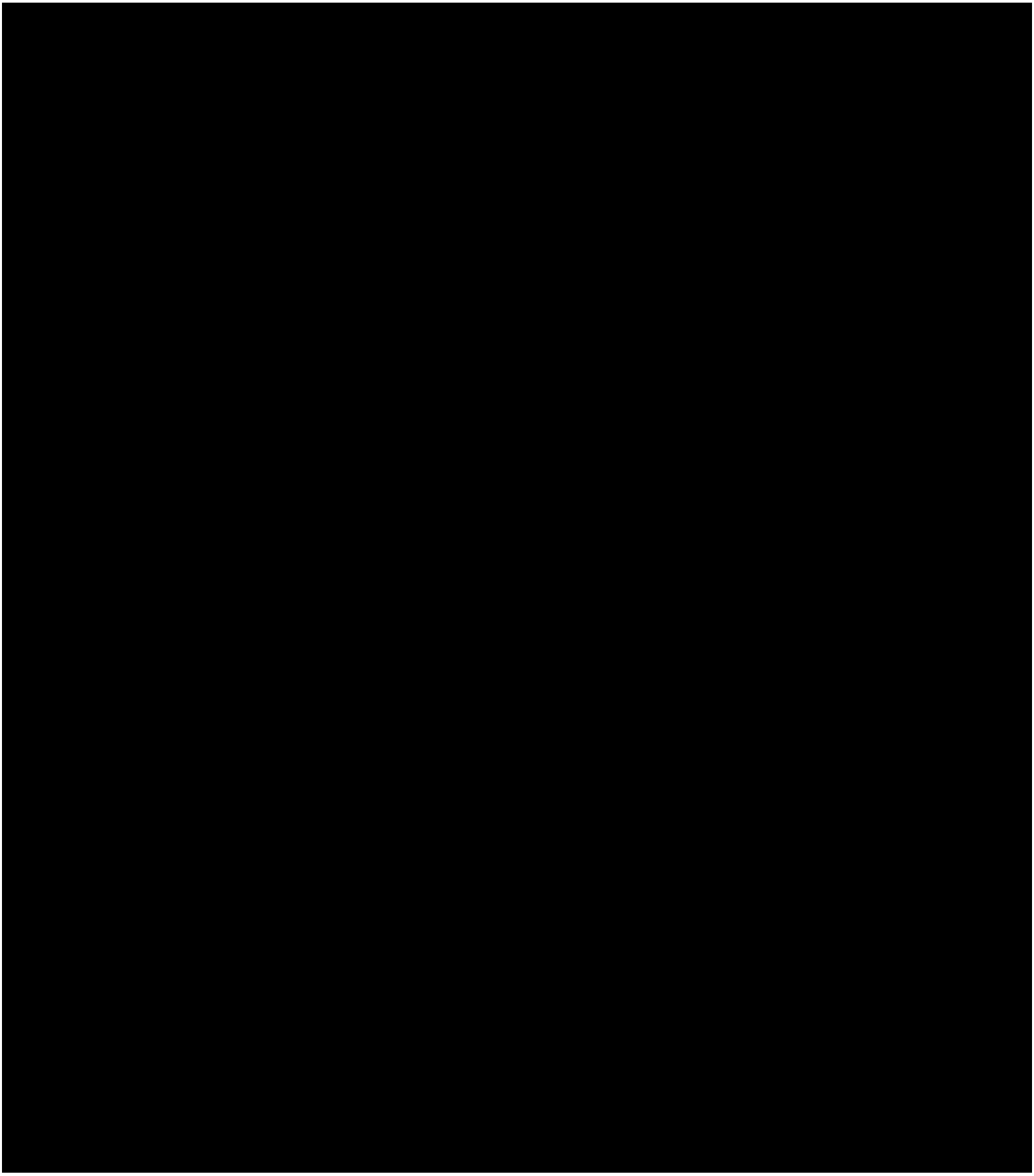

Chart 4
Illustrations Showing the Impact of Professor Gans' Assumptions on His Calculation of Mechanical Royalty Rates

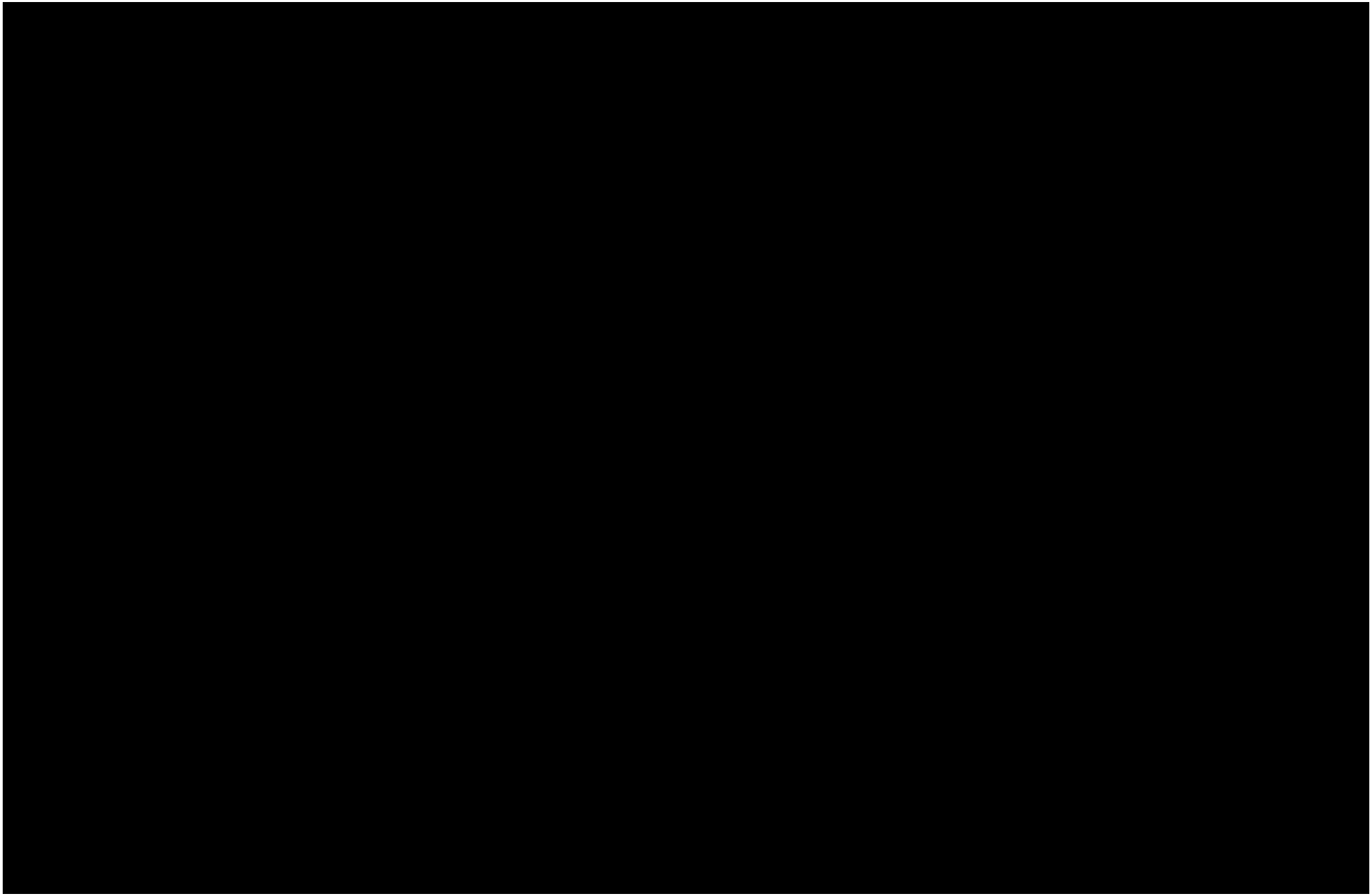

Chart 4
Illustrations Showing the Impact of Professor Gans' Assumptions on His Calculation of Mechanical Royalty Rates

Documents Relied Upon

Document Title, Bates Numbers	Document Date
Motions and Legal Pleadings	
Final Determination of Rates and Terms, *In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding*	November 24, 2008
Final Determination of Rates and Terms, *In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services*	January 10, 2008
Introductory Memorandum of National Music Publishers' Association and the Nashville Songwriters Association International, *In the Matter of: Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*	November 1, 2016
Expert Report	
Expert Opening Report of Anindya Ghose	November 1, 2016
Expert Rebuttal Report of Jui Ramaprasad and Chart	February 15, 2017
Expert Report of Joshua Gans, and backup documents	October 31, 2016
Expert Report of Lawrence S. Miller	October 30, 2016
Expert Report of Marc Rysman, and backup documents	October 28, 2016
Witness Statement/Testimony	
Witness Statement of Peter Brodsky	October 28, 2016
Testimony of Rob Wheeler	November 1, 2016
Bates Numbered Documents	
[redacted] APL-PHONO_00005388-98	June 5, 2015
[redacted] APL-PHONO_00005399-404	June 6, 2015
[redacted] GOOG-PHONOIII-00000172-82	November 12, 2013
[redacted] GOOG-PHONOIII-00000197-208	July 11, 2013
[redacted] APL-PHONO_00005380-86	June 4, 2015
Chapters within Edited Books	
Alvin E. Roth, "Introduction to the Shapley Value," In *The Shapley Value: Essays in Honor of Lloyd S. Shapley*, ed. Alvin E. Roth (Cambridge: Cambridge University Press)	1988
Lloyd S. Shapley, "A Value for N-Person Games," In *The Shapley Value: Essays in Honor of Lloyd S. Shapley*, ed. Alvin E. Roth (Cambridge: Cambridge University Press)	1988

Document Title, Bates Numbers	Document Date
	1988
	1988

Publicly Available Documents

Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted]	October 4, 2016
Michael Addady, "Apple Music Expands Its Student Discount to 25 More Countries," *Fortune*, http://fortune.com/2016/11/30/apple-music-student-discounts/, accessed February 12, 2017	November 30, 2016
Tim Ingham, "Fast-Growing Sony/ATV Now Controls 4 Million Song Copyrights," *Music Business Worldwide*, http://www musicbusinessworldwide.com/sonyatv-now-controls-rights-to-4m-songs/	May 5, 2015
Tim Ingham, "Spotify Is Out of Contract with All Three Major Labels – And Wants to Pay Them Less," *Music Business Worldwide*, http://www.musicbusinessworldwide.com/spotify-contract-three-major-labels-wants-pay-less/, accessed January 31, 2017	August 22, 2016

Miscellaneous

37 C.F.R. § 385

17 U.S.C. § 801(b)(1)

NMPA00001647

NMPA00001660

NMPA00001664

APL-PHONO_00005387

APL-PHONO_00006829–APL-PHONO_00006832

All other sources and charts mentioned within the Report

Anindya Ghose
Expert Depositions and Testimony for Prior Four Years

Deposition of Anindya Ghose, in In re Facebook, Inc., IPO Securities and Derivative Litigation, on behalf of Facebook, Inc. and the individual defendants, United States District Court, Southern District of New York, Case No. 1:12-md-02389 (April 30, 2015).

Deposition of Anindya Ghose, in In re Appraisal of AOL Inc., on behalf of Petitioners, Court of Chancery of the State of Delaware, Consolidated C.A. No. 11204-VCG (February 14, 2017).

Index of Apple Inc. Exhibits

EX. NO.	DESCRIPTION	BEG BATES	END BATES
APL-003	Agreement: [redacted]	APL-PHONO_00005380	APL-PHONO_00005386
APL-004	Agreement: [redacted]	APL-PHONO_00005387	APL-PHONO_00005387
APL-005	Agreement: [redacted]	APL-PHONO_00005388	APL-PHONO_00005398
APL-006	Agreement: [redacted]	APL-PHONO_00005399	APL-PHONO_00005404
APL-025 (Updated)	Excerpt from United States Copyright Office, Copyright and the Music Marketplace Register of Copyrights Report, February 2015	NMPA00001047	NMPA00001291
APL-070	Dan Graziano, Comparing Music Storage Services from Apple, Amazon, Google, CNET, March 10, 2015, https://www.cnet.com/how-to/itunes-match-vs-google-play-vs-amazon-music/, accessed October 20, 2016		
APL-071	Final Determination of Rates and Terms. In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, November 24, 2008		
APL-135	Learn About Digital Music, Why Music Matters, 2016 http://whymusicmatters.com/pages/about-digital-music		
APL-185	Agreement: [redacted]	AMZN00001435	AMZN00001616
APL-186	Agreement: [redacted]	APL-PHONO_00004529	APL-PHONO_00004639
APL-187	Agreement: [redacted]	APL-PHONO_00004814	APL-PHONO_00004844
APL-188	Agreement: [redacted]	APL-PHONO_00005273	APL-PHONO_00005293
APL-189	Agreement: [redacted]	APL-PHONO_00005334	APL-PHONO_00005345
APL-190	Agreement: [redacted]	APL-PHONO_00008928	APL-PHONO_00008975
APL-191	Agreement: [redacted]	APL-PHONO_00008976	APL-PHONO_00009020
APL-192	Agreement: [redacted]	APL-PHONO_00009021	APL-PHONO_00009079

Index of Apple Inc. Exhibits

EX. NO.	DESCRIPTION	BEG BATES	END BATES
APL-193	Agreement: [redacted]	GOOG-PHONOIII-00000172	GOOG-PHONOIII-00000182
APL-194	Agreement: [redacted]	GOOG-PHONOIII-00000197	GOOG-PHONOIII-00000208
APL-195	Spreadsheet: [redacted]	NMPA00001647	NMPA00001647
APL-196	Spreadsheet Excerpt: [redacted]	NMPA00001664	NMPA00001664
APL-197	Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., [redacted], October 4, 2016	SPOTCRB0011512	SPOTCRB0011596
APL-198	Current Credit Card Interest Rates, Bankrate, February 9, 2017 http://www.bankrate.com/finance/credit-cards/current-interest-rates.aspx, last accessed February 14, 2017		
APL-199	Drake's Views is U.S.'s biggest album of the year, Sony-ATV Music Publishing, January 5, 2017, https://www.sonyatv.com/en/news/1215/drake's-views-is-u.s.'s-biggest-album-of-the-year, last accessed February 14, 2017		
APL-200	Ed Sheeran, Sony-ATV Music Publishing, https://www.sonyatv.com/en/songwriters/267/ed-sheeran, last accessed February 14, 2017		
APL-201	Melanie Martinez's Acclaimed Debut Album Cry Baby Makes Incredible Chart Debut, Warner/Chappell Music, August 27, 2015, http://www.warnerchappell.com/news-details/279, last accessed February 14, 2017		
APL-202	Behind The Hit With Rising Country Star: Kane Brown, Universal Music, December 21, 2106, http://www.umusicpub.com/us/News/2016/12/Behind-The-Hit-With-Rising-Country-Star-Kane-Brown.aspx, last accessed February 14, 2017		
APL-203	Final Determination of Rates and Terms, In the Matter of Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, January 10, 2008		
APL-204	Excerpt from Lloyd S. Shapley, A Value for N-Person Games, In Alvin E. Roth, The Shapley Value: Essays in Honor of Lloyd S. Shapley, Cambridge University Press, 1988, pgs. 31-40		
APL-205	Michal Addady, Apple Music Expands Its Student Discount to 25 More Countries, November 30, 2016, Fortune, http://fortune.com/2016/11/30/apple-music-student-discounts/		

Index of Apple Inc. Exhibits

EX. NO.	DESCRIPTION	BEG BATES	END BATES
APL-206	Tim Ingham, Fast-Growing Sony/ATV Now Controls 4 Million Song Copyrights, MusicBusiness Worldwide, May 5, 2015, http://www.musicbusinessworldwide.com/sonyatv-now-controls-rights-to-4m-songs/		
APL-207	Tim Ingham, Spotify Is Out of Contract with All Three Major Labels – And Wants to Pay Them Less, Music Business Worldwide, August 22, 2016, http://www.musicbusinessworldwide.com/spotify-contract-three-major-labels-wants-pay-less/, accessed January 31, 2017		
APL-208	Antitrust Consent Decree Review – ASCAP and BMI 2014, The United States Department of Justice, available at: https://www.justice.gov/atr/ascap-bmi-decree-review		
APL-209	Making the Most Out of YouTube, YouTube, https://support.google.com/youtube/answer/3309389, last accessed February 9, 2017		
APL-210	Upload Videos, YouTube, https://support.google.com/youtube/answer/57407, last accessed February 14, 2017		
APL-211	What is Pandora? Pandora. https://help.pandora.com/customer/portal/articles/182180-what-is-pandora, last accessed February 9, 2017		
APL-212	YouTube Creator Hub, YouTube, https://www.youtube.com/yt/creators/?noapp=1, last accessed February 14, 2017		
APL-213	Amazon Best Sellers, available at: https://www.amazon.com/Best-Sellers-MP3-Downloads/zgbs/dmusic		
APL-214	Ed Christman, Universal Music Publishing Group, Ole Pulling Production Music Catalogs from ASCAP, April 1, 2016, http://www.billboard.com/articles/business/7318702/umpg-ole-pull-film-production-music-ascap-sesac		
APL-215	Google Play, Today's Top Tunes, available at: https://play.google.com/store/music		
APL-216	iTunes Charts, available at: http://www.apple.com/itunes/music/		
APL-217	Spreadsheet: [redacted]	NMPA00001660	NMPA00001660
APL-218	iTunes Preview - Single by Price on Apple Music, iTunes, https://itunes.apple.com/us/album/price-single/id449623583, last accessed February 14, 2017		

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

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

DECLARATION AND CERTIFICATION OF MARY MAZZELLO

1. I represent Apple Inc. ("Apple") in the above-captioned proceeding. I respectfully submit this declaration and certification in support of Apple's Written Rebuttal Statement in the above-captioned proceeding.

2. I have reviewed Apple's Written Rebuttal Statement, including all exhibits, affidavits, and expert reports (collectively, the "Written Rebuttal Statement"). I also have reviewed the Protective Order issued in the above-captioned proceeding, dated July 27, 2016.

3. I have determined to the best of my knowledge, information and belief that the Written Rebuttal Statement contains "confidential information" as defined in Section III of the Protective Order. Accordingly, such confidential information has been marked "RESTRICTED — Subject to Protective Order in Docket No. 16-CRB-0001-PR (2018-2022) (Phonorecords III)" ("RESTRICTED") pursuant to Section IV(C) of the Protective Order.

4. The confidential information in the Written Rebuttal Statement includes non-public, material information concerning (1) Apple's licensing agreements and the terms therein, (2) Apple's royalty payments and the calculation of such payments, and (3) documents and information produced by other participants and marked RESTRICTED by them.

5. In particular, Apple's Introductory Memorandum to its Written Rebuttal Statement contains, among other things, (1) highly sensitive analysis regarding historic average per-play royalties, (2) information concerning sound recording royalties, and (3) references to information found in documents marked RESTRICTED by the Copyright Owners.

6. The Rebuttal Testimony of David Dorn contains, among other things, non-public, highly sensitive information concerning Apple's licensing agreements and royalty payments.

7. The Rebuttal Testimony of Rob Wheeler contains non-public, highly sensitive information concerning Apple's royalty payments.

8. The Expert Rebuttal Report of Professor Jui Ramaprasad contains, among other things, non-public, highly sensitive information concerning Apple's licensing agreements and references to documents and information labeled RESTRICTED by other participants.

9. The Expert Rebuttal Report of Professor Anindya Ghose contains, among other things, non-public, highly sensitive analysis regarding historic average per-play royalties and references to documents and information labeled RESTRICTED by other participants.

10. Finally, Apple's Written Rebuttal Statement includes exhibits and an exhibit list that contain non-public, highly sensitive business information and document descriptions. These exhibits include non-public, confidential licensing agreements and documents labeled RESTRICTED by other participants.

11. Disclosure of this information could competitively disadvantage Apple, provide a competitive advantage to another participant in this proceeding, or interfere with Apple's ability to obtain like information in the future. Indeed, many of the participants in this proceeding are direct competitors or sit opposite one another in negotiations. Disclosure of this confidential

information to them, or to the public, could greatly harm Apple in future negotiations and provide competitors with information that Apple has taken great effort to keep confidential.

12. The confidential information described above must be treated as "Restricted" pursuant to the terms of the Protective Order and should not be disclosed except in accordance with the Protective Order.

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

Dated: February 15, 2017
New York, NY

Mary Mazzello
Kirkland & Ellis LLP
601 Lexington Avenue
New York, NY 10022
Tel: 212-446-4800
mary.mazzello@kirkland.com

Counsel for Apple Inc.

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

In The Matter Of:	)	
Determination of Rates and Terms for Making and Distributing Phonorecords	)	Docket No. 16-CRB-0003-PR (2018–2022) "Phonorecords III"

REDACTION LOG FOR THE WRITTEN REBUTTAL STATEMENT OF APPLE INC.

Pursuant to the requirements of the Protective Order dated July 27, 2016, Apple Inc. ("Apple") hereby submits the following list of redactions to its Written Rebuttal Statement, redacted copies of which were filed on February 17, 2017 pursuant to the First Prehearing Order, dated January 23, 2017.

Document	Page/Paragraph/Exhibit No.	General Description
Introductory Memorandum to Apple Inc.'s Written Rebuttal Statement	Page 3	Contains material non-public information concerning royalty payments and analysis based on documents provided by other participants and marked RESTRICTED by them.
	Page 4	Contains material non-public information concerning Apple's royalty payments.
	Page 5	Contains information concerning other participants' data and Direct Statements marked RESTRICTED by them.
	Page 8	Contains material non-public information concerning Apple's licensing agreements.

Document	**Page/Paragraph/Exhibit No.**	**General Description**
	Page 9	Contains information concerning other participants' data and Direct Statements marked RESTRICTED by them.
	Page 10	Contains material non-public information concerning royalty payments and analysis based on documents provided by other participants and marked RESTRICTED by them.
Rebuttal Testimony of David Dorn	Paragraph 6	Contains material non-public information concerning Apple's licensing agreements and royalty payments.
	Paragraph 12	Contains material non-public information concerning Apple's licensing agreements and royalty payments.
	Paragraph 15	Contains material non-public information concerning Apple's royalty payments and licensing practices.
	Paragraph 26	Contains material non-public information concerning Apple's licensing agreements.
	Paragraphs 27–29	Contains material non-public information concerning Apple's licensing agreements and royalty payments.
	Paragraph 30	Contains material non-public information concerning Apple's licensing agreements.
Testimony of Rob Wheeler	Paragraph 8	Contains material non-public information concerning Apple's royalty payments.
Expert Rebuttal Report of Jui Ramaprasad	Paragraphs 7	Contains material non-public information concerning Apple's licensing agreements and royalty payments for downloads.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraph 8–10	Contains material non-public analysis concerning data contained in documents provided by other participants and marked RESTRICTED by them.
	Paragraph 13	Contains material non-public information concerning Apple's licensing agreements and agreements produced by other participants and marked RESTRICTED by them.
	Paragraph 14	Contains information concerning other participants' data and Direct Statements marked RESTRICTED by them.
	Paragraph 21	Contains information calculated from other participants' expert reports marked RESTRICTED by them.
	Paragraph 32	Contains material non-public information concerning Apple's licensing agreements and royalty payments.
	Paragraph 33	Contains material non-public information concerning Apple's licensing agreements and royalty payments.
	Paragraph 34, including Rebuttal Table 1	Contains material non-public information concerning Apple's licensing agreements and royalty payments and analysis based on this information and information provided by other participants and marked RESTRICTED by them.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraphs 35	Contains analysis concerning Apple's non-public, highly confidential licensing agreements and information produced by other participants and marked RESTRICTED by them; contains RESTRICTED data from another participant's expert report.
	Paragraph 36–37	Contains material non-public information concerning Apple's licensing agreements.
	Paragraphs 39–40	Contains information concerning another participant's expert report marked RESTRICTED by that participant.
	Paragraph 41, including Rebuttal Figure 1	Contains data and analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraph 42	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraph 47–49	Contains data and analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraphs 50–52, including Rebuttal Tables 2 and 3	Contains data and analysis concerning Apple's non-public, highly confidential royalty payments and information provided by other participants and marked RESTRICTED by them.
	Paragraphs 54–55	Contains information concerning other participants' expert reports marked RESTRICTED by them.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraph 56, including Rebuttal Table 4	Contains data and analysis concerning Apple's royalty payments and information provided by other participants and marked RESTRICTED by them.
	Paragraph 62	Contains material non-public information concerning Apple's licensing agreements and agreements produced by other participants and marked RESTRICTED by them.
	Paragraphs 64–66	Contains information from Copyright Owner's Written Direct Statement marked RESTRICTED.
	Paragraph 68	Contains information from Copyright Owner's Written Direct Statement marked RESTRICTED.
	Paragraph 71	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraphs 72–73	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraph 75	Contains material non-public information concerning Apple's licensing agreements and agreements produced by other participants and marked RESTRICTED by them.
	Paragraphs 76	Contains information from Copyright Owner's Written Direct Statement marked RESTRICTED.

Document	Page/Paragraph/Exhibit No.	General Description
	Footnote 26	Contains material non-public information concerning Apple's licensing agreements and documents marked RESTRICTED by Amazon.
	Footnote 28	Contains material, non-public information and analysis concerning Apple's licensing agreements and documents marked RESTRICTED by other participants.
	Footnote 29	Contains material, non-public information concerning Apple's licensing agreements and documents marked RESTRICTED by Amazon.
	Footnote 30	Contains material, non-public information and analysis concerning Apple's licensing agreements and royalty payments and documents marked RESTRICTED by other participants.
	Footnote 31	Contains material, non-public information and analysis concerning Apple's licensing agreements and royalty payments and documents marked RESTRICTED by other participants.
	Footnote 33	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Footnote 34	Contains material, non-public data and analysis concerning Apple's royalty payments and information provided by other participants and marked RESTRICTED by them.

Document	Page/Paragraph/Exhibit No.	General Description
	Footnote 35	Contains material, non-public information concerning Apple's licensing agreements.
	Footnotes 37–38	Contains material, non-public information concerning Apple's licensing agreements and documents provided by other participants and marked RESTRICTED by them.
	Footnotes 45–47	Contains data and analysis concerning information provided by other participants and marked RESTRICTED by them.
	Footnote 71	Contains material, non-public information concerning Apple's licensing agreements and documents provided by other participants and marked RESTRICTED by them.
	Footnote 81	Contains data marked RESTRICTED by the Copyright Owners.
	Chart 1	Contains data and analysis based on data produced by other participants and marked RESTRICTED by them.
	Rebuttal Appendix A Page 1	Contains material, non-public information concerning Apple's licensing agreements and documents marked RESTRICTED by Amazon, and Google.
Rebuttal Expert Report of Professor Anindya Ghose	Paragraph 6	Contains analysis concerning Apple's royalty payments and information provided by other participants and marked RESTRICTED by them.
	Paragraph 9	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraph 10	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraph 11	Contains analysis concerning information provided by other participants and marked RESTRICTED by them.
	Paragraphs 18	Contains material non-public information concerning Apple Music usage.
	Paragraph 19	Contains data and analysis based on information provided by other participants and marked RESTRICTED by them.
	Paragraphs 22–26, including Rebuttal Table 1	Contains material, non-public data and analysis based on Apple's royalty payments and information provided by other participants and marked RESTRICTED by them.
	Paragraph 28	Contains material non-public information concerning Apple's licensing agreements and documents produced by other participants.
	Paragraphs 30	Contains information concerning documents provided by other participants and marked RESTRICTED by them.
	Paragraph 31, Sentence 1	Contains material, non-public analysis based on Apple's streaming data and documents provided by other participants and marked RESTRICTED by them.
	Paragraph 31, Sentence	Contains information from Copyright Owner's Written Direct Statement marked RESTRICTED.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraph 32-36	Contains analysis based on documents provided by other participants and marked RESTRICTED by them.
	Paragraph 39	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Paragraphs 48–49	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Paragraph 50–51	Contains data and analysis based information provided by other participants and marked RESTRICTED by them.
	Paragraph 57–58	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Paragraphs 61–63, including Rebuttal Figure 1	Contains data and analysis based on the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Paragraph 65	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Paragraph 66	Contains material non-public information concerning Apple's licensing agreements.

Document	Page/Paragraph/Exhibit No.	General Description
	Paragraphs 69–70, including Rebuttal Table 2	Contains information and analysis concerning the Copyright Owners' Written Direct Statement and documents produced by other participants and marked RESTRICTED by them.
	Paragraph 73	Contains analysis based documents provided by other participants and marked RESTRICTED by them.
	Paragraph 74	Contains material, non-public analysis concerning Apple's royalty payments and documents provided by other participants and marked RESTRICTED by them.
	Paragraph 77	Contains information and analysis based documents provided by other participants and marked RESTRICTED by them.
	Footnote 11	Contains material non-public information concerning streaming on Apple Music and documents provided by other participants and marked RESTRICTED by them.
	Footnotes 13–14	Contains material non-public information concerning streaming on Apple Music and documents provided by other participants and marked RESTRICTED by them.
	Footnote 16	Contains information and analysis based documents provided by other participants and marked RESTRICTED by them.

Document	Page/Paragraph/Exhibit No.	General Description
	Footnote 51	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Footnote 54	Contains information from a document marked RESTRICTED by Spotify.
	Footnote 55	Contains information concerning the Copyright Owners' Written Direct Statement and marked RESTRICTED by them.
	Footnote 56	Contains information from a document marked RESTRICTED by Spotify.
	Footnote 60	Contains material non-public information concerning Apple's licensing agreements and documents marked RESTRICTED by Google.
	Charts 1–3	Contains material non-public data and analysis concerning Apple's royalties, streaming on Apple Music, and documents provided by other participants and marked RESTRICTED by them.
	Chart 3	Contains material non-public analysis based on confidential Apple data and documents provided by other participants and marked RESTRICTED by them.
	Rebuttal Appendix A Page 1	Contains material non-public information concerning Apple's license agreements and documents marked RESTRICTED by Google.

Document	**Page/Paragraph/Exhibit No.**	**General Description**
	Rebuttal Appendix A Page 2	Contains information concerning a documents marked RESTRICTED by Spotify.
Index of Apple Inc. Exhibits	Page 1	Contains descriptions of non-public documents concerning Apple's highly confidential licensing agreements and descriptions of documents marked RESTRICTED by other participants.
	Page 2	Contains descriptions of documents marked RESTRICTED by Google, NMPA and Spotify.
	Page 3	Contains descriptions of documents marked RESTRICTED by NMPA.
Apple Inc. Exhibits	APL-003	Contains material non-public information concerning a highly confidential licensing agreement.
	APL-004	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-005	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-006	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-185	Contains a confidential document marked RESTRICTED by Amazon.

Document	Page/Paragraph/Exhibit No.	General Description
	APL-186	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-187	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-188	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-189	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-190	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-191	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-192	Contains material non-public information concerning concerning a highly confidential licensing agreement.
	APL-193	Contains a confidential document marked RESTRICTED by Google.
	APL-194	Contains a confidential document marked RESTRICTED by Google.

Document	**Page/Paragraph/Exhibit No.**	**General Description**
	APL-195	Contains confidential data marked RESTRICTED by NMPA.
	APL-196	Contains confidential data marked RESTRICTED by NMPA.
	APL-197	Contains a confidential document marked RESTRICTED by Spotify.
	APL-217	Contains confidential data marked RESTRICTED by NMPA.

Dated: February 17, 2017

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CERTIFICATE OF SERVICE

I, Erika Dillon, hereby certify that a true and correct copy of the Written Rebuttal Statement of Apple Inc. (Public) has been served this 17th day of February 2017 as follows:

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