No. _____

IN THE

Supreme Court of the United States

NATIONAL RELIGIOUS BROADCASTERS
NONCOMMERCIAL MUSIC LICENSE COMMITTEE,

Petitioner,

v.

COPYRIGHT ROYALTY BOARD AND LIBRARIAN OF
CONGRESS,

Respondents.

*On Petition for Writ of Certiorari to the United States
Court of Appeals for the District of Columbia Circuit*

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI (VOLUME 1 of 2)

KARYN K. ABLIN
FLETCHER, HEALD &
 HILDRETH, PLC
1300 N. 17th Street
11th Floor
Arlington, VA 22209
(703) 812-0443
ablin@fhhlaw.com

CODY S. BARNETT
ALLIANCE DEFENDING
 FREEDOM
44180 Riverside Pkwy
Lansdowne, VA 20176
(571) 707-4655
cbarnett@adflegal.org

JOHN J. BURSCH
 Counsel of Record
ALLIANCE DEFENDING
 FREEDOM
440 First Street NW, Ste. 600
Washington, DC 20001
(616) 450-4235
jbursch@adflegal.org

RORY T. GRAY
ALLIANCE DEFENDING
 FREEDOM
1000 Hurricane Shoals Rd.
 NE, Ste. D-1100
Lawrenceville, GA 30043
(770) 339-0774
rgray@ADFlegal.org

Counsel for Petitioner

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LIBRARY OF CONGRESS

Copyright Royalty Board

37 CFR Part 380

[Docket No. 19-CRB-0005-WR (2021-2025)]

Determination of Rates and Terms for Digital Performance of Sound Recordings and Making of Ephemeral Copies To Facilitate Those Performances (Web V)

Agency: Copyright Royalty Board, Library of Congress.

Action: Final rule and order.

SUMMARY: The Copyright Royalty Judges announce their final determination of the rates and terms for two statutory licenses (permitting certain digital performances of sound recordings and the making of ephemeral recordings) for the period beginning January 1, 2021, and ending on December 31, 2025.

DATES:

Effective date: October 27, 2021.

Applicability date: The regulations apply to the license period beginning January 1, 2021, and ending December 31, 2025.

ADDRESSES: The final determination is posted in eCRB at *https://app.crb.gov/*. For access to the docket to read the final determination and submitted background documents, go to eCRB and search for docket number 19–CRB–0005–WR (2021–2025).

FOR FURTHER INFORMATION CONTACT:
Anita Blaine, CRB Program Assistant, (202) 707–7658, *crb@loc.gov.*

SUPPLEMENTARY INFORMATION:

Final Determination

The Copyright Royalty Judges (Judges) hereby issue their written determination of royalty rates and terms to apply from January 1, 2021, through December 31, 2025, to digital performance of sound recordings over the internet by nonexempt, noninteractive transmission services and to the making of ephemeral recordings to facilitate those performances.

The rate for commercial subscription services in 2021 is $0.0026 per performance. The rate for commercial nonsubscription services in 2021 is $0.0021 per performance. The rates for the period 2022 through 2025 for both subscription and nonsubscription services shall be adjusted to reflect the increases or decreases, if any, in the general price level, as measured by the change in the Consumer Price Index for All Urban Consumers (U.S. City Average, all items) (CPI-U) from that published by the Bureau of Labor Statistics (BLS) in November 2020, as set forth in the regulations adopted by this determination.

The rates for noncommercial webcasters are: $1,000 annually for each station or channel for all webcast transmissions totaling not more than 159,140 Aggregate Tuning Hours (ATH) in a month, for each year in the rate term. In addition, if, in any month, a noncommercial webcaster makes total

transmissions in excess of 159,140 ATH on any individual channel or station, the noncommercial webcaster shall pay per-performance royalty fees for the transmissions it makes on that channel or station in excess of 159,140 ATH at the rate of $0.0021 per performance in 2021. The rates for transmissions over 159,140 ATH per month for the period 2022 through 2025 shall be adjusted to reflect the increases or decreases, if any, in the general price level, as measured by the changes in the CPI-U from that published by BLS in November 2020, as set forth in the regulations adopted by this determination.

The Judges also determine herein details relating to the rates for each category of webcasting service, such as minimum fee and administrative terms, in the following analysis. "Exhibit A" to this determination contains the regulatory language codifying the terms of the Judges' determination.

I. Background

A. Purpose of the Proceeding

The licenses at issue in the captioned proceeding, viz., licenses for commercial and noncommercial noninteractive webcasting, are compulsory. Title 17, United States Code (Copyright Act or Act), establishes exclusive rights reserved to copyright owners, including the right to "perform the copyrighted work publicly by means of a digital audio transmission." *See* 17 U.S.C. 106(6). The digital performance right is limited, however, by section 114 of the Act, which grants a statutory license for nonexempt noninteractive internet transmissions of protected works. 17 U.S.C. 114(d). Eligible webcasters are entitled to perform sound recordings without an

individual license from the copyright owner, provided they pay the statutory royalty rates for the performance of the sound recordings and for the ephemeral copy of the sound recording necessary to transmit it. 17 U.S.C. 114(f), 112(e). Licensee webcasters pay the royalties to a Collective, which distributes the funds to performing artists and copyright owners. The statutory rates and terms apply for a period of five years. The Act requires that the Judges "establish rates and terms that most clearly represent the rates and terms that would have been negotiated in the marketplace between a willing buyer and a willing seller." 17 U.S.C. 114(f)(2)(B). The marketplace the Judges look to is a hypothetical marketplace, free of the influence of compulsory, statutory licenses. *Web II*, 72 FR 24084, 24087 (May 1, 2007). The Judges "*shall* base their decision on economic, competitive[,] and programming information presented by the parties . . . ." 17 U.S.C. 114(f)(2) (B), 112(e)(4) (emphasis added). Within these categories, the Judges' determination shall account for (1) whether the internet service substitutes for or promotes the copyright owner's other streams of revenue from the sound recording and (2) the relative roles and contributions of the copyright owner and the service, including creative, technological, and financial contributions, and risk assumption. *Id.* The Judges may consider rates and terms of comparable services and comparable circumstances under voluntary, negotiated license agreements. *Id.* The rates and terms established by the Judges "*shall* distinguish" among the types of services and "*shall* include" a minimum fee for each type of service. *Id.* (emphasis added).

B. Procedural Posture

Following the timeline prescribed by the Act, the Judges published notice of commencement of this proceeding in the **Federal Register**. 84 FR 359 (Jan. 24, 2019). Twenty parties in interest filed petitions to participate in the proceeding. Nine of those petitioners subsequently withdrew from the proceeding, and the Judges dismissed one of the petitioners because the Judges determined that he lacked the requisite substantial interest in the proceeding.[1]

1. Negotiated Settlements

The Judges received two settlements, one between SoundExchange and certain public broadcasters and the other between SoundExchange and certain educational webcasters.

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[1] The following parties filed petitions to participate: Accu Radio LLC (withdrew), College Broadcasters Inc. (settled), David Powell (dismissed), Educational Media Foundation (joined case of NRBNMLC), Live365 Broadcaster LLC (withdrew), LA RAZA MEDIA GROUP LLC (withdrew), Pandora Media LLC (Pandora), Radio Coalition LLC (withdrew), Sirius XM Radio, National Religious Broadcasters Noncommercial Music License Committee (NRBNMLC), National Association of Broadcasters (NAB), Feed Media, Inc. (withdrew), Dash Radio, Inc. (withdrew), Tunein Inc. (withdrew), National Public Radio (settled), Radio Paradise Inc. (withdrew), SoundExchange, Inc. (SoundExchange) (filing jointly on behalf of The American Federation of Musicians and the United States and Canada, Screen Actors Guild/American Federation of Television and Radio Artists, The American Association of Independent Music, Sony Music Entertainment, UMG Recordings, Inc., Warner Music Group Corp., and Jagjaguwar Inc.), iHeart Media Inc., ICON Health & Fitness Inc. (withdrew), and Google Inc.

a. Public Broadcasters

One of the settlements, among SoundExchange, National Public Radio (NPR), and the Corporation for Public Broadcasting (CPB), addressed rates and terms for certain internet transmissions by public broadcasters, NPR, American Public Media, Public Radio International, Public Radio Exchange, and certain other unnamed public radio stations for the period from January 1, 2021, through December 31, 2025. The Judges published the terms of the settlement in the **Federal Register** on October 29, 2019. The Judges received no comments on the proposal and approved the settlement on February 28, 2020.[2]

b. Educational Webcasters

The other settlement, between SoundExchange and College Broadcasters, Inc. (CBI), addressed rates and terms for certain internet transmissions of sound recordings by college radio stations and other noncommercial educational webcasters for the period from January 1, 2021, through December 31, 2025. The Judges published the terms of the settlement in the Federal Register on October 30, 2019. The Judges received no comments on the proposal and approved the settlement on March 4, 2020.[3]

2. The Current Proceeding To Adjudicate Rates and Terms

The Act provides that the Judges shall make their determinations "on the basis of a written record, prior

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[2] 85 FR 11857 (Feb. 28, 2020).

[3] 85 FR 12745 (Mar. 4, 2020).

determinations and interpretations of the Copyright Royalty Tribunal, Librarian of Congress . . ." and their own prior determinations to the extent those determinations are "not inconsistent with a decision of the Register of Copyrights . . . ." 17 U.S.C. 803(a). Pursuant to 17 U.S.C. 803(b), the Judges conduct a hearing to create that "written record." To that end, non-settling parties appeared before the Judges virtually for an evidentiary hearing. At the hearing, SoundExchange represented the interests of licensors. Several non-settling licensees also participated in the hearing.[4]

The hearing commenced on August 4, 2020, and concluded on September 9, 2020.[5] The parties submitted proposed findings and conclusions (and responses thereto) in writing, prior to their closing arguments on November 19, 2020. During the hearing, the Judges heard oral testimony from 33

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[4] The non-settling licensees were Google, iHeart Media, NAB, NRBNMLC, Pandora, and Sirius XM.

[5] The hearing was originally scheduled to commence on March 16, 2020, but was delayed due to the coronavirus pandemic. See Order Granting Joint Motion for Continuance of Hearing (Mar. 12, 2020) (delaying commencement of hearing until April 28, 2020. In consultation with the participants, the Judges granted several additional continuances, until ultimately scheduling a virtual hearing employing videoconferencing technology to commence on August 4, 2020. See Order Granting Joint Motion for Second Continuance of Hearing (Apr. 1, 2020); Order Granting Joint Motion for Third Continuance of Hearing (May 1, 2020); Order on Hearing Schedule and Related Pre-Hearing Matters (Jun. 10, 2020); Order Setting Virtual Hearing and Addressing other Hearing-Related Matters (Jun. 25, 2020); Order Postponing Virtual Hearing (Jul. 14, 2020); Order Rescheduling Virtual Hearing (Aug. 3, 2020).

witnesses (some of them for both direct case and rebuttal testimony) and considered the testimony of eight witnesses on the papers. The witnesses included 13 qualified experts. The Judges admitted 748 exhibits into evidence, consisting of over 900,000 pages of documents (9227 MB of electronic files in eCRB), and considered numerous illustrative and demonstrative materials that focused on aspects of the admitted evidence and the permitted oral testimony.

Pursuant to section 803(c)(1), the initial Determination in this matter was due no later than December 16, 2020 (i.e., 15 days before the expiration of the current statutory rates and terms). See 17 U.S.C. 803(c)(1). On July 6, 2020, the Acting Register of Copyrights, at the request of the Judges, exercised her authority under 17 U.S.C. 710 to "toll, waive, adjust, or modify" the timing provision in section 803(c)(1) to account for the disruption and delay caused by the COVID-19 pandemic. The Acting Register extended the Judges' deadline for issuing an initial Determination by up to 120 days, effectively making the deadline April 15, 2021. *See Public Notice Regarding Timing Provisions for Persons Affected by COVID-19*, U.S. Copyright Office, *https://www.copyright.gov/coronavirus/* (last visited Jan. 11, 2021). The Register of Copyrights announced an additional 60-day extension on March 29, 2021, in the Copyright Office's NewsNet, Issue No. 889.

II. Context of the Current Proceeding: Prior Rate Determinations

Congress created the exclusive sound recordings digital performance copyright in 1995. *See* Digital Performance Right in Sound Recordings Act of 1995, Public Law 104–39, 109 Stat. 336 (1995). At the same time, Congress limited that performance right by granting noninteractive subscription services a statutory license to perform sound recordings by digital audio transmission. In 1998, Congress created the ephemeral recording license and further defined and limited the statutory license for digital performance of sound recordings. *See* Digital Millennium Copyright Act, Public Law 105–304, 112 Stat. 2860 (1998) (DMCA).

A. Web I-Web III

The Judges summarized the history of webcasting determinations from *Web I* through *Web III* in detail in their *Web IV* determination. *See Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings*, Final rule and order, 81 FR 26316, 26317-19 (May 2, 2016) (*Web IV*). The Judges hereby incorporate that discussion by reference into this Determination.

B. Web IV Determination and Appeals

The Judges commenced the Web IV proceeding in January 2014. SoundExchange and a *pro se* petitioner, George Johnson d/b/a GEO Music, represented the interests of licensors. Seven licensees also participated in the hearing.[6] The Judges approved two negotiated agreements, one for public

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[6] The licensees were Harvard Radio Broadcasting, Inc., IBS, iHeartMedia, NAB, NRBNMLC, Pandora, and Sirius XM.

broadcasters between SoundExchange and NPR and CPB, and the other for educational webcasters between SoundExchange and CBI.

The Judges concluded that "there is continued support in the marketplace for a different rate structure for commercial and noncommercial webcasters." 81 FR 26316, 26320 (May 2016). The Judges therefore adopted separate rate structures for noncommercial and commercial webcasters. With respect to noncommercial webcasters, the Judges adopted a $500 per station or channel fee for all transmissions by noncommercial webcasters up to a threshold of 159,140 aggregate tuning hours (ATH) for 2016 through 2020. For transmissions in excess of 159,140 ATH, the Judges set a rate of $0.0017 per performance for 2016, which would be adjusted annually for changes to the CPI-U for the years 2017-2020. *Id.* at 26396.

The Judges also identified a distinction between two different types of copyright owners. Based on the record, the Judges observed that "in the marketplace, Services have agreed to pay higher rates to" major record labels (Majors) than to so-called independent labels (Indies). *Id.* at 26319. To gain clarity on whether the Judges could establish different rates based on differences among copyright owners, the Judges referred to the Register of Copyrights (Register) the novel question of whether the Act permits the Judges to differentiate based on types of licensors. The Register concluded that the Judges' question did not meet the statutory criteria for referral and declined to answer it. *Id.* In the absence of an adequate record to support such differentiation,

the Judges declined to adopt separate rates for Majors and Indies. *Id.*

The Judges also addressed potential distinctions between groups of licensees. In particular, NAB argued that simulcasting is different from other forms of commercial webcasting and therefore simulcasters (*i.e.*, terrestrial radio stations that simulcast over-the-air broadcasts on the internet) should pay a lower rate than other commercial webcasters. *Id.* at 26320. Based on the record in *Web IV*, however, the Judges concluded that NAB did not satisfy its burden to demonstrate that simulcasting differs in ways that would cause willing buyers and willing sellers to agree to a lower royalty rate in the hypothetical market. Therefore, the Judges did not adopt a different rate structure for simulcasters than that which applied to other commercial webcasters. *Id.*

SoundExchange and Pandora each proposed different greater-of rate structures employing a per-play rate and a percentage-of-revenue rate. All of the Services, other than Pandora, opposed such a two-pronged approach. The Judges concluded that the record did not support a greater-of rate structure in the rate period at issue in *Web IV*. *Id.* at 26323. Rather, the Judges found that the statutory rate should continue to be set on a per-play basis for commercial webcasters. *Id.* at 26325.

The Judges set two separate rates for commercial noninteractive webcasting. One applied to performances on subscription-based commercial noninteractive services. A separate rate applied to performances on nonsubscription services (*i.e.*, advertising supported services that are free to the

listener). *Id.* at 26404. The Judges set each of the rates for 2016 (the first year of the five-year statutory license term) and then applied an inflation-based adjustment to the rates for the remaining years of the license. The Judges looked to separate benchmarks to establish the rates. For commercial noninteractive subscription services, the Judges used a benchmark developed by SoundExchange's expert, Dr. Rubinfeld, to which the Judges applied a 12% "steering" reduction to reflect a lack of competition in that particular segment of the market among the providers of the copyright works. The Judges also credited a rate established in an agreement between Pandora and Merlin. Those two rates formed a zone of reasonableness, within which the Judges chose a per-performance rate of $0.0022 for 2016. *Id.* at 26405.

With respect to the rate for commercial nonsubscription services, the Judges identified two usable benchmarks. One was based on a rate in an agreement between iHeart and Warner. The other was based on a rate from an agreement between Pandora and Merlin. *Id.* at 26405. The first represented an agreement between a service and a Major and the second between a service and Indies. The Judges used these rates to form a zone of reasonableness. The Judges selected a rate for 2016 of $0.0017, which took into account a greater number of streams from Major sound recordings as opposed to the percentage of streams from Indie sound recordings. The rates for 2017 through 2020 would be adjusted to account for changes in the CPI. The rate for the Section 112 license would constitute 5% of the

royalty services would pay for performances under the Section 114 license. *Id.* at 26406.

SoundExchange and George Johnson appealed the Judges' determination to the U.S. Court of Appeals for the D.C. Circuit. The court affirmed. *SoundExchange, Inc. v. Copyright Royalty Bd.*, 904 F.3d 41 (Sep. 18, 2018).

III. The Role of Effective Competition in Setting Webcasting Rates

A. The Concept of "Effectively Competitive" Rates

In *Web IV*, the Judges held that the Copyright Act either required them, or permitted them, in their discretion, "to set a rate that reflects a market that is *effectively competitive*." *Web IV*, 81 FR at 2633 (emphasis added). The D.C. Circuit affirmed the Judges' conclusion that they had the discretionary authority "to determine rates through the lens of an effective-competition standard" (but held that the Judges were not required to do so). *SoundExchange*, 904 F.3d at 57.

More particularly, the D.C. Circuit found reasonable the Judges' construction of the statutory "willing seller/willing buyermarketplace" standard as calling for the establishment of rates that would have been set in an effectively competitive market. In that regard, the D.C. Circuit pointed to testimony and record evidence—referenced approvingly by the Judges—stating that "neither sellers nor buyers can be said to be 'willing' partners to an agreement if they are coerced to agree to a price through the exercise of overwhelming market power." *SoundExchange*, 904 F.2d at 56 (quoting *Web IV*, 81 FR at 26331).

Additionally, the D.C. Circuit grounded its affirmance on its finding that the statutory willing buyer/willing seller-marketplace standard was inherently ambiguous. Because of this ambiguity, the D.C. Circuit held that the Judges had properly exercised their statutory duty by considering "the clear statutory purpose, applicable prior decisions, and the relevant legislative history." *SoundExchange*, 904 F.3d at 55 (quoting *Web IV* at 26332). In particular, the D.C. Circuit took note of the Judges' reliance on their own webcaster rate determination that had immediately preceded *Web IV*:

The [Judges] relied on one of [their] prior determinations in reasoning that, "[b]etween the extremes of a market with 'metaphysically perfect competition' and a monopoly (or collusive oligopoly) market devoid of competition there exists in the real world . . . a mind-boggling array of different markets, all of which possess varying characteristics of a 'competitive marketplace.' " [*Web IV*, 81 FR at 26333 (quoting *Web III Remand*, 79 FR at 23114 n.37)]. *SoundExchange*, 904 F.3d at 57.

In fact, the D.C. Circuit not only found that the Judges acted reasonably in this regard, but also that—when exercising their discretion—the Judges "*must* consider 'competitive information'" contained in the hearing record, in order "to identify *the relevant characteristics of competitiveness* on which to base [their] determination of the statutory rates." *SoundExchange*, 904 F.3d at 56-57 (emphasis added).

Consistent with the D.C. Circuit's decision affirming *Web IV*, the Judges in this *Web V* proceeding again apply the standard that royalty rates for

noninteractive services should be set at levels that reflect those that would be set in an effectively competitive market. Further, the Judges note that no party in this proceeding challenges the application of this effective competition standard, although SoundExchange and the Services offer vastly different understandings of how the Judges should apply the standard in this case.

In *Web IV*, the Judges applied the concept of "effective competition" as a counterweight to the "complementary oligopoly" power of the Majors. *Web IV*, 81 FR at 26368 (identifying the "complementary oligopoly that exists among the Majors," allowing them to "utilize their combined market power to prevent price competition among them . . . ."). Simply put, the Judges found that each Major is a "Must Have" licensor for noninteractive services (in the hypothetical unregulated market), meaning that each noninteractive service "must have" a license for the entire repertoires of Sony, Universal and Warner, in order to remain in business. Also, because the *interactive* market was proffered as a benchmark market in *Web IV* (as in the present proceeding), the Judges performed the same inquiry for that market, concluding that interactive licensees likewise "must have" access to the repertoires of each Major in order to survive commercially. *Web IV*, 81 FR at 26340, 26342. From a more technical economic viewpoint, the "Must Have" status of the three Majors rendered each a "complementary oligopolist."[7] As explained in *Web*

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[7] "Complementary oligopolists" supply products or, as here, offer licenses, for access to products, that are "perfect complements," meaning that the products or licenses they offer are essential, *i.e.*, "Must Haves," for a buyer/licensee in order to operate its

IV, this status allows each Major to wield the individual economic power of a monopolist, but the exercise of that power leads to royalty rates that are even greater than those that would be set by a single monopolist. Specifically, the Judges held:

> '[I]f the repertoires of all [Majors] were each required by webcasters (*i.e.*, if the repertoires were necessary complements) . . . each [Major] would have an incentive to charge a monopoly price to maximize its profits . . . constitut[ing] *higher monopoly* costs . . . paid by webcasters to each of the [Majors].' . . . The Judges in this determination adopt this economic reasoning and will not allow such complementary oligopoly power to be incorporated into the statutory rate.

Web IV, 81 FR at 26368 & n.142 (*quoting Web III Remand*, 79 FR at 23114); *see also Web IV*, 81 FR at 26342-43 (summarizing corroborating economic expert testimony as (i) stating that the complementary oligopoly structure is "*even worse than a market controlled by a single monopoly supplier* . . . [as] first identified by Antoine Cournot in 1838"; and (ii) explaining that Universal had argued to the Department of Justice that its merger with EMI "would lead to lower prices because it would remove the Cournot Complements pricing effect" between the merging entities.) In *Web IV*, the dispute regarding the "effective competition" standard focused essentially on the absence of *horizontal price competition between and among the Majors*—and whether such horizontal competition could be

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business. Such products/licenses are known in economics as "Cournot Complements." *See Web IV*, 81 FR at 26342–43.

generated by noninteractive services in the *hypothetical* (i.e., unregulated) market.[8] Based on the record in that proceeding, the Judges determined that the Services had successfully demonstrated how effectively competitive rates had been set, (*i.e.*, via steering, discussed *infra*) even in the face of a complementary oligopoly.[9]

The foregoing findings regarding the "Must Have" status of the Majors in the *interactive* benchmark market are not challenged in this proceeding. However, SoundExchange argues that, unlike in the *Web IV* period, the benchmark interactive market now generates effectively competitive rates, because the present record demonstrates that Spotify has gained licensee-side power sufficient to offset, in

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[8] The section 114 statutory rate supplants an unregulated market rate, so the Judges must ascertain the rates that would have been set in such a *hypothetical* market. *See Web IV*, 81 FR at 26316, 26333. In *Web IV*, though, in addition to receiving evidence regarding the hypothetical market, the Judges were presented with *actual* market evidence of effectively competitive rates from the noninteractive market. *Id.* at 26343 ("[T]he Judges are not left with mere hypotheticals . . . . Rather, the Judges were presented with hard and persuasive evidence that . . . reduced royalty rates in the noninteractive market and would do so in the hypothetical market as well.").

[9] The more particular issue was whether noninteractive services could foment such horizontal price competition among record companies through the services' expressed intent to "steer" their algorithmically or humanly curated plays toward those licensed by Majors who agree to royalty rates lower than those of their competitors. *Web IV*, 81 FR at 26348 ("[T]he ability of noninteractive services to steer away from higher priced recordings and toward lower priced recordings (or threaten to do so) serves as a buffer against the supranormal pricing that arises from the impact of complementary oligopoly pricing . . . .").

whole or in part, the Majors' "Must Have" status. SoundExchange's Second Corrected Proposed Findings of Fact and Conclusions of Law ¶ 89 *et seq.* (and record citations therein) (SX PFFCL). The Services dispute the assertion that the record shows Spotify to have acquired such power or that the interactive market has otherwise become effectively competitive. Services' Joint Proposed Findings of Fact and Conclusions of Law ¶ 62 *et seq.* (Services PFFCL). (This issue is discussed in detail *infra*, section III.B.).[10]

Thus, the present record raises a new question: Have there have been changes in bargaining power between the Majors and Spotify in the interactive benchmark market such that the royalty rates in their agreements are consonant with the "effectively competitive" standard?

In order to address this new question, the Judges find it first necessary to consider the concept of "effective competition" in a context dictated by the present record, one that did not arise in *Web IV*. To put this analysis in proper economic context, it is helpful and, indeed, necessary, to begin by identifying the aspects of the "effective competition" standard that were addressed and determined in *Web IV*. In summary, those points are the following:

1. The Majors possess "complementary oligopoly power" in the actual (unregulated) interactive market

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[10] However, the Services dispute the assertion that all three Majors would be "Must Have" licensors in the hypothetical *noninteractive* market. Services PFFCL ¶ 195 *et seq.* That issue is discussed *infra*, section IV.C.2.b in the Judges' consideration of Pandora's "Label Suppression Experiments."

and in the hypothetical (unregulated) noninteractive market that "thwart[s] price competition and [is] inconsistent with an 'effectively competitive market' . . . ." *Web IV*, 81 FR at 26335.

2. Because there are a "mind-boggling" number of markets with various competitive characteristics, there exists a range of rates that may satisfy the "effectively competitive" standard—between the statutorily-created *de facto* zero rate for terrestrial sound recordings and the complementary oligopoly rate generated by the Majors' power as complementary oligopolists—each of which can be seen as a "bookend" for the range of potential rates. *Web IV*, 81 FR at 26334.[11]

3. The "essence of a competitive standard is that it suggests a continuum and differences in degree rather than in kind," which dovetails with the Judges' statutory charge to "weigh competitive information" in order to "decide whether the rates proposed adequately provide for an effective level of competition." *Web IV*, 81 FR at 26334.[12]

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[11] To borrow from Tolstoy, perfectly competitive and perfectly monopolist markets all gravitate toward well-understood equilibria in the same way, but oligopolistic markets move in different ways.

[12] Economists have acknowledged the pragmatic nature of applying the "effective competition" standard. *See, e.g.*, Alfred E. Kahn, *Antitrust Policy*, 67 Harv. L. Rev., 28, 35, (1953) ("[T]here exists no generally accepted economic yardstick appropriate to . . . determine what degree [of monopoly power] is compatible with [effective] competition."); J. Markham, *An Alternative Approach to the Concept of Workable Competition* 349, 361 (1950) (The concepts of "market competition are essentially pragmatic").

4. When the hearing record provides *actual evidence* allowing the Judges to determine whether a rate is effectively competitive, that evidence and the adjudicatory process vitiate the theoretical absence of an *a priori* "bright line" to distinguish effectively competitive and noncompetitive rates. *Web IV*. 81 FR at 26343.

In *Web IV*, the evidence demonstrated only one potential method for the amelioration of the ability of the Majors, as complementary oligopolists, to set noncompetitive rates. Specifically, Pandora and iHeart introduced evidence of agreements with Merlin and Warner, respectively, that incorporated "steering" into those agreements. "Steering" in this context means the presence of contract provisions by which a licensee will increase the number of plays of the counterparty record company above its historic market share, in exchange for the record company's agreement to accept a lower royalty rate than other record companies. *Web IV*, 81 FR at 2366 ("The Judges find that steering in the hypothetical noninteractive market would serve to mitigate the effect of complementary oligopoly . . . and therefore move the market toward effective, or workable, competition" together with "the ever-present 'threat' that competing [licensors] will undercut each other in order to [license] more . . . .").

But *Web IV* does not consider in detail whether evidence of any *other economic factors* could also serve to offset or ameliorate the complementary oligopoly power present on the licensor/record company supply-side of the market. And further, the Judges never intimated—let alone determined—that steering was the *sole* method by which the complementary

oligopoly power on the licensor side could be ameliorated.[13] Indeed, the *Web IV* Determination clearly explains that the steering adjustment is not a *sui generis* device for adapting a benchmark rate, but rather "is of a class with any other adjustments necessary to harmonize the benchmark rate with the statutory requisites." *Web IV*, 81 FR at 26368.[14]

Web IV also must be understood as limited by the fact that the parties implicitly agreed (given the facts of that case) to apply a particular conception of "competition"—"price competition." In fact, although the parties and the Judges discussed extensively the meaning of "*effective* competition," they intentionally

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[13] In fact, *Web IV* makes clear that the Judges found the injection of steering into the market (actual or hypothetical) could be "*sufficient*" to ameliorate the anticompetitive impact of complementary oligopoly power—not that an injection of steering was necessary to do so. *See Web IV*, 81 FR at 26367–68; *see also id.* at 26369 (Professor Shapiro noting that steering is only "an example of price competition at work.").

[14] In *Web IV*, the Judges did touch upon the potential for countervailing licensee power as a potential mitigating or offsetting factor. SoundExchange asserted that Pandora had significant (monopsony) market power in its own right in the noninteractive market that generated rates below effectively competitive rates in its benchmark agreement with Merlin. But the Judges rejected SoundExchange's argument, finding—in reliance on an analysis presented by Pandora's economic expert witness, Professor Shapiro—that "Pandora's share of the Merlin Labels' [overall] revenues is far short of the level that would be necessary for Pandora to have undue market power in its negotiations with Merlin." *Web IV*, 81 FR at 26371. Implicitly, the Judges there indicated that, had Pandora possessed sufficient market power, that fact may have weighed in the Judges' calculus in reducing the effective competition adjustment, thereby increasing the effectively competitive statutory rate.

did not provide a rigid definition for the concept of "competition." This absence is unsurprising because the only form of competition at issue in *Web IV* was price competition—a standard neoclassical variant. *Web IV*, 81 FR at 26366 ("The Judges find that steering in the hypothetical noninteractive market would serve to mitigate the effect of complementary oligopoly on the prices paid by the noninteractive services and therefore move the market toward effective, or workable, competition. Steering is synonymous with *price competition* in this market . . . .") (emphasis added). But the Judges did not have cause to examine in any detail whether, beyond price competition, it was appropriate to consider other dimensions of competition, of which there are several. *See generally* Donald J. Harris, *On the Classical Theory of Competition*, 12 Cambridge J. of Econ., 139, 141, 146 (1988) (contrasting the "relative tranquility [of] the *neoclassical conception of competition . . .* formalized in a vast array of modern textbooks" with "a structure of oligopolistic firms *in which price competition is simply one component . . .* of a broader process of strategic rivalry among leading firms [and] other possible behavioural rules on price formation.") (emphasis added).

So, although the importance of effective price competition cannot be disputed, the Judges must consider whether, if such competition is lacking, other forms of market behavior either substitute for price competition or otherwise generate prices consonant with those that would be established through price competition in an effectively competitive market. In fact, as discussed below, the Judges have engaged in such analyses in prior cases.

The first case in which the Judges considered other economic dimensions beyond price competition was the *SDARS III* proceeding. In that case, the Judges again addressed the complementary oligopoly power of the Majors, albeit in connection with a different and now superseded statutory rate-setting standard. *SDARS III*, 83 FR at 65320 n.82.[15] There, the Judges noted that the licensor-side complementary oligopoly power could be ameliorated by the "*countervailing power*" of a licensee (Sirius XM in that case) that possessed a large share of the downstream market at issue (a monopoly share of the satellite radio market in that case). *SDARS III*, 83 FR at 65238.[16]

And, in the next rate-setting case, *Phonorecords III*, the Judges (in the majority *and* in the dissent) found that the licensors—owners of the copyrights for musical works—possessed complementary oligopoly power. The majority Determination found that this noncompetitive effect could be ameliorated—not only by steering or another form of price competition—but by the application of economic game theoretic modeling (specifically, the Shapley Value approach) that economic experts testified would have such an

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[15] The superseded statutory standard was set forth in 17 U.S.C. 801(b)(1). Despite the different standard, the Judges applied the same hypothetical market approach in *SDARS III*, before considering whether that hypothetical market rate should be adjusted to account for factors set forth in the now superseded statute. *SDARS III*, 83 FR. at 65237, 65253.

[16] That countervailing power, the Judges noted, existed if the market in which the licensee operated is not subject to meaningful potential substitution from listening via another form of music delivery. *Id.*

effect. *Phonorecords III*, 84 FR at 1947, 1950 ("The Judges look to the Shapley Analyses . . . as one means of deriving a reasonable royalty rate (or range of reasonable royalty rates) . . . . The Judges . . . find that the Shapley Analysis . . . eliminates the 'holdout' problem that would otherwise cause a rate to be unreasonable, in that it would fail to reflect effective (or workable) competition.").[17]

The *Phonorecords III Dissent*, although certainly not discounting the value of the Shapley Value approach, asserted instead that the complementary oligopoly power could be better ameliorated by adopting the benchmark proposed by the interactive streaming service-licensees, which was essentially the *Phonorecords II* rate structure, *i.e.*, a benchmark based on the rates in effect in the prior rate period that had been adopted in a settlement between industrywide trade associations, the NMPA and DiMA, representing licensors and licensees, respectively. *Phonorecords III*, 84 FR at 1993 (dissent) ("settlement agreements tend to eliminate complementary oligopoly inefficiencies, and provide guidance as to an effectively competitive rate."). Thus, once again, a Copyright Royalty Judge applied a factor—countervailing power—other than the presence of price competition, to determine an effectively competitive rate.

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[17] Although the D.C. Circuit vacated and remanded the *Phonorecord III Determination*, the general point stands: The Judges consider factors and methods other than price competition (via steering or otherwise) to determine whether a rate is "effectively competitive" and, more specifically, whether such other factors or methods counterbalance the rate inflation caused by the complementary oligopoly effect.

In this regard, it is important to note that the concepts of "effective competition" and "countervailing power" are not mutually exclusive, but are better understood as *complementary*. Professor John Kenneth Galbraith, who developed the concept of "countervailing power," defined it as follows:

> [W]ith the widespread disappearance of competition in its classic form . . . it was easy to suppose that since competition had disappeared, all effective restraint on private power had disappeared . . . . [However,] [i]n fact, new restraints on private power did appear to replace competition . . . . [T]hey appeared not on the same side of the market but on the opposite side, not with competitors but with customers or suppliers . . . *countervailing power*.

John Kenneth Galbraith, American Capitalism: The Concept of Countervailing Power 111 (1952).

In *Web IV*, the Judges recognized the economist J.M. Clark as the individual who introduced into microeconomics analysis the concept of effective competition, which he originally described as "workable competition." *Web IV*, 81 FR at 26341 n.96 (citing J. M. Clark, T*oward a Concept of Workable Competition*, 30 Am. Econ. Rev. 241 (1940)). Two decades hence, Professor Clark wrote a book that served, in his words, as an "elaboration of [the] line of inquiry" dating from his seminal 1940 article. John Maurice Clark, Competition as a Dynamic Process at *ix* (1961). In that volume, Professor Clark took note of the compatibility between the concept of "countervailing power" and his own concept of

workable/effective competition. Clark, supra at 5 (noting approvingly Professor Galbraith's view that, if competition is found wanting, "countervailing power" serves as a "rough substitute" that can "deprive monopoly of its arbitrary power . . . .").[18]

Likewise, in *American Capitalism*, Professor Galbraith expressly acknowledges the interplay between Professor Clark's conception of effective/workable competition and the principle of "countervailing power":

There remains the possibility that within the structure of the market shared by a few firms there are practical restraints on economic power—that there is an attenuated but still *workable competition which minimizes the scope for exercise of private market power* . . . . This line of argument has emphasized results . . . . The notion of workable competition takes cognizance of the . . . point that over-all consequences, while in theory are deplorable, are often in real life quite agreeable . . . . [W]hat is unworkable in principle becomes workable in practice . . . because the a*ctive restraint [on the exercise of market power] is provided not by competitors but from the other side of the market by strong buyers.*

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[18] In his 1961 treatise, Professor Clark expressly "shift[s] . . . from 'workable' to 'effective competition'", because "[t]he theory of effective competition is dynamic theory," going beyond "the analysis of static equilibrium" to "bring[] in *the . . . interplay between aggressive and defensive forms of competition* . . . ." *Id.* at *ix.* (emphasis added).

Galbraith, *supra* at 57-58, 112 (emphasis added); *see also id.* 158 n.912 (noting the "originality of Professor J.M. Clark" and crediting his 1940 article for the development of the concept of workable competition).[19]

In sum, the inclusion of the concepts of price competition and countervailing power into microeconomic analysis—as already applied by the Judges in several determinations—makes it clear

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[19] Despite Professor Galbraith's well-known progressive leanings, his concept of "countervailing power" as a means for more competitively dividing profits between input oligopolists and oligopsonists has been well-received by ardent free market economists as well, including a Nobel Prize winner. *See*, *e.g.*, George J. Stigler, *The Economist Plays with Blocs*, 44 Am. Econ. Rev., no.2, 7, 9, 13–14 (1954) (papers and proceedings) (agreeing that Galbraith's concept of "countervailing power" describes a context in which "a monopsonist or a set of oligopsonists arises and shares the gains of a previously unhampered monopolist or set of oligopolists," because "[i]t is true that as countervailers they might share monopoly profits . . . ."). However, Professor Stigler disagreed vehemently with the notion that the bilateral oligopolies formed through the exercise of countervailing power "reduce prices to consumers" or "should in general eliminate, and not merely redistribute, monopoly gains." *Id.* at 9, 13. But such downstream effects are irrelevant to the Judges' statutory task of setting an effectively competitive royalty rate in the upstream market. Moreover, Professor Stigler cautioned that the presence of "countervailing power" in a market will not necessarily "place groups on a basis of *equality* with respect to one another . . . ." *Id.* at 14 (emphasis added). Accordingly, even if Spotify has acquired some additional bargaining power, *that does not mean that its bargaining power is equal* to the complementary oligopoly of the Majors. That is, any new bargaining power enjoyed by Spotify could mitigate the Majors' complementary oligopoly power but not necessarily offset it in full.

that the Judges must consider record evidence regarding both of these economic concepts in order to fulfill their statutory mandate to establish rates that would be set between willing sellers and willing buyers in the marketplace. The Judges discuss and apply both of these economic concepts below.

B. Evaluation of Arguments Concerning Effective Competition

1. SoundExchange's Claim That Spotify has Downstream Pricing Power That Mitigates or Offsets the Majors' Complementary Oligopoly Power

SoundExchange asserts several bases for its claim that the complementary oligopoly power of the Majors has been mitigated in part, or offset in full, by the increase in Spotify's market power, which has manifested in the latter's ability to [REDACTED]. More particularly, in the agreements between Spotify and the Majors that immediately preceded their 2017 agreements,[20] the contract rate for [REDACTED]. In all three subsequent 2017 agreements between Spotify and the Majors, [REDACTED]. Trial Ex. 5609 ¶ 24 (WDT of Aaron Harrison) (Harrison WDT); Trial Ex. 5611 ¶ 10 (WDT of Reni Adadevoh) (Adadevoh WDT); Trial Ex. 5613 ¶ 31 (WDT of Mark Piibe) (Piibe WDT) ([REDACTED]).

SoundExchange identifies the following three interrelated sources for Spotify's alleged increase in pricing power in 2017 that generated this [REDACTED]:

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[20] The 2017 agreements were the most recent agreements available for inclusion in the record in this Web V proceeding.

1. Spotify now generates [REDACTED]. SX PFFCL ¶ 306 *et seq*.

2. Spotify can now [REDACTED]. SX PFFCL ¶ 311 *et seq*.

3. Spotify now has the ability to steer a significant number of plays on Spotify-curated playlists. SX PFFCL ¶ 346 *et seq*.

The Judges examine each of these assertions seriatim below.

a. Has Spotify's Increased Share of each Major's Revenue provided Spotify with Leverage to Obtain [REDACTED]?

SoundExchange asserts that—between 2014 and 2017—there has been explosive growth in the subscription on-demand format. More specifically, SoundExchange notes that, whereas in 2013, U.S. retail revenue from on-demand services was approximately $0.9 billion, by 2016, this revenue total had increased to approximately $2.8 billion and, by 2017, to approximately $4.2 billion. This growth has continued, with 2018 retail revenue from on-demand services greater than $5.4 billion, and, by 2019, reaching $6.8 billion. *See* Trial Ex. 5604 app. 2 (WDT of Catherine Tucker) (Tucker WDT); Trial Ex. 4115 at 3.[21]

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[21] The Services do not dispute the fact of significant growth in the subscription on-demand market over this period, but they assert that Professor Tucker's data appear to include ad-supported on-demand revenue as well as subscription on-demand revenue. *Compare* SX PFFCL ¶ 306, *with* Tucker WDT app. 2. This specific potential discrepancy does not alter the

Accordingly, SoundExchange maintains that the Majors have now become increasingly reliant on income generated by all the interactive services. Because of this changed circumstance, SoundExchange avers that the balance of pricing power as between the Majors and Spotify has changed, with the latter now in a position to bargain more aggressively for favorable rates and terms. *See* Trial Ex. 5602 ¶¶ 119-131 (WDT of Jon Orszag) (Orszag WDT).

The Services assert that this is merely a re-tread of the SoundExchange argument the Judges rejected in *SDARS III*. Although the Services dispute neither the growth in music industry revenue nor the growth of interactive streaming industry revenue from 2014 through 2017,[22] they assert that the revenue data does not support Sound Exchange's argument that *a single service's growth—here, Spotify's* revenue growth—supports the assertion that the Majors' complementary oligopoly power has been compromised. More specifically, the Services maintain that the important metric is *the percentage of the music industry's total revenue* generated by Spotify. In this regard, the Services take note that Spotify accounted for [REDACTED] [REDACTED] of the Majors' total U.S. revenue in 2017, and only [REDACTED] in 2018. Trial Ex. 1105 ¶ 64 (AWRT of Steven Peterson) (Peterson WRT); Trial Ex. 4107 at

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substance of the parties' dispute nor the Judges' analysis of this issue.

[22] "The Services agree that streaming accounts for a larger percentage of the overall revenue for recorded music, however the industry's total revenue has increased substantially since 2013." Services RPFFCL ¶ 308.

10 & n.17 (WRT of Carl Shapiro) (Shapiro WRT). Additionally, the Services' economic expert witnesses reject the idea that the Majors' complementary oligopoly power vis-à-vis Spotify has been compromised because of the latter's contribution to the Majors' revenue stream. These witnesses further aver that, because Spotify and its on-demand service competitors offer essentially the same service at the same downstream subscription price, if one Major's repertoire was unavailable on Spotify, subscribers would turn to its competitors, thus abandoning Spotify in the process. 8/25/20 Tr. 3713-14 (Peterson); 8/19/20 Tr. 2859 (Shapiro).

The Judges agree with the Services reasoning and conclusion, finding that the increase in revenues from the *entire interactive services sector* cannot support SoundExchange's argument that *Spotify*'s pricing power vis-à-vis the Majors has strengthened.[23] The Judges find that Spotify's *relative pricing power* must be evaluated in the context of Spotify's *particular economic position*. The Judges find nothing in the record to demonstrate that Spotify provides an on-demand service that is so unique to listeners as to imbue it with greater bargaining leverage.[24] More

[23] The Services are correct in noting that the Judges rejected the same argument when asserted by SoundExchange in a prior proceeding. *See SDARS III*, 83 FR at 65238, 65245. However, each proceeding considers the facts as presented in the record of that pending proceeding, so the Judges are not constrained here by the factual record as presented in *SDARS III*.

[24] In the language of economics, Spotify and the other on-demand services—such as Apple Music, Google, Amazon, and others with a smaller market footprint—may provide somewhat *differentiated* on-demand experiences *inter se*, but nothing in the record suggests that whatever differences exist make them

particularly, even acknowledging that, *ceteris paribus*, a Major would prefer to avoid the loss of Spotify's [REDACTED] to overall music revenues, the substitutability of the on-demand subscription services indicates to the Judges that the potential loss of *Spotify's* royalty payments to a Major would be

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anything other than mere "monopolistic competitors," rather than buyers/licensees with enhanced pricing power. *See generally* Robert S. Pindyck & Daniel L. Rubinfeld, Microeconomics 451 (8th ed. 2012) (In a "monopolistically competitive market . . . [f]irms compete by selling differentiated products that are highly substitutable for one another. . . . [T]he cross-price elasticities of demand are large but not infinite . . . [t]here is free entry and exit . . . [and] [i]n long-run equilibrium . . . the firm earns zero profit even though it has monopoly power [over its own brand]."). Further, the essential products offered by interactive services, as SoundExchange's industry witnesses all tout, are their sound recording repertoires, which makes a listener's selection of any particular streaming service of secondary concern compared to the ability to access all the music. *See* Harrison WDT ¶ 5 (identifying, as examples, 23 Universal artists who are "some of the best known and most popular recording artists in the world"); Piibe WDT ¶¶ 6–7 (listing, as examples, Sony's own 23 artists who are "superstars" and "legendary recording artists"); Adadevoh WDT ¶ 3 (listing, as examples, 10 Warner artists who are among "today's most popular artists, within a roster of "some of the most celebrated artists in recorded music history"). These artists and their recordings are not available only on Spotify.

The chronic lack of profits and essentially identical downstream subscription prices persuade the Judges that the Services are correct that the on-demand streaming services lack of market power downstream and an absence of pricing power upstream. Further, the meteoric growth of Apple Music in the streaming market and the recent strong growth of Amazon and Google in the on-demand sector, show that the on-demand streaming market has characteristics of a competitive market. *See* Orszag WDT tbl.4.

quickly offset in the form of increased royalties from Spotify's *competitors*, as subscribers substituted alternative on-demand subscription services that offered the music licensed by all the record companies. Thus, there is no basis for the Judges to conclude that a Major would be willing to capitulate to Spotify by [REDACTED].

To make this argument from a different perspective, SoundExchange also looks at Spotify's U.S. revenue through the narrower prism of total U.S. subscription interactive revenues—noting that Spotify was responsible in 2016 and 2017 for a more considerable portion—almost [REDACTED]% of such domestic royalties. Orszag WDT ¶ 124, tbl.11. However, the Services aver that this [REDACTED]% figure needs to be placed in an appropriate temporal context. Specifically, they note that Spotify's share of U.S. gross subscription interactive revenues has actually fallen from 2015, when it was [REDACTED]% of the total, to 2018, when it accounted for [REDACTED]% of the total. *See* Orszag WDT ¶ 124, tbl.10.

Because the specific issue under consideration is the alleged *change* in Spotify's pricing power since the execution of the parties' 2013 agreements, the Judges find that the *dynamic* changes in subscription revenue shares during the relevant period is a more meaningful metric than the static [REDACTED]%-[REDACTED]% market share measure. Because Spotify's share of domestic revenues has diminished [REDACTED] since 2015—*according to Mr. Orszag's own written testimony*—there is no basis to support SoundExchange's claim that the Majors had become *more* dependent upon Spotify's revenue stream over

this period. Moreover, because the decrease in Spotify's share of domestic on-demand subscription revenue coincided with the rapid growth of Apple Music's entry into the market, these data further confirm the substitutability of interactive services among the listening public, further diminishing the Majors' dependence on any single interactive service.

Placing Spotify's royalty revenues in the context of two Majors' internal contract renewal discussions, SoundExchange relies on the testimony of two witnesses, for Sony and Warner respectively.[25] First, according to the Sony witness, the [REDACTED] 9/2/20 Tr. 5228 (Piibe); Trial Ex. 5467 at 1. Moreover, Sony believed that Spotify was [REDACTED]. 9/2/20 Tr. 5368 (Piibe).

Second, Warner also emphasized the impact of [REDACTED]. In its internal documents discussing negotiations with Spotify, Warner executives expressed the importance of [REDACTED], with one executive stating: "[REDACTED]" Trial Ex. 4025 at 1. However, the Services point out that, in the very same document, Warner executives were also emphasizing that [REDACTED] and that Warner [REDACTED] Trial Ex. 4025 at 1.[26]

Moreover, although the internal [REDACTED] deliberations summarized in Trial Ex. 4025 reference the [REDACTED], the recitation of that latter point is not economically relevant, let alone dispositive.

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[25] The Judges discuss the separate negotiations between Spotify and the three Majors in detail *infra*.

[26] As the Judges *discuss* in greater detail *infra*, the interest Warner (or either of the other Majors) had in [REDACTED] is the only economically credible rationale for [REDACTED].

Internal business documents that reflect information such as historical revenue or other accounting data but ignore crucial economic information regarding, for example, the fluidity of market shares, the elasticity of market demand, and the absence of barriers to entry, are not only lacking in economic relevancy, they obscure the identification of relevant economic evidence. *See* Geoffrey A. Manne & E. Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 Ariz. L. Rev. 654 (2005) (noting in the analogous area of antitrust law, "[r]eliance on accounting data, market characterizations, and statements of intent by economic actors threatens to undermine the economic foundations of antitrust jurisprudence, and thus the purpose of the antitrust laws."). This caution extends from comments made by negotiators in the trenches up to discussions in corporate boardrooms. *See William Inglis & Sons Baking Co. v. ITT Cont'l Baking Co.*, 668 F.2d 1014, 1028 (9th Cir. 1982) (discounting the probative value of "boardroom ruminations" in antitrust cases). In fact, Mr. Orszag is in agreement with regard to the primacy of economic testimonial analysis over such other evidence. 8/11/20 Tr. 1338 (Orszag) ("It's well understood in competition economics . . . that . . . economic analysis should play a dominant role" relative to the role of statements of the commercial actors and internal company documents.) (emphasis added.[27]

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[27] In *Web IV*, the Judges found that the existence of negotiations between Must Have record companies and interactive services

In sum, the Judges find that Spotify's share of the Majors' downstream revenue does not explain why [REDACTED].

b. Can Spotify [REDACTED]?

SoundExchange asserts that the Majors could not reasonably [REDACTED], because [REDACTED]. SX PFFCL p. 105 *et seq.* First, Sony's testifying witness, Mr. Piibe, explained that the [REDACTED]. 9/2/20 Tr. 5229-30 (Piibe). Further, according to a Warner analysis, [REDACTED]. Trial Ex. 5077. *See also* Harrison WDT ¶ 35 ("It would take time to [REDACTED] . . . ."). From this testimony and evidence, SoundExchange concludes that "[REDACTED] . . . ." SX PFFCL ¶ 317 (and record citation therein).

The Services emphasize in response that this argument again ignores the fundamental bargaining point: That because [REDACTED]. Services' Corrected Reply to SoundExchange's Proposed Findings of Fact and Conclusions of Law ¶ 311 (and record citations therein) (ServicesRPFFCL). To that end, the Services point to the testimony of a [REDACTED] witness, who said that [REDACTED]. 9/9/20 Tr. 5932 ([REDACTED]). *See also* 9/2/20 Tr.

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did not prove that the latter had pricing power, because expert economic testimony explained that even monopolists will negotiate in order to estimate their counterparties' willingness-to-pay. Thus, the Judges held: "[T]he mere existence of . . . negotiations is *uninformative* as to whether the rates negotiated between the interactive services and the Majors are competitive." *Web IV*, 81 FR at 26343. Thus, evidence of negotiations must be examined contextually—on a case-by-case basis—to ascertain whether that evidence in fact reflects an effectively competitive environment.

5424-25 ([REDACTED]) (noting that if [REDACTED]).

With regard to the distinction between short-run and long-run effects, Professor Shapiro contextualizes the issue in an economic manner. Shapiro WRT at 7 n.16 ("the economics of bargaining teaches that bargaining power depends on the long-run impact on both parties of failing to reach an agreement, with future impacts suitably discounted as are all cash flows."). That is, he considers the problem as a weighing of present discounted values to Spotify, on the one hand, and to a Major, on the other, over a one-year period,[28] of a license negotiation impasse that leaves Spotify without the Must Have Major and, reciprocally, leaves the Major without the Spotify platform. The Judges find his analysis highly persuasive, and thus quote it at some length below:

> [C]onsider as an example the negotiations between Spotify and Sony. Sony is "must-have" for Spotify (as Mr. Orszag concedes), so if Spotify fails to sign a license with Sony, Spotify's interactive service will decline, fail to be commercially viable, and be forced to close down. Unquestionably, that makes an impasse very costly for Spotify, so Sony has a great deal of

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[28] It was agreed that [REDACTED]. Peterson WRT ¶ 66; 9/3/20 Tr. 5928–30 ([REDACTED]); *see also* 8/11/20 Tr. 1293–94 (Orszag) ("obviously there's a longer-term effect that would occur that would be adverse to Spotify"); Leonard WRT ¶ 77 ("[A] label would have a greater ability to wait out the impasse, given that it would continue to receive royalties from other sources, whereas the service's entire subscription revenues would potentially be at risk . . . .").

bargaining power in its negotiations with Spotify.

Mr. Orszag['s] claim[ ] that Spotify has comparable pricing power comparable to that of a "must-have" service for Sony . . . does not withstand scrutiny. If Sony does not sign a license with Spotify, so Spotify is forced to stop offering Sony tracks, Sony will immediately suffer a loss of royalty income from Spotify . . . . According to Table 13 in the Orszag WDT, Sony received [REDACTED]% of its total revenue from Spotify in 2017.

Mr. Orszag provides no explanation of why Sony losing up to [REDACTED]% of its revenue from recorded music is comparable, in terms of impact and thus bargaining power, to Spotify having to shut down its service altogether. Moreover, the [REDACTED]% figure for Spotify's share of Sony's revenue in 2017 is far too high as a measure of the revenue that Sony would have lost, had Sony music no longer been available on Spotify. Crucially, the [REDACTED]% figure represents the *immediate* impact on Sony, before any Spotify subscribers respond to the absence of Sony music.

Quite soon, Sony's loss of income would be much smaller. As emphasized repeatedly by SoundExchange—indeed as a foundational pillar of its entire case here—a "must-have" record company bears a substantial opportunity cost of licensing to a music service because without its music listeners to that service will shift their listening time to other forms of music

listening. By definition, that implies that when Sony does not license to Spotify, Sony will gain substantial revenue from other licensees and other forms of listening. As a matter of arithmetic, that means that Sony would lose less than [REDACTED]% of its revenue.

As an illustrative example, suppose that Spotify would shut down after one year, due to its lack of Sony's "must-have" repertoire, and suppose that all of the former Spotify subscribers would replace their Spotify subscriptions with subscriptions to other interactive services that pay royalties comparable to those paid by Spotify. In that case, Sony would be made entirely whole after the first year. In that situation, Spotify would have very little pricing power in its negotiations with Sony, far less than Sony's power as a "must-have" record company.

Mr. Orszag and the label witnesses on which he relies emphasize the *short-term* cost to a record company of not licensing to Spotify. However, economic theory tells us that the correct measure of the cost to Sony of not licensing to Spotify in a bargaining context is the *present discounted value* of the revenue that Sony would lose in total. The present discounted value includes short-term *and* long-term effects, weighting them appropriately given the time value of money.

This is a critical point in understanding relative bargaining power in the upstream interactive services market. The underlying idea

is relatively simple and hopefully intuitive: When two parties are bargaining, their bargaining power does not just depend upon how costly an impasse would be for each of them over the first day or week, but rather upon how costly an impasse would be over time. Mr. Orszag's analysis is unreliable because he focuses excessively on the short-term cost to a major record company of not licensing to Spotify and fails to account for the long-term effects.

Shapiro WRT at 7-8 (emphasis added; footnotes omitted).

Applying an 8% annual discount factor—that Professor Shapiro found to be a reasonable cost of capital to use for generating present value—as well as other assumptions not challenged as unreasonable by SoundExchange—Professor Shapiro found that not licensing to Spotify would: (i) Cause Sony to lose only [REDACTED]% of the present discounted value of its royalty income; and (ii) by [REDACTED] contrast, cause Spotify to lose approximately 95% of the present discounted value of its revenue and profits. Shapiro WRT at 9. Accordingly, Professor Shapiro concludes that "[c]learly, in this situation Sony would be in the driver's seat in negotiating with Spotify." Shapiro WRT at 9.

The only rejoinder by SoundExchange, through Mr. Orszag, is that the record reflects a [REDACTED] than the weighting reflected in a present value approach that did not incorporate this [REDACTED]. However, the record is barren of any analysis [REDACTED] The Judges find this alternative not credible. Moreover, even if the Majors did

[REDACTED], they would surely recognize (and, indeed, do not dispute) that [REDACTED].

Indeed, the Services emphasize that the testimony of Majors' witnesses regarding the impact of [REDACTED] was speculative and lacked support—particularly as it related to [REDACTED]. *See* 9/2/20 Tr. 5388 (Piibe) ([REDACTED]); 9/3/20 Tr. 5731-32 (Harrison) (admitting that [REDACTED]).

Given the dearth of analysis in the record of the relative harms to Spotify and the Majors from a prolonged blackout, and the fact that such a consequence would spell Spotify's commercial demise, the Judges find that SoundExchange's assertion that [REDACTED], beggars belief.

The Services also seek to diminish the evidentiary value of Trial Ex. 5077, on which [REDACTED] relies. That document, the Services note, is a [REDACTED]. Moreover, the Services point out that this document [REDACTED]. Services RPFFCL ¶ 315 (and record citations therein).[29]

In sum, the Judges find that SoundExchange's claim that the effect on a Major of its loss of the Spotify platform (*i.e.*, going dark on Spotify) has altered the power dynamic between Spotify and the Must Have Majors to be incomplete at best, and almost certainly incorrect. In order to demonstrate that the power complementary oligopolists bring to

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[29] The Services also note that the reference to a [REDACTED] reflects a situation that arose in Mexico and that there is no evidence or testimony to support [REDACTED] implication that this foreign event is representative of what would occur in the United States. *See* Trial Ex. 5077; Services RPFFCL ¶ 317.

the market and thus to the bargaining table had been neutralized to any degree, [REDACTED] needed to do more than [REDACTED]. Because the context of this analysis is to ascertain relative negotiating power, SoundExchange needed to demonstrate that the economic impact to the Majors of going dark on Spotify would at least approximate the impact of such an event on Spotify. This SoundExchange decidedly did not do. Rather, the evidence is clear—and the economic logic of maximizing the present value of profits and minimizing the present value of losses is compelling—that a Major going dark on Spotify would work expeditiously to contain losses and entice Spotify subscribers to maximize their own self-interest by moving to an interactive service that continued to play that Major's music.

SoundExchange alternatively seeks to show that the Majors' bargaining power has been compromised vis-à-vis Spotify because Spotify [REDACTED]. SX PFFCL ¶¶ 318-327 (and record citations therein). In response, the Services note the absence of testimony from artists themselves regarding whether they might depart from a Major who failed to secure a license deal with Spotify. In fact, the Services point out that testimony upon which SoundExchange does rely—[REDACTED]—indicates [REDACTED] [REDACTED]." 9/2/20 Tr. 5426-27 (Jennifer Fowler). And, in terms of the legal and practicable ability of [REDACTED]. 9/9/20 Tr. 5952-54 (Sherwood); 9/3/20 Tr. 5738 (Harrison).

The Judges find compelling the absence of the testimony from any artists as to how they would react if the Major with which they had contracted lost the Spotify platform because of an impasse in licensing

negotiations. In the absence of such testimony, the Judges put particular weight on the testimony, cited above, from [REDACTED] indicating that [REDACTED].

SoundExchange also suggests that a Major would suffer several miscellaneous injuries if it reached an impasse with Spotify that resulted in that Major going dark on the Spotify platform. First, the Major would [REDACTED]. *See generally* Trial Ex. 5017; SX PFFCL ¶ 328 (and record citations therein). However, the Judges agree with the Services that a Major's ongoing ability to obtain data from other interactive services would reduce the impact of such a data loss, especially as erstwhile Spotify subscribers—unhappy with the loss of a Major's repertoire—migrated to other on-demand services. Moreover, even the prospect of a short-term data loss is quite low, given the futility of a Spotify strategy of actually forcing a Must Have to go dark.

Another damage which SoundExchange posits derives from the testimony of a Universal executive who was concerned that a [REDACTED] could [REDACTED] Harrison WDT ¶ 35; 9/3/20 Tr. 5724 (Harrison). The Judges find this testimony to constitute mere speculation, and meritless speculation at that. The Judges find it bordering on the absurd to contemplate that a licensing impasse between a single service and a single Major [REDACTED]. Other interactive services that are already competing vigorously in the market stand at the ready to acquire Spotify's subscribers and, given the low barriers to entry for streaming services, the concept of contestable competition means that a new

competitor could also enter and compete for a share of the market. *See* Shapiro WRT at 9.[30]

Continuing with its speculation regarding miscellaneous harm, SoundExchange argues that, upon a licensing impasse with a Major, Spotify's subscribers would not abandon it because (i) subscribers pay monthly or yearly for their subscriptions, (ii) Spotify delivers well-customized recommendations, (iii) subscribers have invested time in building their music collection, (iv) subscribers who purchased Spotify as a part of a bundle may be less likely to cancel their subscription, and (v) subscribers might anticipate a quick resolution to the licensing dispute. SX PFFCL ¶¶ 339-343 (and record citations therein). The Judges agree though with the Services that these assertions are little more than rank speculations. As the Services point out, because on-demand plays account for [REDACTED]% of Spotify listening hours, the idea that subscribers would

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[30] Further, Spotify's competitors (as well as aggrieved artists and social and mass media) would likely spread the word publicly regarding the music missing from Spotify in the event of a blackout of a Major, hastening the transition of Spotify customers to other interactive services. Ironically, as discussed *infra*, this is the very sort of accelerating demise that, according to SoundExchange (in convincingly criticizing Pandora's Label Suppression Experiments), would befall a noninteractive service that attempted to black-out a Major. If noninteractive ad-supported listeners—*who pay nothing out-of-pocket to listen to music curated by the service*—would switch away from the service if they became aware of the blackout of a Major, then, *a fortiori*, Spotify's interactive subscribers—*who do pay out-of-pocket to listen to music they demand*—would certainly switch away from Spotify if it likewise blacked-out a Major's entire repertoire.

tolerate the loss of any Majors' repertoire because of behavioral impediments is not only unexplored, it assumes a remarkable irrationality among subscribers with regard to their own tastes and preferences. Further, SoundExchange's assertion of this speculative *status quo outcome* is *180 degrees* from its immediately preceding speculative assertion that *the entire subscription concept and market would collapse* if a single Major went dark on Spotify. While there may be a *rational* argument why either outcome could occur, neither extreme is reasonable or based on record evidence. Moreover, it is not rational to posit that such a licensing disagreement would cause the industry both to remain in stasis and to disappear. Indeed, by making both arguments simultaneously without evidentiary support, SoundExchange seems willing to engage in the evidentiary equivalent of throwing spaghetti against the wall to see if any of it sticks.[31]

In sum, the Judges find insufficient evidence to support SoundExchange's argument that a Major going dark on Spotify would lead to a "parade of horribles" befalling that Major so substantial as to

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[31] SoundExchange also posits that whatever injury would befall the domestic industry would also injure the global music market. SX PFFCL¶¶ 337–338. However, this assertion is likewise devoid of evidentiary support, as there is no adequate record support that foreign agreements are affected by the existence, *vel non*, of licensing agreements in U.S. interactive markets. *See* Services RPFFCL ¶ 338. As a general rule, the Judges have eschewed reliance on developments in foreign markets when the proofs are insufficient to demonstrate a posited connection between foreign and U.S. market that is relevant to these proceedings. *SDARS II*, 78 FR at 23058 (and precedent cited therein).

imbue in Spotify a market power sufficient to [REDACTED].

    c. Does Spotify's technological ability to steer plays on spotify-curated playlists provide it with pricing power sufficient to mitigate or offset the Majors' complementary oligopoly power?

The bulk of Spotify's argument in support of its claim that Spotify has a pricing power commensurate with the overall bargaining power of the Majors is based on Spotify's *technological* ability to steer plays of sound recordings toward or against a record company. This emphasis on steering is unsurprising, because in *Web IV* the Judges relied on evidence of the *noninteractive* services' ability to steer, and their credible threats to do so, as ameliorating the anticompetitive effect of the Majors' complementary oligopoly.

More particularly, SoundExchange asserts that Spotify developed a substantial ability to influence listening on its platform subsequent to the execution of its 2013 Agreements with the Majors. *See*, *e.g.*, Orszag WDT ¶¶ 138-151; 9/2/20 Tr. 5414 (Fowler); 9/2/20 Tr. 5197-98 (Piibe). Spotify's purported power to influence market share, according to SoundExchange, flowed mainly from its alleged ability to influence market share through economically strategic placement of sound recordings within Spotify-controlled playlists. Orszag WDT ¶¶ 141-146.[32] By way of background, in July 2015,

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[32] SoundExchange further notes that [REDACTED] has [REDACTED]. SX PFFCL ¶¶ 370–71 (and record citations therein); Orszag WDT ¶ 148. Less significantly, SoundExchange

Spotify launched playlists personalized for its subscribers, including Discovery Weekly, to assist subscribers in identifying new music tailored to their listening preferences. Orszag WDT ¶ 62. Contemporaneously, Spotify began to prioritize those playlists and additional Spotify-curated playlists, for various genres, by giving them prominent and superior locations in its search and display features. Trial Ex. 5619 ¶¶ 15, 17 (CWDT of Jennifer Fowler). *See also* SX PFFCL ¶¶ 359-360 (and record citations therein). From 2015 to 2017, these Spotify-curated playlists increased as a share of listening on Spotify from less than 20% to approximately 31% of Spotify platform listening. Orszag WDT ¶ 142.

According to SoundExchange, the economic value of these Spotify-curated playlists extends beyond a subscriber's initial accessing of songs on the playlist. Listeners also can add songs from those playlists onto their own playlists and into their own music collections, and, having positively experienced music curated by Spotify, they are more likely to search for music from the same artists, and thus from the same record company. SX PFFCL ¶¶ 363-364, 366 (and record citations therein).

Consequently, SoundExchange avers that record companies consider playlists to be [REDACTED], and thus they devote considerable effort and resources to the development and implementation of playlist strategies. SX PFFCL¶¶ 365, 367 (and record citations therein). Further, the [REDACTED]. *See* Trial Exs. 5070-5072; Harrison WDT ¶¶ 49, 52.

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avers that Spotify can also leverage its [REDACTED]. Orszag WDT ¶147.

SoundExchange further relies on the testimony of Michael Sherwood, a Warner Senior Vice President responsible for overseeing its Spotify and other streaming service accounts, Trial Ex. 5620 ¶¶ 1-2 (WDT of Mike Sherwood), who testifies that [REDACTED]. 9/9/20 Tr. 5921-22 (Sherwood).

Moreover, SoundExchange emphasizes that Pandora's own economic expert witness, Professor Shapiro, acknowledges that, by the time Spotify and the Majors were negotiating their 2017 Agreements, Spotify already possessed the ability to influence listening and record company market share through its selection and placement of songs on Spotify-curated playlists. 8/19/20 Tr. 2868 (Shapiro) ("Spotify has some ability to influence listening through a service-generated playlist. [Mr. Orszag] emphasizes that. I agree that they definitely have that ability.").

SoundExchange relies yet again on Professor Shapiro's testimony to argue that, when a streaming service such as Spotify has the technical ability to steer, its credible threat to steer against a Major during contract negotiations can constitute sufficient leverage by which Spotify can negotiate better terms for itself. *See* 8/20/20 Tr. 3067-68 (Shapiro). SoundExchange's expert is in full agreement, testifying that in negotiations related to steering, as in negotiations generally, "it is often the threat that can influence outcomes . . . *as long as the threat is credible.*" 8/11/20 Tr. 1255 (Orszag) (emphasis added); *see also id.* at 1211-13, 1347-48.

Continuing its attempt to build its steering argument on the back of Professor Shapiro's own testimony, SoundExchange points out that he

admitted that a steering threat could be implicit as well as explicit. 8/20/20 Tr. 3066-67 (Shapiro). Moreover, the evidence of [REDACTED], might be seen, Professor Shapiro recognizes, [REDACTED]. 8/20/20 Tr. 3052 (Shapiro). For these reasons, SoundExchange emphasizes, in *Web IV* Professor Shapiro testified that "if the services have substantial ability to steer" then the market can be "workably competitive" notwithstanding that each Major remains a Must Have. *See* 8/20/20 Tr. 3036 (Shapiro).

SoundExchange does recognize that, for Spotify to be able to transform its *technological* ability to engage in editorial steering into [REDACTED], its threats must be *credible* to a Major, so that actual steering is neither needed nor implemented. SX PFFCL ¶ 354 (citing Orszag WDT ¶ 149). On this score, Professor Shapiro likewise is in full agreement. He testifies that steering threats are "depend[ent] on the *credibility* of these threats" as well as the "fallback" positions of the parties in the event the threat of steering leads to a failure of the parties to enter into a licensing agreement. 8/20/20 Tr. 3053 (emphasis added).

The Services strongly disagree with SoundExchange's steering argument. First, they minimize the economic importance of playlist listening—where steering might take place—notwithstanding its recent growth. In particular, they criticize Mr. Orszag for trumpeting that 31% of all Spotify listening is to Spotify-curated playlists, when this figure obviously means that approximately 69% of all listening remains on-demand in nature and thus *outside of Spotify's curatorial gatekeeping capacity*. Thus, the Services argue, the defining feature of Spotify (and other interactive services) remains the

offering to a subscriber of access to a virtually complete repertoire of songs for on-demand listening. Services RPFFCL ¶ 358 (and record citations therein). Google's economic expert, Dr. Leonard, takes note of a behavioral study of Spotify users [REDACTED] *See* Trial Ex. 2122 at 8. Dr. Leonard takes from the 69%:31% split referenced above and the [REDACTED] that "[a] user's ability to play any song on demand remains a defining characteristic of interactive services and a driver of user demand for these services." Trial Ex. 2160 ¶ 73 (CWRT of Gregory Leonard) (Leonard WRT).

Further, on a fundamental level, the Services assert that SoundExchange misapprehends the concept of steering, untethering the concept from its economic significance. The relevant form of "steering" for purposes of this proceeding, the Services maintain, is one that generates price competition among the Majors. Services PFFCL ¶ 64 (citing *Web IV*, 81 FR at 26343 ("[s]teering is synonymous with price competition in this market") and *SoundExchange*, 904 F.3d at 52 (affirming the Judges' decision that "the likely effect of steering in the music industry would be to promote price competition")).

The Services distinguish *Web IV* in this regard by emphasizing that the Judges in that case had relied on two agreements that contained *explicit* steering provisions designed to generate lower royalty rates in exchange for additional plays—what the Services characterize as the essence of steering. First, the Services point to the agreement between Pandora and Merlin for Pandora's noninteractive service, which provided that "the [REDACTED]" as set out in the agreement. *Web IV*, 81 FR at 26356. Second, the

Services refer to the *Web IV* Judges' description in that determination of an "iHeart/Warner Agreement [that] incorporates the same economic steering logic as the Pandora/Merlin Agreement." *Id.* at 26375.

But, in the present case, the Services aver that the Majors had [REDACTED]. In fact, the Services maintain, Mr. Orszag concedes this point, testifying in response to a question from the Judges that [REDACTED]." 8/12/20 Tr. 1536 (Orszag); *see also id.* at 1711 (Orszag) ("[REDACTED]."); Shapiro WRT at 16 (summarizing lack of evidence in Orszag WDT and noting "when Mr. Orszag discusses how the major record companies have responded to the growing role of service-generated playlists, he does *not* claim they have reduced their royalty rates to encourage increased plays of their material"). In this regard, Google's economic expert witness, Dr. Peterson, noted that [REDACTED]. Peterson WRT ¶ 74.

The Services also point to the hearing testimony of [REDACTED], who acknowledged that [REDACTED]. Specifically, they note that: (1) [REDACTED] 9/2/20 Tr. 5371-72 ([REDACTED]) (emphasis added); (2) [REDACTED]." 9/3/20 Tr. 5698 ([REDACTED]) (emphasis added); and (3) [REDACTED] 9/3/20 Tr. 5531-32, 5480-81 ([REDACTED]) (emphasis added); *see also* Trial Ex. 4014 at 3 ("[REDACTED].").

Accordingly, the Services maintain that [REDACTED] present no evidence or testimony that [REDACTED]. *See* 9/02/20 Tr. 5435 (Fowler); 9/09/20 Tr. 5949-50 (Sherwood). Accordingly, the Services note that, [REDACTED], Mr. Orszag was compelled to concede that competition for playlist slotting is not

based on royalty rate discounts (or side payments). 8/11/20 Tr. 1313 (Orszag). The Services maintain that this testimony is powerful evidence "undermining [the] theory that playlist competition is an outgrowth of steering-based price competition." Services RPFFCL ¶ 359. In fact, the Services note, [REDACTED]. *See* Services PFFCL ¶ 66 ([REDACTED]) (and record citations therein).

The Services also take issue with Spotify's claim that the 31% of listening that occurs on Spotify-curated playlists is entirely subject to Spotify's steering capabilities. Specifically, the Services note that 17 percentage points of that listening (more than half of the 31%) occurs on algorithmically-curated playlists that are personalized for each user based on his or her listening behavior and thus outside Spotify's control." *See* Orszag WDT ¶ 61. Moreover, no SoundExchange witness provided any evidence that Spotify exerts any price-based influence over this algorithm (or over the autoplay algorithm), such as in the Pandora/Merlin agreement relied upon by the Judges in *Web IV*. *See* 9/2/20 Tr. 5406 (J. Fowler); 8/11/20 Tr. 1316 (Orszag).

The Services also assert that SoundExchange is exaggerating the importance of playlists within Spotify's entire streaming platform. It notes [REDACTED] indicating that "[REDACTED]" Trial Ex. 2074. In the same vein, the Services take note of the testimony of a [REDACTED], who acknowledged that, for [REDACTED] 9/2/20 Tr. 5432-33, 5443 ([REDACTED]). Furthermore, the Services emphasize that SoundExchange relies essentially on supposition that playlist listening drives listeners' subsequent on-demand streaming decisions, noting

the absence of any detailed studies that would confirm this hypothesis. Services RPFFCL ¶¶ 365-366 (and record citations therein).

The Services further note that, in the [REDACTED]. 9/2/20 5370-71 (Piibe); 9/3/20 Tr. 5537-39 (Adadevoh).

According to the Services, [REDACTED]. Essentially, according to the Services, [REDACTED]t. *See* Services PFFCL ¶¶ 151-156 (and record citations therein).

To make clear the scope of the relevant [REDACTED], the Services rely on the exact language of the 2017 agreements between the Majors and Spotify. The Services assert that this contract language, set forth below, [REDACTED], thus disposing of the very notion that [REDACTED]:

The Sony-Spotify Agreement

[REDACTED]

Trial Ex. 5011 at 36 (Sony-Spotify 2017 Agreement); *see also* Trial Ex. 5074 at 22 ([REDACTED] in Sony-Spotify immediately prior 2013 Agreement) (emphasis added).

The Universal-Spotify Agreement

[REDACTED]

Trial Ex. 5037 at 45, 96 (Universal- Spotify 2017 Agreement); *see also* Trial Ex. 2062 at 38 ([REDACTED] in Universal-Spotify 2013 Agreement).

The Warner-Spotify Agreement

[REDACTED]

Trial Ex. 5020 at 20, 36 (Warner- Spotify 2013 Agreement).[33]

The Services note a consensus between SoundExchange and Services' expert witnesses that [REDACTED]. *See, e.g.,* 8/12/20 Tr. 1709 (Orszag); Leonard WRT ¶ 66. More particularly, they point to Dr. Leonard's testimony that [REDACTED]. Leonard WRT ¶¶ 60–63 (reviewing [REDACTED] provisions in the Spotify agreements); *see also* 8/25/ 20 Tr. 3716–17 (Peterson); *see also* Peterson WRT ¶¶ 69–70 (noting the [REDACTED]); 8/12/20 Tr. 1699–1701, 1704 (Orszag) (acknowledging that [REDACTED]).

SoundExchange maintains, though, that these [REDACTED] have not been sufficient to [REDACTED], as discussed *supra*). Specifically, SoundExchange argues:

1. [REDACTED]. *See, e.g.,* 9/3/20 Tr. 5702 (Harrison). SoundExchange notes that [REDACTED] construed the [REDACTED]. *See* Trial Exs. 4031 at 37 ([REDACTED]) & 5020 at 20 ([REDACTED]).

2. A service that curates its own playlist, such as Spotify, could [REDACTED]. *See* 9/3/2020 Tr. 5700–01 (Harrison) (discussing the Spotify- Universal agreement).

3. There are significant [REDACTED], including the Majors' [REDACTED]. Orszag WDT ¶ 150 ("[REDACTED]."). And, even if a record company

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[33] [REDACTED]. *See* Trial Ex. 5038 at 24 ("[REDACTED]"). *See also* 9/3/20 Tr. 5549–51, 5557–61 (Adadevoh) (acknowledging these provisions were intended to [REDACTED]).

[REDACTED]. *See id.* [REDACTED]). Moreover, the [REDACTED]. *See* 9/2/20 Tr. 5404–06, 5446–47 (J. Fowler).

4. Even [REDACTED]. 8/11/20 Tr. 1317–18 (Orszag); *accord* Trial Ex. 4017 at 4 (noting that [REDACTED]); Trial Ex. 2124 at 1 ("[REDACTED]); 9/2/2020 Tr. 5204 (Piibe) ("[REDACTED]).

5. Even if the [REDACTED], SoundExchange claims they would nonetheless be left with [REDACTED]. It asserts that [REDACTED]—but that would [REDACTED]. *See*, e.g., Harrison WDT ¶ 56; Adadevoh WDT ¶ 34, 38 & n.27; Piibe WDT ¶¶ 29–30; 9/3/20 Tr. 5482 (Adadevoh).

Consequently, SoundExchange maintains, it is unsurprising that the record contains no evidence that [REDACTED]. *See*, *e.g.,* 9/3/20 Tr. 5481 (Adadevoh); *accord id.* at 5565 (Adadevoh) (noting that [REDACTED]). And, when Universal asserted to Spotify that the latter was [REDACTED]. 9/3/20 Tr. 5702 (Harrison).

Additionally, SoundExchange avers that, even assuming *arguendo* the [REDACTED] and effectively competitive. Specifically, SoundExchange explains that [REDACTED]. Accordingly, although Majors may want or need to [REDACTED] such as those quoted above, [REDACTED]. Rather, according to SoundExchange, Spotify is [REDACTED] or, importantly here, *to [REDACTED]. See* 8/11/20 Tr. 1254 (Orszag).

That is, as Mr. Orszag explains, once a streaming service has successfully used a *[REDACTED]*, the Major may in turn seek [REDACTED]. *See* 8/11/20 Tr.

1331–32 (Orszag). By similar economic logic, a Major that had entered a negotiation [REDACTED] may decide [REDACTED]. *See* 9/2/20 Tr. 5203–05 (Piibe).

Thus, SoundExchange maintains, *the mere presence* of [REDACTED], on which the Services rely, is hardly conclusive evidence that the market lacks effective competition. Rather, as Professor Shapiro himself acknowledges, in an effectively competitive market, a service might agree to accept an [REDACTED]. 8/19/20 Tr. 3089–92 (Shapiro).

The Services respond, though, that the notion that the [REDACTED] was contradicted by SoundExchange's own witnesses. Specifically, as the Majors and Spotify negotiated over terms in 2016 and 2017, they *[REDACTED]. See*, e.g. 9/3/20 Tr. 5551 (Adadevoh) (agreeing that [REDACTED]"); *see also* 9/3/20 Tr. 5704–05 (Harrison).

Moreover, the Services aver, the terms of [REDACTED] with the [REDACTED]. *See, e.g.*, Peterson WRT ¶ 69. That is, while Spotify negotiated [REDACTED], Spotify remained [REDACTED]. Trial Ex. 5074 at 22; Trial Ex. 5020 at 20, 36. *Indeed, SoundExchange's own witness, Mr. Orszag, concedes that throughout Spotify's presence in the United States streaming market, [REDACTED]* 8/12/20 Tr. 1703–04 (Orszag); *see also* Services PFFCL ¶ 100 (summarizing additional evidence).

The Services also assert that there is no evidence that, as SoundExchange maintains, the Majors negotiated for [REDACTED]. Instead, the Services point to the Majors' imposition of [REDACTED]. *See* Shapiro WRT at 22 (noting the Majors' recognition that [REDACTED]).

More particularly, the Services explain that the Majors' [REDACTED] ensured that a [REDACTED]. That is, unless other labels [REDACTED]. 8/20/ 20 Tr. 3058 (Shapiro); *see also* 8/13/20 Tr. 1905–06 (Orszag) ([REDACTED]"). The Services also rely on the testimony by Mr. Harrison, the Universal executive appearing at trial, who agreed that [REDACTED]," and that "[[REDACTED]" 9/3/20 Tr. 5705–06 (Harrison).[34]

Importantly, SoundExchange's position—that the [REDACTED] in the 2017 agreements reflect a [REDACTED]—is inconsistent with Sound-Exchange's argument, itemized *supra*, that, for "[REDACTED]" SX PFFCL ¶ 388.

In addition to their rejoinders to SoundExchange's [REDACTED] assertions, set forth *supra*, the Services take issue with each of SoundExchange's additional arguments regarding the [REDACTED]. First, they note that the only example SoundExchange could muster regarding potentially [REDACTED] was related to [REDACTED] entered into between [REDACTED]. However, there is no evidence in the record regarding how [REDACTED] interpreted the [REDACTED] and, further, that the context for any possible disagreement [REDACTED]. Further, there is no record evidence indicating that Pandora had the intent to influence, or did influence, [REDACTED]'s streams. Moreover, the Services note that there is no sufficient proof that the [REDACTED] in the

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[34] Because Mr. Harrison testified, without dispute, that Universal ([REDACTED]) could only use the [REDACTED], Universal apparently could not, for example, [REDACTED].

[REDACTED] agreement are the same in all respects as those in the [REDACTED] agreement. Services RPFFCL ¶¶ 389–390.

The Judges find that SoundExchange's reliance on [REDACTED] is unavailing because [REDACTED]. Moreover, although [REDACTED] is a participant in these proceedings (represented by SoundExchange and its counsel), no [REDACTED] witness testified that [REDACTED] sound recordings was—to its understanding—a [REDACTED]. More broadly, the Judges find wholly undeveloped SoundExchange's speculative assertion that a service and a label may have [REDACTED]. Of course, they might have (or claim to have) [REDACTED], but that possibility hardly indicates that [REDACTED]. Moreover, the parties (services and labels) spend substantial sums on attorneys to draft contract language [REDACTED], the Judge are unwilling to find that industrywide [REDACTED], as a class, are [REDACTED].

Second, the Services' assert as meritless SoundExchange's argument that, even under [REDACTED], Spotify could [REDACTED]. The Services point out that [REDACTED]—the only label SoundExchange cites for this argument—prohibits "any form of preferential or otherwise enhanced *positioning, placement or status*" and provides that *[REDACTED]* Trial Ex. 5037 at 45, 96.

Moreover, the Services aver that the Majors do not [REDACTED]. In fact, the Services note, in 2017, [REDACTED]. *See* Trial Ex. 4014; 9/3/20 Tr. 5537–39 (Adadevoh) (reviewing Trial Ex. 4014, an internal

Warner analysis of [REDACTED] and agreeing that Warner had found [REDACTED]").[35]

The Judges find that there is insufficient evidence to support SoundExchange's claim that it is hamstrung in attempting to [REDACTED]. Given the ostensible greater importance the Majors place in this proceeding on [REDACTED]—*see* Trial Ex. 2124 at 1 ("[REDACTED]—the Judges find that a Major would [REDACTED]. Moreover, [REDACTED].

Further in this regard, the Services disagree with SoundExchange's claim that record companies would have "[REDACTED]." Rather, the Services point to, *inter alia*, Trial Ex. 2108, in which [REDACTED]. Trial Ex. 2108 at 2–3. The Services assert that this [REDACTED] shows the Majors have an available [REDACTED]. Further, the Services maintain that the mere fact that [REDACTED] is consistent with [REDACTED] rather than with speculation that [REDACTED]. *See* Services RPFFCL ¶ 395 (and record citations therein).

The Judges find there is inadequate evidence to demonstrate that the Majors [REDACTED], for the reasons given by the Services. Further, consistent with the Judges comment regarding legal representation *supra*, the Majors have at their disposal highly talented commercial, corporate and litigation attorneys, who receive handsome fees for [REDACTED]. Although [REDACTED], a sufficient record of [REDACTED] must be demonstrated by a

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[35] The Services also note that SoundExchange separately claims that the Majors [REDACTED]. This claim [REDACTED], belies SoundExchange's claim that it [REDACTED] The Judges agree with the Services.

more persuasive record than exists in this proceeding. Finally, in this regard, if the Majors [REDACTED], why does SoundExchange argue that the [REDACTED]? *If [REDACTED]?* Indeed, the fact that there is [REDACTED] in the record, as discussed *supra*, does not mean that [REDACTED]; it points to the value of such [REDACTED]. The Majors' claims (1) that [REDACTED] and (2) that [REDACTED], are blatantly inconsistent.

Accordingly, on balance the Judges find that there is insufficient evidence to demonstrate that [REDACTED] in their stated intent. The Judges take particular note of SoundExchange's acknowledgement, discussed *supra*, that the Majors (1) had [REDACTED], (2) did not [REDACTED], (3) found it difficult to [REDACTED], (4) asserted [REDACTED], (5) failed to [REDACTED], and (6) agreed to [REDACTED].

Shifting from the issue of [REDACTED], the Services disagree with SoundExchange regarding the economic importance of this issue. They note that, pursuant to an internal Sony document, [REDACTED] comprise[REDACTED] and that, [REDACTED], replacing those [REDACTED] with [REDACTED] would only [REDACTED]. Trial Ex. 4017 at 4. *See also* 9/03/20 Tr. 5544–45 (Adadevoh) ([REDACTED]); Trial Ex. 4014 at 3.

The Judges agree with the Services that Spotify's [REDACTED] to suggest a sea change in Spotify's pricing power. And, there is no evidence that Spotify could alter its business model by engaging in a wholesale [REDACTED] with subscribers remaining indifferent to such a fundamental change in the

service. This is critical because the Judges do not lose sight of the purpose of this particularized analysis of the benchmark interactive service, which is to determine if Spotify has changed in a manner that lessens or eliminates the complementary oligopoly power of the Majors, such that an effective competition adjustment in the target noninteractive statutory market is either unnecessary or should be reduced. A [REDACTED] (themselves generating but a minority of Spotify's listening) is wholly uninformative as to this issue.[36]

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[36] The Judges discuss the negotiation of "[REDACTED]" with Spotify later in this Determination. But, the Judges note here that they find unavailing Mr. Orszag's attempt to decontextualize the impact of [REDACTED] by his noting that a [REDACTED]% loss in Sony's market share would equate to a $[REDACTED] annual revenue loss. Mr. Orszag reports that in 2018 Sony's digital music U.S. revenue totaled $[REDACTED]. Orszag WDT tbl.13. Thus, the $[REDACTED] short-term revenue loss posited by Mr. Orszag equals [REDACTED] about [REDACTED] one percent of Sony's total annual U.S. digital music revenue. Although $[REDACTED] is a large sum in many contexts, it is small in the present context, especially because the purpose of the exercise is to determine Spotify's pricing power relative to the complementary oligopoly market power of the Majors. Clearly the $[REDACTED] figure fails to reflect the appropriate magnitude of the impact of Spotify's [REDACTED]. Such distorted use of monetary sums is inappropriate. *Cf.* Pablo J. Barrio *et al.*, *Improving the Comprehension of Numbers in the News*, Proc. 2016 Conf. Hum. Factors Computing 1 (Ass'n for Computing Mach. 2016) ("Unfamiliar measurements make up much of what we read, but unfortunately carry little or no meaning . . . as they can be difficult to interpret without the appropriate context.") (available on *Google Scholar* at *www.cs.columbia.edu* (accessed June 9, 2021).

d. The (Partial) Evidence and Testimony Regarding the Majors' Negotiations With Spotify Leading to Their 2017 Agreements

In addition to its foregoing arguments, SoundExchange relies on evidence and testimony regarding the negotiations between Spotify and the three Majors. Sound Exchange avers that this evidence and testimony show that in the run-up to the execution of the 2017 Agreements [REDACTED]. Accordingly, the Judges next consider that evidence and testimony.

Before they weigh the record in that regard, the Judges take note of the nature and sequencing of that evidence and testimony. *First*, SoundExchange proffered this information in a disjointed manner. Multiple documents from the archives of the three Majors were introduced—primarily email correspondence between and among various executives within each Major— discussing the Spotify negotiations. However, none of the individuals who actually negotiated with Spotify—and virtually none of the authors or recipients of these internal emails— provided oral or written testimony at the hearing. Rather, SoundExchange proffered witnesses from the Majors who had some knowledge of these documents and second-hand knowledge of the oral negotiations between their employers and Spotify.[37] The Judges

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[37] The Judges admitted these documents into the record, finding them sufficiently authenticated, and, exercising their discretion to admit hearsay evidence, the Judges did not exclude these documents on that basis. But the issue of *admissibility* does not raise the same concerns regarding the *weight* to be given to documents written or received by relevant actors who were not called to testify to explain the context, completeness and

would have much preferred to hear from first-hand witnesses from the Majors' negotiating teams, who actually bargained with Spotify, in order to appreciate how the usual bargaining dominance of the Majors might (or might not) have been usurped by Spotify. Further, the documents to which the Majors' second-hand witnesses testified are not always models of clarity, and these secondhand witnesses could not go beyond the four corners of the documents to explain, identify or provide a sufficient economic context for these documents. *See* Manne & Williamson, supra at 645; *see also Web IV*, 81 FR at 26352 (When "the Judges' task is to determine . . . *economic significance* . . . the contracts are but one . . . piece of evidence . . . [and] [w]here . . . a transaction is part of a complex . . . business relationship it is appropriate—*even necessary*—for the Judges *to consider other evidence and analysis to determine the true economic value of the transaction.")* (emphasis added). And, to the extent oral negotiations between Spotify and the Majors, or between the Majors' negotiating teams and their superiors, were never summarized or were summarized in writings not in evidence, the record is incomplete in the absence of testimony from the Majors' negotiators and other direct decision-makers.

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ambiguities, if any, relating to those documents. Further, the actual negotiators could have been called to testify regarding oral negotiations (the Majors are all parties in this proceeding) and to explain and contextualize statements contained in internal emails. Thus, to the extent the record evidence of the Spotify-Majors negotiations is incomplete or uncertain, the Judges find that SoundExchange must bear the consequences of such deficiencies.

Second, SoundExchange proffered only correspondence from the licensor side, that is, from the Majors. The record does not contain any documentary evidence (or testimony, for that matter) *from Spotify* regarding its negotiations with the Majors. Accordingly, there is an incomplete and one-sided record of the negotiations upon which SoundExchange relies.[38] SoundExchange asserts that this incompleteness is inconsequential because what is relevant are the Majors' understandings and perceptions of [REDACTED].

The Judges agree that the Majors' understanding of Spotify's position [REDACTED] is the *ultimate* relevant factor in explaining how and why the Majors responded as they did in negotiations. However, to determine whether the Majors' claimed understanding is *credible*, and to weigh the value of each factor, the Judges would need to know much more about how Spotify bargained and the representations it made. The actual negotiators would have been the best witnesses to provide that level of detail to assist the Judges in determining whether the Majors' [REDACTED] is factually persuasive.

This is crucial for two reasons. First, the Services offer up a quite different explanation. They argue that the Majors were simply utilizing their complementary oligopoly power to[REDACTED]. *See* Services PFFCL ¶¶ 138–150 (and record citations therein).

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[38] In previous proceedings, the Judges have considered negotiation documents when the record contained such material from *both* counterparties. That is not the case with the record here.

SoundExchange is making an argument that relies on facts that, if relied upon by the Judges, would lead to a radical departure from the bargaining analysis they identified and adopted in *Web IV*—one which is consistent with the economic framework of complementary oligopoly that has an unchallenged lineage dating back to the 19th century work of the economist A.A. Cournot. *See Web IV*, 81 FR at 26342. Such a departure from the prior bargaining framework is certainly conceivable, but the hearing record necessary to support the task should be substantial; instead, SoundExchange's presentation appears to the Judges to have been stitched together and, for the reasons discussed *supra*, lacking a sound basis in economics, as well as in the very principles and dynamics of bargaining that it applies to the hypothetical noninteractive market.[39]

The Judges keep these considerations in mind as they analyze below the parties' arguments regarding the import of the relevant strands of evidence and testimony regarding Spotify's negotiations with the Majors.

i. The Universal-Spotify Negotiations

Universal and Spotify began their negotiations to replace their 2013 agreement in [REDACTED], *see* Trial Ex. 4027 at 1, and completed the negotiations at [REDACTED]. *See* Trial Ex. 5037 at 1. Early in the negotiations, according to an internal company

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[39] By contrast with the problematic record relating to the effects of Spotify's supposed newfound pricing power, and as discussed in detail *infra*, the Majors' internal documents and hearing testimony reveal [REDACTED]. As also discussed *infra*, the Majors' [REDACTED].

document, Universal identified [REDACTED] as an issue to be addressed. Trial Ex. 5410 at 1. SoundExchange notes that Universal's subsequent internal communications reflect its [REDACTED]. Trial Ex. 4016 at 1 ("[REDACTED]"); *see also* Trial Exs. 4019, 5429 at 1. Further, some Universal negotiators—again, *who did not testify*— expressed in internal documents their belief that [REDACTED], Trial Ex. 5422 at 1, with the author of an internal Universal email, adding [REDACTED]. Trial Ex. 5221 at 5.[40]

When apprised of [REDACTED], according to an internal Universal email, Spotify acknowledged to Universal that it [REDACTED]. Trial Ex. 5413 at 1. Consistent with [REDACTED], Universal's testifying witness, Aaron Harrison, acknowledged that [REDACTED]. 9/3/20 Tr. 5701 (Harrison).

In an attempt to [REDACTED], Universal ultimately proposed that [REDACTED]. Trial Ex. 5410 at 1. However, Universal's internal emails indicated that Spotify had [REDACTED] Trial Ex. 5421 at 1. Rather, Spotify took the position that it would be "[REDACTED]." Trial Ex. 5414 at 1. Ultimately, the final 2017 Agreement included [REDACTED]. *See generally* Trial Ex. 5037. (However, as noted above, the 2017 Agreement included [REDACTED].

In response, the Services point out, as an initial matter, that the statements in Trial Ex. 5414

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[40] Because the author of the email did not testify, the unusual placement and styling of this alleged quote (itself hearsay) was not the subject of examination at the hearing.

constitute double hearsay, in that they repeat [REDACTED] (the first hearsay) to a [REDACTED], which were then repeated in the exhibit (the second hearsay). The Services also argue that the Judges should give no weight to Trial Ex. 5521, which also contains double hearsay, *viz.*, [REDACTED] [REDACTED] (the first hearsay), repeated in an internal email (the second hearsay). In any event, the Services maintain, no part of the [REDACTED] that would generate price competition.

Moreover, the Services aver that these statements are flatly inconsistent with the acknowledgement by Universal's testifying witness, Mr. Harrison, that Universal [REDACTED], but rather Universal sought to [REDACTED] Trial Ex. 4016 at 1. Thus, Universal's negotiating stance, according to the Services, was to [REDACTED]. To that extent, the Services do acknowledge that Universal [REDACTED]—*see* Harrison WDT ¶ 56; 9/3/2020 Tr. 5743– 5744 (Harrison)—but Universal was [REDACTED]. *Id.* at 5744 (Harrison). Accordingly, Universal had to rely on the [REDACTED]. Harrison WDT ¶ 56. Additionally, the Services note that the 2017 Agreement [REDACTED].

The Services also contest SoundExchange's characterization of [REDACTED]. Specifically, the Services point to the [REDACTED], which requires that Spotify [REDACTED] and that Spotify would "[REDACTED]" Trial Ex. 2062 at 53–54 (2013 Spotify-Universal Agreement).

In fact, Trial Ex. 5429 (a 2016 negotiation email cited by SoundExchange) acknowledged that the

[REDACTED] Trial Ex. 5429 at 4. Moreover, according to the Services, Spotify's [REDACTED] rendered dubious, unsubstantiated, and unwarranted Universal's [REDACTED].

Further, as an economic matter, the Services assert that Universal's [REDACTED] gives away the game—Universal was seeking to [REDACTED] that the Services characterize as a "perverse conception of 'price competition' to say the least." Services RPFFCL ¶¶ 419–421 (and record citations therein). Moreover, the Services aver, in any event, the presence of [REDACTED] Spotify's agreements with the [REDACTED]. *See* ServicesRPFFCL ¶ 425

The Judges find that the evidence and testimony relating to these negotiations, relied upon by SoundExchange, are insufficient to demonstrate that Spotify had acquired any greater pricing power in connection with the negotiation of the 2017 Agreement. The [REDACTED] in the 2013 Agreement [REDACTED] in the 2017 Agreement, as confirmed in Universal's own internal email. Further, as the Services point out, Universal's testifying witness, Mr. Harrison, contradicted the key point that SoundExchange is attempting to make with regard to these negotiations: [REDACTED] 9/3/20 Tr. 5701 (Harrison). *This broad statement clearly undermines SoundExchange's assertion that [REDACTED].*[41]

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[41] The Judges find startling, though, the Services' dismissal—as a "perverse conception of 'price competition'"—of SoundExchange's more nuanced claim that [REDACTED]. This is precisely the phenomenon that Professor Shapiro enthusiastically endorsed in *Web IV* and which the Judges adopted. *Web IV*, 81 FR at 26366 (Professor Shapiro testifying that it was "absolutely" correct that "the threat of steering . . .

Further, because Universal's agreement to [REDACTED], the Judges agree with the Services that Universal's pointed attempt to have Spotify agree to [REDACTED] demonstrates that *Universal was [REDACTED]*.

On a more general basis, the Judges find SoundExchange's portrayal of Universal as essentially a "pitiful helpless giant" in negotiations to be at odds with the reality of its status as a complementary oligopolist wielding a Must Have repertoire. It did not have to [REDACTED], but rather, *ceteris paribus*, could have [REDACTED].

Additionally, SoundExchange's assertion that Universal [REDACTED] in the 2017 Agreement is problematic for two reasons. First, Universal claimed to be [REDACTED], so why did Universal [REDACTED]? Again, SoundExchange's characterization of this largest Must Have Major as some sort of pitiful helpless giant (like Gulliver restrained by the Lilliputians) is simply not credible, because, as discussed elsewhere in this Determination, Spotify would be out of business

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pushes [the record companies] . . . towards their original [market share] percentages to avoid being that odd man out who was the holdout for the higher price . . . ."). In any event, Mr. Harrison's testimony that [REDACTED] renders moot the Services' jarring attempt to repudiate the notion of a Major agreeing to lower rates in exchange for protection from steering. Moreover, if, hypothetically, the facts had demonstrated [REDACTED], then [REDACTED] might have made sense as a way for a Major to avoid the situation where it [REDACTED]. However, under SoundExchange's *own* theory of the case, as discussed elsewhere in this Determination, the idea that the Majors thought [REDACTED], would be a chimera, given that the Majors aver that [REDACTED].

[REDACTED] without a Major's repertoire, whereas Universal and the other Majors would continue in business, as Spotify's listeners would migrate to a substitute streaming service. And, if the [REDACTED] as SoundExchange claimed (because, as discussed *supra*, a Major could not [REDACTED] then why was Universal (or any Major) [REDACTED]—especially given that SoundExchange proffered evidence that the Majors claimed [REDACTED].

Moreover, in *Web IV*, SoundExchange provided substantial detail regarding how the Majors would respond to thwart an attempt by a service to engage in steering as a means of price competition. A Major would threaten to black out its repertoire on that service or actually do so (a threat that remains viable, as discussed in this Determination). Second, a Major could demand that all royalties be paid up front on a non-refundable basis, according to historic market shares, making subsequent market share deviations costly (*i.e.*, the marginal cost of deviating toward a Major beyond its historic share would be a positive royalty, compared to the zero marginal cost of playing a marginal sound recording as part of a Major's historic share, because the royalties based on historic market share had been prepaid). Finally, in *Web IV*, SoundExchange noted that each Major could insist on an MFN or similar anti-steering/antidiscrimination clause, making deviations from historic share play a breach of contract. *Web IV*, 81 FR at 26364–65.[42]

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[42] The very concept of licensors requiring historic shares to be maintained appears inconsistent with effective competition. In *Web IV*, the Judges noted that "demands by the Majors to

In *Web IV*, the Judges acknowledged the capacity of the Majors to engage in such conduct, and the Judges characterized such conduct as simply alternate expressions of their complementary oligopoly power that, under the statute, the Judges were intending to mitigate, in order to identify rates that would be set in an effectively competitive market. *Web IV*, 81 FR at 26373–74. In the present proceeding, SoundExchange has not provided a sufficient evidentiary basis to show that Spotify would be immune from such tactics. Moreover, it would be in each Major's long-run interest, acting alone, *yet consciously aware of the parallel incentives of the other Majors*, to threaten and, if necessary, follow through on such actions, because of each Major's individual Must Have status (and each Major's knowledge of the other Majors' Must Have status).[43] Simply put, the Majors' power provides

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prevent steering by insisting that a noninteractive service not deviate from an historical ("natural") division of market shares would be a classic example of anticompetitive conduct." *Web IV*, 81 FR at 26373 (citing *Blue Cross & Blue Shield United of Wisconsin v. Marshfield Clinic*, 65 F.3d 1406, 1415 (7th Cir. 1995) (Posner, J.).

[43] Indeed, an important point made by Professor Willig, SoundExchange's Shapley Value and bargaining expert, regarding the noninteractive market is fully applicable here. Each Major, as a Must Have, would recognize its power to withhold (or threaten to withhold) a license in order to maximize the benefit of the bargain. *See also* Richard A. Posner, *Oligopoly and the Antitrust Law: A Suggested Approach*, 21 Stan. L. Rev. 1067, 1081a n.39 (1969) (A "meeting of the minds" among oligopolists is "illuminated by game theorists [who note that] mutual dependence . . . demands . . . collaboration [that is] . . . tacit if not explicit . . . ."). There is no reason to believe that this phenomenon does not exist in the unregulated interactive music

them with multiple tactics, which, if triggered, would confront Spotify with certain and prompt economic ruin, as its subscribers expeditiously defected to Apple, Amazon, Google, or one of Spotify's smaller competitors.

Accordingly, the Judges reject the argument that Spotify's economic position generated a change in bargaining and market power [REDACTED]. Rather, it is apparent to the Judges that Universal must have had [REDACTED].[44]

ii. The Warner-Spotify Negotiations

At the outset of negotiations regarding the 2017 Agreement, Spotify represented to Warner that it had [REDACTED]. 9/3/20 Tr. 5479; 5526–27 (Adadevoh).

In response to a Spotify proposal for [REDACTED], Warner explored with Spotify a [REDACTED]. *See* Trial Exs. 5264 at 4; 5265 at 2; 9/3/2020 Tr. 5495–96 (Adadevoh). According to Warner's testifying witness, Ms. Adadevoh—*who did not participate in the negotiation sessions with Spotify*—Spotify rejected this [REDACTED] proposal, and [REDACTED]. *See* Trial Exs. 5264 at 4; 5265 at 2; 9/3/2020 5495–97 (Adadevoh). According to

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licensing market. Kristelia A. Garcia, *Facilitating Competition by Remedial Regulation*, 31 Berkeley Tech. L.J. 183, 188 (2016) ("In an industry like music licensing . . . parallel pricing and tacit collusion can . . . remov[e] the threat of meaningful competition from the marketplace.").

[44] That [REDACTED] is discussed *infra*, section III.B.2, after the Judges consider the evidence regarding the negotiations between Spotify and Sony and between Spotify and Warner.

Warner, Spotify also rejected its subsequent proposal for [REDACTED]. Trial Ex. 4020 at 1.

In February 2017, Warner alternately proposed that, in consideration of a [REDACTED], Spotify [REDACTED]. However, Spotify refused. Trial Exs. 5520 at 2; 5038; 9/3/20 Tr. 5505 (Adadevoh).

Ultimately, Warner agreed to [REDACTED]. According to Ms. Adadevoh, Warner agreed to [REDACTED], motivated in part by [REDACTED]. SoundExchange avers that Warner's [REDACTED] was reasonable because Spotify had [REDACTED]. Trial Ex. 5401 at 3. In this regard, Ms. Adadevoh testified at the hearing that Warner's perception of Spotify's [REDACTED] 9/3/20 Tr. 5490–91 (Adadevoh). Accordingly, she testified that Warner [REDACTED]. 9/3/20 Tr. 5531 (Adadevoh).

During these negotiations, Warner attempted to determine whether its speculation was justified that Spotify might have [REDACTED]. Through this analysis, Warner was [REDACTED]. Nonetheless, according to SoundExchange, Warner's [REDACTED], but rather reflected the [REDACTED]. SX PFFCL ¶ 435 (citing Trial Ex. 4014 at 1; 9/3/20 Tr. 5601–02 (Adadevoh)).

Ms. Adadevoh testified that— notwithstanding the [REDACTED] that Spotify had [REDACTED]— Warner [REDACTED]. Trial Ex. 5612 ¶ 12 (WRT of Reni Adadevoh); 9/3/20 Tr. 5530–31 (Adadevoh). The importance of [REDACTED] was noted in an email written by Warner's lead negotiator with Spotify, who wrote that "[REDACTED]" the effect on WMG's [REDACTED] would be [REDACTED]. Trial Ex. 2124 at 1. The same email also stated that the

[REDACTED] in Warner's 2013 agreement with Spotify did not [REDACTED]. Trial Ex. 2124 at 1; Adadevoh WDT ¶ 12.

To underscore Warner's purported concern that Spotify might [REDACTED], SoundExchange also notes discussions on a Warner [REDACTED] regarding [REDACTED]. Trial Ex. 4025 at 1.

Ultimately, Warner agreed to [REDACTED], which was included in its 2017 Agreement with Spotify. Trial Ex. 5038; Adadevoh WDT ¶¶ 11–12. According to Ms. Adadevoh, Warner [REDACTED] because "[REDACTED]" 9/3/20 Tr. 5480.

The Services respond first by noting that SoundExchange has ignored the import of Warner's complementary oligopoly power in connection with the bargaining dynamics. Absent consideration of this fact, they argue that Ms. Adadevoh's assertion that [REDACTED] is simply conclusory and hardly credible. Additionally, the Services maintain that there is no evidence linking [REDACTED] to either (1) a [REDACTED] or (2) a [REDACTED].

The Services also assert that a key document on which SoundExchange relies, Trial Ex. 4022, actually identifies [REDACTED] in its 2017 Agreement with Spotify.[45] Among these drivers, according to the Services' understanding of this Warner document, was [REDACTED]. *See* Trial Ex. 4011 at 1 ("[REDACTED]").

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[45] The Services also identify several other "drivers" that led Warner to agree to the terms of the 2017 Agreement, predominantly relating to Warner's [REDACTED]. These other points are discussed *infra*.

The Services also note that another document on which SoundExchange relies regarding the Warner-Spotify negotiations, Trial Ex. 5264, consists of double hearsay—providing a secondhand report of Spotify statements. Moreover, the Services claim the statements contained therein cannot even unambiguously be attributed to specific sources—making it difficult to tell whether certain text reflects a Spotify statement, Ms. Gardner's reaction thereto, or something else entirely. Moreover, the Services point out that the testifying Warner witness, Ms. Adadevoh, did not claim to have personal knowledge sufficient to provide the requisite clarity.

The Services also characterize as misleading SoundExchange's attempt to portray [REDACTED] as an example of Spotify's market power. Rather, they claim that an examination of Trial Ex. 5265 reveals that Spotify was [REDACTED] in the 2017 Agreement; rather, Spotify was making the practical observation that if a [REDACTED]. Trial Ex. 5265 at 4–5. And, the Services add, allowing a [REDACTED] noted *supra* in Trial Ex. 4011.

The Services also dispute SoundExchange's assertion that Spotify's refusal to provide Warner with [REDACTED] demonstrates Spotify's increased bargaining or market power. They note that it was Spotify's [REDACTED]. Moreover, the Services note that Warner made its proposal [REDACTED] (*see* Trial Ex. 5520) *[REDACTED]*, belying Ms. Adadevoh's suggestion that [REDACTED]. Additionally, the Services point out that Trial Ex. 5520 also reveals that Warner sought to [REDACTED]—underscoring the degree to which Warner recognized that it, too, [REDACTED]—and

that Warner was willing to agree to [REDACTED] because of [REDACTED]. *See* Trial Ex. 5520 at 3.

More broadly, the Services argue that, if it was true that Spotify had been [REDACTED], the negotiation files would have been [REDACTED], and yet, by contrast, the quantum of evidence on which Warner relies is remarkably slender. Services RPFFCL ¶ 434 (and record citations therein). And, with regard to the extant record evidence, the Services characterize as insufficient and unconvincing SoundExchange's attempt to recharacterize Warner's internal [REDACTED]. *See* Trial Ex. 4014. Continuing its attack on what it describes as SoundExchange's purported misstatement of the evidentiary record, the Services point to another SoundExchange document, Trial Ex. 2124, which includes, [REDACTED]—contradicting SoundExchange's argument that the [REDACTED] (as discussed *supra*).

Continuing its attack on the usefulness of the evidence relied upon by SoundExchange relating to Warner's negotiations with Spotify, the Services note that Trial Ex. 4025, apparently describing [REDACTED] is replete with double hearsay, in the form of a declarant's summary of third-party statements by other declarants. The Services state that there is no indication that any particular comment in this exhibit reflects Warner's final or official position, or that they are not merely the opinions of each individual. On the substance of this exhibit, the Services point out that this document contains [REDACTED], ignored by SoundExchange, which [REDACTED]. Services RPFFCL ¶ 438 (and record citations therein).

The Judges find the Services' arguments convincing. Warner's internal correspondence indicates it was [REDACTED]. But, when it [REDACTED] Warner's contract with Spotify. On these facts, the Judges cannot find support for Spotify's supposed new-found power [REDACTED].

Further, there is no persuasive evidence [REDACTED] included in that contract. The Judges will not presume such a *[REDACTED]* when the record does not reflect that this [REDACTED] occurred. Alternatively stated, SoundExchange is asserting that the Judges should find causation—that the [REDACTED] and vice versa—when the evidence [REDACTED]. Here, the absence of testimony from the actual negotiators looms large; if there had been evidence of such [REDACTED] (which is not in the present record) in first-hand testimony from the negotiators, the Judges could have weighed their direct and cross-examination testimony to assist in making a finding as to this issue. But, no such record exists. Accordingly, the possibility that [REDACTED] were the consequence of Spotify's new market power [REDACTED] is not more plausible than the Services' position that the [REDACTED] were included, [REDACTED], to [REDACTED], and that Warner's agreement to the [REDACTED] was [REDACTED].

Additionally, the fact that Spotify refused to [REDACTED] Warner does not reflect any pricing power possessed by *Spotify*. Rather, *it reflects the power of[REDACTED]* to [REDACTED], *thus undermining price competition.*

Finally, the Warner [REDACTED] document on which SoundExchange relies is unpersuasive. Not

only does it consist of double-hearsay—as the Services note, it also fails to identify the speakers and their business affiliations [REDACTED] (which also are not provided in hearing testimony)—but rather, the email reflects [REDACTED] regarding the pending Spotify-Warner 2017 Agreement. In that regard, it contains [REDACTED], allegedly voiced by the unidentified participants. As the Judges noted *supra*, corporate documents, including [REDACTED] are often likely to fail to shed light on the economic factors relevant to a proceeding. *See William Inglis & Sons Baking*, 688 F.2d at 1028.

Here, the Warner [REDACTED] document is even more problematic, as it merely recites [REDACTED]. The problem with this document—*emblematic of the problem with all of these hearsay documents*—was highlighted in a fruitless attempt by SoundExchange's counsel to cross-examine Professor Shapiro regarding the meaning of a double hearsay declaration in this Warner [REDACTED] document, Trial Ex. 4025. Presented with language in this exhibit stating: "[REDACTED]" Professor Shapiro responded by stating: "I'm not sure what this [REDACTED] means," and adding: "I don't know what it means [REDACTED]." 8/20/20 Tr. 3076–77 (Shapiro). The witness then asks SoundExchange's counsel: "Could you help me out on that?," to which SoundExchange's counsel then had no choice but figuratively to throw up his hands and lament: "Well, . . . *let's just leave it since we don't have the fact witness here.*" 8/20/20 Tr. 3077 (Shapiro) (emphasis added). The Judges share that frustration.

ii.   The Sony-Spotify Negotiations

According to Sony, at the outset of negotiations, Spotify sought [REDACTED]. 9/2/20 Tr. 5218 (Piibe). However, Sony was [REDACTED] particularly because Sony believed the proposed [REDACTED]. Piibe WDT ¶ 20; 9/2/20 Tr. 5195–96 (Piibe); Trial Ex. 4018 at 1. The Services find this opening salvo—made about a year before the parties ultimately executed their 2017 Agreement—to be wholly unremarkable. Professor Shapiro characterizes this start to negotiations as merely "[REDACTED]" 8/20/20 Tr. 3082 (Shapiro).

When [REDACTED] appeared [REDACTED] Sony decided that, "[REDACTED],"[46] it would offer to [REDACTED]. Trial Ex. 5461 at 7, 35 (offering increasing [REDACTED]);[47] *see also* Trial Ex. 4026 at 1, 4 (offering a more general framework for [REDACTED]); Piibe WDT ¶ 22 (the thinking behind the [REDACTED] was simply that, [REDACTED]).

The Services' rejoinder to this assertion is consistent with their explanation of the problem regarding the [REDACTED]: As long as Spotify remained [REDACTED], Spotify was [REDACTED] Services RPFFCL ¶ 442 (and record citations therein).

Because Sony understood that Spotify had the [REDACTED], Piibe WDT ¶ 25, Sony recognized that a consequence of [REDACTED]. As Mr. Piibe

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[46] The relevancy of Spotify's "importance" to Sony and the other Majors, in terms of the subscription royalty rate [REDACTED], is discussed *infra*.

[47] To put this proposal in context, Sony's market share for interactive subscription plays in 2018 was [REDACTED]%. Orszag WDT, tbl.2.

explained, in [REDACTED]. Piibe WDT ¶ 26. Moreover, Sony asserted that it [REDACTED]— because it believed that Spotify could [REDACTED] Piibe WDT ¶ 26 (emphasis added).

More particularly, Sony asserts that it was concerned about Spotify's [REDACTED]. *See* Trial Ex. 5451 at 1 (noting that Spotify [REDACTED]); Trial Ex. 5461 at 40 (noting that [REDACTED]); Trial Ex. 5514 at 3 (noting that [REDACTED] and identifying [REDACTED]); Trial Ex. 4017 at 4 (noting that [REDACTED]). Sony was concerned because it believed its [REDACTED] Trial Ex. 5461 at 40; *accord* Trial Ex. 5514 at 3 (asserting that Sony's [REDACTED]). Trial Ex. 5468 at 2.

The Services aver that these purported [REDACTED] reflect mere possibilities, which Sony [REDACTED] in contract negotiations. First, regarding [REDACTED], the 2017 Agreement included a [REDACTED] More particularly, the Services note the dynamics of the negotiations that led to [REDACTED]. In Spotify's initial contract proposal, Trial Ex. 5461, it sought a [REDACTED] However, in the final 2017 Agreement, Trial Ex. 5011, the [REDACTED] was [REDACTED] to Sony.

Moreover, the Services point to what they consider to be a blatant inconsistency between Mr. Piibe's WDT regarding this [REDACTED] and Mr. Piibe's deposition testimony in this proceeding, with which he was confronted at the hearing, as set forth below:

[Hearing Question]: [L]et me ask you to take a look at . . . your deposition.

. . .

[Deposition Question]:

[REDACTED]?

* * * * *

[Deposition Answer]

[REDACTED].

[Hearing Question]

[W]as that answer correct at the time?

[Hearing Answer]

Yes.

9/2/20 Tr. 5339–40 (Piibe) (emphasis and bolding added).

Further, the Services note (as discussed *supra*) that the [REDACTED] in the Sony-Spotify 2017 Agreement contained a [REDACTED] Trial Ex. 5011 at 36. There is no basis in the record, the Services maintain, to conclude that this [REDACTED] would [REDACTED], two areas regarding which Sony claimed to be concerned.

SoundExchange also finds a [REDACTED] in a statement supposedly made by Spotify (contained in an internal Sony email), [REDACTED] There, Mr. Piibe recounted what he heard from a Sony employee regarding a statement allegedly made by a Spotify negotiator, to the effect that, [REDACTED]. Trial Ex. 5469 at 1. Mr. Piibe asserts that, in response to that and [REDACTED], Sony "determined that [REDACTED]" Piibe WDT ¶¶ 24, 26.

The Services respond by noting that this [REDACTED]—of questionable veracity given the double-hearsay nature of its representations—[REDACTED]. Further, the Services contrast what they characterize as [REDACTED] with what they indicate to be Mr. Orszag's [REDACTED] characterization of the statement in his oral testimony as a "[REDACTED]" in which Spotify said, "[REDACTED]." 8/12/20 Tr. 1743 (Orszag). Ultimately, Sony determined that it was [REDACTED] that, according to its testifying witness Mr. Piibe, caused a "[REDACTED]." Piibe WDT ¶ 23. According to Mr. Piibe, Sony, in fact, [REDACTED]. Piibe WDT ¶ 36. And, during the hearing, he elaborated, testifying:

[REDACTED].

9/2/20 Tr. 5228 (Piibe) (emphasis added). Moreover, on behalf of Sony, Mr. Piibe speculated that Spotify was [REDACTED]. 9/2/20 Tr. 5228, 5368 (Piibe). Consequently, Sony negotiators, according to an internal Sony email, concluded that [REDACTED]. Trial Ex. 5467 at 1.

The Judges find, for several reasons, that the evidence proffered by SoundExchange regarding the Sony-Spotify negotiations does not support the assertion that Spotify's supposed new pricing power was [REDACTED]. First, Spotify's [REDACTED] was simply consistent with the [REDACTED]. Thus, such [REDACTED] was not [REDACTED].

Next, SoundExchange's assertion that Sony alternatively sought [REDACTED] in order to [REDACTED] was unambiguously refuted by Mr. Piibe's deposition testimony. As noted above, in that

testimony, he admitted that [REDACTED]. His testimony in this regard also neutralizes the claim by SoundExchange that [REDACTED].

Finally, the Judges take note of Mr. Piibe's exaggerated hearing testimony regarding Sony's decision [REDACTED]. In that testimony, Mr. Piibe indicated that the very [REDACTED] was "[REDACTED]" to the point that he was "stuttering" in an attempt to "process" the idea. The Judges find this over-the-top testimony not only lacking in credibility, but also a fine example of the adage "the lady doth protest too much." [48] Mr. Piibe was a polished witness who spoke carefully and with fluidity. The question that he was asked that led to his "stuttering" response was the following: "[REDACTED]?" 9/2/20 Tr. 5228 (Piibe).

This question was straightforward, simple, and posed to him on *direct* examination, thus unlikely to have caught him by surprise. Moreover, the [REDACTED] is the [REDACTED]. The Judges cannot fathom that a Major, a sophisticated corporation, would not [REDACTED] when it is undisputed in the present record, and supported by the economic analysis discussed in this Determination, that [REDACTED]. Indeed, a substantial component of SoundExchange's case-in-chief (presented in the testimony of Professor Willig) turns on the contributions each party makes to the value of a music service and their fallback values.[49]

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[48] William Shakespeare, Hamlet act III, sc. 2.

[49] Professor Willig refers to the opportunity cost of a Major that is a complementary oligopolist when negotiating with a potential licensee as the [REDACTED] opportunity cost. [REDACTED]

What the Judges find inconceivable is Mr. Piibe's claim that [REDACTED]. Thus, the Judges find this exaggerated testimony to lack credibility, indicating that there must have been another reason for [REDACTED].

e. Other Record Evidence and Testimony Contradict SoundExchange's Claim That Spotify' Pricing Power Had Neutralized the Majors' Complementary Oligopoly Power

If Spotify, in fact, had become so powerful by virtue of its market size, ability to [REDACTED] and ability to [REDACTED], as a Sony executive wrote, to [REDACTED]. Trial Ex. 2137. However, the evidence indicates that the Majors were [REDACTED]. The Judges find telling the following colloquy between the bench and Michael Sherwood, a senior Warner executive:

[THE JUDGES]

[REDACTED]?

[MR. SHERWOOD]

[REDACTED]. . . .

[THE JUDGES]

Why [REDACTED]?

[THE WITNESS]

[REDACTED].

[THE JUDGES]

Okay. Did you have an understanding

as to why [REDACTED]?

[MR. SHERWOOD]

I [REDACTED].

[THE JUDGES]

When you say [REDACTED], you mean [REDACTED], so to speak?

[MR. SHERWOOD]

Correct. That was my impression of it.

[THE JUDGES]

Okay. And how did you come to that impression?

[MR. SHERWOOD]

Through conversations with our business development team at Warner Music Group.

[THE JUDGES]

Okay. Who, in particular, do you recall, by name?

[MR. SHERWOOD]

I don't, unfortunately. That team has had some turnover since that time.

[THE JUDGES]

I see. Who was the head of the team at the time you came to that conclusion?

[MR. SHERWOOD]

[REDACTED].

* * * * *

[THE JUDGES]

Okay. And at a more general level,

separate and apart from this particular

negotiation and [REDACTED], how

would you [REDACTED]?

[MR. SHERWOOD]

Well, if that circumstance were to

come to light, [REDACTED].

9/9/20 Tr. 5930–32 (Sherwood) (emphasis added).

The Judges find Mr. Sherwood's testimony, quoted at length above, to be highly informative, and the Judges found him to be a highly credible witness. He has been a Warner employee for 21 years, and he is currently the Senior Vice President of Streaming and Revenue, responsible for overseeing all of the revenue-generating commercial accounts, which include digital service providers, including Spotify. 9/9/20 Tr. 5912–13 (Sherwood). Moreover, he was one of the few Major employees that SoundExchange chose to testify in this proceeding, out of the numerous individuals who had duties related to the streaming services or who wrote or received emails regarding the issues raised in the present proceeding.

His testimony indicates that [REDACTED] what the Services have argued repeatedly—that *Spotify [REDACTED]* when it [REDACTED]. Not only did Mr. Sherwood agree with that [REDACTED], but he also identified the negotiating team within Warner itself as having informed him that [REDACTED] This

testimony supports the Services' characterization of Spotify's weak pricing power and overall bargaining position, further confirming the dubiousness of SoundExchange's claim that the Majors did not [REDACTED] that [REDACTED] continued into the negotiations over the 2017 Agreements.

Perhaps even more importantly, Mr. Sherwood's testimony regarding [REDACTED] speaks even more persuasively than his words. Warner was [REDACTED], as he testified he would do if a [REDACTED].

Mr. Sherwood's testimony also underscores the problem created by SoundExchange's decision not to call witnesses with first-hand experience negotiating with Spotify, such as [REDACTED], who could have shed direct light on the Majors' analysis of Spotify's [REDACTED] in the 2016–2017 period.[50]

Finally, Mr. Sherwood's testimony [REDACTED] gives real-world evidence of the substitutability and cross-elasticity of these various downstream services addressed by the Services' economic expert witnesses. Likewise, this testimony shows [REDACTED], consistent with SoundExchange's direct case criticisms of Pandora's Label Suppression

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[50] This portion of Mr. Sherwood's testimony does not contain inadmissible hearsay, as it is in the nature of testimony regarding an admission and/or declaration against interest by Warner. Moreover, no objection was lodged by SoundExchange (which would have been awkward, given that he was its own witness and the testimony had been elicited by the Judges) and, even if the testimony constitutes hearsay, the Judges invoke their discretion to allow hearsay testimony pursuant to 37 CFR 351.10(a).

Experiments for their failure to address how the industry would respond to such a going-dark scenario.

One of SoundExchange's internal Major documents from an executive who actually negotiated with Spotify took a [REDACTED] than SoundExchange regarding Spotify's pricing power— [REDACTED] consistent with the Judges' findings herein that Spotify had not acquired pricing power sufficient to [REDACTED]. The document was an email written by [REDACTED] 9/2/20 Tr. 5247 (Piibe). Mr. [REDACTED] wrote the following in a December 13, 2016 email— REDACTED] in a response to [REDACTED]:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

Trial Ex. 5467 (emphasis and bolding added).

In the succinct, colloquial, and mildly vulgar statement emphasized above, Mr. [REDACTED] concisely summed up [REDACTED] The Judges find Mr. [REDACTED] observation consistent with the economic analysis on which the Judges have relied in this Determination, supporting the finding that Spotify lacked the pricing power to mitigate or offset the complementary oligopoly power of the Majors.

But, as the quoted document—indeed, the quoted sentence—*also* reveals, Mr. [REDACTED] took note of [REDACTED], stating that he "[REDACTED]" Trial Ex. 5467. Thus, Mr. [REDACTED], in one sentence, also summed up a conundrum that is at the

heart of the question: Why did three complementary oligopolists decline to exercise their market power [REDACTED]?

The Judges consider that conundrum below.[51]

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[51] SoundExchange notes that Apple has [REDACTED]. Moreover, it notes that Apple [REDACTED] [REDACTED]. 9/3/20 Tr. 5681–82 (Harrison); Harrison WDT ¶ 31. Subsequently, Apple also [REDACTED]. Piibe WDT ¶ 46. *See generally* 8/13/20 Tr. 1899–1900 (Orszag); 8/11/20 Tr. 1367 (Orszag). According to SoundExchange, these facts indicate that Apple, [REDACTED] was able to [REDACTED]. *See* SX PFFCL ¶ 468 (and record citations therein).

However, the Judges are struck by the fact that the record regarding Apple's relationship with the Majors is barren, even in comparison to the meager and disjointed proofs SoundExchange proffered regarding Spotify's negotiations with the Majors. There are no internal documents from the Majors describing their relationship with Apple, including [REDACTED], nor is there any evidence that Apple [REDACTED]. *Accord*, Services' Response to SX PFFCL ¶ 466 (noting the [REDACTED] the setting and level of its rates). Moreover, as the Services note, Mr. Orszag did not use the Apple rate as a benchmark in this proceeding. Id. ¶ 465. In fact, Mr. Orszag did not identify in the materials upon which he relied in preparing his WDT any documents memorializing any aspect of Apple's negotiations with any of the Majors, and he could not recall with any certainty having reviewed such documents prior to preparing that written testimony. 8/12/20 Tr. 1646–48 (Orszag).

The Judges also note that the fact that Apple *[REDACTED]* is consistent with the Judges' understanding of the Majors' [REDACTED]. That is, the Majors negotiated [REDACTED], so to speak.

For these reasons, the Judges find that there is insufficient evidence that Apple's [REDACTED] is supportive of SoundExchange's argument that an interactive service's mere market share [REDACTED]. (The Judges note that this is not the first time the Judges have declined to give weight to

1. The Majors' Action to [REDACTED]
a. Introduction

The record discussed *supra* reflects an apparent disconnect between the facts discussed above and the relevant economic principles. The Majors agreed to [REDACTED]. Why did that occur? The upstream benchmark agreements at issue were consummated in a market where the licensors, the Majors, are complementary oligopolists with "Must Have" repertoires, and the licensee, Spotify—despite being arguably the largest interactive service—lacked long-term bargaining power and pricing power sufficient to affect, let alone dictate, the terms of trade.[52]

SoundExchange's underdeveloped record as it related to an Apple agreement. *See Web IV*, 81 FR at 26352 (declining to rely on "SoundExchange's analysis and use of [an] Apple agreement" because "there is insufficient evidence in the record")).

[52] To better appreciate the Judges' discussion of this conundrum, they note here a distinction among different types of economic power as used in this analysis.

The Judges use the phrase "pricing power" to reflect the ability of a seller or buyer (or licensor or licensee) to influence price (royalty rates) because of its own "market power," arising from strengths, such as monopoly, monopsony, oligopoly, or oligopsony positions, as derived from whatever source. Here, the Majors have "pricing power" derived from their status as complementary oligopolists; Spotify lacked "pricing power," for the reasons discussed *supra*.

The Judges use the phrase "countervailing power," as discussed *supra*, to reflect a contracting party's power, again from whatever source, that offsets, in whole or in part, the pricing power of a counterparty. (Thus, it is a power defined in relative terms compared to the opposing commercial power.).

These two types of power collide in the negotiation process, allowing each party to exert a measure of "bargaining power."

The further factual record though, when analyzed through the lens of economics, provides the answer to this facial conundrum; the Majors were intent on surviving as powerful licensors vis-a`-vis their licensees.[53] As discussed below, the Majors were [REDACTED], enabling them to [REDACTED].[54] One way the Majors could attempt to avoid this development and survive as economically powerful licensors was to [REDACTED] that were rapidly expanding in the interactive market.

Accordingly, as the record (discussed below) reveals, [REDACTED], the Majors [REDACTED] in order to [REDACTED].[55]

See Orszag WDT ¶ 110 (and citations therein) ("Bargaining power can be defined as the advantage one player has over another in establishing desired terms [and] can arise from a number of sources, including market power, better information (*e.g.*, knowledge of the true value of what is being negotiated), and credible threats to retaliate or steer business away from the other player. A player with enhanced bargaining power tends to extract greater surplus through better terms.").

[53] *See* Manne & Williamson, supra at 620 ("In the end, whatever business people *think* they are maximizing, whatever they do or wish to do, *survival is ultimately an economic matter.*") (emphasis added).

[54] Despite their complementary oligopoly power, the [REDACTED] is a contemporary example of the literary adage: "Uneasy lies the head that wears a crown." William Shakespeare, *King Henry IV*, act III, sc. 1. From the drier economic perspective, the [REDACTED].

[55] An IPO is a process offering shares of a private corporation to the public in a new stock issuance that allows the corporation to raise capital from public investors. *See* Investopedia.com (search term "Initial Public Offering") (last accessed May 12, 2021). Ultimately, Spotify decided to forego an IPO and instead

The Judges' evidence-based analysis in this section is not the story that SoundExchange chooses to emphasize. SoundExchange prefers the story in which the Majors are the *[REDACTED]*. It is not immediately obvious why SoundExchange prefers that story to the facts that actually match economic theory to reality—that the Majors perceived themselves as *[REDACTED]*.[56]

The forgoing analysis is also not the story told by the Services. Although they discuss the same record facts as relied upon by the Judges (discussed *infra*), they aver that these facts demonstrate merely that the Majors were behaving as complementary oligopolists always behave—[REDACTED], without regard for the bargaining power of their counterparties. As explained in more detail *infra*, the Services' understanding of the facts is neither supported by the record nor relevant to the Judges' task of identifying an effectively competitive rate.

b. The Majors' [REDACTED]

Nested within its assertions of Spotify's pricing power, *discussed supra*, SoundExchange presented

engaged in a "Direct Placement" (a/k/a "Direct Public Offering" or "Direct Listing") by which the corporation does not raise new capital, but rather enables its existing shareholders to sell their stock to the public. *See Spotify's Wall Street Debut is a Success*, New York Times (Apr. 3, 2018); *See generally Corporatefinanceinstitute.com* (search term "Direct Placement") (last accessed May 14, 2021).

[56] It may be that SoundExchange was reluctant to emphasize a countervailing power argument that was not based on a licensee's pricing power because pricing power (through steering) was the rationale applied in *Web IV*.

witness testimony and advanced arguments that the [REDACTED]—in the interactive service market.[57] Some of the most compelling testimony in this regard was provided by Aaron Harrison, Universal's Senior Vice President, Business & Legal Affairs, responsible for overseeing the teams that negotiate licensing agreements with digital music services. Harrison WDT ¶ 1.

In his written direct testimony, Mr. Harrison emphasized the [REDACTED]:

> [S]ome on-demand services are part of companies that dwarf [Universal] and dominate digital markets. Amazon, Apple and Google, for example, can rely on their size to absorb any losses from their streaming services *and [REDACTED]*.

Id. ¶ 41 (emphasis added); see also Orszag WDT ¶ 39 n.56 (relying on a 2019 trade publication article stating that Amazon Music is reportedly *growing faster than Spotify and Apple Music*).[58] At the hearing, Mr. Harrison elaborated on this

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[57] The rapid rise of the tech firms in the interactive market is undisputed. The record reveals that [REDACTED], account for [REDACTED] of U.S. interactive subscribers respectively, and [REDACTED] has already [REDACTED]. Orszag WDT, tbl.4.

[58] As noted above, SoundExchange does not emphasize this argument. In this regard, Mr. Harrison buries this [REDACTED] in a section of his WDT entitled, "[REDACTED]," Harrison WDT at 12, where he notes there are "several reasons" why *[REDACTED]*. But the fourth (and final) reason he provides, the one addressed in the accompanying text, *see id.* ¶ 41, pertains *only* [REDACTED]. Thus, this final reason resides as something of a non sequitur within a section explaining why Mr. Harrison believed *[REDACTED]*.

[REDACTED]. 9/3/20 Tr. 5752 (Harrison) (acknowledging that Universal's [REDACTED]).

The relevance of the *size* of the tech firms must be distinguished from the *market* power of a Must Have Major. The latter has what Professor Willig aptly describes as "walk away" *market* power, *see* Trial Ex. 5600 ¶ 14 (CWDT of Robert Willig) (Willig WDT), in that a service cannot operate when it lacks a license for the sound recordings from each of the three Majors. Therein lies the power of ownership and control over essential inputs possessed by complementary oligopolists. The tech firms, however, possess a different type of power. Their advantage is based on *sheer size*, affording them the potential to dominate a market they decide to enter.[59] Thus, if they were to control the downstream interactive streaming market [REDACTED], they would be well-positioned to threaten blacking out one (or more) Majors and to follow through on that threat by, as Mr. Harrison testified, [REDACTED]. *See* SX PFFCL ¶

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[59] This distinction between market power and power derived from sheer corporate size is a specific example of a broader contemporary issue in competition law, especially with regard to these tech firms. *Compare* Tim Wu, The Curse of Bigness 15, 21 (2018) (asserting that the power of "just a handful of giants . . . *Amazon, Google and Apple . . . transcend[s] the narrowly economic") with* J. Wright *et al.*, *Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust*, 51 Az. St. L.J. 293, 362 (2019) (criticizing the new emphasis on sheer corporate size as "call[ing] for nothing less than the complete dismantling of the consumer welfare standard and the consensus . . . among antitrust practitioners, enforcers and academics . . . about how to promote competition.").

336 ("the music business is a rounding error for these big-tech services.").[60]

Accordingly, [REDACTED]. As Mr. Harrison further acknowledged on cross-examination, it was his view that "[REDACTED]" 9/3/20 Tr. 5721 (Harrison). Moreover, Mr. Harrison agreed that the economic [REDACTED] would not only [REDACTED], but also would "[REDACTED]." 9/3/20 Tr. 5721 (Harrison).

The Services do not dispute that the Majors [REDACTED]. In fact, relying on Mr. Harrison's testimony, the Services argue that the Majors [REDACTED] [to] [REDACTED] . . . .Services PFFCL ¶ 147.[61] The Services argue that this testimony

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[60] The ability of tech firms to dominate markets, including music markets, and the implications of that power has been noted by economists who have studied the issue. *See* Alan B. Krueger, Rockonomics at 103, 200–201 (2019) ("Superstar firms, including *Google, Apple and Amazon*, have probably benefited from . . . deploying the technological innovations that enable them to take advantage of enormous economies of scale [b]ut there is also a concern that such firms use their dominant position to stifle competition. . . . Spotify's long-run existential challenge is exacerbated by the fact that [tech firms] can sustain losses . . . *rais[ing] the question of whether Spotify can be sustainable as a stand-alone company.")* (emphasis added).

[61] The idea that [REDACTED]. In *Web II*, 72 FR 24084 (2007), the Judges set rates for all noninteractive services at $0.0008 for 2006, rising annually to $0.0019 in 2010, after a hearing that included the large tech services of that era—Yahoo, Microsoft, and AOL. After the passage of the Webcaster Settlement Acts of 2008 and 2009, SoundExchange negotiated a substantially *lower* per-play royalty rate regime for the pureplay noninteractive services—beginning at the same $0.0008 for 2006, but then lower in every subsequent year until reaching a 2010 rate of $0.00097, only 51% of the *Web II* rate. (The pureplay rate was

reveals that "[t]he unmistakable implication of Mr. Harrison's testimony [is that Universal] [REDACTED] Services PFFCL ¶ 147.

The Judges find that the Services misconstrue the import of this aspect of Mr. Harrison's testimony. His point is *[REDACTED]*. (In fact, [REDACTED] make that apparent. *See* Orszag WDT tbls.15 & 16.). Rather, the point is that the *[REDACTED]* would [REDACTED] would [REDACTED]. For example, [REDACTED]. *See generally* J. Baker & J. Farrell, *Oligopoly Coordination, Economic Analysis, and the Prophylactic Role of Horizontal Merger Enforcement*, 168 U. Pa. L. Rev. 1985 (1986). Thus, [REDACTED].[62]

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part of a greater-of structure including a 25%- of-revenue prong, but that prong was not triggered.). In addition, the pureplay settlement rates continued through 2015 and were substantially lower than the *Web III* rates. For example, in the final year of the *Web III* rate period (2015), the pureplay rate was $0.0014, only 61% of the *Web III* rate of $0.0023 (with similar disparities in the prior years of the *Web III* rate period). The Webcaster Settlement Acts prohibited a party from using the settlement rates as precedent or evidence in subsequent proceedings. *See generally* Jeffrey A. Eisenach, *The Sound Recording Performance Right at a Crossroads: Will Market Rates Prevail?*, 22 CommLaw Conspectus 1 (2014).

[62] The Services also construe Mr. Harrison's testimony as [REDACTED] at "market segmentation." Services PFFCL ¶ 147. However, market segmentation in the music streaming markets is typically undertaken to effectuate price discrimination. There is no sufficient evidence that is occurring here. The record does not indicate that Apple, Amazon, Google, and Spotify compete among themselves by each appealing principally to different segments of the listening public based on the varying willingness-to-pay among listeners (although each has tiers and products intended to appeal to categories of listeners varying based on willingness-to-pay).

Whether [REDACTED] generates an effectively competitive rate *in the interactive benchmark market* is of no consequence in this proceeding regarding *the noninteractive market*.[63] Rather, *the important issue for the present benchmarking purposes is whether the royalty rate the Majors agree to accept from Spotify is less influenced, on balance, by the complementary oligopoly power of the Majors [REDACTED].*

Mr. Harrison's testimony clearly shows that [REDACTED]. This is the economic reality that spawned Spotify's bargaining power—a reality created by Spotify's successful 2011 entry into the U.S. market. That is, it is a power that Spotify created, not merely a marketplace factor that the Majors, as complementary oligopolists, chose to exploit. Further, this particular bargaining power cannot be characterized and explained away like SoundExchange's other attempts to explain Spotify's bargaining power—[REDACTED]. Quite the contrary: [REDACTED] [64] [REDACTED]

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[63] [REDACTED]). *See generally* David T. Scheffman & Richard S. Higgins, *Twenty Years of Raising Rivals' Costs: History Assessment, and Future*, 12 Geo. Mason L. Rev. 371, 375 (2003). An economist who specializes in the analysis of music markets has noted that licensees and licensors have the power to strategically manipulate relative streaming royalty rates. Kristelia A. Garcia, *Facilitating Competition by Remedial Regulation*, 31 Berkeley Tech. L.J. 183, 221 (2016) ("the owners of popular songs . . . acting alone or in tacit collusion with similarly situated entities [can] act anticompetitively by . . . offering favorable rates to one service over another.").

[64] Tech firm dominance would not necessarily be limited to the exertion of their power in vertical negotiations with the Majors. The tech firms could integrate upstream and develop their own record companies and poach artists from the Majors, Such an

Mr. Harrison's testimony as considered above was echoed by Mr. Piibe, Sony's principal witness. Relying on Mr. Piibe's written testimony, SoundExchange argues as follows:

> If Spotify was out of the market, record companies would have faced a material reduction in their relative bargaining power with other services. . . . [REDACTED].

SX PFFCL ¶ 333 (quoting Piibe WDT ¶ 48) (emphasis added).[65]

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event is not unlikely, given that (1) Amazon has already integrated upstream to create or purchase television and film content through Amazon Studios, (2) Apple has already integrated upstream with original content television shows, movies and documentaries available via Apple TV, and 3) Google has made a similar foray, through YouTube Originals. *See generally https://www.fastcompany.com/3058507/apple-facebook-google-and-alibabatake-hollywood* (accessed June 2, 2021). Further, there is historical precedent for downstream distributors integrating upstream to compete with licensors, such as in 1939, when the NAB, representing radio station licensees, created Broadcast Music, Inc. (BMI) in the mid-20th century to compete with ASCAP, the dominant musical works licensor, after the latter sought a substantial increase in royalty payments. *See, https://www.bmi.com/about/history* (accessed June 2, 2021).

[65] [REDACTED] Mr. Piibe's testimony, repeated by SoundExchange, [REDACTED], the Judges do not credit other portions of that testimony. Specifically, the Judges do not agree that, in the context of vertical negotiations involving complementary oligopolists, [REDACTED], complementary oligopolists prefer multiple downstream licensees whose competition, *inter se*, allows the complementary oligopolists to avoid "double marginalization" (oligopolistic profits shared by upstream licensors and downstream sellers) and thus to capture for themselves the entirety of the supranormal profits generated

SoundExchange also makes this bargaining point, in the form of a response to Professor Shapiro's argument that the Majors should have instead gone on offense, using their complementary oligopoly power "[REDACTED]." 8/20/20 Tr. 3102–04 (Shapiro). In response to this argument, SoundExchange convincingly stated:

> Had record companies leveraged their must-have status to walk away from Spotify, as Professor Shapiro suggests they were willing to do, Spotify's exit would have strengthen[ed] Apple Music significantly, and also strengthen[ed] Amazon and Google. [REDACTED].

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by their market structure. *See Web IV*, 81 FR at 26342 & n.98 (Professor Katz testifying that "*actually, the more intense the competition downstream, the greater the incentive to charge a high price upstream because you don't have to worry about so-called double marginalization)* (emphasis added). Also, Mr. Piibe oddly omits from his list of benefits arising from a better Sony bargaining position its ability to increase its own profits—listing only artist income and investment recoupment as the benefits of a more advantageous bargaining environment. It is curious when a businessman fails to identify his company's own ability to increase profits as a worthy goal, as if acknowledging a desire to maximize profits is somehow inappropriate, so it is better to be disingenuous than disreputable. And, in that vein, Mr. Piibe joins in the Orwellian language of several of the Majors' other fact witnesses—identifying their streaming service counterparties as their "partners." Parties seeking to promote their own interests at the expense of their counterparties is a fundament of negotiation to be anticipated and welcomed, but the counterparties are hardly "partners." (Although in the context of [REDACTED] the Judges find it appropriate to note that the [REDACTED]).

SX PFFCL ¶ 335 (citing 8/11/20 Tr. 1273–75 (Orszag); Orszag WDT ¶ 33, tbl.4; 9/3/20 Tr. 5733 (Harrison) (emphasis added)).

To illuminate further how Spotify's role as a bulwark against the tech firms influenced the Majors' bargaining position with Spotify, SoundExchange states:

> Put simply, leveraging must-have status to put Spotify out of business would risk making Apple Music dominant in the market. [REDACTED], the result would be a material increase in their relative bargaining power. The outcome would put the record companies in a precarious position, *given that the music business is a rounding error for these big-tech services.*

SX PFFCL ¶ 336 (citing 8/11/20 Tr. 1273–75 (Orszag); 9/3/20 5733 (Harrison) (emphasis added)). *See also* 8/11/20 Tr. 1274–75 (Orszag) (noting that the absence of Spotify would increase the market shares of the tech firms).[66] SoundExchange's point is reasonable. Indeed, given that the record makes it clear [REDACTED].

c. The Majors Demonstrated [REDACTED]

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[66] More precisely, using Mr. Orszag's subscriber data, if Spotify left the market and its subscriber share was distributed proportionately among its existing competitors, [REDACTED] *See* Orszag WDT, tbl 4. Alternatively, if Spotify were to be acquired by another large tech firm (*e.g.*, Facebook) and no longer be "independent," then adding Spotify's share to the existing tech firm shares would place [REDACTED]% of the interactive subscription in the hands of the large tech firms.

Early in the negotiations, the [REDACTED]. Mr. Harrison's further testimony on behalf of SoundExchange and Universal, in colloquy with the Judges, made that clear:

The Judges: [W]as it your understanding that [REDACTED]?

Mr. Harrison: [REDACTED]

9/3/20 Tr. 5748 (Harrison) (emphasis added).

The documentary evidence regarding the negotiations between Spotify and the Majors, relied on by SoundExchange, is consistent with the testimony considered above. More particularly, this evidence also reveals that *[REDACTED]*.[67]

In an email to Stefan Blom, Spotify's then Chief Strategy Officer, dated December 7, 2016— approximately one-half year prior to the execution of the Spotify-Sony 2017 Agreement—*Sony's* President, Global Digital Business & U.S. Sales, Dennis Kooker, wrote:

[REDACTED].

Trial Ex. 4026 (emphasis added).[68] *See also* SX PFFCL ¶ 441 (acknowledging that Trial Ex. 4026

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[67] [REDACTED] Spotify with a countervailing power that generated a more level bargaining table, in contrast to the one-sided bargaining where a "Must Have" Major could threaten— in Professor Willig's terminology—to "walk away" from the negotiations. This change explains why the [REDACTED] other terms resulted in [REDACTED], as discussed *infra*.

[68] Mr. Kooker testified in *Web IV*. SoundExchange did not call him as a witness in this *Web V* proceeding.

[REDACTED].[69] And, as testified to by Mr. Piibe (who reported to Mr. Kooker), Spotify requested [REDACTED]s. 9/3/20 Tr. 5323 (Piibe). Thus, from the [REDACTED] that the former [REDACTED] through, *inter alia*, [REDACTED].

As generally acknowledged by Mr. Harrison's testimony, discussed *supra*, Universal's internal documents [REDACTED]. Eight months before the parties concluded negotiations and entered into the April 2017 Agreement, Johnathan Dworkin, Universal's Senior Vice President of Digital Strategy and Business Development, wrote the following in an internal email to other Universal executives dated August 27, 2016:

[REDACTED]Trial Ex. 4023. *See also* SX PFFCL ¶ 473 (SoundExchange conceding that in Trial Ex. 4023 [REDACTED].").

In a subsequent internal email to other Universal executives dated September 4, 2016, Jeffrey Harleston, Esq., Universal's General Counsel and Executive Vice President of Business & Legal Affairs,

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[69] The Judges understand the Majors' expressed interest in a [REDACTED] to be a specific example of how the Majors' could [REDACTED]. It is also true, as the Services point out, the record reflects that the [REDACTED] (and the ultimate Direct Placement [REDACTED]. *See* *https://seekingalpha.com/article/4408328-direct-listing-explained* (accessed June 2, 2021). However, there is no record evidence regarding the cost (including opportunity cost) incurred by the Majors to [REDACTED], so the Judges cannot find sufficient evidence that the Majors' [REDACTED] was an independent or material motive for [REDACTED]. *See also* Services PFFCL ¶ 144 (*the Services* acknowledging that Spotify's [REDACTED] (emphasis added).

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wrote the following—still *seven month prior* to the execution of Universal's 2017 Agreement with Spotify: [REDACTED].

Trial Ex. 5421 (emphasis added).[70] In this exhibit, Mr. Harleston added that the [REDACTED] Trial Ex. 5421. As discussed further *infra*, the Judges find Spotify's [REDACTED] to be consistent with [REDACTED].

Rounding out the early documentary evidence, the third Major, Warner, in internal notes written by its chief Spotify negotiator, Tracey Gardner, dated October 12, 2016—*eight months out from the eventual Warner-Spotify 2017 Agreement*—recorded Spotify's [REDACTED] . . . ." Trial Ex. 4022 (emphasis added). According to these notes, Warner conveyed [REDACTED] Trial Ex. 4022 (emphasis added). Thus, Warner, [REDACTED], had indicated to Spotify early in the negotiations that [REDACTED].[71]

As negotiations proceeded, [REDACTED] remained an important element [REDACTED]. Specifically, in a December 13, 2016 internal Universal email, Trial Ex. 4052, written [REDACTED] of the Universal-Spotify 2017 Agreement, Universal's Michael Nash, Executive Vice

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[70] Mr. Harleston, also, testified in *Web IV*, but SoundExchange did not proffer him as a witness in this proceeding.

[71] As the quoted language provides, Warner indicated that there was [REDACTED]. Although that point is self-evident and economically rational, stating so in negotiations is obviously strategically prudent. But the salient point here is that [REDACTED]—*thus allowing Spotify to negotiate on a more level playing field than would otherwise exist when it lacked such countervailing power in negotiations with a Must Have Major.*

President of Digital Strategy, included a draft [72] letter to Spotify that stated the following: [REDACTED].

Trial Ex. 4052 (emphasis added). This language not only *re-affirms* Universal's [REDACTED], it also *strongly emphasizes* the importance to Universal of [REDACTED].

In sum, the Judges find that the negotiation-related documents and testimony [73] show [REDACTED].[74]

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[72] Although the letter is identified in the email as a draft, SoundExchange does not claim that correspondence containing this or substantively similar language was not in fact transmitted to Spotify. *See* SX RPFFCL (to Services) at 83 n.35 (noting the correspondence within Trial Ex. 4052 is identified as a draft but not denying it was sent to Spotify). Clearly, SoundExchange and Universal could have provided documentary evidence and/or testimony in an attempt to demonstrate the draft correspondence (or its sum and substance) had not been transmitted to Spotify. Because SoundExchange did not present such evidence or testimony, the Judges find that this correspondence, or a substantively similar version, was transmitted by Universal to Spotify.) In any event, this draft email demonstrates Mr. Nash's state of mind regarding the importance to Universal of [REDACTED].

[73] *These* business documents are probative because they provide facts relating to the parties' state of mind during negotiations that are *[REDACTED]. See* Manne & Williamson, *supra* at 626–627 ("business documents can be useful in demonstrating 'economic realities' [that are] relevant . . . [and] it is "permissible to . . . consider evidence of intent, belief, or motivation to demonstrate that the act intended did, in fact, happen.).

[74] In an attempt to explain away the statements made by the Major's executives contained in the documents discussed above—[REDACTED]—SoundExchange asserts that these statements are [REDACTED] For example, [REDACTED] testified that [REDACTED]." [REDACTED] instead

d. The Services' Contrary Explanation of the [REDACTED] as Based Solely on the Majors' Complementary Oligopoly Is Unavailing

The Services do not acknowledge this countervailing power argument. Rather, they attempt to explain away Spotify's value and power—[REDACTED]—by treating that phenomenon as purely the consequence of the Majors' complementary oligopoly power.

In this regard, the Services assert that the [REDACTED] was merely the [REDACTED]—telltale behavior of a complementary oligopolist rather than a price competitor. They rely on testimony by Messrs. Harrison and Orszag that Universal [REDACTED] not to [REDACTED], but rather [REDACTED]. Services PFFCL ¶ 148 (and record citations therein). The Services also cite testimony by Professor Shapiro in which he opines that when licensors are [REDACTED] 8/19/20 Tr. 2881 (Shapiro) (emphasis added). This basic principle, according to the Services,

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[REDACTED] 9/2/20 Tr. 5265 (Piibe); SoundExchange's Corrected Replies to the Services' Joint Proposed Findings of Fact and Conclusions of Law ¶ 145 (SX RPFFCL (to Services)). *See also* SX RPFFCL (to Services) at 81 nn.30, 33, 35; SX PFFCL at 147 n.17, ¶ 441 (multiple assertions by hearing *witnesses* that [REDACTED]). This argument highlights the serious defect in SoundExchange's failure to call as witnesses the negotiators and executives identified in the Majors' documents, who are the individuals who could testify as to their own state of mind when making those statements. Moreover, if these declarants [REDACTED] For these reasons, the Judges afford no weight to any testimony by SoundExchange witnesses who offer hearsay or opinion testimony regarding the so-called "true meaning" of statements made by declarants contained in the documentary record.

explains why "[REDACTED]" Services PFFCL ¶ 149 (citing 8/19/20 Tr. 2864, 2870, 2880 (Shapiro)) (emphasis added).

SoundExchange asserts there is a serious flaw in this reasoning, which undermines the Services' assertion that the Majors' complementary oligopoly status explains the sum and substance of the relative bargaining power of the Majors and Spotify. Specifically, SoundExchange avers that if the Majors were [REDACTED] they would have [REDACTED]. However, the record indicates that the Majors only negotiated [REDACTED].[75] In support of this point, SoundExchange refers to particular testimony by Professor Shapiro in a colloquy with the Judges. When asked by the Judges why the Majors [REDACTED]—given that [REDACTED]—Professor Shapiro responded, [REDACTED] 8/19/20 Tr. 2880 (Shapiro) (emphasis added).

The Judges agree with SoundExchange and find Professor Shapiro's response unpersuasive. His theory of complementary oligopoly as the single cause of the [REDACTED] is premised on the idea that it was [REDACTED]—at monopoly rates rather than complementary oligopoly rates. 8/19/20 Tr. 2880–81 (Shapiro). But, if it was [REDACTED], there would have been no need [REDACTED]; rather, in their own interest the Majors would have [REDACTED]. Moreover, SoundExchange is persuasive in its

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[75] Apparently, [REDACTED], 9/3/2020 Tr. 5681–82 (Harrison), but that is not the same as a Major [REDACTED] as complementary oligopolists, in accordance with the Services' theory of the case. The Judges address the paucity of the record relating to this [REDACTED], *supra* note 51.

argument that because the Majors [REDACTED], a fact acknowledged by Professor Shapiro, *see* Shapiro WRT at 23, fig. 1; 8/20/20 Tr. 3108–09 (Shapiro), the [REDACTED].

Alternatively, Professor Shapiro noted that Spotify may have [REDACTED] because it was the "leader" among interactive services. But the Judges find the record to demonstrate, as discussed above, that Spotify's "leader" status was important because it was the leader among *[REDACTED]*. Google's economic expert witness, Dr. Peterson, though, did acknowledge the importance of [REDACTED], testifying that [REDACTED] 8/25/20 Tr. 3723 (Peterson).[76]

Indeed, were it not for [REDACTED], its position [REDACTED] would make it [REDACTED], because [REDACTED]. That is, the Majors, as complementary oligopolists, would prefer to keep downstream

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[76] By contrast, it is not clear that Professor Shapiro had recognized, acknowledged or recalled the importance of Spotify's [REDACTED], until the Judges brought the issue to his attention. *Compare* 8/19/20 Tr. 2882 (Shapiro) (stating in response to the Judges' inquiry that he did not recall reviewing correspondence indicating that [REDACTED]) *with* 8/20/20 Tr. 3080 (Shapiro) (Professor Shapiro testifying the next hearing day that it was his "sense" that because Spotify was [REDACTED]the Majors "[REDACTED].") *and* Shapiro WRT at 18 n.58 (Professor Shapiro quoting from Sony's December 7, 2016 internal document (later marked in evidence as Trial Ex. 4026 and discussed *supra*) stating that [REDACTED] (emphasis added). Additionally, it is noteworthy that Professor Shapiro did not specifically address the point in Harrison WDT ¶ 41 where Mr. Harrison identified [REDACTED] because he identified the Harrison WDT as a document upon which he relied in preparing his rebuttal testimony. Shapiro WRT app. A.

competition roiling to avoid a downstream extraction of monopoly profits (double marginalization) that would reduce the Majors' revenues, as discussed in *Web IV* and noted earlier in this Determination.

The Judges note that, ultimately, in their post-hearing briefing, the Services do appear to acknowledge that the Majors [REDACTED] Services RPFFCL ¶ 477 (emphasis added). The Services assert, though, that this reflects only that Spotify has "*[REDACTED]*, which, they contend, would explain why the Majors [REDACTED]. Services RPFFCL ¶ 477 (emphasis added). But, the Judges find this assertion to be fully consistent with their finding that Spotify's much different circumstances explain why it had countervailing power—generated by the confluence of (1) [REDACTED] and (2) its own status as the [REDACTED].[77]

Finally, according to the Services, the Majors' [REDACTED] "does not inform the demonstrated reasons why they [REDACTED] Services RPFFCL ¶ 477. The Judges partially agree: the Majors' decision [REDACTED] is not informative—*standing alone*—to explain why they did [REDACTED]. However, the Services are simply in error when they say the Majors'

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[77] As the Judges have explained in other circumstances, licensors will also charge different licensees different royalties to promote price discrimination and in recognition of a licensee's lower willingness-to-pay (often as a function of its lower ability-to-pay). But, a licensor will not offer a licensee a lower rate if that licensee's presence serves to cannibalize the business of services paying higher royalties (as Professor Willig explains well in this proceeding). Here, after the [REDACTED] [REDACTED]. Thus, providing [REDACTED]. There was; and that particular attribute—as the record demonstrates—was [REDACTED].

[REDACTED] was disconnected from [REDACTED]. As the record discussed above reveals, the connection is clear: SoundExchange provided ample evidence that the Majors [REDACTED]. And, to reiterate, Spotify came to possess that power because it had developed a market-leading business while [REDACTED].[78]

e. There Is Agreement That Spotify's Subscription Royalty Rate Is [REDACTED] Set Through the Exercise of Complementary Oligopoly Power Alone

Notwithstanding the foregoing analytical disputes, Professor Shapiro acknowledges that

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[78] Additionally, the Judges reject the Services' argument as reductive. That is, the Services treat the complementary oligopoly *structure* of the licensor side of the market as wholly explanatory of the [REDACTED]. In other words, they essentially assert that because the licensors are complementary oligopolists *any* [REDACTED] must be a matter of pure self-interest. But, that structural explanation ignores the dynamic and strategic *competitive effects* revealed by the present record: [REDACTED]; [REDACTED]; and the interplay of those two forces that provides Spotify with a countervailing power [REDACTED]. The Services' argument also is inconsistent with the fundamental economic concept of "Pareto Optimality," which posits that any consensual transaction between private actors is efficient, in the sense that it benefits each party (or else it would not enter into the transaction). To be sure, if a party is not a willing buyer or seller, whether because of a counterparty's excessive market power or otherwise, this optimality is not realized, but here the Majors and Spotify found it in their interest, through the exercise of their countervailing power, to enter into agreements containing [REDACTED]. Accordingly, it is incorrect to state, as the Services do, that the negotiated [REDACTED] cannot be in the *mutual* interest of Spotify and the Majors.

Spotify's subscription royalty rate equates with a rate he identifies as set without the anticompetitive effect of complementary oligopoly power. As SoundExchange explains—relying on Professor Shapiro's own testimony—in the course of developing his proposed competition adjustment, he calculates [REDACTED]'s effective per-play interactive royalty rate at $[REDACTED]. Ex. 4094 at 40 & tbl.10 (SCWDT of Carl Shapiro) (Shapiro WDT). Then, he characterizes this $[REDACTED] rate as an effectively competitive rate (as a base for comparison with other rates he identifies as not effectively competitive). Id. at 40; 8/19/20 Tr. 2850 (Shapiro).[79]

SoundExchange notes that, according to Professor Shapiro's own calculations, Spotify's effective subscription per-play rate is $[REDACTED], Shapiro WDT at 40, tbl.10, *[REDACTED] to the [REDACTED] rate he characterizes as free of the complementary oligopoly effect.* 8/20/20 Tr. 3112–13 (Shapiro); see also 8/10/20 Tr. 1170 (Orszag). SoundExchange further notes that Professor Shapiro acknowledges, as he must, that these two rates are [REDACTED] 8/20/20 Tr. 3113 (Shapiro). Given this [REDACTED], Mr. Orszag opines that, at most, a competition adjustment should measure the difference between the Spotify effective rate ($[REDACTED]) and the [REDACTED] effective rate ($[REDACTED]). Orszag

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[79] Professor Shapiro reaches this opinion based on the limited repertoire available on [REDACTED], which he understands to demonstrate that customers "do not expect to find all their favorite artists and recordings on the service." Shapiro WDT at 40. Thus, he opines that, for [REDACTED], no record company is a Must Have, making the rate effectively competitive. 8/20/20 Tr. 3110–11, 3117–19 (Shapiro).

WDT ¶ 114. This difference would lead to a [REDACTED]% effective competition adjustment.[80]

After first conceding [REDACTED] the Services attempt to dismiss the importance of this equivalency—in a reply, quoted below—that is off-point and unconvincing:

> In an attempted "gotcha," Mr. Orszag argues that if [REDACTED]'s per-play rate of $[REDACTED] reflects the lack of must-have power, and if [REDACTED] pay $[REDACTED] per performances (*see* Shapiro WRT at 30 fig. 3), then the record companies must not be must-have for those services either—in which case there is no need to adjust the Spotify rates any further for effective competition (or to make an adjustment of only [REDACTED] [81] ([REDACTED])). Orszag WRT ¶ 114. . . . Mr. Orszag is resorting to sleight-of-hand. Because he artificially excludes all the discounted plans from his calculations, the effective per-play rate of Spotify plans on which he actually relies for his benchmark is $[REDACTED], not $[REDACTED]. Moreover, as explained at length above, he does not use the per-play rate at all, but rather alters the *Web IV* methodology by starting from Spotify's percent-of-revenue royalty. . . . Were Mr. Orszag actually working from a $[REDACTED] per performance

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[80] [REDACTED]/[REDACTED] = [REDACTED] [REDACTED]¥[REDACTED] = [REDACTED]%.

[81] This [REDACTED]% calculation appears to be a computational error, as indicated by the math in the immediately preceding footnote.

benchmark and following the *Web IV* methodology [by]. . . drop[ping] his industry-wide interactive per-play benchmark . . . he might have a point—but he does not.

Services PFFCL ¶ 160.

This criticism is off-the-mark because it explains why the Services believe that *Mr. Orszag* improperly ignored Spotify's $[REDACTED] effective per-play subscription rate. But the point here is not what Mr. Orszag did or did not do with this data point, but rather that Professor Shapiro identified two [REDACTED] royalty rates as simultaneously satisfying and not satisfying the effective competition requirement (inconsistent with the principle of transitivity). The Services' response fails to address that point.

The Judges find that the [REDACTED] is generally confirmatory of the fact that Spotify's [REDACTED] is not—as the Services maintain—a product solely of the Majors' complementary oligopoly power.[82]

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[82] However, the Judges do not find that the [REDACTED] of Spotify's effective per play rate with [REDACTED]'s per play rate limits the effective competition adjustment to the [REDACTED] in those rates. Rather, as discussed elsewhere in this Determination, the Judges agree with Dr. Peterson (Google's expert economic witness) that the 12% steering adjustment from *Web IV* remains applicable here. But, as also described elsewhere herein, that 12% downward adjustment must be offset by use of the [REDACTED]), as applied to the segments of the Spotify market for which the [REDACTED] applied. See Peterson WDT fig. 5 ([REDACTED]). Further, by limiting the application of the [REDACTED]" adjustment only to Spotify market segments to which that rate actually applied, the

f. The Majors' [REDACTED] Explains the [REDACTED] of the Ongoing Negotiations

The Majors' [REDACTED] explains the flow of the ongoing negotiations between the Majors and Spotify. Unlike a negotiation in which the complementary oligopolists' "Must Have" status allows them to dictate terms, they [REDACTED].

In this regard the Services describe these negotiations as follows:

[W]hat is apparent from the evidentiary record is [REDACTED] . . . *par for the course in a deal negotiation* . . . .

Services RPFFCL ¶¶ 426–427 (and record citations therein).

But, the point of complementary oligopoly power is that a "Must Have" supplier/licensor *[REDACTED]* to its buyers/licensees. And yet, here the Services acknowledge that the Spotify-Major negotiations were marked by a [REDACTED], as happens in *any* negotiation. Clearly, given that the Majors remained "Must Have" licensors, something else [REDACTED], and, as discussed above, that "something else" is Spotify's countervailing power flowing from its status as the [REDACTED].[83]

Judges have allayed a final argument by the Services, viz., that the evidentiary value of the Spotify and [REDACTED] should not apply beyond the subscription tier. *See* Services PFFCL ¶ 161.

[83] The Services maintain that, as a general rule, complementary oligopolists, like monopolists, negotiate with their counterparties, but that does not demonstrate the existence of effective competition. Shapiro WRT at 1; *see also Web IV*, 81 FR

The [REDACTED] is clear in the record. Among the provisions that the Majors prevailed on (and, thus reciprocally, as to which [REDACTED] were four important items: (1) [REDACTED], (2) [REDACTED], (3) [REDACTED], and (4) [REDACTED]. Services PFFCL ¶ ¶ 146, 157–158 (and record citations therein).

And, on the other side of the ledger, among the provisions as to which *[REDACTED]* in negotiations (and, thus reciprocally, as to which [REDACTED]) were the following important items: (1) [REDACTED], (2) [REDACTED], (3) [REDACTED] [REDACTED], and (4) [REDACTED] [REDACTED]. SX PFFCL ¶ ¶ 293, 413, 431–432, 444; SoundExchange's Corrected Replies to the Services' Joint Proposed Findings of Fact and Conclusions of Law ¶ 158 (and record citations therein) (SX RPFFCL (to Services)). This [REDACTED]led the Services to describe that process as typical of an ordinary bargaining process when each counterparty has bargaining leverage. *See* Services RPFFCL ¶¶ 413; 424, 426–427 (and record citations therein) (it is *"unsurprising"* that *"each party* to the negotiation [REDACTED]; it is *"inevitable* [that] *not all* [REDACTED] will form part of the . . . agreement"; and "what the [Warner-Spotify negotiation] record shows is [REDACTED] (emphasis added). These

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at 26344 (monopolists and complementary oligopolists bargain with their customers to establish discriminatory prices that increase the sellers' profits). That is certainly true, but it is insufficient for the Services simply to maintain, *ipse dixit*, that *any* "give-up" by a Major in negotiations represents the foregoing elements of negotiation rather than a "give-up" generated by identifiable countervailing power.

descriptions are not consistent with the one-sided negotiations between complementary oligopolists and their relatively powerless counterparties, belying the Services' assertion that these negotiations reflected the one-sided power of the Majors' complementary oligopoly status.[84]

Finally, consistent with the idea that the Majors would continue to bargain ([REDACTED]—is the following succinct colloquy (referred to *supra*) between Spotify and Warner negotiators in October 2016, as recounted in one of Warner's internal documents:

[REDACTED]

[REDACTED]

Trial Ex. 4022 (emphasis added). As noted *supra*, Warner was making a basic economic point: It understood that Spotify, as a [REDACTED]. The [REDACTED] realized by the Majors reflect [REDACTED] to incur for this benefit, and the Majors' [REDACTED] reflect [REDACTED] to incur.

In sum, the Judges find that the negotiation documents on which SoundExchange relies reflect bargaining that is consistent with: (1) The testimony of the Majors' witnesses regarding [REDACTED] and (2) the economic principle of countervailing power

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[84] By contrast, SoundExchange, in its zeal to portray Spotify as [REDACTED] in these negotiations, studiously ignores the fact that Spotify [REDACTED]. The Judges see this as "hyperbole-by-omission." The Judges reject any notion that Spotify had acquired unilateral power to dictate terms; rather, its [REDACTED] provided it with a power to countervail the Majors' Must Have power.

that, as discussed *supra*, could and did blunt some of the Majors' complementary oligopoly power, [REDACTED] toward an effectively competitive rate, even in the absence of horizontal price competition.[85]

C. *The Price Competition Adjustment Necessary To Set an Effectively Competitive Rate*

In the exercise of their statutory duty to "to decide whether the rates proposed adequately provide for an effective level of competition," *SoundExchange, Inc. v. Copyright Royalty. Bd.*, 401 F.2d 41, 57 (D.C. Cir. 2018), the Judges find that the 12% effective competition adjustment that they set in *Web IV* remains an appropriate measure for an effective competition adjustment (before any necessary adjustment to reflect Spotify's countervailing power). To recap, the 12% effective competition adjustment was based on a factual record that included Pandora Steering Experiments, a steering-based agreement between Pandora and Merlin,[86] and a steering-based agreement between iHeart and Warner. The *Web IV* Judges defined steering in the same manner as defined by the parties in this proceeding, *i.e.*, as a licensee's "ability to control the mix of music that's played on the service in response to differences in

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[85] The Majors' [REDACTED]. As noted *supra*, in an internal Sony email from a Sony line negotiator, Andre Stapleton, to Mr. Piibe, Trial Ex. 5467, discussed *supra*, the [REDACTED]. By contrast, Mr. Sherwood, a Warner witness, [REDACTED], testifying, as noted *supra*, that [REDACTED]. 9/9/20 Tr. 5931 (Sherwood).

[86] Merlin is referred to in the music industry as "the fourth major." *See, e.g., https://theindustryobserver.thebrag.com/heres-to-ten-years-of-merlin/ (accessed* June 7, 2021).

royalty rates charged by different record companies." *Web IV*, 81 FR at 26356.

The Judges in *Web IV* construed the economics of steering in the following manner:

> [S]teering in the hypothetical noninteractive market would serve to mitigate the effect of complementary oligopoly on the prices paid by the noninteractive services and therefore move the market toward effective, or workable, competition. *Steering is synonymous with price competition in this market, and the nature of price competition is to cause prices to be lower than in the absence of competition, through the ever-present "threat" that competing sellers will undercut each other in order to sell more goods or services.*

Web IV, 81 FR at 26366 (emphasis added). Moreover, the *Web IV* Judges noted that the steering evidence was especially probative because it consisted of "a *combination* of benchmarks, experiments and expert economic theorizing using fundamental principles of profit maximization and opportunity cost . . . [a] combination of proofs and arguments [that] is actually *more persuasive* to the Judges than a mere benchmark standing alone." *Web IV*, 81 FR at 26367 n.141. Relying on all the steering evidence presented, the *Web IV* Judges determined that benchmark rates that were inflated by the complementary oligopoly effect needed to be adjusted downward by 12%, in order to establish an effectively competitive rate. *Web IV*, 81 FR at 26404–05.

Additionally, crucial evidence that supported the Judges' *Web IV* finding of a 12% adjustment is part of

the present record, having been designated as such by Pandora. Specifically, Pandora designated as part of the *Web V* record the *Web IV* Written Direct Testimony and hearing testimony of Stephan McBride, Pandora' Senior Scientist responsible for the Pandora Steering Experiments on which the Judges relied. *See* Trial Exs. 4104 & 4105; *see generally* 37 CFR 351.4(b)(2) (permitting a party to designate "past records and testimony" for inclusion in its Written Direct Statement).

The Judges in *Web IV* described the Pandora Steering Experiments as follows:

> Pandora's . . . steering experiments . . . consist of comparisons between randomly selected groups of listeners, one group receiving a manipulated experience (the "treated" group) and the other group receiving the standard Pandora experience (the "control" group). . . . These experiments are randomized, controlled, and blind . . . .

> Pandora initiated the steering experiments because . . . it recognized that, as a noninteractive service it has the economic incentive to "steer" its performances toward music owned by a particular record company if that music is available at a lower royalty rate. . . . Therefore, Pandora decided to determine through its steering experiments whether and to what extent it could use this technological ability to steer performances *without negatively affecting listenership.*

>   . . .

The Steering Experiments consisted of a group of 12 experiments. Each experiment involved a combination of one of three target ownership groups (UMG, Sony or WMG) and a target "deflection" in share of spins (treatment group) as compared to spins that would occur according to the standard Pandora music recommendation results (control group

The experiments demonstrated that Pandora was able to steer +15% or -15% for all three Majors without causing a statistically significant change in listening behavior. McBride WDT ¶ 21. However, Pandora was unable to steer +30% or -30% for Universal or Sony without creating a statistically significant change in listening behavior.

Web IV, 81 FR at 26357–58 (emphasis added).

As noted above, the Judges also relied on provisions in two agreements. First, *Web IV* noted that "the central piece" of the agreement between Pandora and Merlin was a "reduced per-play rate in exchange for increased plays"—the very essence of steering. *Web IV*, 81 FR at 26357. The second agreement the Judges relied on in *Web IV* was the iHeart/Warner agreement which the *Web IV* Judges described as "incorporat[ing] the same economic steering logic as the Pandora/Merlin Agreement [by] [c]reat[ing] an incentive for iHeart to increase Warner's share of performances substantially." *Web IV*, 81 FR at 26375. As with the Pandora/Merlin Agreement, the *Web IV* Judges described this "steering aspect" of the contract as reflective of "price competition—an increase in quantity (more performances) in exchange for a lower price (a lower rate)." *Web IV*, 81 FR at 26383.

SoundExchange argues that this evidence of steering is now "stale," because the experiments are outdated, as are the two cited agreements, SX PFFCL ¶¶ 490–91.[87] But the dates of the experiment and those agreements are insufficient to wash away the importance of steering as a price competition mechanism applicable to the noninteractive market. The Judges note that SoundExchange could have called a witness from Merlin in *Web V* (as it did in *Web IV*) to present testimony that may have shed light on *why* its [REDACTED] but elected not to.[88] By contrast, Pandora presented testimony from Professor Shapiro explaining that Merlin (and the Majors) had refused to agree to continue steering. Specifically, Professor Shapiro testified:

> Following the *Web IV* Determination, as a condition for obtaining the additional rights necessary to offer its non-statutory services,*[REDACTED]*. These provisions appear to be the result of the complementary oligopoly power held by certain record companies in the market for licensing recorded music to interactive services. *Given these provisions, Pandora has been unable to offer to steer toward other labels in exchange for a discounted royalty rate from them, lest it jeopardize the share of other labels in violation of their anti-steering*

[87] The Pandora/Merlin agreement was executed on June 16, 2014, the iHeart/Warner agreement was entered into on October 1, 2013, and the Pandora Steering Experiments were conducted between June 4 and September 3, 2014. *Web IV*, 81 FR at 26355, 26357, 26375.

[88] The [REDACTED]. *See* SX PFFCL ¶ 1168 (and record citations therein).

provisions. As a result, competition for incremental performances on Pandora in the form of steering has been snuffed out.

Shapiro WDT at 9–10 (emphasis added); *see also* Trial Ex. 4090 ¶ 24 (WDT of Christopher Phillips) (Phillips WDT) (noting the existence of the [REDACTED]).

In response, SoundExchange asserted that: (1) Pandora had not offered any further evidence or testimony beyond the testimony cited above; (2) it was not clear that [REDACTED]; (3) Pandora had "considerable leverage in negotiations" because it could default to the statutory rate. SoundExchange's Corrected Replies to Pandora and Sirius XM's Corrected Proposed Findings of Fact and Conclusions of Law ¶ 21 (SX RPFFCL (to Pandora/Sirius XM)).

The Judges find SoundExchange's arguments unavailing. As already noted, SoundExchange could have attempted to rebut Pandora's testimony by calling a Merlin representative, as it had in *Web IV*, yet it declined to do so. When a party is in a position to proffer testimony or evidence that would elucidate a point, or rebut an adverse point, but declines to do so, a finder of fact may determine that the testimony would not have been supportive of that party's position. *See Huthnance v. District of Columbia*, 722 F.3d 371, (D.C. Cir. 2013) (Under the "missing evidence rule, when a party has relevant evidence [which includes testimonial evidence] within his control which he fails to produce, that failure gives rise to an inference that the evidence is unfavorable to him . . . ."). The Judges infer that the absence of a Merlin witness indicates that the testimony of a

Merlin witness would not have been favorable to SoundExchange's argument on this steering issue. Moreover, there is simply *no* evidence to contradict the testimony of Professor Shapiro in this regard.

In the present case, the absence of a Merlin witness is particularly noteworthy. As Dr. Peterson recounted in his testimony, SoundExchange had in the recent past—*after Web IV*—cautioned Indies that entering into direct agreements with services, even though they appear advantageous to the Indies, may ultimately be used in rate proceeding as evidence to support a *lowering* of statutory royalty rates. 8/25/20 Tr. 3673 (Peterson); Trial Ex. 2113 (SoundExchange's 2015 notice informing labels they "should . . . keep in mind that any direct deals might be used against artists and record companies as evidence," and that because "[d]igital radio services are intensely focused on how market evidence will be used in their case, . . . you should be as well."). Although there is no evidence that SoundExchange repeated that cautionary communication in the run-up to *Web V*, there is also no evidence that it has ever retracted this warning. Thus, in this context, the absence of a Merlin witness to explain the [REDACTED] is of even greater importance.

Further, SoundExchange's assertion that steering beneficial to Pandora may have remained possible under its agreement with Merlin—and yet Pandora nonetheless acted against its self-interest and [REDACTED]—is simply bewildering; the Judges do not assume that sophisticated commercial entities engage in economically irrational conduct. Also, SoundExchange's assertion that Pandora enjoyed "considerable leverage in the negotiations"

with Merlin is purely speculative (given the absence of record evidence demonstrating such leverage) and also runs counter to an essential premise of SoundExchange's case-in-chief, presented through Professor Willig, that as a matter of bargaining strategy and modeling, the record companies would not engage in steering because it would thwart the maximization of their "Must Have" value. *See* 8/10/20 Tr. 1077–78 (Willig).

Additionally, [REDACTED] was one of the very devices SoundExchange claimed in *Web IV* that record companies would use to defeat steering-based price competition. *Web IV*, 81 FR at 26364. In response, the Judges found such a contract term would constitute an exertion of the licensors' complementary oligopoly power, frustrating the setting of an effectively competitive rate. *Web IV*, 81 FR at 26373–74 ("the hypothetical use by the majors of anti-steering clauses in response to the threat of price competition-via-steering would thwart 'effective competition.' "). Here too, it would be anomalous (in the nature of a Catch–22) for the Judges to disregard the capacity of price-competitive steering to offset a complementary oligopoly effect because a record company had used such power to thwart the continuation of such steering.

Further, the Judges' task is to set a rate that equates with an effectively competitive rate that would have been agreed to by willing buyers and sellers in a *hypothetical* market. The Pandora/Merlin and iHeart/Warner agreements demonstrate that *actual* steering has occurred in the market. *A fortiori*, steering is clearly an element of the hypothetical

market (as shown by the Pandora Steering Experiments) that the Judges must construct.

The Judges also note that in the present case, Dr. Leonard, the economic expert for the NAB, adopts the 12% steering adjustment applied by the Judges in *Web IV* in order to establish an effectively competitive rate. Trial Ex. 2150 ¶ 115 (CWDT of Gregory Leonard) (Leonard WDT). In his oral testimony, Dr. Leonard testified that any initial reluctance he may have had to "reuse" this 12% adjustment was outweighed by the fact that this adjustment: (1) Is based contractual agreements; (2) is the product of agreements entered into "not that long ago"; and (3) is "conservative" and "small" relative to the complementary oligopoly effect in the present circumstances. 8/24/10 Tr. 3410 (Leonard).

In addition, Google's economic expert, Dr. Peterson, testified in favor of utilizing this same economic evidence to support the steering adjustment in the present case. Dr. Peterson's testimony in this regard is well worth quoting:

In a *hypothetical* effectively competitive market, statutory streaming services, such as custom radio services, have the potential to steer the music they use toward or away from particular labels [because] [m]usical recordings are differentiated but substitutable products. . . . [T]he service can reduce the number or share of plays for a given label's recordings if the license rate is too high. This response to rate differences is called steering. . . . [I]it is appropriate that the *hypothetical negotiation* between statutory streaming services and licensors reflect some

degree of competition from steering or the ability of the streaming services to substitute one label's recordings for another's relative to the rates that the labels charge acting as Cournot oligopolists.

The evidence available to me in this proceeding does not include recent licenses with steering adjustments built into them as was the case in the *Web IV* proceeding. *However, I am aware of no evidence that a stand-alone statutory webcaster would not be able to steer toward or away from labels, which would lead to their competing at the margin for additional plays on the service.*

In the absence of new benchmarks, it can be appropriate to use previous benchmarks. In the Web IV proceedings, there was ample evidence of the ability of statutory streaming services to steer toward or away from record labels. Thus, the evidence indicates that listener behavior permits statutory webcasters to engage in substantial steering without negatively affecting their user base. In the *hypothetical* effectively competitive marketplace for licensing statutory webcasters, licensors would not be in the position of Cournot oligopolists because their high license fees would affect the spins of their works directly.

Trial Ex. 1103 ¶¶ 37, 58–61, 64 (emphasis added) (CWDT of Steven Peterson) (Peterson WDT). Relying on this analysis, and also considering other evidence, Dr. Peterson opined that a reasonable range for the steering-based effective competition adjustment was

between 11% and 23% (which includes the Judges' 12% adjustment). Peterson WDT ¶ 65.

The Judges agree with Dr. Peterson. They emphasize that *basic economic principles* do not change with the mere passage of a few years. Although new probative factual evidence or advances in economic theory or modeling presented by an expert witness could show either that the principle is factually inapplicable or needs to be revisited, no such record has been presented in this proceeding. Accordingly, the Judges find that the economic experts cited above [89] have properly relied on the evidence supporting the Web IV steering adjustment to establish the appropriate steering adjustment in this proceeding.[90]

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[89] Pandora's economic expert, Professor Shapiro, although presenting in this proceeding a "carriage competition" model relying on the Label Suppression Experiments, rather than a steering-based adjustment, nonetheless has acknowledged previously that "a streaming service that possesses an ability to "steer" towards certain recordings, and away from others, will have 'much more bargaining power and be able to negotiate a lower royalty rate," reflecting "price competition at work," and the workings of an "effectively competitive market." *Web IV*, 81 FR at 26356–57. Thus, experts for all the commercial services are on record as supporting the use of a steering adjustment to generate an effectively competitive rate.

[90] The Judges have also not hesitated to apply evidence from a prior proceeding when they have found the prior evidence to be superior to the evidence presented in the new proceeding. *SDARS II*, 78 FR at 23063 ("The Judges rely [inter alia] . . . on . . . the unadjusted upper bound in *SDARS–I* to guide the determination of what the upper bound should be in this proceeding.").

A final aspect of the *Web IV* and *Web V* proceedings adds to the ample evidence supporting the use of a steering adjustment to establish an effectively competitive rate. In this *Web V* proceeding, Professor Willig, a SoundExchange economic witness, while testifying in support of his Shapley Value Model, emphasized repeatedly that Majors were "Must Haves" in the noninteractive market because their repertoires included the bulk of sound recording "hits" that listeners wanted to hear. *See, e.g.*, 8/5/20 Tr. 400 (Willig) ("Must Have" status is "really about the hits"); 8/5/20 Tr. 440 (Willig) (the hits are "terribly important" to the overall value of listening); 8/5/20 Tr. 448 (Willig) (the Majors' collection of hits is what makes them "Must Haves"); 8/6/20 Tr. 807 (Willig) (the level of spin rates on noninteractive services is a function of the plays of current hits); Trial Ex. 5601 ¶ 28 & n.46 (WRT of Robert Willig) (Willig WRT) (Universal has a [REDACTED]% share of the streams but accounts for [REDACTED]% of the top 100 hits according to 2019 *Billboard* data relied on by Professor Willig).

Similarly, in *Web IV*, the Judges took note of the importance of hits ("top spins") to a noninteractive service. *WebIV*, 81 FR at 26373 n.155 (" 'top spin' figures are indicative of the 'must have' aspect of the Majors' repertoire . . . suggest[ing] to the Judges that the popularity of the Majors' spins is the reason why steering away from their repertoires cannot be pursued beyond a certain level, and why [Professor] Shapiro candidly declined to reject the idea that the Majors' repertoires were 'must haves' . . . .").

Professor Willig's emphasis in this proceeding on the Majors' possession of many of the "hits" puts a fine

point on the steering issue. The noninteractive
services need to play the "hits" (at intervals consistent
with the sound recording performance complement)
in order to remain attractive to their listeners and
subscribers. That necessity renders the Majors "Must
Have" licensors. However, the flip-side of this
appropriate emphasis on the "hits" is a de-emphasis
on less popular sound recordings, *and therein lies the
ability of the noninteractive services to engage in price
competition by embedding steering into their
algorithmic or human curation system.*

That is, noninteractive services can (and, in the
case of [REDACTED], *did*) steer curated songs that
were not necessarily the hits/top spins, in a manner
that [REDACTED]. *See Web IV*, 81 FR at 26368–69
(explaining why substituting a curated song with a
[REDACTED] did not impact listeners but improved
the bottom lines of the services and labels that
engaged in steering). When the Judges consider this
point together with Professor Willig's testimony
regarding the need of noninteractive services to
obtain licenses necessary to play all the hits, the
economic coexistence *of the noninteractives' steering
ability and the Majors' "Must Have" status remains
clear.*

Finally, the Judges note that none of
SoundExchange's arguments indicates that the
fundamental economics of noninteractive services
have changed in any manner that would make
steering by such services a less useful tool for
applying an appropriate steering adjustment. Rather,
as Dr. Peterson testified, "the ability to steer for a
noninteractive statutory service is pretty much bred

right into the nature of the service where it's choosing the songs." 8/25/20 Tr. 3668 (Peterson).

In sum, the Judges find it appropriate—for the reasons discussed above—to apply a 12% steering adjustment (prior to the offsets discussed below) in order to generate a competitive rate.

D. The Countervailing Power Offset to the Price Competition Adjustment

As discussed more fully elsewhere in this Determination, the Judges find that Spotify, through its success as a market leader among interactive services and as the dominant independent pureplay interactive service, has acquired a significant measure of bargaining power in its licensing negotiations with the Majors. To summarize very briefly, the evidence demonstrates that Spotify's [REDACTED]—in the interactive market. *See supra*, section III.B.2.

Spotify's bargaining power allowed it to bargain for [REDACTED].[91] This reduction is a function of the countervailing power discussed supra, which can serve as a means for reducing prices (and rates) *toward* a level indicated by the processes of price competition that are the hallmark of traditional neoclassical microeconomics.

In this regard, it is noteworthy that one of SoundExchange's economic expert witnesses, Mr. Orszag, acknowledges that the 12% effective competition adjustment can be applied, if

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[91]   [REDACTED]%-[REDACTED]%   =   [REDACTED]%. [REDACTED]%/[REDACTED]% = [REDACTED]%.

[REDACTED].   8/25/20   3837   (Orszag)
("[REDACTED]").[92]

Here, [REDACTED]. A 12% price competition adjustment is warranted. But [REDACTED]. Thus, an appropriate adjustment for rates using this benchmark is 12%—[REDACTED], or [REDACTED]%.

However, as explained *infra*, that [REDACTED]% adjustment applies only to a headline rate that serves as a benchmark in this proceeding and that is consistent with [REDACTED] in the *effective* per-play rate. To the extent the [REDACTED]% adjustment does not apply to discounted subscriptions, such as student plan subscriptions, or to ad-supported plans, then the [REDACTED]% reduction is not applicable. Rather, in such instances, the full 12% competition adjustment applies.[93]

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[92] The Judges do not agree with Mr. Orszag's levels of adjustment to reduce the 12% factor, but his concept is the one the Judges are applying in this proceeding.

[93] The Judges recognize, as they did in *Web IV*, that estimating a rate that reflects effective competition is not an exact science. See *Web IV*, 81 FR at 26334 ("The very essence of a competitive standard is that it suggests a continuum and differences in degree rather than in kind."). However, the *quality* of the steering evidence in *Web IV* allowed the Judges to identify with some precision the "range of potential steering adjustments, notwithstanding the otherwise inherently 'fuzzy' nature of the 'bright line' . . . between effectively competitive and noncompetitive rates." *Web IV*, 81 FR at 26344. Here, applying that steering evidence together with the offset indicated by the *Web V* record represents another application of specific evidence to put into focus the necessary size of the effective competition adjustment. Mr. Orszag likewise acknowledges that identifying the impact of market developments on the ascertainment of an

IV. Commercial Webcasting Rates

A. *Evaluation of Survey Evidence*

1. Zauberman Music-Listening Behavior Survey

a. Description of the Zauberman Survey

Professor Willig's opportunity cost approach is dependent upon the results of the consumer behavior surveys.[94] The Judges, therefore, test the underlying survey data on which he relied to assess their reliability or their strength in supporting Professor Willig's conclusions.

SoundExchange engaged Professor Gal Zauberman to measure the music-listening behavior

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effective competition adjustment cannot be determined with absolute precision. 8/11/20 Tr.1276 (Orszag) ("[T]hese are

areas of gray. . . . [M]arkets can be less workably competitive or less effectively competitive and more effectively competitive."). And, to compare markets over time to identify the change to the level of an effective competition adjustment, Mr. Orszag opines that "[f]rom an economic perspective, what one can do is utilize calibration or empirical evidence to understand how markets have changed. 8/12/20 Tr. 1653 (Orszag). The Judges quite agree, and that is what they have undertaken in this Determination—to use the empirical data and related evidence to calibrate the extent to which an effective competition adjustment is required in the noninteractive subscription and ad-supported markets.

[94] One input in calculating a record company's opportunity cost of licensing its repertoire to a statutory webcaster is a diversion ratio, which measures how listening is spread across a range of alternative listening sources in the event that listeners stop listening to a statutory webcaster because a label's repertoire is no longer available. The Judges discuss Professor Willig's economic modeling *infra*, section IV.C.1.

of listeners to streaming radio services.[95] Trial Ex. 5606 ¶¶ 1, 4(WDT of Gal Zauberman) (Zauberman WDT). Professor Zauberman conducted an internet-based survey with the assistance of the Brattle Group, an economic consulting firm, and Dynata, a marketing research company with extensive experience in conducting surveys. Zauberman WDT ¶ 28. Specifically, the survey explored how consumers of streaming radio services that are eligible for the webcasting statutory license would listen to music if those streaming radio services were not available. Zauberman WDT ¶ 12. The survey respondents were asked about their listening behavior in a hypothetical world in which either free or paid streaming radio services were no longer available. Zauberman WDT ¶ 13.

The Zauberman Survey consisted of three key types of questions: Respondents were asked about which music-listening options they have used in the past 30 days, either a free or paid streaming radio service (Q1), which replacement music-listening options they would choose instead of the free or paid streaming radio service set forth in their assigned hypothetical scenario (Q2), and (in some cases) how they would allocate their replacement time music-listening options (Q3, 3A) among replacement options. Zauberman WDT ¶ 51.[96]

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[95] Professor Gal Zauberman, is the Joseph F. Cullman 3rd Professor of Marketing at the Yale School of Management, who specializes in consumer judgment and decision-making, financial decision-making, and survey methodology. Zauberman WDT ¶¶ 1, 4.

[96] A total of 21,335 respondents entered the survey: 6,146 respondents answered Q1 and 2,151 respondents answered Q2.

Among the 6,146 respondents who were asked which type of music-listening options they had used in the prior 30 days (Q1), 66 percent (4,029 respondents) responded that they had used a free streaming radio service in the past 30 days, and 21 percent (1,27 respondents) responded that they had used a paid streaming radio service in the past 30 days. Altogether, 71 percent (4,369 respondents) said they had used either free or paid streaming radio (or both), and 15 percent (938 respondents) said they had used both free and paid streaming radio services in the past 30 days. Zauberman WDT ¶ 68.

Out of the 1,552 respondents who were not excluded and completed the survey, a total of 989 respondents were assigned to the scenario in which free streaming radio services are no longer available (Q2). The survey assigned 563 respondents to the scenario in which paid streaming radio services are no longer available. Zauberman WDT ¶ 56. After being provided with the respective scenario in which free or paid streaming radio services were no longer available, respondents were asked a series of questions about how they would replace the time they currently spent listening to music on their free or paid streaming radio services. Respondents were then presented a variety of music-listening options with the exception of the streaming radio option that was

Of these, 1,552 qualified respondents completed the survey without being excluded for selecting "Unsure" for any of the options in Q1 or Q2. These 1,552 respondents did not include 88 respondents who were excluded for completing the survey in what was judged to be too little time or too much time. Zauberman WDT ¶ 53.

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no longer available in their given scenario. Zauberman WDT ¶ 57.

Out of 989 respondents who completed the survey and were told that *free* streaming radio services were no longer available, the (Q2) responses indicated that 33 percent of current listeners of free streaming radio services would instead listen to paid streaming radio services, 80 percent would instead listen to free On-Demand streaming services, 39 percent would instead listen to paid On-Demand streaming services, 31 percent would instead listen to Sirius XM satellite radio services on a satellite receiver, 85 percent would instead listen to AM/FM radio on a traditional radio receiver, 69 percent would instead listen to CDs, vinyl records, or MP3 files they currently own or would purchase, and 48 percent would instead do something other than listen to music.[97] Zauberman WDT ¶ 24, 72, fig. 8.

Out of 563 respondents who completed the survey and were told that paid streaming radio services were no longer available, the (Q2) responses indicated that 84 percent of current listeners of paid streaming radio services would instead listen to free streaming radio services, 83 percent would instead listen to free On-Demand streaming services, 71 percent would instead listen to paid On-Demand streaming services, 52 percent would instead listen to Sirius XM satellite radio services on a satellite receiver, 79 percent would instead listen to AM/FM radio on a traditional radio receiver, 67 percent would instead listen to CDs, vinyl

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[97] The percentages add up to more than 100% because respondents were permitted to select multiple replacement options. *See* Zauberman WDT app. D.

records, or MP3 files they currently own or would purchase, and 50 percent would instead do something other than listen to music. Zauberman WDT ¶ 25, 74, fig. 9.

The respondents who answered the (Q2), saying that they would replace their streaming radio service that is no longer available with either (a) a free On-Demand service or (b) a free streaming radio service (if their paid streaming radio service were no longer available), and who chose at least one other music-listening option (or "[d]o something other than listen to music") as a replacement for their streaming radio service that is no longer available, were asked (in Q3) if they would expect to listen to their streaming radio service one week from the day on which the respondent was taking the survey, if it were available.[98] Zauberman WDT ¶ 75.

This form of questioning was designed to account for the possibility that time spent listening to music may vary from day to day for different people and across the respondents' allowed measurement of listening time across all days of the week. The day of week question format was also designed to be as specific as possible about the occasion that they are estimating and to have the estimation day not too far into the future. Zauberman WDT ¶ 61–62.

The respondents who answered "Yes" to Q3 were then asked to allocate their time among replacement options they chose in the replacement question, Q2.

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[98] For example, respondents who took the survey on a Wednesday would be asked if they would expect to listen to their streaming radio service on the following Wednesday.

They were asked (in Q3A) to allocate any number from 0 through 100 to reflect the percentage of time they would listen to each particular option. Respondents were shown all of the services they said they would use to replace free or paid streaming radio in response to Q2. Zauberman WDT ¶ 64, 76.[99]

The responses to Q3A indicated that current listeners of *free* streaming radio services who were asked to allocate their time indicated that they would replace 16 percent of the time they would have spent listening to their free streaming radio services by listening to paid streaming radio services, 32 percent of that time by listening to free On-Demand streaming services, 25 percent of that time by listening to paid On-Demand streaming services, 19 percent of that time by listening to Sirius XM satellite radio services on a satellite receiver, 27 percent of that time by listening to AM/FM radio on a traditional radio receiver, 18 percent of that time by listening to CDs, vinyl records, or MP3 files they currently own or would purchase, and 16 percent of that time by doing something other than listen to music. Zauberman WDT ¶ 26, 77, fig. 10.

The responses to Q3A also indicated that current listeners of *paid* streaming radio services who were asked to allocate their time indicated that they would replace 24 percent of the time they would have spent listening to their paid streaming radio services by listening to free streaming radio services, 20 percent by listening to free On-Demand streaming services, 24 percent by listening to paid On-Demand streaming

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[99] The "day of week" variable was designed to function in the same manner as in Q3.

services, 21 percent by listening to Sirius XM satellite radio services on a satellite receiver, 18 percent by listening to AM/FM radio on a traditional radio receiver, 14 percent by listening to CDs, vinyl records, or MP3 files they currently own or would purchase, and 10 percent by doing something other than listen to music. Zauberman WDT ¶ 27, 78, fig. 11.

b. Services' Criticisms of the Zauberman Survey

The Services offer a number of critiques of Professor Zauberman's surveys, including those noted below. Services PFFCL ¶¶ 288–302.

The Services assert that the survey erroneously toggles between an initial definition of "free streaming radio service" and an incorrect definition that described "on-line streams of AM/FM radio stations" as services that "allow you to listen to customized radio stations with advertisements," like Pandora. Services PFFCL¶¶ 288–290, Proposed Findings of Fact and Conclusions of Law of the National Association of Broadcasters ¶¶ 190–191 (NAB PFFCL), 8/27/20 Tr. 4245–51 (Zauberman).[100] The Services point out that in his hearing testimony, Professor Zauberman conceded that, contrary to the language of his erroneous definition, simulcasts are

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[100] Q1: "A free streaming radio service, such as personalized radio services like free Pandora and free iHeart Radio, and on-line streams of AM/FM radio stations, where you cannot choose a specific song, and must listen to advertisements."

Q2: "Free streaming radio services—services, such as personalized radio services like free Pandora and free iHeart Radio, and on-line streams of AM/FM radio stations, allow you to listen to customized radio stations with advertisements, but you cannot choose a specific song."

not customizable, and that including different definitions for the exact same term in a survey is not a best practice in his field. Services PFFCL¶¶ 288–290; 8/27/20 Tr. 4246–47, 4253.

The Services also suggest Professor Zauberman's survey suffers from "cheap-talk" or hypothetical-bias problems. Services PFFCL ¶¶ 291–294. These concepts are described by Professor Hauser and Dr. Leonard as problems arising where respondents are allowed to choose multiple options, in which case they are more likely to select paid options that they would not in fact pay for in the real world, or otherwise do not really consider how much things cost or their budget constraint. Services PFFCL ¶ 291; 8/27/20 Tr. 4346–48 (Hauser); 8/24/20 Tr. 3421–23 (Leonard). Dr. Leonard also referenced academic literature addressing issues with the hypothetical nature of the "payment" in surveys, which can lead respondents to overstate their true willingness to pay. *See* Leonard WRT ¶¶ 19–21 & n.37 (citing Franziska Voelckner, *An Empirical Comparison of Methods for Measuring Consumers' Willingness to Pay,* 17 Marketing Letters 137 (2006); James J. Murphy et al., *A Meta-analysis of Hypothetical Bias in Stated Preference Valuation,* 30 Envtl. Resource Econ. 313 (2005).). Dr. Leonard's testimony suggests that aspects of responses to Q3, the time allocation question, indicate that respondents would not actually pay for their survey selections in the real world. Services PFFCL ¶ 291; Leonard WRT ¶ 21; 8/24/20 Tr. 3447–48 (Leonard) (addressing instances in which a service option was selected but no listening time was allocated to the option, a concept known in the economics literature as "hypothetical bias"). The Services, through their

expert witness Professor Hauser, suggest that the Zauberman Survey's instruction to focus on music-listening options is biased and could suggest to respondents that the researcher was interested only in respondents switching to music-listening options, which could prompt respondents to favor the music-listening options rather than the stated option to do something other than listen to music. Professor Hauser points out the absence of specificity about what "do something other than listen to music" might entail and offers that respondents may not have immediately known, recalled, or considered alternatives that were available to them if they were not listening to music, leading them to select music-listening options instead. Services PFFCL ¶ 295; 8/27/20 Tr. 4364–65; Trial Ex. 2161 ¶¶ 7, 28–30 (WRT of John Hauser) (Hauser WRT).

The Services point to the Zauberman Survey's inability to distinguish between a respondent who did not have an existing paid subscription and a respondent who had an existing paid subscription but did not use it in the past thirty days. This concern was highlighted by the testimony of Dr. Leonard and Mr. Harrison who both address the occurrence of consumers having inactive paid subscriptions. Services PFFCL ¶¶ 297–298; Leonard WRT ¶ 18; 9/3/20 Tr. 5732 (Harrison) (explaining how users who bill subscriptions through a credit card might have a service for months without realizing they were still a subscriber). Professor Hauser also criticizes the survey's inability to distinguish between a respondent who did not have an existing paid subscription and a respondent who had an existing paid subscription but did not remember using it in the past thirty days.

Services PFFCL ¶ 299. Professor Hauser stated that both academic research and his own survey pretest indicate that thirty days is too long for respondents to remember their own listening behavior accurately. The inability to distinguish between respondents who did not have an existing paid subscription, or who had one but did not use it or remember using it in the past thirty days, likely resulted in an upward bias in estimated switching to new, paid subscriptions. Hauser WRT ¶¶ 24–27; *see also* 8/27/20 Tr. 4360.

The Services find fault with the Zauberman Survey's failure to allow respondents to distinguish between their listening to CDs, vinyl, or digital music files they owned already, and listening to CDs, vinyl, or digital files they would purchase. They point to Professor Zauberman conceding that a respondent who had a large existing collection of downloads or CDs would have no way of indicating that she would listen to her existing collection, rather than purchasing new CDs. Services PFFCL ¶ 300; 8/27/20 Tr. 4240. The Services point out that Professor Willig described the effect of this on the Zauberman Survey results as an "inaccuracy." Services PFFCL ¶ 300; 8/6/20 Tr. 843–47. The Services also note that both the Hauser and Hanssens surveys and industry data suggest that far more people would listen to existing collections than purchase new CDs or digital music files, suggesting that Professor Zauberman's survey likely would have demonstrated the same if he had given respondents the opportunity to make this distinction. *See* Hauser WRT ¶¶ 47–48; Trial Ex. 4095 tbls.4, 8 (CWDT of Dominique Hanssens) (Hanssens WDT); Leonard WRT ¶ 19; 8/24/20 Tr. 3448

(Leonard); Trial Exs. 2037, 2038, 2041 at 6 (showing declining sales and use of CDs and digital downloads).

The Services contend that the Zauberman Survey contained a fundamental error of failing to include attention checks to confirm respondents were sufficiently engaged in the survey and were providing reliable responses. *See* Hauser WRT ¶¶ 31–34. Professor Hauser explained that attention checks represent best practices in survey research, and not including them could have exacerbated the asserted flaws in the Zauberman Survey. *See id.* ¶¶ 8, 31–32; 8/27/20 Tr. 4334–35. The Services suggest that some respondents in the Zauberman Survey who indicated they would listen to physical or digital recordings of music may in fact obtain pirated copies of recordings, thus calling into question the results. *See* 8/6/20 Tr. 799 (Willig); 8/10/20 Tr. 1089–92 (Willig). And, NAB takes issue with the Zauberman Surveys for not taking into account properly respondents who listened to zero hours of simulcasts. *See* NAB PFFCL ¶ 126.

c. Responses to Criticisms of the Zauberman Survey

In response to criticism of the Zauberman Survey, SoundExchange characterizes the altered definitional language as a "slight discrepancy," noting that the word "customized" appeared only in introductory language, and not in any survey response option. SoundExchange offers that the Services provide no basis to conclude that the difference in definitions had any effect on Professor Zauberman's data or that respondents were ever confused or noticed the discrepancy. SoundExchange suggests that the word "customized" in Q2 would not signal to respondents

that AM/FM streaming was not a free streaming radio service because every time the survey describes free streaming radio services, it provides examples of services that fall into this category, including the example "on-line streams of AM/FM radio stations." SoundExchange argues that if respondents had noticed and been confused by the variation in language, the survey results would have shown an increase of "unsure" responses with respect to free streaming radio services once alternate language was introduced, and that no such evidence of confusion exists. SX RPFFCL (to Services) ¶¶ 288-290.

SoundExchange also suggests that Professor Zauberman adequately clarified in his testimony that simulcast listeners do have some ability to customize their experiences. Professor Zauberman testified that "there are multiple ways in which we customize our experiences or select the world around us" and that, with regard to opportunities to personalize on-line streams of AM/FM radio stations, station choice is one aspect of customization. 8/27/20 Tr. 4271. SoundExchange then offers that other experts in this proceeding have a shared understanding of the functionality available through simulcasts. SX RPFFCL (to Services) ¶ 288; 8/26/20 Tr. 4121-25 (Hanssens) (simulcasts of AM/FM broadcasts and free streaming radio services like Pandora are "very comparable mediums" that "share key attributes" and compete with one another).[101]

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[101] SoundExchange also references Orszag WRT ¶ 35 (given that users can choose to listen to a particular genre of music for both simulcast and custom radio, the user experience is not necessarily much different).

SoundExchange adds that Professor Zauberman's testimony regarding variations in definitional language not constituting a best practice was not his ultimate conclusion. SX RPFFCL (to Services) ¶ 290; 8/27/20 Tr. 4217 (Zauberman) (the suggested ultimate conclusion being that the Zauberman Survey provides the most reliable data of any survey or experiment in the proceeding and that its findings are highly consistent with the Hanssens and Simonson Surveys).

SoundExchange offers that Professor Hauser's trial testimony regarding "cheap talk" is beyond the scope of his written testimony and unsupported by the academic literature he mischaracterized at trial. SX RPFFCL (to Services) ¶ 291; SX PFFCL ¶¶ 1259-1261. SoundExchange adds that even if the asserted "cheap talk" effect did exist, the Services have not attempted to quantify it, with regard to Professor Zauberman's survey or any other survey in this proceeding. SX RPFFCL (to Services) ¶ 291. SoundExchange also offers that the critique of Q3 is misplaced, as a zero time allocation on one specific day in the following week is not unreasonable nor does it indicate that respondents would not actually pay for their survey selections in the real world. SX RPFFCL (to Services) ¶ 292.

SoundExchange submits that Professor Zauberman's focus on music listening was entirely appropriate in light of the focus and scope of this proceeding. It adds that Professor Zauberman's approach struck an appropriate balance between providing a comprehensive list of options (including "do something other than listen to music") and the risk of making his survey unwieldy and confusing.

SoundExchange points out that the Services offer no evidence that survey respondents actually had difficulty remembering what non-music options are available to them in the world. SX RPFFCL (to Services) ¶¶ 295-296.

SoundExchange notes that Professor Zauberman's testimony indicates why he chose the survey format. With regard to respondents who may have had an existing paid subscription but did not use it in the past thirty days, Professor Zauberman designed the survey order to avoid ambiguity or complicating the survey and creating non-uniformity that risked privileging some options over others. SX RPFFCL (to Services) ¶ 297; 8/27/20 Tr. 4181-82, 4184-85, 4239 (Zauberman). SoundExchange offers that Dr. Leonard's testimony that inactive subscriptions are "not uncommon" is poorly supported by the record. SoundExchange also criticizes, as conflicting, the NAB's argument that thirty days is too long for respondents to remember their own listening behavior accurately, and that thirty days is not long enough because a respondent may not have used his or her subscription service in the past 30 days SX RPFFCL (to Services) ¶¶ 297-299. SoundExchange posits that the Services' critique regarding new versus existing physical copies of recordings flows from an unwarranted assumption: That respondents who would go back to their existing CD collections and start listening to them again would not also make new purchases in order to supplement their collections with new music. SX PFFCL ¶ 780; 8/6/20 Tr. 843-47 (Willig). It also points out that the Hanssens and Simonson Surveys, which do distinguish between new purchases and existing

collections, find over twice the amount of diversion to new purchases of physical copies as the Zauberman Survey does. SX PFFCL) 781, *Compare* Willig WDT ¶ 47, fig.6 (14.8% diversion to new CDs, vinyl records, and MP3s based on Zauberman Survey), *with* Trial Ex. 5608 app. F at tbl.4B (CWRT of Itamar Simonson) (Simonson WRT) (comparing data from the Hanssens Pandora Survey, Simonson's Modified Hanssens Survey, and Hanssens Replication, reflecting a range of 27.8% to 29.9% diversion to new physical or digital recordings of music).

SoundExchange offers that all of the survey experts acknowledged that tools other than attention checks can be used to ensure that respondents are engaged in a survey and that such tools were used in the Zauberman Survey. SX PFFCL ¶¶ 766, 716-717. SoundExchange also points to Professor Hauser's testimony on attention checks, which according to SoundExchange, indicates that attention checks are not currently viewed as required under best practices, noting his statement that attention checks are now "becoming widely used." SX PFFCL ¶ 766; 8/27/20 Tr. 4334-35 (Hauser).

Addressing criticism of the Zauberman Survey's failure to address the possibility that some respondents would in fact pirate sound recordings, SoundExchange observes that none of the surveys in the proceeding asks respondents whether they might obtain music through piracy. 8/10/20 Tr. 1118-19 (Willig). SoundExchange offers that there is no reason to think respondents would truthfully answer that they would engage in illegal activity. 8/26/20 Tr. 4143-44 (Hanssens). Moreover, Professor Hanssens made clear that he would not expect respondents to

interpret the term "own" to encompass theft. *Id.* at 4142-43 (Hanssens). He also noted that the survey gave respondents options such as diverting listening to "other" sources, through which respondents could express their intent to steal recordings. *Id.* at 4143 (Hanssens).

SoundExchange suggests that while a number of respondents to the Zauberman Survey allocated zero time to a replacement option they had previously selected, any attempt to convert this observation into a critique misunderstands the structure of Professor Zauberman's time allocation questions. It offers that there is no inconsistency in respondents indicating that they would replace a noninteractive streaming service with a particular music-listening option and also indicating that they do not expect to listen to that option on one specific day of the following week. SX PFFCL ¶ 784-785; 8/27/20 Tr. 4197-98 (Zauberman); 8/6/20 Tr. 848-50 (Willig). SoundExchange goes on to offer that the Services cite to no evidence to support the insinuation of inconsistency in the survey results. SX PFFCL ¶ 787.

d. Judges' Conclusions on the Zauberman Survey

Upon consideration of the entirety of the record, including the facts and arguments indicated above, on balance, the Judges find the Zauberman Survey to be reasonably reliable evidence. There is some validity to the criticisms regarding definitional inconsistency and diversion related to existing/owned physical recordings. However, viewed in light of the results of the other surveys, these criticisms of the Zauberman Survey seems to have had a minimal effect. At most,

the criticisms go to the weight assigned to the Zauberman Survey results.

2. Share of Ear Report

Professor Willig used data from Edison Research's quarterly "Share of Ear" study as a secondary data source as a basis for fallback values inputted into his theoretical models, and as a sensitivity check to the Zauberman Survey. The Services assert that the Share of Ear data contain troublesome ambiguities. Services PFFCL ¶¶ 265–268; Leonard WRT ¶¶ 23–29.

SoundExchange responds to the criticism of the Share of Ear data by pointing out that such concerns have essentially been mooted. Professor Willig acknowledged at trial that, for purposes of computing diversion ratios and calculating opportunity cost, Share of Ear is "is not nearly as well founded . . . as making use of the Hanssens Survey or the modified Hanssens Survey or the Zauberman Survey." SX RPFFCL (to Services) ¶ 265.

3. Hanssens Pandora Survey and Sirius XM Survey

a. Description of the Hanssens Surveys

i. Purpose and Design

Several experts relied, in part, on the results of the Hanssens Surveys. *See, e.g.,* Shapiro WDT at 16; 20–21, tbl.2; 28, tbl.5; Willig WRT ¶¶ 30–35. The Judges, therefore, test the underlying survey data on which he relied to assess their reliability or their strength in supporting various modeling conclusions.

Sirius XM and Pandora retained Professor Dominique Hanssens to conduct two consumer

surveys—the "Pandora Survey" and the "Sirius XM Survey. The Hanssens Surveys measured how consumers would respond if their noninteractive streaming services changed by the loss of access to any given record company's repertoire, including what alternative sources of music, if any, listeners of free internet radio services music on Sirius XM over the internet would change their listening to as a result of hypothetical loss of music options. Hanssens WDT ¶¶ 13, 33, 39–40 & app. 6. The Pandora Survey addressed listeners of free internet radio and his Sirius XM Survey addressed listeners of Sirius XM's subscription webcasting service. *Id.* ¶ 20. The two surveys pose comparable hypotheticals and proceed in parallel. *Id.* ¶¶ 33, 66 & Apps. 6 & 12.

Professor Hanssens sought to answer the following questions: (a) Whether listeners would change their listening if they were dissatisfied because music selection across the category was "degraded" as described in the hypothetical given to respondents,[102] (b) whether listeners would change their listening to alternative sources of music (as opposed to non-music) in that instance, (c) which alternative sources of music they would increase

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[102] The study considered the hypothetical that services were limited by the loss of access to any given record company's repertoire, which was addressed in the survey by asking respondents what they would do in the event that they noticed all relevant services stopped streaming songs by some popular artists and some newly released music. Hanssens WDT ¶¶ 13, 21–22. This approach was intended for the focus to be on cases where that change in music availability is noticed and therefore generates responses to that specific scenario, as opposed to the more general scenario of simple label suppression. 8/26/20 Tr. 4091 (Hanssens).

listening to, if any, and (d) how listeners would allocate increased listening, if any, across the alternative music sources they identified).[103] *Id.* ¶¶ 21–22.

The Pandora Survey indicated that 60.1 percent of the sample of listeners of free internet radio services would decrease listening to free internet radio services in the event that the music selection across all free internet radio services were degraded. Of the respondents who indicated that they would decrease listening to free internet radio services or listen to free internet radio about the same amount, 63.5 percent would increase listening to alternative sources of music under this scenario. When forced to make a tradeoff between multiple options of alternative sources of music, the sample of listeners indicated that they would increase their watching or listening to music in videos on YouTube or social media the most (11.6 points on average), followed by listening to live radio broadcasts of music through a radio (9.8 points on average), and then followed by listening to music on a new free On-Demand music streaming service (7.7 points on average). Hanssens WDT ¶ 18.[104]

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[103] The Hanssens survey thus posits a *degradation* of a listening option (*i.e.,* loss of repertoire), as distinguished from the Zauberman survey, which posited the *unavailability* of a listening option.

[104] Respondents were asked to allocate 100 points across the alternative music sources they previously selected based on how much they would listen to these different sources. Hanssens WDT app. 12.

The Sirius XM Survey indicated that 36 percent of the sample of listeners of music on Sirius XM over the internet would decrease their listening to that service in the event that the music selection available on that service were degraded. Of the respondents who indicated that they would decrease listening to music on Sirius XM over the internet or listen to about the same amount of music on that service, 58.9 percent would increase listening to alternative sources of music under this scenario. When forced to make a tradeoff between multiple options of alternative sources of music, by an allocation of points on average, the sample of listeners indicated that most of their increased listening would be on an existing Sirius XM satellite radio subscription. Hanssens WDT ¶ 19.

Professor Hanssens's surveys were conducted by respondents on a traditional desktop computer, laptop notebook computer, or tablet computer. The surveys included several screening questions. Qualified respondents had to pass several standard attention check questions and satisfy certain demographic quotas to ensure the survey respondents were not statistically different from the typical demographics of Pandora or Sirius XM on the internet users, depending on the particular survey. The survey response rate, completion rate, and incidence rate were all within the typical range for internet surveys, and the sample size was large enough to draw conclusions regarding the key questions posed in the survey. Additionally, the survey was extensively pretested. *Id.* ¶¶ 26–29, 36–37, 56–59, 65–67.

Professor Hanssens applied other quality assurance measures designed to ensure that

respondents provided informed and reliable responses. In the Pandora Survey, prior to the first substantive question (P20), Professor Hanssens provided respondents with descriptions and well-known examples of free internet radio, On-Demand Music Streaming, and Paid internet Radio categories. *Id.* ¶ 32. Additional preliminary questions helped identify the target population for the Pandora Survey and were designed to provide respondents with an accurate set of alternative music options in the main questionnaire, in which they were asked to identify services they would listen to more if the music selection on free internet radio services were degraded. *Id.* ¶ 30.

ii. Pandora Survey Results

In order to assess which alternative sources of music respondents would choose in the event that a webcaster lost access to a particular record company's repertoire, Professor Hanssens instructed respondents, "Imagine you were not satisfied with [a free internet radio service the respondent indicated listening to in a typical week] because you noticed that it had stopped streaming songs by some of your favorite artists and some newly released music. Imagine that all other free internet radio services stopped streaming those same songs as well." Hanssens WDT ¶ 33; 8/26/20 Tr. 4091 (Hanssens) (explaining that this language is intended for the focus to be on cases where that change in music availability is noticed and therefore generates responses to that specific scenario, as opposed to the more general scenario of simple label suppression).

The Hanssens Pandora survey then proceeded as follows.

Respondents were asked (in question P20), "Which of the following actions, if any, would you consider taking in the event that you were not satisfied with free internet radio services because their selection of songs changed in this way?" The survey offered the following answer choices: "I would use free internet radio services less; I would use free internet radio services about the same amount; I would use free internet radio services more; Don't know/unsure." *Id.* ¶¶ 34, 39; Appendix 7 at 120; 8/26/20 Tr. 4097 (Hanssens).

Among the 506 respondents to question P20, 60.1 percent responded that they would use free internet radio services less, 35.8 percent responded that they would use free internet radio services about the same, and 4.2 percent responded that they did not know or were unsure about how their listening habits would change. Hanssens WDT ¶ 40.[105] Those who indicated that they did not know or were unsure about how their listening habits would change were not included in subsequent calculations as it is not possible to know what they would do if the music selection across all free internet radio services were degraded. Hanssens WDT ¶ 40 n.46.

Respondents who indicated that they would listen to free internet radio services less or about the same amount were asked question P30: "Which other actions from the following, if any, would you consider taking in the event that you were not satisfied with

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[105] The results of P20 are reported in Table 1.

free internet radio services because their selection of songs changed in this way?" Those respondents were provided the following two categories: "Consume non-music entertainment content" and "Listen to music using ways other than free internet radio" and, for each, were asked whether they would "increase doing this, make no changes to how much I do this, decrease doing this, don't know/unsure." *Id.* ¶¶ 34, 42, Appendix 7 at 121.

In hearing testimony Professor Hanssens noted that, while the non-music options (and descriptive examples) were presented "for completeness reasons," the results were not used as they are "not the focus of [the] work." 8/26/20 4097–98 (Hanssens).

The results of P30 are reported in Table 2, below.

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Table 2

Summary of Responses to Question P30 on Pandora Survey

	Number of Respondents	**Percentage of Respondents**
Listen to music using ways other than Free Internet Radio		
Increase doing this	308	63.5%
Make no changes	124	25.6%
Decrease doing this	38	7.8%
Don't know/unsure	15	3.1%
Total	**485**	**100.0%**

Consume non-music entertainment content		
Increase doing this	191	39.4%
Make no changes	260	53.6%
Decrease doing this	16	3.3%
Don't know/unsure	18	3.7%
Total	**485**	**100.0%**

Source: GBH Data

Note: Question P30 reads: "Which other actions from the following, if any, would you consider taking in the event that you were not satisfied with Free Internet Radio services because their selection of songs changed in this way?"

Id. ¶ 42.

In the analyses that followed question P30, the 53 respondents who indicated in that they would listen to alternative sources of music less (35) or who did not know or were unsure about whether they would change their music consumption (15) were excluded. Hanssens WDT ¶ 43 n.50.

Respondents who indicated that they would increase listening to alternative sources of music were asked question P40: "In which of the following ways, if any, would you increase listening to music in place of free internet radio in a typical week?" Respondents were then provided specific alternative music sources to which they would consider increasing their listening, including the types of services the respondents had previously responded they were already using in their responses to the screening

questions. Hanssens WDT ¶¶ 34. 46–48, Appendix 7 at 122; 8/26/20 Tr. 4098 (Hanssens).

The results of P40 are reported in Table 3, below.

Table 3

Summary of Responses to Question P40 on Pandora Survey

Respondents indicated that they would increase listening to music via	Number of Respondents	Percentage of Respondents
A new free On-Demand music streaming service they do not already use	198	45.8%
A free On-Demand music streaming service they already use	88	20.4%
A new paid On-Demand music streaming service they do not already use	92	21.3%
A paid On-Demand music streaming service they already use	127	29.4%
A new Paid Internet Radio service they do not already use	115	26.6%
A Paid Internet Radio Service they already use	25	5.8%

A new Sirius XM subscription and through a satellite radio receiver	55	12.7%
An existing Sirius XM subscription and through a satellite radio receiver	54	12.5%
A new Sirius XM subscription and through Sirius XM over the internet	66	15.3%
An existing Sirius XM subscription and through Sirius XM over the Internet	52	12.0%
New purchases of physical or digital recording of music	129	29.9%
Physical or digital recording of music they already own	213	49.3%
Borrowed copies of music recordings	113	26.2%
Live radio broadcasts of music through a radio	222	51.4%
Music channels through a cable or satellite television subscription	174	40.3%
Videos on YouTube or social media	241	55.8%
Other [Please specify_____]	7	1.6%
Total	**432**	

Source: GBH Data

Note: Question P40 reads: "In which of the following ways, if any, would you increase listening to music ["in place of Free Internal Radio" IF RESPONDENT ANSWERED "I would use Free Internal Radio services less" FROM Question P20] in a typical week? The 432 repondents in Table 3 include 124 respondents who indicated in Question P30 that they would not change how much they would listen to music using ways other than Free Internal Radio in the evant that the music selection across all Free Internet Radio services were degraded. These respondents are treated as having indicated that they would not increase listening to any of the options in Question P40.

Hanssens WDT ¶ 49.

The final substantive question, P50, presented respondents who had responded to question P40 that they would increase listening to multiple alternative music sources with the alternative music sources they selected in P40 and instructed them to "Please divide 100 points across the different ways of listening to music based on how much you think you would use each alternative in a typical week." *Id.* ¶¶ 34, 52, Appendix at 123. This question was designed to allow the individual listener to rank the relative importance of answer options. 8/26/20 Tr. 4098 (Hanssens). Professor Hanssens explained that he asked this question in terms of point allocations rather than in absolute time or percentages of time in order to avoid the cognitively difficult "quantification of time," and to better assess relative importance, which may be obscured by absolute expressions of time. 8/26/20 Tr. 4099 (Hanssens).

The results of P50 are reported in Table 4, below.

Table 4

Summary of Responses to Question P50 on Pandora Survey

Respondents indicated that they would increase listening to music via...	Number of Respondents	Percentage of Respondents	Average Number of Points Allocated Across All Responses	Standard Error
A new free On-Demand music streaming service they do not already use	178	41.2%	7.7	0.7
A free On-Demand music streaming service they already use	81	18.8%	3.7	0.5
A new paid On-Demand music streaming service they do not already use	82	19.0%	4.0	0.6
A paid On-Demand music streaming service they already use	112	25.9%	5.4	0.7
A new Paid Internet Radio service they do not already use	102	23.6%	4.2	0.5
A Paid Internet Radio service they already use	22	5.1%	0.8	0.2
A new Sirius XM subscription and through a satellite radio receiver	42	9.7%	1.5	0.3
An existing Sirius XM subscription and through a satellite radio receiver	49	11.3%	2.4	0.4
A new Sirius XM subscription and through Sirius XM over the Internet	55	12.7%	1.4	0.2
An existing Sirius XM subscription and through Sirius XM over the Internet	48	11.1%	1.7	0.3
New purchases of physical or digital recordings of music	106	24.5%	2.7	0.3
Physical or digital recordings of music they already own	196	45.4%	7.0	0.6
Borrowed copies of music recordings	96	22.2%	2.0	0.3
Live radio broadcasts of music through a radio	201	46.5%	9.8	0.6
Music channels through a cable or satellite television subscription	155	35.9%	4.6	0.4
Videos on YouTube or social media	232	53.7%	11.6	0.8
Other [Please specify _____]	10	2.3%	0.4	0.2
Total	432			

Source: GBH Data

Note: Question P50 reads: "Please divide 100 points across the different ways of listening to music based on how much you think you would use each alternative in a typical week." The 432 respondents in Table 4 include 124 respondents who indicated in Question P30 that they would not change how much they would listen to music using ways other than Free Internet Radio in the event that the music selection across all Free Internet Radio services were degraded. These respondents are treated as having entered zero points to all of the options in Question P50.

Hanssens WDT ¶ 53.

4. Simonson's Replicated and Modified Hanssens Surveys

a. Description of the Simonson Surveys

SoundExchange also engaged Professor Simonson to assess the testimony of several witnesses, including Professor Hanssens. As part of that task, Professor Simonson ran a replication of the Hanssens Pandora Survey (Hanssens Replication survey), as well as a modified version of that survey (Modified Hanssens survey). Simonson WRT ¶ 12.

Professor Simonson adopted the same methodology and screening criteria that Professor Hanssens used in the Hanssens Pandora Survey. *Id.* ¶¶ 88; 8/27/20 Tr. 4282–83 (Simonson). The Modified Hanssens survey retained all aspects of the original Pandora survey, except it omitted any mention of user dissatisfaction. The Modified Hanssens survey modified the instructions given to respondents, which Professor Hanssens had intended to focus on cases where listeners noticed the change in music availability. Professor Simonson made the change out of concern that one may assume that the Hanssens Surveys' results apply only to those listeners who would have been dissatisfied by the change in repertoire, perhaps relying on the Reiley Label Suppression Experiments to support assumptions that very few users would in fact be dissatisfied and change their listening. Therefore, the scenario changed from:

> Imagine that you were not satisfied with this service because you noticed that it had stopped streaming songs by some of your favorite artists and some newly released music. Imagine that all other free internet radio services stopped streaming those same songs as well.

to

> Imagine that this service stopped streaming songs by some of your favorite artists and some newly released music. Imagine that all other free internet radio services stopped streaming those same songs as well.

Simonson WRT ¶¶ 94–95. The Modified Hanssens survey also removed the instruction that "you were

not satisfied" in other places throughout the survey. *Id.* ¶¶ 94–96.

Additionally, in the Modified Hanssens survey, for those respondents who indicated that they "would use free internet radio services less" in the hypothetical scenario, respondents were asked an additional question, intended to allow analysis of the magnitude of these respondents' likely change in listening:

> You indicated that you would use free internet radio services less in the event that all free internet radio services had stopped streaming songs by some of your favorite artists and some newly released music. In that case, how much less time would you spend listening to free internet radio services in a typical week?

> Select one only.

> 1. 1–9% less
> 2. 10–24% less
> 3. 25–49% less
> 4. 50–74% less
> 5. 75–99% less
> 6. 100% less
> 7. Don't know/unsure

Simonson WRT ¶ 89.

Professor Simonson indicated at trial that the results of the Replication survey and Modified Hanssens survey indicate that the Hanssens Pandora Survey is reliable because it can be replicated with a different panel and at a different time of year. 8/27/20 Tr. 4283 (Simonson). Additionally, Professor Simonson stated that "removing the 'you are

unsatisfied' instruction from the Modified Hanssens Survey did not generally result in large alterations to the data, relative to either the original Pandora Survey or the Replication Survey. This similarity indicates that the survey data largely applies to all relevant listeners, not only to the subgroup who would be dissatisfied with a change in repertoire." Simonson WRT ¶ 99 (footnote omitted).

The results of the respective surveys regarding the actions respondents would take if free internet radio services were degraded (Hanssens question P20) are reflected below.[106]

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[106] Professor Simonson's analysis of the Hanssens survey data only included the respondents who were not excluded by reason of their responses to the screening questions and P20 and P30, as described above, the number of such respondents totaling 432. The total number of qualifying respondents in the Replication survey was 424. The total number of qualifying respondents in the Modified Hanssens survey was 372.

Table 1B.
Comparison of Simonson and Hanssens Results
Q20/120/220 Responses, Qualifying Respondents Only

	Hanssens	Simonson		Hanssens	Simonson	
		Cell 1	Cell 2		Cell 1	Cell 2
I would consider using Free Internet Radio Services...				N = 432	N = 424	N = 372
Less	267	270	232	61.8%	63.7%	62.4%
About the same amount	165	154	140	38.2%	36.3%	37.6%
More	0	0	0	0.0%	0.0%	0.0%
Don't know/Unsure	0	0	0	0.0%	0.0%	0.0%
Total	432	424	372	100.0%	100.0%	100.0%

Notes and Sources:

[1] Only respondents who chose "Less" or "Same" in Q20, "More" or "Same" in Q30 (for music), and "4" in Q60 were included in this analysis.

[2] Q20: Which of the following actions, if any, would you consider taking in the event [that you were not satisfied with Free Internet Radio Services because their selection of songs changed in this way/that Free Internet Radio Services' selection of songs changed in this way]?

[3] Hanssens results were from "Pandora Raw ALL STARTS.xlsx", and Simonson results were from "12.11.19_N1075 - 19077 Music Survey Daily Data Export.xlsx."

Simonson WRT ¶ 98.

The results of the respective surveys regarding other actions, if any, respondents would consider taking in the event that free internet radio services were degraded (original Hanssens question P30) are reported below. Simonson WRT 244.

Table 3B.
Comparison of Simonson and Hanssens Results
Q30/130/230 Responses, Qualifying Respondents Only

	Total Respondents			Percent of Respondents		
	Hanssens	Simonson		Hanssens	Simonson	
		Cell 1	Cell 2		Cell 1	Cell 2
I would consider...				N = 432	N = 424	N = 372
Listening to music using ways other than Free Internet Radio						
More	308	308	250	71.3%	72.6%	67.2%
Same amount	124	116	122	28.7%	27.4%	32.8%
Less	0	0	0	0.0%	0.0%	0.0%
Don't know/Unsure	0	0	0	0.0%	0.0%	0.0%
Consuming non-music entertainment content						
More	168	156	136	38.9%	36.8%	36.6%
Same amount	240	233	204	55.6%	55.0%	54.8%
Less	12	15	14	2.8%	3.5%	3.8%
Don't know/Unsure	12	20	18	2.8%	4.7%	4.8%
Total	432	424	372	100.0%	100.0%	100.0%

Notes and Sources:
[1] Only respondents who chose "Less" or "Same" in Q20, "More" or "Same" in Q30 (for music), and "4" in Q60 were included in this analysis.
[2] Q30: Which other actions from the following, if any, would you consider taking in the event [that you were not satisfied with Free Internet Radio Services because their selection of songs changed in this way/that Free Internet Radio Services' selection of songs changed in this way]?
[3] Hanssens results were from "Pandora Raw ALL STARTS.xlsx", and Simonson results were from "12.11.19_N1075 - 19077 Music Survey Daily Data Export.xlsx."

The results of the respective surveys regarding which of the following ways, if any, respondents would increase listening to music in place of free internet radio in a typical week (original Hanssens question P40) are reflected below.

Table 4B.

Comparison of Simonson and Hanssens Results

Q40/140/240 Responses, Qualifying Respondents Only

	Hanssens	Simonson	
		Cell 1 N =	Cell 2 N =
In place of [listening to] Free Internet Radio in a typical week, I would...	N = 432	424	372
Sign up for and listen to a new free On-Demand music streaming service with ads	45.8%	48.8%	40.1%
Listen more to a free On-Demand music streaming service with ads	20.4%	21.2%	22.3%
Purchase a new subscription for an ad-free On-Demand	21.3%	21.9%	12.4%
Listen more to an ad-free On-Demand music streaming service	29.4%	30.9%	32.8%
Purchase a new subscription for an ad-free Paid Internet Radio service	26.6%	23.3%	16.9%
Listen more to an ad-free Paid Internet Radio service	5.8%	5.0%	2.7%
Purchase a new Sirius XM subscription and listen to music on Sirius XM through a satellite radio receiver	12.7%	8.3%	5.6%
Use an existing Sirius XM subscription and listen to music on Sirius XM through a satellite radio receiver	12.5%	13.0%	15.1%
Purchase a new Sirius XM subscription and listen to music on Sirius XM over the internet	15.3%	12.0%	8.9%
Use an existing Sirius XM subscription and listen to music on Sirius XM over the internet	12.0%	13.0%	14.5%
Purchase new physical or digital recordings (downloads) of music	29.9%	27.8%	29.0%
Listen more to physical or digital recordings (downloads) of music I already own	49.3%	51.2%	49.5%
Listen to borrowed copies of recordings from friends, family, or the public library	26.2%	26.2%	22.0%
Listen to live radio broadcasts of music from radio stations through a radio	51.4%	55.2%	50.8%
Listen more to music channels I have access to as part of a cable or satellite television subscription	40.3%	44.3%	33.6%
Watch or listen to music in videos on websites such as YouTube or through social media	55.8%	56.1%	55.4%
Other	1.6%	1.4%	2.2%

Notes and Sources:

[1] Only respondents who chose "Less" or "Same" in Q20, "More" or "Same" in Q30 (for music), and "4" in Q60 were included in this analysis.

[2] Q40/140/240: In which of the following ways, if any, would you increase listening to music in place of Free Internet Radio in a typical week?

[3] Hanssens results were from "Pandora Raw ALL STARTS.xlsx", and Simonson results were from "12.11.19_N1075 - 19077 Music Survey Daily

Simonson WRT ¶ 98.

The Modified Hanssens survey results for regarding the magnitude of respondents' likely change in listening (Q225) are reflected below.

Table 2B.
Summary of Responses to Simonson's Additional Question
Simonson Q225 Responses, Qualifying Cell 2 Respondents Only

I would use Free Internet Radio Services...	N	%
1 - 9% less	4	1.7%
10 - 24% less	33	14.2%
25 - 49% less	54	23.3%
50 - 74% less	77	33.2%
75 - 99% less	35	15.1%
100% less	21	9.1%
Don't know/unsure	8	3.4%
Total	232	100.0%

Notes and Sources:
[1] Only respondents who chose "Less" or "Same" in Q20, "More" or "Same" in Q30 (for music), and "4" in Q60 were included in this analysis.
[2] Q225: You indicated that you would use Free Internet Radio Services less in the event that all Free Internet Radio Services had stopped streaming songs by some of your favorite artists and some newly released music. In that case, how much less time would you spend listening to Free Internet Radio Services in a typical week?
[3] Simonson results were from "12.11.19_N1075 - 19077 Music Survey Daily Data Export.xlsx".

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Simonson WRT 243.

b. Criticisms of the Hanssens Surveys

SoundExchange engaged Professor Itamar Simonson to examine whether the Hanssens surveys were likely to produce unbiased, reasonably accurate estimates regarding the impact of a loss of access to any given record company's repertoire on listening to the free internet radio services at issue and on switching to alternative sources of music. Simonson WRT ¶ 66. While Professor Simonson found the Hanssens surveys relatively reliable, he asserted the surveys contained several flaws. Simonson WRT ¶¶ 64–65. SoundExchange also engaged Professor Zauberman to examine the Hanssens Surveys calculation. Trial Ex. 5607 ¶¶ 1–2 (WRT of Gal Zauberman) (Zauberman WRT).

Professor Simonson criticized the Hanssens survey questions for mixing music with unrelated

categories, such as videogames and movies, leading to a "diversification bias," which allegedly encouraged respondents to select to non-music switching options and an underestimation of switching from one music service to another. He pointed to research, demonstrating that the mere fact that respondents are presented simultaneously with multiple options causes them to spread their choices among the options instead of choosing only the option they like most. He indicated that a survey designer can decrease the percentage of respondents who indicate they will switch from one music service to another by presenting respondents with options from a wide range of options and that the Hanssens Surveys do just that by leading respondents to consider a wide set of switching options, including options that are unrelated to music. Simonson WRT ¶¶ 67–74 (citing Itamar Simonson, *The Effect of Purchase Quantity and Timing on Variety Seeking Behavior,* 27 J. Marketing Research 150 (1990); Daniel Read & George Loewenstein, *Diversification Bias: Explaining the Discrepancy in Variety Seeking Between Combined and Separated Choices,* 1 J. Experimental Psychol.: Applied 34 (1995); and Schlomo Benartzi & Richard H. Thaler, *Naive Diversification Strategies in Defined Contribution Saving Plans,* 91 Am. Econ. Rev. 79 (2001); and Craig R. Fox, David Bardolet & Daniel Lieb, *How Subjective Grouping of Options Influences Choice and Allocation: Diversification Bias and the Phenomenon of Partition Dependence,* 134 J. Experimental Psychology: Gen. 538 (2005); Craig R. Fox, David Bardolet & Daniel Lieb, *Partition Dependence in Decision Analysis, Resource Allocation,*

and Consumer Choice, 3 Experimental Bus. Research 229 (2005)).

Professor Simonson also took issue with the sequence of Hanssens survey questions. He criticized the surveys for asking about the various options the respondents may consider before asking them to select among those options. In Professor Simonson's opinion, informed by published research, asking respondents to consider a long list of options biases the respondents' subsequent responses. He opined that while offering such "consideration set" options may be appropriate in scenarios involving costly and often relatively irreversible decisions, it is not appropriate in the context of selecting a music service, which involves low cost, low risk, and easily changed purchase decisions. Relatedly, Professor Simonson suggested that research suggests that an unrealistic consideration set can also create bias in follow-up questions such that the list of considered options is likely to influence subsequent choices made by respondents. Simonson WRT ¶¶ 75–81 (citing Barbara E. Kahn & Donald R. Lehmann, *Modeling Choice Among Assortments,* 67 J. Retailing 274 (1991); Itamar Simonson, *The Effect of Product Assortment on Consumer Preferences,* 75 J. Retailing 347 (1999); Armin Falk & Florian Zimmermann, *A Taste for Consistency and Survey Response Behavior,* 59 CESifo Econ. Studies, no.1, 181 (2012); and Itamar Simonson, *The Effect of Buying Decisions on Consumers' Assessments of Their Tastes,* 2 Marketing Letters 5 (1991)).

Professor Simonson indicated that the Hanssens Surveys ignored the impact that a change in repertoire would have on services' ability to attract

new users. He noted that while Hanssens Surveys attempted to measure whether existing service users might change their listening behavior, the surveys did not examine or attempt to quantify the impact of offering a more limited music repertoire on a services' ability to attract new users. Professor Simonson posited that ignoring the impact on potential users, Professor Hanssens understated the impact that the loss of a label's content would have on the relevant services. Simonson WRT ¶¶ 82–84. SoundExchange also notes that this focus on existing customers indicates that the surveys at most measure only part of the impact that losing a record label would have on these services. SX PFFCL ¶ 788.

Professor Zauberman faulted the Hanssens surveys for not allowing respondents to respond on their smartphones, despite the fact that a large proportion of users stream music via smartphone. Zauberman WRT ¶¶ 82–88. He noted that other relevant surveys could be completed on smartphones and suggested that those surveys tended to have younger participants who are likely to listen to more music, and to replace Free Streaming Radio with Paid streaming services at higher rates than those who took the survey on other devices. Zauberman WRT ¶¶ 86–88. SoundExchange alleges that this may cause any calculation of diversion ratios based on the Hanssens surveys to be conservative. SX PFFCL ¶ 758.

Professor Zauberman asserted that the Hanssens surveys were confusing for respondents, offering that survey practices dictate that hypotheticals should be posed simply, not as instructions about how respondents should feel. He added that the surveys

contained too many response options that are overly wordy, making it difficult for a respondent to keep track of all relevant information. Professor Zauberman alleged that respondents were presented with too many response options that were zero-royalty options causing the responses to be biased towards such zero-royalty options. He also faulted the surveys for use of the typical week as a timeframe for respondents as being contrary to best survey design practices, and suggested that a time frame described as "a typical week" may be ambiguous to some respondents. Zauberman WRT ¶¶ 88–95.

c. Responses to Criticisms of the Hanssens Surveys

In response to criticism of the Hanssens surveys, Pandora/Sirius XM offers, in part, that Professor Simonson demonstrated convincingly that the Hanssens surveys were reliable by replicating them using an entirely new sample, and obtaining very similar results. Pandora and Sirius XM's Corrected Proposed Findings of Fact and Conclusions of Law ¶ 111 (Pandora/ Sirius XM PFFCL). Pandora/Sirius XM offers that the Hanssens surveys actually overestimate diversion, in that his scenario contemplates the loss of consumers' favorite artists, which does not necessarily simulate real-world conditions given that the loss of a label may not be coincident with the loss of all of the works of an artist and may not be coincident with the loss of a favorite artist. Pandora/Sirius XM PFFCL ¶ 112; 8/26/20 Tr. 4091–96, 4099–4101 (Hanssens). Pandora/Sirius XM adds that the Hanssens surveys reflect only the subset of Pandora users who would actually be affected by the degradation in the sense that they noticed it and were dissatisfied as a result, not simply

any Pandora user subject to the suppression. 8/26/20 Tr. 4093, 4101, 4154–56.

Pandora/Sirius XM notes that Professor Hanssens did not actually use the non-music data but, rather, included it merely for completeness reasons. Pandora/Sirius XM PFFCL ¶ 115. Pandora/Sirius XM also states that no empirical analysis of alleged diversification bias was offered. Instead, they indicate, Professor Simonson only offered citations to academic articles discussing the phenomenon. Pandora/ Sirius XM PFFCL ¶ 114. Similarly, Pandora/Sirius XM indicates that Professor Simonson did not offer any empirical evidence to support his critique that the sequence of Professor Hanssens's questions, requiring respondents to consider options before choosing them, could have biased his results. Pandora/Sirius XM PFFCL ¶ 116. Pandora/Sirius XM adds that the survey was designed to minimize any confusion, including instructing respondents to take their time reviewing the questions and providing a link to the descriptions and examples in every subsequent question. Pandora/Sirius XM PFFCL ¶ 110. Additionally, Pandora/Sirius XM clarifies that the intent of the Hanssens survey was to evaluate the behavior of listeners, not potential listeners. Pandora/Sirius XM PFFCL ¶ 117. The Services also observe a lack of empirical evidence that a failure to conduct the surveys on smartphones had any effect on the results. Services RPFFCL ¶ 760.

d. Criticism of Professor Simonson's Modified Hanssens Surveys

Pandora Sirius XM offers that Professor Simonson conceded that his modified surveys, designed to test the impact of including language of explicit dissatisfaction, did not, generally, result in large alterations to the data relative to either the original Pandora Survey or the Replication Survey. Pandora/Sirius XM PFFCL ¶ 118; Simonson WRT ¶ 99; 8/27/20 Tr. 4285 (Simonson); *id.* at 4315–16; 8/26/20 Tr. 4094 (Hanssens) (noting same). Pandora Sirius XM points out that both Professor Simonson and Professor Hanssens agreed that this lack of impact on Professor Hanssens's survey is likely due to the fact that dissatisfaction is implicit in a hypothetical referencing the loss of some of respondents' favorite artists and some newly released music. Pandora/ Sirius XM PFFCL ¶ 119.

Pandora Sirius XM indicates that Professor Simonson's question 225, intended to allow analysis of the magnitude of respondents' likely change in listening, is flawed and unreliable. Pandora/Sirius XM PFFCL ¶ 122. Professor Hanssens posited that the question does not accurately measure the likely change in listening. He asserts that the loss of a particular label fundamentally differs from the loss of favored artists or newly released music because artists are presented on more than one label, and many people do not know which labels represent which artists. 8/26/20 Tr. 4092–96 (Hanssens). He adds that the question is limited to people who actually notice the change and are negatively affected by it, which he notes is not coincident with all Pandora listeners. And, he offers that, without a proper basis for a respondent's volume of listening, it is not possible for a respondent to generate a reliable

response on the amount that would be lost. 8/26/20 Tr. 4096 (Hanssens). Finally, Professor Hanssens criticizes the answer ranges offered in Question 225, asserting that they are so wide and unequal that they are imprecise, biased, and unreliable. 8/26/ 20 4096 (Hanssens).

e. Responses to Criticisms of Professor Simonson's Modified Hanssens Surveys

SoundExchange counters that the criticism of the language of explicit dissatisfaction is essentially an acknowledgment that there is no need to instruct respondents to imagine they are dissatisfied by label blackout because dissatisfaction follows naturally from the loss of content. SX RPFFCL (to Pandora/Sirius XM) ¶ 119.

SoundExchange indicates that any notion that the loss of a label differs fundamentally from loss of favored artists or newly released music is unsupported by the evidence and contrary to Professor Hanssens's own testimony, including his describing the loss of access to any given record company's repertoire. SX RPFFCL (to Pandora/Sirius XM) ¶ 122, 112. SoundExchange rejects the notion that the survey is limited to a subset of users, instead asserting that it addresses aggregate consumer reaction in the event consumers are aware of label blackout, as they would be in any real world circumstance. SX PFFCL (to Pandora/Sirius XM) ¶ 122. Finally, SoundExchange offers that the suggestion that respondents should have been asked to report their current listening time is undermined by the fact that allocations of absolute time are

notoriously difficult for respondents to answer. SX RPFFCL (to Pandora/Sirius XM) ¶ 122.

f. Judges' Conclusions Regarding the Hanssens and Simonson Surveys

Upon consideration of the entirety of the record, including the facts and arguments indicated above, on balance, the Judges find the Hanssens Pandora Survey as well as the Simonson's Replicated and Modified Hanssens Surveys to be probative as to diversion behaviors of listeners of noninteractive streaming services regarding a loss of content and on switching to alternative sources of music. Notwithstanding the criticisms of the surveys, the Judges find the overall conduct of the surveys to have been rigorous and generally faithful to applicable best practices. Further, the replication and modification of the surveys, with generally consistent results, reinforce the Judges' finding that the collective results are probative in this proceeding. The Judges find that Professor Simonson's modifications (removing indications of dissatisfaction) ultimately had little impact on the results. Additionally, the Judges are persuaded that the issues raised regarding question 225 in the modified Hanssens survey, especially the criticism of the response ranges and interpretation of them, while not completely discounting of the results, do have merit. Therefore, the Judges rely more heavily on the results of the two consistent and replicated surveys.

The overall structure of the Sirius XM survey was the same as the structure of the Pandora survey, and Professor Hanssens simply substituted "Sirius XM over the Internet" for "free Internet radio services"

where necessary. Hanssens WDT ¶ 59. It included 150 respondents, with only 131 non-excluded respondents. Hanssens WDT ¶ 70 n.93. SoundExchange alleges that the sample size of Professor Hanssens's Sirius XM Survey was very small, making the results imprecise. Zauberman WRT ¶ 96. Professor Zauberman's analysis of Professor Hanssens's Sirius XM Survey indicated confidence intervals that are extremely wide. Professor Zauberman testified that the level of imprecision is problematic, especially when the estimates are then used for subsequent analyses. *Id.,* citing Table 6. Pandora/Sirius XM asserts that the sample size of the Sirius XM survey was sufficient to draw statistically valid conclusions. Pandora/Sirius XM PFFCL ¶ 109. The Judges agree with the critique of the sample size of the unreplicated survey. Therefore, the Judges do not find sufficient basis to rely on the Sirius XM Survey.

B. Evaluation of Benchmark Evidence

1. The Subscription Benchmark/Ratio- Equivalency Models

A SoundExchange economic expert witness, Mr. Orszag, presents a benchmark analysis to estimate the statutory royalty rate to be paid by noninteractive subscription services. Orszag WDT ¶¶ 76–86. On behalf of Pandora, Professor Shapiro presents his benchmark analysis for this subscription royalty rate. Shapiro WDT at 39–40; *see also id.* at 30–38 (Professor Shapiro's ad-supported benchmark analysis containing elements also applicable to his subscription benchmark analysis).

Mr. Orszag and Professor Shapiro each claims that his benchmarking model faithfully applies the Judges' "ratio equivalency" benchmarking model applied in *Web IV*. Unsurprisingly, therefore, each of them criticizes the other's model as failing to follow that *Web IV* model. The Judges first set forth the *essential* elements of Mr. Orszag's adaptation of the *Web IV* "ratio equivalency" model and the criticisms of that approach. The Judges then engage in the same approach with regard to Professor Shapiro's model— identifying its *essential* elements— followed by Mr. Orszag's critiques. The Judges then proceed to a more granular analysis of the dueling positions of these economists and set forth factual findings in these regards. Finally, the Judges set forth the benchmark rates that follow from their analysis and findings regarding the models proffered by these two experts.

a.   Mr. Orszag's Ratio-Equivalency Model

As noted above, Mr. Orszag engages in a benchmark analysis to estimate an appropriate statutory royalty to be paid to record companies by noninteractive services for subscription services. Orszag WDT ¶ 9. Mr. Orszag concludes that rates set in the *interactive subscription service* market are reasonable and appropriate benchmark rates, subject only to a downward adjustment to reflect the added value of interactivity in that proposed benchmark market. *Id.* ¶¶ 9, 11. By his approach, Mr. Orszag estimates a $0.0033 per-play royalty rate for performances on subscription services. Orszag WDT ¶¶ 9, 86 & tbls.6,7. He proposes that the Judges adjust the rates to reflect annual changes in the Consumer Price Index, in a manner similar to the approach adopted in *Web IV*. Orszag WDT ¶ 8.

Mr. Orszag finds the subscription interactive market to be an appropriate benchmark for the target noninteractive subscription market because (1) the sellers/licensors (record companies) are identical; (2) the buyers/licensees, although not identical, are sufficiently similar; and (3) the right being sold/licensed is identical in both markets, *i.e.,* the right to play a sound recording. *Id.* ¶¶ 54–56.

In his benchmark comparison, Mr. Orszag avers that he is following the "ratio equivalency" approach undertaken by the Judges in *Web IV.* Orszag WDT ¶ 74. In *Web IV,* the Judges set forth the "ratio equivalency" formula as follows: A/B = C/D

In this *Web IV* ratio equivalency approach:

[*A*] = Avg. Retail *Interactive* Subscription Price

[*B*] = *Interactive* Subscriber Royalty Rate

[*C*] = Avg. Retail *Noninteractive* Subscription Price

[*D*] = *Noninteractive* Subscriber Royalty Rate

Web IV, 81 FR at 26337–38. [107]

However, Mr. Orszag does not define inputs [A], [B], and [C] as they had been identified in *Web IV.* Instead, he defines these four inputs as follows: [*A*] = Total Benchmark Subscription Revenue

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[107] The "ratio equivalency" adopted by the Judges had been proffered by SoundExchange's economic expert witness, Professor Daniel Rubinfeld. *Web IV,* 81 FR at 26337. The Judges' reliance on Professor Rubinfeld's rationale for the use of the ratio equivalency approach is relevant in the present proceeding, as discussed *infra.*

[*B*] = Total Benchmark Subscription Royalty Payments

[*C*] = Total Noninteractive Subscription Revenue
[*D*] = Noninteractive Subscriber Royalty Rate
8/11/20 Tr. 1224–1226 (Orszag).[108]

Mr. Orszag testifies that he departs from the Judges' *Web IV* definitions of inputs [A], [B], and [C] for two reasons, neither of which, he asserts, contradicts the Judges' rationale for using the "ratio equivalency" approach in *Web IV.* Quite the contrary, he testifies that these departures were *required,* in order to make the *Web IV* approach meaningful in the present proceeding. First, Mr. Orszag notes that in *Web IV,* the Judges used *per play* rates as input [B] because "none of the percentage-of-revenue prongs in the greater-of agreements in the record has been triggered, which may suggest that the parties to those agreements viewed the per-play rate as the rate term that would most likely apply for the length of the agreement." *Web IV,* 81 FR at 26325. In other words, in *Web IV* the per-play rates *were* the effective rates.

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[108] Input [C] is identified above as revenue from "noninteractive" services. However, Mr. Orszag used three mid-tier services with limited interactivity—Pandora, iHeart and Napster (Rhapsody)—as his proxies for statutory noninteractive services. Mr. Orszag's use of these proxy services creates a dispute separate from the overarching modeling dispute considered here, and that dispute is addressed *infra* when the Judges examine the more granular issues relating to these two benchmarking models. Also, note that item [D] in the *Web IV* formula and Mr. Orszag's model are identical because [D] is not a modeling input but rather the output generated by the formula *(i.e.,* the proposed statutory royalty rate).

Second, Mr. Orszag testifies that this *Web IV* factual basis for using a stated per-play rate is no longer applicable because royalty payments under current interactive agreements are predominantly made pursuant to "percentage of revenue" prongs" rather than per-play prongs, which are included "only occasionally" in current interactive agreements. Instead, according to Mr. Orszag, most current interactive agreements in the market instead contain a "greater of" rate formulation that includes a "per-subscriber" prong together with the "percent-of-revenue" prong. Orszag WDT ¶ 77.

As the value for his conception of [A], Mr. Orszag uses the gross revenues generated by Spotify from the performance of sound recordings from the three Majors and the Merlin-affiliated Indies over the most recent twelve-month period, April 2018–March 2019. Orszag WDT ¶¶ 76, 83–84, 86, tbl.7.[109]

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[109] Mr. Orszag also analyzes data from Apple Music, Pandora, Amazon Music Unlimited, iHeart, Google, and Rhapsody, in addition to Spotify. He also obtains revenue data for the calendar year 2018. Orszag WDT tbls.6–7. However, he only uses the Spotify revenue data for the more recent of the two periods. Mr. Orszag also relies solely on Spotify royalty data from the same time period. Relying on the Spotify data for the most recent period ultimately yields [REDACTED] royalty rates in terms of percent-of-revenue and per-play rates [REDACTED] interactive services across each time period, *id.,* which is [REDACTED] for the noninteractive services within Mr. Orszag's data set. Mr. Orszag states that he utilizes this lower royalty rate because he believes that [REDACTED]— a factor that weighs against any downward adjustment for the Majors' complementary oligopoly market power. Orszag WDT ¶ 86. This market power issue is discussed at length elsewhere in this Determination.

For his version of [B], Mr. Orszag uses the royalties paid by Spotify to the Majors and the Indies. Again, he selected Spotify data over the same period, April 2018–March 2019, out of the seven total interactive services he considered. *See supra* note 109.

To identify a percent-of-revenue rate from inputs [A] and [B], Mr. Orszag calculates the reciprocal of ([A])/([B]), which is the percent of revenue paid as royalties (*i.e.,* ([B])/([A])). The A/B ratio of these data for Spotify over the relevant period is set forth below: Revenues [A] = $[REDACTED] Royalties [B] = $[REDACTED]

The ([A])/([B]) ratio of the above figures equals [REDACTED]:1. Expressing this ratio factor as a reciprocal ([B])/([A])—thus expressing a percent of revenue royalty—results in a royalty rate calculation of [REDACTED]% (rounded). Orszag WDT ¶¶ 84–85 & tbl.7.[110]

In order to obtain a value for [C] in his model, Mr. Orszag selects Pandora, iHeart, and Rhapsody as his mid-tier proxies for the noninteractive service sector. Orszag WDT tbl.6. He testifies that he chose these three services because they had entered into direct licenses with record companies, thereby allowing him access to royalty statements containing reliable and necessary information. Orszag WDT ¶ 85 & tbl.7.

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[110] In calculating the benchmark revenue and royalty totals (*i.e.,* [A] and [B]) Mr. Orszag excludes all plans which Spotify offered at discounts off full retail prices, *e.g.,* Spotify's family, student, employee, and trial plans, as well as its promotional offerings. Orszag WDT ¶ 85 tbl.7. Pandora criticizes his decision to omit from his analysis the revenues, royalties and play counts generated by these discount plans, as discussed *infra.*

Having obtained values for [A], [B], and [C], Mr. Orszag can calculate a value for [D], his proposed statutory royalty rate for subscription services. He begins by multiplying the percent-of-revenue rate he derives from the left side of his model ([REDACTED]%) by the total revenues ([C]), $[REDACTED], for his three noninteractive proxies. Orszag WDT ¶ 85 & tbl.7.

Despite computing a percent-of-revenue rate in the benchmark market SoundExchange does not propose a percent-of-revenue statutory royalty rate; rather, it proposes a per-play rate. According to Mr. Orszag, a per-play rate is preferable in order to avoid difficulties arising out of (1) defining revenue across business models; (2) separating out the sound recording revenue royalty base when music is bundled downstream with the sale of other items; and (3) accounting for a service's potential business practice of strategically lowering downstream prices. Orszag WDT ¶ 82. Accordingly, Mr. Orszag needs to apply his [REDACTED]% royalty percentage— derived from the left-hand/interactive benchmark market—so as to calculate a per play royalty rate for the right-hand/ noninteractive target market.

To effect this conversion to a per play metric, Mr. Orszag divides the foregoing revenue figure by the number of plays on Pandora, iHeart, and Rhapsody over the relevant period (May 2018–April 2019), which is [REDACTED] plays. The quotient of that division equals $0.0033 per play, which is the value for [D] in Mr. Orszag's model and therefore his recommended per play rate for noninteractive

subscription services. Orszag WDT ¶¶ 85–86 & tbl.7.[111]

b. Pandora's Criticisms of Mr. Orszag's Application of the "Ratio Equivalency" Model

The Services claim that the "first and foremost error" in Mr. Orszag's subscription benchmark analysis is his failure to correctly apply the *Web IV* "ratio equivalency model." Shapiro WRT at 24–27. This alleged error supposedly begins with Mr. Orszag's insertion of different inputs into that *Web IV* model.

More specifically, the Services point out that Mr. Orszag's benchmark royalty input [B] is not a contractual per-performance royalty rate as in *Web IV* but rather the total royalties paid by his benchmark service, Spotify. 8/19/20 Tr. 2892–93 (Shapiro). Similarly, the Services note that Mr. Orszag did not use in the two numerators of his "ratio equivalency" formula (*i.e.,* [A] and [C]), respectively) the "average monthly retail subscription prices" that were used in the *Web IV* formulation of the model. Rather, Mr. Orszag substituted for [A] Spotify's total subscription revenue and for [C] the total subscription revenue earned by Pandora, iHeart, and Rhapsody, his "mid-

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[111] Determining this per-play rate from the same Figure 7 data in another manner, Mr. Orszag notes that his three proxies for noninteractive subscription services had a combined average revenue per play of $[REDACTED] ($[REDACTED] [REDACTED] divided by [REDACTED] billion plays) in the May 2018–April 2019 period. Multiplying this average revenue per play by the [REDACTED]% royalty rate for interactive subscription services results in the per-play royalty

of $0.0033. Orszag WDT ¶ 85 & tbl.7.

tier" (*i.e.,* limited interactive) proxies for a noninteractive subscription services. *See* Services PFFCL ¶ 163 (and record citations therein).

The Services take issue with Mr. Orszag's method of solving for [D], total royalties to be paid. Again, Mr. Orszag multiplies his calculated [REDACTED]% interactive (benchmark) royalty rate by the total noninteractive revenue and (in the final step of his analysis) divides the total target [noninteractive] royalties [D] by the total plays on the three mid-tier services. *See* Services PFFCL ¶ 163 (citing Orszag WDT ¶ 85, tbls.6–7.)

According to the Services, the effect of Mr. Orszag's foregoing "ratio equivalency" approach is as follows:

> [R]ather than charging the target statutory services the same per-play rate as the benchmark services [before any adjustments], as in *Web IV,* his model is set up to compute a rate where the target market services . . . based on their prior revenues and play counts . . . instead pay the same *percentage of revenue* as the benchmark services. Services PFFCL ¶ 164 (citing Shapiro WRT at 25); 8/19/20 Tr. 2897 (Shapiro).

The Services criticize the foregoing approach by Mr. Orszag on several grounds. First, the Services find his modeling to be irreconcilable with the *Web IV Determination* in which, they claim, the Judges affirmatively rejected a percentage-of-revenue royalty

metric for the statutory license. Services PFFCL ¶ 24 (*citing Web IV,* 81 FR at 26325– 26).[112]

Second, the Services find Mr. Orszag's approach to be "unjustified" (as well as "roundabout" and "unnecessary") because SoundExchange is not actually advocating for a percent-of-revenue royalty but rather for a per-play rate. 8/19/20 Tr. 2893 (Shapiro); Shapiro WRT at 27–28. Alternately stated, the Services claim that because the royalty being set is a per-play royalty and not a percentage-of-revenue rate, *the appropriate starting point* for the benchmarking exercise is a per-play rate derived in the benchmark market and then subjected to any adjustments necessary to correct for potential differences between the benchmark and target markets. Shapiro WRT at 24–25; Peterson WDT ¶¶ 13, 15.

As stated *supra,* before the Judges analyze Mr. Orszag's benchmark ratio equivalency approach and the objections thereto, they find it beneficial to next consider Professor Shapiro's benchmark ratio

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[112] To be clear, in *Web IV, the Judges did not reject the use of "percent-of-revenue" royalties because they were legally or economically inappropriate.* Rather, the Judges there expressly rejected SoundExchange's proposed "greater-of" rate proposal and chose to utilize only the per play rates within such benchmarks because *the evidence* demonstrated that "none of the percentage-of-revenue prongs in the greater-of agreements in the record has been triggered." *Web IV,* 81 FR at 26325. Thus, the Judges did not reject the concept of using a percent-of-revenue based royalty rate as a benchmark for noninteractive services for legal or economic reasons but rather for factual reasons particular to the *Web IV* record. *Cf. SDARS III,* 83 FR at 65221–22, 65229, *and Phonorecords III,* 84 FR at 1934 (both adopting percent-of-revenue royalty rates).

equivalency model and Mr. Orszag's objections thereto. Thereafter, the Judges can better compare and contrast these two benchmark models. The Judges proceed in that manner below.

c. Professor Shapiro's Subscription Model

Professor Shapiro also uses the interactive market as his benchmark, relying on direct licenses between eleven interactive services[113] and the three Majors (Sony, Universal, and Warner). Shapiro WDT at 41; 8/19/20 Tr. 2826 (Shapiro). He compares the interactive benchmark market to the noninteractive target market by purporting to use the *Web IV* framework. More particularly, Professor Shapiro asserts that he is using the same definitions as used in *Web IV* for inputs [A], [B], and [C] in his "ratio" equivalency model in order to generate output [D] as a per-play rate.

By his approach, Professor Shapiro proposes that the statutory rate for subscription services fall within a range between $[REDACTED] and $[REDACTED] per play. He also proposes that the range should be indexed to for inflation, using 2019 as the base year (*i.e.,* the same year from which he obtained data), over the 2021– 2025 rate period. Shapiro WDT at 2.

To compute a value for [A] in his ratio equivalency model, Professor Shapiro utilizes the same category of values as used by Professor Rubinfeld in *Web IV*—the monthly retail price for undiscounted subscription

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[113] The eleven interactive services are Amazon Prime, Amazon Unlimited, Apple, Deezer, Google Music, Napster, Pandora, Slacker, SoundCloud, Spotify, and Tidal. Shapiro WDT at 40 tbl.10.

plans— which is $9.99 per month. 8/19/20 Tr. 2828 (Shapiro) ("I'm following very closely what was done in *Web IV* by Professor Rubinfeld, actually, and then adopted by the Judges . . . based on the . . . retail prices for these plans, and that's [$]9.99 . . . .").

To calculate input [B], Professor Shapiro analyzes the most recent 12-month period for which data was available, May 2018 through April 2019. He calculates the average "effective" per-performance royalty rates paid by ten of the eleven services (weighted by each service's percentage of total performances).[114] The plays by the largest interactive services, [REDACTED] and [REDACTED], account for [REDACTED]% and [REDACTED]% of total plays, respectively, thus dominating the weighted average. Shapiro WDT at 40 tbl.10. Professor Shapiro then divides (i) the total royalties paid by the ten interactive services in his model[115] by (ii) the number

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[114] Professor Shapiro excludes [REDACTED] from the calculation "due to insufficient data," but the exclusion has *de minimis* impact, he asserts, because [REDACTED] accounted for only [REDACTED]% of the 358.7 billion plays in Professor Shapiro's benchmark grouping. Shapiro WDT at 40.

[115] Unlike Mr. Orszag, Professor Shapiro calculates [B] (effective per-play rate) by utilizing the revenue and royalties generated by *all* interactive plans, including discounted interactive plans such as student, family and military plans, in addition to the revenue from undiscounted plans. And (because he is calculating an effective per-play rate in the benchmark interactive market), Professor Shapiro also incorporates into his calculation of [B] the number of interactive plays. 8/19/20 Tr. 2827 (Shapiro). By contrast, when calculating his value for [A], Professor Shapiro instead *uses only the full (undiscounted) retail price of an interactive service* rather than including in the value of [A] the retail price of *discounted* interactive plans. These issues are

of interactive plays, to obtain a value for [B], $[REDACTED], his effective per-play rate in the interactive benchmark market. *Id.*[116]

Professor Shapiro avers that *his* only departure from the *Web IV* approach is in his calculation of input [B], a departure born of necessity. Specifically, he notes that he could not use a per-play rate in the interactive benchmark market because (as Mr. Orszag also acknowledges) the majority of contracts between the Majors and the interactive services no longer contains a stated (headline) per-play prong. Thus, he had no alternative but to substitute an "effective" per-play rate as input [B]. Shapiro WDT at 41.

Of particular note here is a distinction between Professor Shapiro's approach and that taken by Mr. Orszag because the latter *does not calculate a per-performance "effective" rate in the interactive benchmark market.* Rather, as discussed *supra,* Mr. Orszag calculates the "effective" *percent-of-revenue* paid as royalties in the benchmark interactive market ([REDACTED]%).

Claiming to continue to follow *Web IV,* Professor Shapiro next identifies the weighted average retail subscription price for the noninteractive proxies on the right-hand side of his ratio, $4.99/ month, as the value for [C], the numerator in the right-hand side of the "ratio equivalency" formula. Shapiro WDT tbl.9;

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addressed in connection with the discussion of the more granular benchmark model issues, *infra.*

[116] The total interactive royalties and interactive plays thus are inputs used to calculate the value of [B] in Professor Shapiro's model rather than stated inputs in the ratio.

8/19/20 Tr. 2828 (Shapiro). Thus, having identified values for inputs [A], [B], and [C], his model solves for [D], including an implicit interactivity adjustment[117] that is a function of the ratio equivalency formula. This value (before any further adjustments) is $[REDACTED] per play.[118]

d. SoundExchange's Criticisms of Professor Shapiro's Benchmark Model

As an initial matter, SoundExchange does not categorically reject Professor Shapiro's benchmarking approach. Rather, it asserts that identifying the effective per performance rate paid by the interactive services is not the "*necessary*" starting point for such an analysis. SX RPFFCL (to Pandora/Sirius XM) at 67 (emphasis added). In a similar vein, SoundExchange asserts that "there is simply no reason why one *must* base the analysis on effective

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[117] Note that Professor Shapiro also proposes an additional "second interactivity adjustment," which the Judges address *infra* in their analysis of the details of Professor Shapiro's ratio equivalency benchmarking model.

[118] Professor Shapiro's $[REDACTED] per play (prior to adjustments other than an initial interactivity adjustment which is implicit in the model) is calculated as follows:

(1) $[REDACTED] divided by $[REDACTED] equals $[REDACTED] divided by [D]

(2) cross-multiplying: $[REDACTED] multiplied by [D] equals $[REDACTED] multiplied by $[REDACTED]

(3) calculating the above step: $[REDACTED] multiplied by [D] equals [REDACTED]

(4) dividing both sides by $[REDACTED] solves for [D] equals $[REDACTED] (rounded)

per-play rates in the benchmark market . . . ." SX PFFCL ¶ 111 (emphasis added).

Nonetheless, SoundExchange finds Professor Shapiro's application of the *Web IV* approach wanting. As an initial matter, SoundExchange disagrees with Professor Shapiro's understanding that the *Web IV* model should be applied so as to generate a per-play rate *in the benchmark (interactive) market.* Rather, SoundExchange argues that in *Web IV* the Judges required that the denominators [B] and [D] should reflect the *effective* royalty rate—*in whatever manner that royalty rate was established in the benchmark market*—so that the ratios [A]/[B] and [C]/[D] would be equivalent. And, the present record reflects that most of the interactive (benchmark) rates are set, as a matter of contract (that is to say, in the market), as a percent of revenue. (This is in contrast to the record in *Web IV* which revealed that, pursuant to marketplace contracts, the royalty rate was set on a *stated* per-play basis).[119] Given this change in market reality, SoundExchange asserts that—for the ratios to be equivalent in the benchmark and target market—the ratio [B]/[A] *is* the effective benchmark royalty rate. SX PFFCL ¶ 105 (citing 8/11/20 Tr. 1226 (Orszag) ("[B] over [A]

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[119] SoundExchange also relies on statements in *Web IV* indicating that the Judges there were intending to set a per-play rate that effectively provided record companies with the same percentage of revenue in the target (noninteractive) market as in the benchmark (interactive) market. *See* SX RPFFCL (to Pandora/Sirius XM) ¶ 189 (citing *Web IV,* 81 FR at 26326, 26338). The Judges discuss *infra* how those *Web IV* statements bear on the ratio equivalency issues raised in the present proceeding.

representing the effective percentage of revenue royalty rate paid by the benchmark service")).

According to SoundExchange, it is for the foregoing reason that Professor Shapiro should not have taken his intermediate step of deriving an effective per-play rate in the benchmark (interactive) market. Rather, according to SoundExchange, he should have solved for [D] (the statutory rate, by (1) applying the benchmark (interactive) percentage derived from the ratio [B]/ [A], (2) multiplying that percentage by [C], and (3) dividing that product by the number of noninteractive plays. Simply put, SoundExchange (unsurprisingly) asserts that, in order to follow the *Web IV* approach, Professor Shapiro needed to utilize Mr. Orszag's approach.[120]

e. The Judges' Analysis and Findings Regarding the "Ratio Equivalency" and Benchmarking Issues

SoundExchange and Pandora accuse each other of misapplying the Judges' ratio equivalency approach adopted in *Web IV*. However, the broadsides by each side miss the mark, as explained below. The parties' attacks are off-target because, in *Web IV,* the *effective* rates upon which the Judges relied *were also* the *stated* per-play rates in the benchmark (interactive) agreements.

Thus, Pandora is *incorrect* in arguing that Mr. Orszag misapplies *Web IV.* Rather, *consistent* with *Web IV,* he relies on and applies the royalty terms in

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[120] As noted *supra,* this criticism relates *solely to the modeling aspects* of Professor Shapiro's benchmark model. SoundExchange levels other criticisms at Professor Shapiro's *application of his benchmark model,* which are discussed *infra.*

the benchmark agreements which are based on a percent-of-revenue royalty prong within their greater-of rate formulae. Therefore, it is incorrect to say that Mr. Orszag acted in a manner inconsistent with *Web IV* by (1) using benchmark (interactive) total revenue as the metric for [A]; (2) using benchmark (interactive) total royalties for [B]; (3) calculating the reciprocal, [B]/[A], as the effective benchmark (interactive) percent-of-revenue royalty rate; and (4) applying that percent ([REDACTED]%) to the total revenue in the target (noninteractive) market.

But, neither has Professor Shapiro run afoul of *Web IV*. Consistent with *Web IV,* Professor Shapiro calculates an effective *per play* rate in the benchmark (interactive) market by applying the *actual* prong utilized in that market—the percent-of-revenue prong—and then identifies an [A]/[B] ratio to apply to the target (noninteractive) market. In *Web IV,* the Judges also explicitly identified a per-play rate as the appropriate rate to use for [B] and, as undertaken by Professor Shapiro, utilized the retail price for the benchmark (interactive) subscription as the value for [A].[121]

But, then a puzzle presents: How can both approaches be both correct and thus incorrect? Are we faced with a paradox analogous to that of

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[121] Moreover, as noted *supra,* SoundExchange does not reject Professor Shapiro's approach but rather asserts only that his starting point of identifying the effective performance rate paid by the interactive services is neither necessary nor mandatory. That is a far cry from an outright rejection. Further, the fact that such an approach might not be necessary or mandatory does not mean that it is inappropriate or without significant value.

"Schrödinger's Cat"?[122] The resolution of the paradox lies in two points: (1) When the Judges in *Web IV* extracted the ratio equivalency methodology out of the record evidence, they intentionally eliminated the linkage between per-play rates and percent-of-revenue rates in the "greater-of" rate formulae present in the benchmark interactive market agreements; and (2) in the present proceeding, benchmark (interactive) royalties are paid predominantly as a "percent-of-revenue," whereas in *Web IV* they were paid on a per-play basis.[123] The Judges analyze below the impact of these two factors on the application of the benchmark models in the present proceeding.

i. De-Coupling of Contractual Per-Play and Percent-of Revenue Rates in Web IV

The contrasting attempts by Mr. Orszag and Professor Shapiro to follow the *Web IV* "ratio equivalency" faithfully derive from the particular factual and economic circumstances in *Web IV*. In that

[122] "Schrödinger's Cat" refers to a thought experiment regarding a theory of quantum mechanics involving a cat—sealed in a box with a flask of poison and a radioactive source—that, under the theory, conceptually may simultaneously be alive and dead. "Schro¨ dinger's Cat" has been extended in popular culture as a way to identify something as a paradox, unfeasible, or working against itself. *See https://www.dictionary.com/e/tech-science/schrodingers-cat/?itm_source=parselyapi* (last visited May 25, 2021).

[123] In fact, the record reflects that [REDACTED] and that [REDACTED]. 8/11/20 Tr. 1207–08 (Orszag); 8/20/20 Tr. 3000 (Shapiro). *See* SX PFFCL ¶ 112 (and record citations therein). Although the Services do not acknowledge such a sweeping abandonment of stated per-play rates, Professor Shapiro recognizes that "[REDACTED]." Shapiro WDT at 39.

proceeding, SoundExchange had not proposed a *stand-alone* per-play rate. Rather, it had proposed that the Judges adopt a "greater-of" rate structure, in which the statutory subscription royalty rate would be the greater of (1) $0.0025 per play and (2) 55% of service revenue. *Web IV,* 81 FR at 26335. In support of that structure, SoundExchange, through its economic expert, Professor Daniel Rubinfeld, asserted, *inter alia,* that (1) "the per-play prong provides a guaranteed revenue stream" and (2) "the percentage-of-revenue prong allows record companies to share in any substantial returns generated by a Service." *Web IV,* 81 FR at 26324. Thus, SoundExchange proposed the per-play rate—not as a *stand-alone value,* but rather as a *partial metric*—one that it believed served as a "guarantee"—a floor on the percent-of-revenue effectively paid as royalties.[124]

As noted *supra,* in *Web IV* the Judges rejected the "greater-of" structure and adopted a per-play rate structure. But, their decision was not unrelated to the valuation of the royalty payments as a function of revenue. Rather, the Judges adopted the per-play rate approach in reliance upon Professor Rubinfeld's testimony that his "ratio equivalency" methodology resulted in a per-play royalty payment ($0.0025) that approximated 55% of service revenue, which, as noted above, was SoundExchange's percent-of-revenue royalty proposal. *Web IV,* 81 FR at 26324 n.44, 26326. Thus, in *Web IV* the Judges understood that the per-

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[124] Professor Rubinfeld apparently relied on per-play royalties as input [B] in his "ratio equivalency" approach because the per-play prongs were the ones triggered in the market and his intention was to faithfully utilize actual market data.

play rate was not proposed as a purely independent measure of the value of an individual play, but rather as a metric that was also designed to approximate a minimum royalty rate of 55% of revenue.

Importantly, when the Judges in *Web IV* de-coupled the percent-of-revenue and per-play rates, rejecting the former approach and adopting the latter, the Judges also eliminated the capacity of the per-play rate to serve its limited function as a form of "guarantee." Thus, the royalty rate paid by noninteractive subscription services during the *Web IV* 2016–2020 rate period—as adjusted (for other reasons) by the Judges from $0.0025 to $0.0022 for 2016—did not correspond with any particular percent-of-revenue floor. Rather, the effective percent-of-revenue paid as a royalty would vary with the level of noninteractive service *revenue* and quantity of plays.[125]

With *Web IV* having severed the link between percent-of-revenue and per-play rates, the attempts *in this proceeding* by Mr. Orszag and Professor Shapiro to adopt the *Web IV* ratio equivalency approach—in order to set a per-play rate derived from a percent-of -revenue rates—are problematic because, as in *Web IV,* the per-play rate is untethered to a percent-of revenue rate. Indeed, despite their best efforts, neither Mr. Orszag nor Professor Shapiro could synthesize what *Web IV* had (for good reason) torn asunder.

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[125] By contrast, if the Judges had adopted only a percent-of-revenue structure, the royalty paid by a noninteractive service obviously would have remained at that fixed percentage.

ii. In the Benchmark (Interactive) Market, Per-Play Rates Were Paid in the Web IV Era; but in the Web V Era Percent-of Revenue Rates Are Now Paid

Whereas in *Web IV* the actual rate in the benchmark (interactive) market and the proposed target statutory rate were both per-play rates, in this *Web V* proceeding the actual benchmark rate is now most often a percent-of-revenue rate. Despite this important change in the benchmark (interactive) market, the parties agree that the statutory rate should remain a per-play rate.

Accordingly, the parties' criticisms not only miss the mark, they fail to illuminate the issue at hand. The Judges need to revisit the economic principles identified in *Web IV* that undergird the ratio equivalency approach in order to apply that formula to the present record.

The concept of ratio equivalency is based on the principle that record companies, as licensors, in a hypothetical unregulated world "would want to make sure that the marginal return that they could get in each sector [interactive and noninteractive] would be equal, because if the marginal return was greater in the interactive space than the noninteractive . . . you would want to continue to pour resources, recordings in this case, into the [interactive] space until that marginal return was equivalent to the return in the noninteractive space." *Web IV* 81 FR at 26344. This is an example of "a fundamental economic process of profit maximization," *id.,* one that "pervades much of [e]conomics: A rational seller or licensor will "[a]llocate resources among alternative uses so as to keep the marginal returns equal, or as near equal as

possible [because] if marginal products aren't equal, there's a gain to be had by reallocating some resources from the use with the lower marginal product and assigning them where the marginal product is higher." Armen A. Alchian & William R. Allen, Universal Economics at 102 (2018) (summarizing this principle as "the equalization of marginals at the maximum aggregate return"). In the present case, this economic logic implies that rational profit-maximizing record companies will seek to earn the same return for each relevant "unit" of value across both the interactive and noninteractive markets.

In *Web IV,* the *metric* for the royalty rate was per play, *i.e.,* each individual performance of a copy of a sound recording. However, downstream *revenue* is not generated on a per-play basis. Rather, in the case of streaming subscriptions, marginal revenue can be generated by incremental increases in the number of subscriptions.[126] A record company would seek to avoid a scenario where it loses marginal royalty revenue on each subscription dollar if listeners who would otherwise have chosen to become interactive subscribers instead decide to become noninteractive subscribers. By equalizing the percent of revenue paid as royalties per subscription dollar, the rational record company is indifferent regarding to which of these two forms of music services a consumer decides

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[126] Services could also hypothetically increase marginal revenue simply by raising subscription prices. There is no evidence in the record, though, indicating that services have the market power to increase subscription prices charged within various segments of the retail market.

to subscribe.[127] (And, it should also be noted, on the *cost* (supply) side, a particular feature of *copies* of sound recordings is that their transmission does not generate a marginal physical production cost. *See Phonorecords III Dissent,* 84 FR at 1976 (and citations therein)).[128]

This is the precise point on which Professor Rubinfeld relied and as to which the Judges in *Web IV* agreed. Thus, the actual economic concern in *Web IV* was setting rates based on a per-play rate that was a marketplace proxy for a minimum percent-of-revenue earned by an assumed substitute service, *i.e.,* interactive services (approximately 55%), which generates marginal opportunity costs.[129]

In the present case, SoundExchange makes this point repeatedly, citing to language in the *Web IV* Determination. *See, e.g., id.* at 26338 ("[G]iven Dr. Rubinfeld's assumption that the ratios should be equal in both markets, the per-play royalty rate for noninteractive services [D] (*i.e.,* the statutory rate) would also have to provide record companies with *the same minimum percentage of revenue out of [C] (the average monthly retail noninteractive subscription price)*.") (emphasis added); *id.* at 26344 ("Dr.

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[127] Of course, concern for substitution is appropriate only if the two services are indeed substitutes among consumers. This important point is considered *infra.*

[128] The *Phonorecords III* majority Determination does not conflict with this economic point.

[129] To be clear, that concern is not the end of the story. Potential adjustments also need to be considered to reflect effective competition, differences in WTP for substitutes (for example, because of interactivity differences), and inconsistent definitions of a "play" between service types (the "skips" issue).

Rubinfeld acknowledged that his 'ratio equivalency' was intended to *create a rate whereby every marginal increase in subscription revenue would result in the same increase in royalty revenue,* whether that marginal increase in subscription occurred in the interactive market or the noninteractive market.") (emphasis added); *id.* at 26324 n.44 (noting that Dr. Rubinfeld's ratio equivalency per-play methodology resulted in an interactive royalty payment generally ranging from 50% to 60% of subscription revenues, with most falling between 55% and 60%); *id.* at 26338 (the per-play rates relied upon by Dr. Rubinfeld implied these same express percent-of-revenue rates as set forth in the "greater-of" formulae in the interactive direct licenses). To buttress this point, SoundExchange notes that the Judges' restatement in *SDARS III* of the "ratio equivalency" model is consistent with the understanding that this approach is intended to equalize royalties as a percent of revenue. SX PFFCL 119 (citing *SDARS III,* 83 FR at 65243 n.137).

The Judges agree with SoundExchange's assertion in this regard. Accordingly, the Judges find that the *Web IV* "ratio equivalency" approach was properly intended to approximate and equalize percent-of-revenue royalties for interactive and noninteractive subscriptions—on the assumption that interactive and noninteractive subscriptions were 1:1 substitute products for consumers downstream. If and when such substitution exists, Mr. Orszag's "ratio equivalency" approach is the more appropriate methodology.

Nonetheless, based on the record in this proceeding, the Judges do not find good reason to

apply Mr. Orszag's benchmark rate other than in a partial manner. That is, because the "ratio equivalency" approach is economically premised on a presumed high substitutability (cross-elasticity in economic parlance) between interactive and noninteractive subscriptions, this equivalency cannot be economically pertinent where, as here, the record presents the Judges with facts in conflict with that presumption.

Again, recall that in *Web IV,* the Judges stated: "Dr. Rubinfeld's 'ratio equivalency' *assumes a 1:1 'opportunity cost'* for record companies, whereby, on the margin, a dollar of revenue spent on a subscription to a noninteractive service is a lost opportunity for royalties from a dollar to be spent on a subscription to an interactive service." *Web IV,* 81 FR at 26344–45 (emphasis added). To make clear that the *Web IV* Judges found this 1:1 substitutability to be a presumption (and certainly not an axiom), they rejected SoundExchange's attempt to extend this 1:1 substitution argument to the ad-supported market in order to equalize royalties as a percent of revenues in that market with the percent applicable in the subscription interactive market. In rejecting this attempted extension of the 1:1 substitutability presumption, the Judges took note of a sharp dichotomy in the willingness to pay (WTP) of listeners in each market. *Web IV,* 81 FR at 26345– 46, 26353.

However, the Judges did apply a 1:1 substitutability of subscription interactive services for subscription noninteractive services in *Web IV* and noted its limited application:

Dr. Rubinfeld's interactive benchmark is only applicable when, *inter alia:*

> Revenues in both markets are *derived from subscription revenues and are thus reflective of buyers with a positive WTP* for streamed music; [and] functional convergence and downstream competition for potential listeners indicate *a sufficiently high cross-elasticity of demand as between interactive and noninteractive services,* provided the noninteractive subscription rate is reduced to reflect the absence of the added value of interactivity . . . .

Web IV, 81 FR at 26353 (emphasis added). Applying these principles, *Web IV* held:

> When the segment of the market at issue consists of willing buyers/licensees who are providing access through subscription-based listening to listeners who have a WTP for either interactive or noninteractive services that are close substitutes, then Dr. Rubinfeld's "ratio equivalency" is reasonably based on revenues.

Web IV, 81 FR at 26348 (emphasis added).

These quoted portions of *Web IV* show that the Judges dichotomized between Dr. Rubinfeld's use of the "ratio equivalency" model by rejecting it for the ad-supported noninteractive services but applying it to subscription noninteractive services. But these quoted portions also demonstrate that the Judges applied a "ratio equivalency" across the benchmark and target subscription markets by *presuming* that *subscribers'* revealed positive WTP for both interactive and noninteractive services was sufficient

to show the necessary cross-elasticity and, relatedly, that each product was a close substitute for the other (after making an adjustment for interactivity.[130]

In the present proceeding, a consumer survey in evidence, commissioned by SoundExchange—the Zauberman Survey—provides relevant information regarding the question of whether and to what extent subscription *interactive* services are substitutes for subscription *noninteractive* services. As analyzed and applied by one of SoundExchange's other economic expert witnesses, Professor Willig, the Zauberman Survey indicates that only 11.5% of subscribers to noninteractive services would divert to listening to subscription interactive services if their noninteractive subscription service were no long available. *See* Willig WDT ¶ 47 fig.6.[131] These survey results indicate there is far less than the 1:1 substitution ratio between subscription *interactive* services and subscription *noninteractive* services that was *presumed* in *Web IV*. This SoundExchange-

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[130] Such an assumption was not unreasonable as there were no "opportunity cost" surveys such as in the present case indicating the extent of cross-elasticity or substitutability of interactive and noninteractive subscriptions. As discussed, *infra,* that evidentiary absence does not exist in the present proceeding. Also, in *Web IV,* the $0.0025 benchmark (adjusted to $0.0022) that presumed this 1:1 substitutability was consistent with Pandora's own proposed benchmark derived from its *noninteractive* market agreement with [REDACTED]. *Web IV,* 81 FR at 26405.

[131] The Hanssens Survey indicates, according to Professor Shapiro, that this diversion to new interactive subscriptions would be even smaller, measuring [REDACTED]%. Shapiro WDT at 28 tbl.5. This lower figure would not alter the weights assigned to the benchmarking and ratio-equivalency models.

proffered evidence indicates that Mr. Orszag's per-play rate—derived from his ratio equivalency approach—has only limited applicability.

Moreover, in *Web IV* and also in *SDARS III,* the Judges laid out this precise critique of a ratio equivalency approach proffered by Mr. Orszag, with the Judges also relying on survey evidence to make the point:

> *The survey results* highlight a . . . criticism . . . of Mr. Orszag's ratio equivalency approaches. . . . [T]he *economic rationale* support[ing] a ratio equivalency approach *requires 'significant competition, or a high cross-elasticity of demand,* between [the target market] and [the benchmark market] . . . . *[A] limited degree of head-to-head competition . . . will not suffice. . . .'*
>
> *Web IV,* 81 FR at 26353 . . . .

> In *Web IV,* the Judges stated that the ratio equivalency approach might be appropriate if the record reflected . . . *a sufficiently high cross-elasticity of demand as between interactive and noninteractive services,* provided the noninteractive subscription rate is reduced to reflect the absence of the added value of interactivity. . . . 81 FR at 26353.

> In the present case, Mr. Orszag did not provide either qualitative or quantitative evidence of a sufficiently high cross-elasticity. . . . [T]he survey results reported by SoundExchange's own survey witnesses . . . indicated that there is no such high substitutability between subscribership to

interactive services and [the target market.] *These survey conclusions negate any complete or overwhelming ratio equivalency Mr. Orszag has posited.*

SDARS III, 83 FR at 65247 (emphasis added).[132]

iii. The Judges' Application of Mr. Orszag's and Professor Shapiro's Models

In sum, Professor Shapiro's model is more of a traditional benchmarking model. He identifies the interactive market as similar in terms of licensors, licensees, and licensed works, and he proposes adjustments (discussed *infra*) that allegedly correct for differences between the otherwise analogous benchmark and target markets. On the other hand, Mr. Orszag's approach is essentially an "opportunity

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[132] The Judges are perplexed by SoundExchange's decision to propose a per-play rate as opposed to a percent-of-revenue rate. Mr. Orszag could have more simply applied his [REDACTED]% percent-of-revenue rate as the applicable benchmark rate (subject to any warranted adjustments). Further, the Judges note that the Majors and the services revealed their *[REDACTED]* in the interactive market—*a market that is unregulated and [REDACTED] to the record companies than the noninteractive market. Compare* Orszag WDT tbl.4 (2018 U.S. *interactive* subscription revenue was $[REDACTED]) with *id.* tbl.6 (2018 U.S. subscription revenue for Mr. Orszag's *noninteractive* proxies (including Pandora) was $[REDACTED], [REDACTED]% of the interactive revenue). There is no reason provided in the record to explain why SoundExchange and Mr. Orszag would find practical issues relating to revenue definition—which were insufficient to reject a percent-of-revenue rate in the far larger and unregulated interactive market—to be so vexing in the noninteractive market as to necessitate the conversion of the benchmark percent-of-royalty rate into a statutory per-play rate.

cost" model more than it is a traditional "benchmark model." Because SoundExchange's survey evidence, as applied by Professor Willig, reveals the limited applicability of the opportunity cost approach, the model cannot be extended to the entire market.

Therefore, the Judges find it necessary to apportion the applications of Professor Shapiro's benchmark result and Mr. Orszag's benchmark result. The Judges find it reasonable to apportion 11.5% of Mr. Orszag's proposed benchmark rate toward the subscription benchmark rate.[133] The Judges apply the remaining and greater weight, 88.5% (*i.e.,* 1–.115), to the more traditional benchmark approach undertaken by Professor Shapiro that relies on the broad similarities in terms of rights, licensors, and licensees, without adding assumptions regarding substitution patterns between the target noninteractive subscription market and the benchmark interactive subscription market.

The Judges will apply these apportionments to each expert's proposed rate *after* the Judges consider the more granular criticisms of each expert's

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[133] The Judges prefer Mr. Orszag's approach over Professor Shapiro's approach for the portion of the market in which the relevant cross-elasticity/ substitutability is high. As the Judges noted in *SDARS III, if and when the opportunity cost approach is appropriate,* it can be superior to a benchmark approach in estimating the statutory rate. *SDARS III,* 81 FR at 65231 ("*When properly weighted,* the opportunity cost approach is tantamount to a useful benchmark, because the weightings are quite analogous to (and more precise than) the 'adjustments' the Judges consistently make to proposed benchmarks.") (emphasis added).

approach and the proposed adjustments to those rates.

iv. The Parties' Granular Criticisms of Their Adversary's Subscription Benchmarking

Having resolved the differences between Mr. Orszag and Professor Shapiro regarding the *overarching issue* of how to apply ratio equivalency and benchmarking principles, the Judges now turn to the *detailed* critiques of each approach.

(A) SoundExchange's Granular Criticisms of Professor Shapiro's Benchmarking and the Judges' Analysis and Findings Regarding Those Criticisms

(1) Professor Shapiro's Inclusion of Discount Plan Royalties and Play Counts in Calculating a Value for [B], the Effective Per-Play Royalty in the Benchmark (Interactive) Market

SoundExchange criticizes Professor Shapiro for including the royalties and play counts associated with interactive services' *discount plans* in order to calculate the value of [B] in his benchmarking model. More precisely, Professor Shapiro calculates an effective interactive (benchmark) per-play royalty rate [B] by including in his numerator the total royalties paid and, in his denominator, the play counts—*not only for the interactive services' full-price ($9.99) subscription plans but also for discount plans, such as student, family, and military plans.* 8/19/20 Tr. 2931 (Shapiro); Shapiro WDT, app. D.1.B n.7.

According to Mr. Orszag, this has the effect of lowering the effective per-play rates in the benchmark market and therefore the proposed rates for the target market. To make this point, he

compares his calculation of the weighted average subscription per-play rate *excluding* discount plans— $[REDACTED] per play—with Professor Shapiro's effective per-play rate for the same services *including* discount plans—$[REDACTED] per play. Trial Ex. 5603 ¶ 88 (WRT of Jon Orszag) (Orszag WRT).

In response, Professor Shapiro asserts that it would be inappropriate to handpick a subset of the market (*i.e.,* just the full-price plans) in order to generate the per-play rate because the statutory rate will apply to royalties generated by all subscribers regardless of whether they subscribe to a full-price or discounted plan. 8/19/20 Tr. 2852–53, 2898–99 (Shapiro).

The Judges agree with Professor Shapiro that the identification of a per-play benchmark rate in his model for subscription services should be based on the royalties and play counts of all plans. There is no valid reason to cherry-pick among the plans when calculating this benchmark input because all noninteractive services offering subscription plans will pay the calculated per-play royalty across all plans, whether full price or discounted.[134]

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[134] Mr. Orszag claims that interactive discount plans should be ignored because [REDACTED] engages in much less discounting. He claims that this difference requires the Judges to look only at full-price plans in order to make an "apple-to-apples" comparison. SX RPFFCL (to Pandora/Sirius XM) ¶ 186 (citing 8/11/20 Tr. 1215 (Orszag)). But, Pandora analogizes to another food group (characterizing *this* point as a "red herring"), namely one that is unresponsive to the need to consider that all noninteractive subscription services will pay the statutory per play rate, regardless of whether they engage in discounting. Pandora/Sirius XM PFFCL ¶ 186 (citing 8/19/20 Tr. 2852–53

(2) Professor Shapiro's Use of Full Subscription Prices Rather Than Average Revenue per User (ARPU) for the Values of [A] and [C]

SoundExchange also criticizes Professor Shapiro's inputs for the values for [A] and [C] in his benchmarking model, which represent the monthly downstream retail price of the interactive benchmark subscriptions and the proxies for the noninteractive services, respectively. 8/19/20 Tr. 2936– 37 (Shapiro). SoundExchange asserts that Professor Shapiro should have used the Average Revenue per User (ARPU) for these values (which would have incorporated any lower discounted retail prices) rather than the full retail subscription prices for [A] and [C], which were $9.99 and $4.99, respectively. *For the first time in this proceeding,* at the hearing, SoundExchange, through Mr. Orszag, sought to raise a concern that Professor Shapiro's use of retail prices rather than ARPU for [A] and [C] is improper. He maintained that because Professor Shapiro used all plans, including discounted plans, to calculate the effective per-play rate ([B]), as described above, while neglecting the discount plans' ARPU when providing values for [A] and [C], Professor Shapiro's model

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(Shapiro)). The Judges disagree with SoundExchange's reliance on the different degrees of discounting. Discount plans are forms of price discrimination, designed to increase overall revenue. There is no reason why the manner in which different services generate revenue should affect the calculation of per play rates in this benchmarking exercise, unless the Judges were asked by the parties to consider setting different royalty rates for full-price and discount subscription plans (which no party has requested).

"[REDACTED]." 8/11/20 Tr. 1387–88 (Orszag).[135] In Mr. Orszag's opinion, because Professor Shapiro calculates effective per-play royalty rates in a manner that includes all plans (including discount plans), he likewise should have based the interactivity adjustment on the effective payment for all plans, including discount plans. 8/ 10/20 Tr. 1164–67 (Orszag).

Further to this argument, SoundExchange notes that Professor Shapiro acknowledges that identifying what customers actually pay on a per-subscriber basis is preferable to relying on an undiscounted price that is paid by many, but not all, of the subscribers. SX PFFCL ¶ 136 (citing 8/19/20 Tr. 2939 (Shapiro)). In addition, SoundExchange explains that, although the use of discount plans is a form of price discrimination, Professor Shapiro concededly did not build this price [REDACTED] only on the full prices for subscriptions as his values for [A] and [C]. SX PFFCL ¶ 137 (citing 8/19/20 Tr. 2958–59 (Shapiro)).

SoundExchange then uses its post-hearing PFFCL submissions to set forth its proposed new analysis, in which it suggests several different potential ARPU levels that could be used to substitute for [A], the retail price paid in the benchmark interactive market. *See* SX PFFCL ¶¶ 139–140 (and references cited therein).

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[135] As noted *supra,* the first of Professor Shapiro's proposed two-part interactivity adjustment is implicit in the ratio equivalency approach and, for presentation purposes, is more naturally considered as an element of the modeling rather than as a stand-alone adjustment.

However, the Services emphasize that none of SoundExchange's witnesses raised an objection in their written rebuttal testimonies to Professor Shapiro's use of retail prices as the metric for [A] and [C] in any of the witnesses. The Services further aver that no witness at the hearing proffered alternative ARPU calculations for use as values for [A] and [C]. *See* Pandora/ Sirius XM PFFCL ¶ 191. Moreover, the Services note that this issue has already been resolved at the hearing, when a proffer by SoundExchange of testimony from Mr. Orszag was met with a motion by the Services to bar such testimony. At the hearing, after extended argument and colloquy, 8/25/20 Tr. 3821–28 (argument and colloquy), the Judges sustained the Services' objections to the presentation by Mr. Orszag of his belated attempt to raise this issue and attempt to utilize ARPU data for the first time from the witness stand in an attempt to support that new analysis because such 11th-hour testimony and data review would constitute delinquent and thus improper "new analysis." 8/ 25/20 Tr. 3821–28 (Chief Judge Feder) ("[T]his is a new analysis. The objection is sustained."). Moreover, the Services note that contrary rebuttal arguments were certainly available for them to raise, if SoundExchange had advanced this assertion in a timely fashion. First, they take note that there is no established manner by which the industry calculates ARPU for discount plans. As Professor Shapiro and Mr. Orszag both testify, there is no uniform method employed by the various services for making that calculation, and SoundExchange has provided no evidence to the contrary. 8/19/20 Tr. 2943–44 (Shapiro); 8/11/20 Tr.

1199– 1200 (Orszag) (conceding that "there are some differences between how [the Majors]" account for family plans in their ARPU calculations). Second, they note that the several discount-based ARPU ratios [A]:[C] suggested by SoundExchange as supporting Mr. Orszag's unadmitted "new analysis" are themselves contradicted by the ARPU-based ratio for Pandora's own interactive "Premium" service and its Pandora Plus service. 8/19/20 Tr. 2853– 54, 2855– 56 (Shapiro).

Additionally, Professor Shapiro opines that his reliance on the ratios of full price retail subscriptions to effective per-play rates is a cleaner method to isolate the value of interactivity, and an inclusion of discount plans would inject confounding issues relating to the bundling of use by family plan members. 8/26/20 Tr. 3932 (Shapiro) (distinguishing (1) his use of royalties and plays from all plans as identifying an effective per-play rate to cover all plays from all plans from (2) the attempt to measure the "value of interactivity, that's $9.99 versus $4.99, nicely isolated for particular individual undiscounted plans"); *see also* Pandora/Sirius XM PFFCL ¶ 190.

The Judges find that SoundExchange cannot resurrect this belated argument in its post-hearing submissions, through counsel, after the Judges had already ruled that the issue had been delinquent when presented for the first time at the hearing. Moreover, SoundExchange has not presented any argument in its post-hearing submissions to suggest that the Judges should revisit their decision. Indeed, the dispositive effect of SoundExchange's delinquency in making this argument remains manifest; having had no timely and proper notice of this argument, the

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Services and their witnesses had no ability to prepare a contrary argument.

Additionally, as the Judges note *supra,* the Services have identified specific rejoinders to Mr. Orszag's "new analysis," which could not be explored thoroughly because SoundExchange did not raise this issue in a timely manner. Further, the Judges note that Professor Shapiro's reliance on the use of undiscounted retail prices as his values for [A] and [C] was consistent with the Judges' formulation of the ratio equivalency approach in *Web IV*.

For these reasons, the Judges do not give any weight to SoundExchange's arguments in this regard.[136]

(3) Professor Shapiro's Generation of a Per-Play Rate in the Benchmark Market

SoundExchange also asserts that Professor Shapiro's generation of an effective per-play rate in the benchmark interactive market "is inconsistent with market reality." SX PFFCL ¶ 112. This is an odd critique, in that Mr. Orszag and SoundExchange are themselves proposing a per-play rate structure, the very approach it claims to be at odds with "market reality." *See* Services RPFFCL ¶ 112 ("If the . . . shift from interactive services paying under per-play metric to a percentage-of-revenue metric really had . . . market-wide relevance . . . one would have expected [Mr. Orszag] to propose a percentage-of-revenue rate

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[136] To be clear, the Judges are not making any substantive finding regarding how they would rule if a timely argument were to be made in a subsequent proceeding regarding the merits of using ARPU values for numerators [A] and/or [C].

for statutory purposes."). Further, because both SoundExchange and Pandora propose a per-play rate generated from a non-per-play benchmark, a conversion to a per-play rate must occur *at some point in the analysis,* and SoundExchange does not adequately explain why making this conversion in the benchmark market (early in the analysis) is any more in accord with "market reality" than engaging in the conversion in the target noninteractive market as a final step. Indeed, as noted at the outset of the Judges' presentation of SoundExchange's critique of Professor Shapiro's benchmark, they explicitly assert only that his setting of a per-play rate in the benchmark market is neither necessary nor mandatory—not that it was improper. *See supra,* section IV.B.1.d.

(B) The Services' Criticisms of Mr. Orszag's Benchmarking and the Judges' Analysis and Findings Regarding Those Criticisms

(1) SoundExchange's Reliance on Pandora's Data

The Services criticize Mr. Orszag for relying only on Pandora's revenue and play counts in his ratio equivalency approach. Services PFFCL ¶ 29 (and record citations therein). However, SoundExchange responds by noting that Pandora Plus has an [REDACTED]%+ market share, making it a highly suitable data source. Further to this point, SoundExchange notes that, when appropriate, the Judges have relied in past proceedings on facts and data attributable to entities with significant market share. SX RPFFCL (to Services) ¶ 29.

The Judges find the Services' criticism to be without merit. Mr. Orszag acted reasonably and in a manner consistent with the Judges' past reliance

upon data from a significant industry participant. Moreover, as the Judges have said on several other occasions, the statutory rate-setting process does not instruct the Judges to protect any particular business model. Thus, Mr. Orszag's decision to rely on data from the largest noninteractive service with arguably the most successful business model (in terms of market share) can hardly be considered improper.

(2) Mr. Orszag's Model Will Not Generate a Royalty Equal to [REDACTED]% of Revenue Across Noninteractive Services

The Services also object to Mr. Orszag's approach because his model's per-play royalty rate will not equate with [REDACTED]% of any noninteractive service's revenue (including Pandora) unless, by coincidence, it has revenues and a play count that generate that effective percentage royalty level. Accordingly, the Services maintain that Mr. Orszag's approach cannot even generate its "foundational premise" of "ratio equivalency," whereby noninteractive services pay the same percentage of revenue rate as paid by interactive services in the benchmark market. Shapiro WRT at 28; 8/19/20 Tr. 2893– 95 (Shapiro). Relatedly, the Services claim that Mr. Orszag fails to identify revenue and play counts for any existing statutory service, and for this reason as well he thus had not analyzed whether any such service would in fact pay [REDACTED]% of its revenues in royalties if it paid $0.0033 per performance. Services PFFCL ¶ 174.

The first criticism is correct but uninformative. It is but a specific example of a more general criticism: Any rate or rate structure set by the Judges can (and

likely will) affect different regulated entities somewhat differently and also be rendered inaccurate or obsolete during the five-year rate term by changes in the marketplace. This is closely analogous to the well-known concept of "regulatory lag" in public utility regulation. *See* Alfred E. Kahn, 1 The Economics of Regulation 54 (1970) ("regulatory lag" results from the fixing of a rate for a period of time and the inability of regulated companies to maintain rates of return that were deemed satisfactory at the inception of the rate period").

The second criticism is also off-target. As SoundExchange states by way of response, Pandora's subscription service indeed would pay essentially [REDACTED]% of its revenue as royalties pursuant to Mr. Orszag's proposed per-play rate (because [REDACTED]), and Mr. Orszag multiplied his proxy revenues by his [REDACTED]% benchmark royalty rate and then divided by the number of noninteractive proxy plays) SX RPFFCL (to Services) ¶ 174. While it is true that Pandora Plus is not a statutory service, the parties (including Pandora) have used it as a proxy for such services in this proceeding, subject to adjustments for, *inter alia,* differences in interactivity, if appropriate.[137] Thus, the appropriate

[137] Further, if the Services wanted to avoid a per play rate that would generate different effective percent-of-revenue royalty rates for different entities, it could have proposed a percent-of revenue rate, either in its direct case or as a rebuttal to Mr. Orszag's benchmark per play rate proposal. Instead, the Services, like SoundExchange, propose only a per-play rate, that will also necessarily generate different effective percent-of-revenue royalty rates for different noninteractive services, depending upon their revenues and play counts. Also, as discussed *infra* with regard to Professor Shapiro's proposed

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response by the Services is not to urge the Judges to reject outright this proxy-based analysis, but rather to: (1) Propose proper adjustments that would purportedly align the benchmark proxies to the statutory market; and/or (2) propose alternative benchmarks (which the Services have done).

(3) Mr. Orszag Fails To Identify a Per-Play Rate That Adequately Captures the Value of Individual Plays

Next, the Services assert that Mr. Orszag's reliance on a percent-of-revenue centric benchmarking approach fails to adequately capture a value attributable to each play of the sound recording, which is the metric he proposes. Shapiro WDT ¶ 47. The Judges reject this criticism. A fundamental rationale for Mr. Orszag's modeling approach, as the Judges discussed above, is that the value to be generated in this market for "second copies" of sound recordings lies not in the recordings of songs whose marginal (non-opportunity) cost is zero and whose marginal revenue is non-existent (because listeners do not pay per song as with a juke box), but rather in the revenue derived from subscribers (and advertisers in the ad-supported market). Thus, there is no economic "value" inherent in the "second copies" of the sound recordings from a marginalist perspective. Of course, there is tremendous value in the sound recordings themselves, in terms of the costs of artist

additional (second) interactivity adjustment, the record evidence does not demonstrate that the Pandora Plus mid-tier service, priced at $4.99, is more valuable downstream than a statutorily-compliant noninteractive service, making Mr. Orszag's use of mid-tier services, Pandora Plus, iHeart and Napster (Rhapsody), as proxies for revenue and play count-purposes a reasonable modeling choice. *See* Orszag WDT ¶¶ 176–179.

discovery, development, recording and promotion, and—not to be deemphasized—the entrepreneurial profit generated by creating value through the assembly of such inputs. The record companies recoup those costs, avoid opportunity costs and generate profits by percent-of-revenue royalty pricing.

Thus, the Services' criticism of the fact that Mr. Orszag's approach does not capture some hypothetical inherent value of a sound recording is a red herring. *Cf. Phonorecords III,* 84 FR at 1931 n.64, 1946 n.110 (explaining why the existence of different pricing regimes for the same music demonstrates the absence of an "inherent value" in *copies* of musical works, notwithstanding the significant "first copy" value of musical works).

(4) Mr. Orszag's Rate Is Far Above the Present Statutory Rate

The Services note that Mr. Orszag's $0.0033 proposed benchmark rate is almost 50% above the statutory rate the Judges set in *Web IV* (originally $0.0022, now $0.0023 as adjusted for inflation)—using the same benchmarking approach Mr. Orszag claims to be following now. This substantial divergence is anomalous, according to the Services, and serves as a "red flag" that Mr. Orszag's methodology departs significantly from *Web IV*. *See* 8/19/20 Tr. 2896–97 (Shapiro).

The Judges find this criticism wholly unpersuasive. Each rate case is a *de novo* proceeding, based upon the contemporaneous circumstances in the relevant markets (benchmark and target) as demonstrated by the record evidence. *Cf. Phonorecords III,* 84 FR at 1944 ("The statute is plain

in its requirement that the rates be established *de novo* each rate period"). There is no *a priori* reason why the rate in *Web V* should bear any particular relationship to the rate in *Web IV*. Moreover, this assertion appears self-serving because, as SoundExchange notes, Professor Shapiro advocates for a subscription royalty rate between $0.0005 and $0.0016, *far below* the current *Web IV* rate. Shapiro WDT at 2.

(5) Mr. Orszag's Proposed $0.0033 Per-Play Rate [REDACTED] Than the Effective Rate Paid by His Mid-Tier Proxies

Next, the Services assert that Mr. Orszag's use of the three mid-tier proxies to generate his $[REDACTED] per-play rate [REDACTED] than the $[REDACTED] effective per-play rate actually paid by mid-tier services under the applicable percent-of-revenue rate. Shapiro WDT at 37–39 & tbl.9; 8/12/20 Tr. 1564–65 (Orszag); Orszag WDT ¶¶ 84–85; 8/13/20 Tr. 1958–59 (Orszag).

The Judges find this argument unpersuasive. For the Judges to make a meaningful comparison of Mr. Orszag's proposed rate and the effective rates paid by mid-tier services, they would need evidence that sheds light on how those effective rates had been calculated from the actual percent-of-revenue rates (or other rate tiers) applicable to those mid-tier services. The Judges find that the record does not provide a basis to make such an examination.

(6) Mr. Orszag's Benchmark Interactive Rates [REDACTED] but He Proposes an Increase in the Statutory Noninteractive Rate

The Services criticize Mr. Orszag for—on the one hand—noting that benchmark interactive rates [REDACTED] while—on the other hand—calling for a significant increase in the noninteractive subscription royalty rate. But the Judges find that this reveals no *ipso facto* inconsistency. Factors particular to the noninteractive market could cause the rate in that market to increase and converge with the subscription interactive rate, which could be falling. Additionally, SoundExchange notes that the operative marketplace metric in the benchmark interactive market changed from the per-play metric to the percent-of-revenue measure from the *Web IV* to the *Web V* period.[138] Thus, Mr. Orszag (who was not a witness in *Web IV*) has relied on new, contemporaneous material to generate his opinion regarding changes in the market. The Judges find that the deviation between his proposed rate arising from his expert analysis, and the prior rate, does not raise a concern.

(7) Mr. Orszag's Exclusion of Revenues and Royalties From Discount Plans in His Calculation of Inputs [A] and [B] in His Ratio Equivalency Model

The Services assert that Mr. Orszag errs in excluding discount plans from his ratio equivalency model. SoundExchange responds by noting that the interactive services—Spotify in particular—engage in [REDACTED] discounting/price discrimination than the noninteractive services (or [REDACTED] in the model), such that including discount plans would fail

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[138] The Judges discuss the significance of that change *supra,* section IV.B.1.e.ii.

to generate an apples-to-apples comparison. Orszag WRT ¶¶ 83, 87; 8/ 11/20 Tr. 1215 (Orszag).

This is essentially the reciprocal of SoundExchange's criticism of Professor Shapiro's *inclusion* of discount plans in calculating [B], his percent-of-revenue rate in the benchmark market (en route to a per-play rate in that market). Here, the Judges find no sufficient reason for Mr. Orszag's exclusion of discount plan royalty and revenue data from his calculation of [A] (his total revenue input) and [B] (his total royalty input (en route to his percent-of-revenue rate in the benchmark market). As the Judges explained in connection with the reciprocal argument pertaining to Professor Shapiro's inclusion of such data, because the statutory rate will apply to all plays across all plans the per-play rate should be derived from data across all plans.

But SoundExchange makes a point that at first blush is anomalous: It notes that, had Mr. Orszag included discounted plans in his analysis, the [REDACTED]% percent-of-revenue rate he calculates would have increased to [REDACTED]%, Orszag WRT ¶ 89 n.198.[139] This has the effect, Mr. Orszag notes, *of increasing the royalty rate in his benchmark interactive market from $0.0033 to $0.0035.* Orszag WRT ¶ 89 & n.198; *see also* SX PFFCL ¶¶ 95–96. *Moreover, the Services expressly do not dispute that*

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[139] Because the percent-of-revenue rate is [REDACTED]%, the [REDACTED]% rate which is inclusive of discount plans necessarily includes royalties that were paid on other prongs in the [REDACTED] in Spotify's license agreement. In fact, Mr. Orszag's calculation of a [REDACTED]% "undiscounted plan" royalty rate (rather than exactly [REDACTED]%) likewise suggests that Spotify paid [REDACTED].

their criticism in this regard causes Mr. Orszag's benchmark rate to increase. See Services RPFFCL ¶¶ 95–96.

So, why did SoundExchange decline to include the discounted plans in its analysis? As noted above, Mr. Orszag claims that he ignored discount plan data because the target mid-tier [REDACTED] service has far fewer discount subscribers, and he wants to make an apples-to-apples comparison. But the clear appropriateness of including discount plan data, together with the fact that including such data would have been significantly in SoundExchange's interest, makes its decision to exclude discount plan data something of a mystery, to say the least.

To wrap this mystery in an enigma, *the Services continue their own apparent self-destructive argument,* asserting that (1) the noninteractive market indeed offers a wide array of subscription plan discounts, including in particular SiriusXM's internet service, and (2) in any event, no economic principle supports Mr. Orszag's requirement of this particular apples-to-apples approach. *See* Services RPFFCL ¶¶ 93–94. Perplexingly (at least initially), *SoundExchange still declines to forego this argument and declare victory,* and simply accept the higher [REDACTED]% rate arising from the Services' criticism.[140] Likewise, the Services refuse to "let

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[140] The difference between these rates is certainly not *de minimis.* SoundExchange argues, for example, that the [REDACTED] paid by Spotify to the Majors in their most recent contracts, from [REDACTED]% to [REDACTED]%, reflects [REDACTED] in the competitive nature of the upstream interactive market.

sleeping dogs lie" and stop arguing against themselves for an analysis that generates a rate of [REDACTED]%—which is [REDACTED]% *above* [REDACTED]%.

One may reasonably inquire*: What is going on here?*[141] Why the facial anomaly of SoundExchange advocating for the *lower* [REDACTED]% of revenue rate and the Services arguing for the *higher* [REDACTED]%? The answer appears to lie in the fact that, under Professor Shapiro's approach, the higher royalty total in the benchmark market must be divided by the number of plays by subscribers. When Spotify's discount plans are included, the percentage increase in the total number of plays (the denominator) [REDACTED] than the percentage increase in royalties (the numerator). It appears to the Judges that Mr. Orszag and SoundExchange were willing to sacrifice applying the [REDACTED]% of revenue percentage that would have increased their proposed per-play rate to $0.0035, in order to avoid relying on discount plans whose inclusion would bolster Professor Shapiro's model that includes discount plan play counts which thus decreases the per-play rate in the benchmark market. Conversely, Professor Shapiro and the Services were willing to acknowledge that if Mr. Orszag had included discount plans in his model, and the Judges fully applied his approach, they risked a higher statutory rate of $0.0035 per play. But the Services were apparently

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[141] *See* John Kay & Mervyn King, Radical Uncertainty at 10 (2020) (Two prominent economists, John Kay and Mervyn King, note: "The question 'What is going on here?' sounds banal, but it is not. . . . [R]epeatedly . . . people immersed in technicalities . . . have failed to stand back and ask, 'What is going on here?'")

willing to take that risk, in order to bolster their general position that discount plan data be included, a position that, if adopted by the Judges, would add evidentiary weight to Professor Shapiro's model. In sum, it seems to the Judges that a good dose of game theory motivated the litigation strategy of the parties.

As discussed *supra* in connection with Professor Shapiro's benchmark, the Judges find that all revenues, royalties and plays, regardless of whether they are generated via discounted or undiscounted plans, must be included in the benchmarking analyses. That means Mr. Orszag's benchmark of $0.0033 in fact should be increased to $0.0035 when all discounted revenues, royalties and plays are included.[142] Likewise, that means that Professor Shapiro's benchmark (interactive) effective per-play rate likewise properly considers all revenues, royalties and plays in that market. *See* Pandora/Sirius XM PFFCL ¶ 186 n.19 ("The effective per-play rate for *all plans,* as calculated by Professor Shapiro ($[REDACTED]), is [REDACTED] than the

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[142] The Judges could leave Mr. Orszag's proposed rate at $0.0033 per play, because he never revised his opinion to propose such a rate. However, the Judges take note that (as stated *supra*) the Services do not dispute the fact that including discount plans raise the per-play rate in Mr. Orszag's modeling to $0.0035. Further, because the Judges are including discounted plan data in Professor Shapiro's modeling in that it makes economic sense to do so, the Judges find it is their obligation under the section 114 rate setting standard to utilize consistent economic analysis when evaluating Mr. Orszag's proposed rate model and resultant rates, when, as here, there is an evidentiary record to support such consistency.

per-play rate for solely full-priced plans
($[REDACTED]).").[143]

v. Explicit Adjustments to the Subscription
Benchmarks of Professor Shapiro and Mr. Orszag

Having considered the structures of the
benchmarking and ratio equivalency models of Mr.
Orszag and Professor Shapiro, and having considered
the granular criticism of their respective applications
of their models, the Judges now turn their attention
to the choices made by these experts regarding
whether to apply any additional, explicit adjustments
to the subscription rates they derive from their
models. And, if the Judges find that any additional

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[143] These per-play differences indicate the monetary impact of
SoundExchange's *exclusion* of discount plans, even though they
increased Mr. Orszag's proposed statutory rate from $0.0033 to
$0.0035. That is an increase of 6.1%. However, if discount plans
were likewise excluded from Professor Shapiro's analysis, his
effective per-play rate would be reduced from $[REDACTED] to
$[REDACTED], a decrease of [REDACTED]%. These per-play
differences likewise explain why the Services wanted to *include*
discount plans, because that inclusion (compared to full price
plans only) reduced Professor Shapiro's benchmark rate
[REDACTED] Mr. Orszag's benchmark rate. Assuming quite
reasonably that neither SoundExchange nor the Services could
predict with any certainty which of the two benchmark
approaches the Judges were more likely to adopt (if either), or in
what proportions, it made rational sense for them to make their
best prediction of the outcome and then choose the approach to
the discount plan inclusion/exclusion issue based on which
position maximized their litigation return. If that is not what
they did, then the Judges are left with the absurdity of both
parties arguing against their interests, even after the issue had
been joined in the proceeding.

adjustments are warranted, they determine the size of any such adjustment.

(A) Professor Shapiro's Proposed Second Interactivity Adjustment

Professor Shapiro's first interactivity adjustment is discussed *supra,* as it is part and parcel of his ratio equivalency model. But Professor Shapiro also proposes a second additional (*i.e.,* cumulative) interactivity adjustment, to be added on to his first interactivity adjustment.

According to Professor Shapiro, his first interactivity adjustment, while necessary, is not sufficient. The insufficiency arises, he asserts, because the mid-tier services that he utilizes to identify a retail price ([C] in his model) are not statutory noninteractive services. Rather, as mid-tier subscription services, they offer limited interactivity, at a full retail price of $4.99 per month. Shapiro WDT at 37–38, tbl.9; 8/19/20 Tr. 2828 (Shapiro). Thus, Professor Shapiro proposes an additional *second* "interactivity adjustment, which he avers is necessary to fully adjust for the difference between the value of a fully interactive service ([A] in his model) and a statutorily-compliant noninteractive service.

In support of this further adjustment, Pandora asserts that the general purpose for making an "interactivity adjustment" is to reflect the incremental downstream market value generated by interactive functionality. Pandora/Sirius XM PFFCL ¶ 188 (citing Shapiro WDT at 38–39, 42; 8/12/20 Tr. 1505–10 (Orszag). Professor Shapiro claims that his *first* interactivity adjustment follows the *Web IV*

approach by identifying the ratio of: (1) Subscription retail prices for his selected interactive services (identified above) to (2) subscription retail prices for his selected target market, the mid-tier services (also identified above). Shapiro WDT at 37–38 & tbl.9; 8/19/20 Tr. 2828 (Shapiro); *see also Web IV,* 81 FR at 26348. The average monthly full subscription price of the interactive services he reviewed was $9.99. The average monthly subscription price of the mid-tier services he reviewed was $4.99. Thus, the ratio of [A]:[C] is 2:1. Shapiro WDT at 37–39; 8/19/20 Tr. 2828 (Shapiro).

But because that first (implicit) interactivity adjustment measures—at the retail level ([A]/[C])—the difference in the value of interactivity to consumers between a fully interactive service and *a partially interactive (mid-tier) service,* Professor Shapiro asserts that a *second* interactivity adjustment is necessary—to measure the value of the further difference between mid-tier level interactivity and a *non*interactive (statutory) service. Shapiro WDT at 38–39; 8/19/20 Tr. 2830–33 (Shapiro).

However, unlike with his *first* interactivity adjustment, Professor Shapiro does not measure the difference in value by identifying a difference in the *downstream* market between the (unregulated) retail values of: (1) The mid-tier *limited* interactive subscription services and (2) a measure of statutorily compliant *non*interactive subscription services. Instead, Professor Shapiro examines the *upstream* market, comparing: (1) The effective per-performance *royalty* paid by consumers for his selected mid-tier subscription services, $[REDACTED]; to (2) the 2019 statutory royalty for noninteractive services, $0.0023,

which was the most recent inflation-adjusted rate established by *Web IV*. Shapiro WDT at 37–39 & tbl.9. According to Professor Shapiro, using this upstream royalty differential is actually more direct than using the downstream retail price differential as a proxy for upstream value, because the purpose of the analysis is to determine the value of interactivity within the licensed rights *in the upstream market*. 8/19/20 Tr. 2830–32 (Shapiro). Thus, Professor Shapiro's additional interactivity analysis results in a further adjustment, reducing his proposed statutory royalty (before any additional adjustments) by an additional[REDACTED]%. Shapiro WDT at 39.[144]

Professor Shapiro further asserts that this second interactivity adjustment is consistent with the express language in *Web IV*. There, the Judges relied on the "ratio equivalency" argument proffered by SoundExchange's economic expert, Professor Rubinfeld. As with Professor Shapiro's approach, Professor Rubinfeld first compared ratios of interactive services to limited interactive services. The Judges utilized the implicit first adjustment discussed above. But additionally, as Professor Shapiro notes, the Judges found that Professor Rubinfeld should have made this second adjustment,

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[144] $[REDACTED] — $[REDACTED] = [REDACTED]. This royalty difference, in percentage terms, is [REDACTED]% (rounded), *i.e.,* $[REDACTED]/$[REDACTED]. Professor Shapiro expresses this royalty difference, equivalently, as the ratio of $[REDACTED] ÷ $[REDACTED] = [REDACTED]:1 ([REDACTED] ÷ [REDACTED] = [REDACTED] (rounded), and [REDACTED] — [REDACTED] = [REDACTED], or [REDACTED]%).

if sufficient data was in evidence, to account for the different value of interactivity in the limited interactive market and the statutorily-compliant noninteractive market. Shapiro 8/19/20 Tr. 2832–33 (Shapiro).

Relying on the foregoing point from *Web IV,* Professor Shapiro then combines his 2:1 initial interactivity adjustment—reducing the effective royalty rate he had derived from the interactive market, $[REDACTED] by 50%, down to $[REDACTED]—and then *further reducing* that rate by an additional [REDACTED]% pursuant to his second interactivity adjustment, down to $[REDACTED]).[145]

SoundExchange does not disagree with Professor Shapiro's assertion that a benchmark model consistent with *Web IV* requires an interactivity adjustment. However, SoundExchange avers that Mr. Orszag's model, which it contends is more faithful to the *Web IV* approach, properly adjusts implicitly for the value of interactivity (as discussed *infra).* SX PFFCL ¶ 100.

SoundExchange argues that Professor Shapiro's second interactivity adjustment is improper.[146]

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[145] $[REDACTED] × [REDACTED] = $[REDACTED] (rounded up from $[REDACTED]).

[146] SoundExchange also contends that Professor Shapiro's first interactivity adjustment, implicit in his model, is improperly inflated because Professor Shapiro (consistent with *Web IV*) utilizes only full retail value for [A] and [C] to identify his 2:1 interactivity ratio (as had been calculated in *Web IV*). Instead, SoundExchange avers that Professor Shapiro should have used the overall ARPU attributable to all retail plans, including the discount plans, which would have been lower than the average

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SoundExchange bases this argument on two
assertions. First, SoundExchange notes that the
additional functionality of the Pandora Plus mid-tier
service (compared to the previous Pandora One
statutory subscription service) [REDACTED],
precluding reliance on a royalty rate nominally
attached to a particular tier of service within that
bundle. SX PFFCL ¶ 155 (and record citations
therein). SoundExchange asserts that the
[REDACTED] is confirmed by a Pandora executive,
who testified that the purpose of this increased
functionality in the mid-tier subscription service
(compared with the noninteractive functionality of
the former statutory subscription service) was to
"creat[e] additional opportunities to upsell
subscribers over time to Pandora Premium." Phillips
WDT ¶ 22. Accordingly, SoundExchange avers that
Pandora's WTP $[REDACTED] for mid-tier
functionality does not represent an unambiguous
measure of the marginal value to Pandora of such
functionality, but rather reflects, or certainly
includes, the value of the mid-tier service as a

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retail prices, especially in the interactive benchmark market
(input [A] in the model). The Judges have discussed this issue in
detail *supra,* section IV.B.1.d, in connection with
SoundExchange's criticism of Professor Shapiro's selection of
values for [A] and [C]. As explained there, the Judges ruled at
the hearing that SoundExchange had failed to timely raise this
issue, as required, in its written rebuttal statement and included
rebuttal testimonies, and that it therefore constituted
delinquent and improper "new analysis." Further, the Judges
noted that the evidence in the hearing was inconclusive as to
how ARPU is measured in the industry, and that the several
ARPU values mentioned in other contexts were not sufficient to
support the "new analysis" the Judges declined to admit into the
record at the hearing.

marketing tool. Also, SoundExchange— relying on testimony from Professor Shapiro—speculates that [REDACTED]. SX RPFFCL (to Pandora/Sirius XM) ¶ 197 (citing 8/19/20 Tr. 2962 (Shapiro)).

SoundExchange also emphasizes that the retail monthly subscription price for the Pandora Plus mid-tier service is $4.99—the same price as Pandora charged for its predecessor Pandora One statutory service. Phillips WDT ¶¶ 18, 20; Orszag WDT ¶ 179; 8/19/20 Tr. 2960 (Shapiro). SoundExchange relies further on Professor Shapiro's testimony to assert that the absence of an increase in this subscription price demonstrates the absence of a marginal increase in market value from the additional mid-tier functionality, given that, under *Web IV,* the upstream demand for licensed interactivity is a "derived demand," *i.e.,* it is a function of downstream retail demand. 8/19/20 Tr. 2959–2960 (Shapiro) ("[T] this is derived demand. Since we're talking about the subscription side, it would be based on the customers who were paying, the subscribers.").

Pandora has a different explanation of how the concept of "derived demand" affects this second interactivity issue. Pandora asserts that it had anticipated, *ex ante* the Pandora Plus offering, that an increase in the downstream value of that service would be reflected in an increase in the *quantity* of Pandora Plus (mid-tier) subscriptions compared with the *quantity* of Pandora One (noninteractive) subscriptions, as Pandora maintained the $4.99 monthly subscription price. SoundExchange discounts the economic value of this argument, asserting that only an increase in *revenue per play*

unit—not a potential increase in total revenue—is probative of an increase in the value of the increase in licensed functionality. Orszag WDT ¶ 179 ("[T]here is no reason to think that the difference in functionality between Pandora One and Pandora Plus changed the amount of revenue per play . . . ."); 8/12/20 Tr. 1574 (Orszag) ("[T]he right question then to ask is: Was there a change in revenue per-play?").

The Judges find Professor Shapiro's attempt to make a second interactivity adjustment inappropriate. They find compelling the fact that the mid-tier retail $4.99 monthly subscription price was unchanged from the monthly price for Pandora's prior statutorily-compliant service (Pandora One). Also, the Judges find unwarranted Professor Shapiro's reliance on the difference between the effective per-play upstream royalty rate Pandora agreed to pay ($[REDACTED]) for its mid-tier Pandora Plus service and the statutory royalty rate of $[REDACTED]. The interactivity adjustment as described in *Web IV* reflects differences in retail prices ([A] and [C]) in the ratio equivalency model), not upstream royalty rates. As SoundExchange correctly notes, those upstream rates can be affected by the fact that they are set in a contract that [REDACTED]. Further, as Professor Shapiro conceded in a colloquy with the Judges during the hearing, the $[REDACTED] effective per-play rate— by Professor Shapiro's own conception of the Majors' complementary power— could also embody a premium for that market power. 8/19/20 Tr. 2838–39 (Shapiro) ("it's true that we might be getting a measure that is somewhat inflated [in] comparison [with] if there were more competition to offer those rights . . . . [Y]ou might want to give [the second

interactivity adjustment] a haircut if you thought it was infected by complementary oligopoly power . . . .”); *see also* 8/25/20 Tr. 3644–46 (Peterson) (witness unable to preclude that the upstream royalty premium includes a market power effect that he treats as an interactivity value). However, Professor Shapiro did not parse the $[REDACTED] rate to separate out this additional factor. In similar fashion, Professor Shapiro does not consider the extent to which the mid-tier services allow subscribers unlimited skips (plays of less than thirty seconds) for which no royalty is owed, unlike statutory noninteractive services (as discussed *infra*). Because the Judges are making separate adjustments for effective competition (to curtail the effect of the Majors’ complementary oligopoly power) and for skips, Professor Shapiro’s second interactivity adjustment could double-count those adjustments, as Professor Shapiro acknowledged in his colloquy with the Judges, quoted above.[147]

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[147] Although it might be possible to adjust the $[REDACTED] royalty rate to parse the effective competition and skips values therein, Professor Shapiro did not do so at the hearing, and, in fairness to SoundExchange, the Judges find in the exercise of their discretion that it would be unreasonable for the Services or the Judges, *sua sponte,* to attempt to make these adjustments, post hearing, in this Determination. *See Johnson* v. *Copyright Board,* 969 F.3d 363, (2020) (parties must be provided adequate notice of issues to be considered and resolved at the hearing, to “ensure[] that agencies provide a fair process in which each party is able ‘to present its case or defense . . ., to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts’ that bear on the agency’s decision and choices.”) (internal citation omitted).

Further, the second interactivity adjustment mentioned in *Web IV,* on which Professor Shapiro relies, did not provide for an adjustment based on an increase in the number of subscriptions sold and the increased revenue that may have resulted from those additional subscriptions. And, whether Pandora believed *ex ante* that it might generate additional revenue, or whether *ex post* some additional revenue may have been generated, there is no support for incorporating these revenue metrics into a model predicated on downstream retail prices.[148]

Accordingly, the Judges shall not make this second interactivity adjustment.[149]

(B) Professor Shapiro's Proposed Skips Adjustment

Professor Shapiro also proposes to apply a skips adjustment to his benchmark subscription rate. The skips adjustment, he avers, is necessary to account for the fact that [REDACTED], by contrast, noninteractive services do not have the right to avoid paying royalties for plays under thirty seconds under

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[148] Professor Shapiro's attempt to rely on increases in revenues to support his second interactivity adjustment to his ratio equivalency adjustment appears to be inconsistent with his based application of the ratio equivalency model. Additionally, there is nothing in the record sufficient to indicate how any estimated increase in subscriptions (and thus revenues) generated by the mid-tier Pandora Plus service would impact the value of [C], given the inadequacy (discussed above) of simply applying the difference in upstream effective per-play royalty rates.

[149] Because the Judges reject Pandora's proposed second interactivity adjustment on other grounds, they do not address SoundExchange's argument that, because the mid-tier rate [REDACTED], the mid-tier rate cannot be examined in isolation.

the Copyright Act. Shapiro WDT at 39. This difference in what constitutes a royalty-bearing play results in a [REDACTED] calculated per-play rate for on-demand services (who pay on a [REDACTED]) than for statutory services (who must pay for all plays). Peterson WDT ¶ 67.

In *Web IV,* as Professor Shapiro notes, the Judges applied a skips adjustment to correct for this disparity. *Web IV,* 81 FR at 26350–51, 26639; 8/19/20 Tr. 2847 (Shapiro). Moreover, the need to account for the play count differential in the benchmark and target markets is not disputed in this proceeding. 8/11/20 Tr. 1191 (Orszag); 8/25/20 Tr. 3632 (Peterson).

Applying the most current data for Pandora, Professor Shapiro determines that performances of less than 30 seconds constitute about [REDACTED]% of total performances. Shapiro WDT at 39. Accordingly, given Professor Shapiro's royalty rate of $[REDACTED], which includes the first interactivity adjustment (but not the second interactivity adjustment rejected by the Judges *supra*), this skips adjustment would reduce that rate by [REDACTED]%.

SoundExchange questions the data on which Professor Shapiro relies in making his skips adjustment. Specifically, it notes that the data he uses to calculate this [REDACTED]% skips adjustment applies to noninteractive plays that were available on all three tiers of Pandora's service— ad-supported, mid-tier and fully interactive. *See* 8/20/20 Tr. 3028–29 (Shapiro). According to Mr. Orszag, this multi-tier sourcing of the skips data indicates that the Pandora skips rate is probably overstated. He bases

this conclusion on the fact that the subscription tiers (Plus and Premium), unlike statutory services, provide their subscribers with unlimited skips, likely resulting in subscribers to those tiers skipping more songs. Orszag WRT ¶ 120. SoundExchange notes that Professor Shapiro agrees. *See* 8/20/20 Tr. 3030–32 (Shapiro).

In rebuttal, Professor Shapiro characterizes this issue as overblown, because [REDACTED]. Specifically, Pandora Plus and Pandora Premium have [REDACTED] and [REDACTED] subscribers, respectively, out of a total of [REDACTED] Pandora listeners. The remaining [REDACTED] listeners access Pandora Free. 8/20/20 Tr. 3031–32 (Shapiro); Phillips WDT ¶¶ 5, 20–21. Accordingly, Professor Shapiro characterizes the number of noninteractive skips occurring on the subscription tiers is [REDACTED].

SoundExchange counters this point by noting that, although the impact of [REDACTED], Professor Shapiro nonetheless fails to measure this effect and reduce his skips adjustment accordingly. Conversely, the Services attack SoundExchange's criticism as being speculative and devoid of empirical support. The Judges find that, although there is no dispute that [REDACTED], SoundExchange does not bear the burden of quantifying, or at least estimating, the impact of the fact that listeners on the subscriber tiers would generate some of the reported skips. That is, because the adjustment is proffered by the Services, there is no apparent reason why SoundExchange should be required to assume the burden of proving the extent of the adjustment.

At a minimum, it is certainly reasonable, based on the record of the number of users and subscribers across Pandora tiers, as set forth above, that the percentage of skips would approximate the percent of Pandora customers who comprise the subscription tiers. That percent is [REDACTED]% ([REDACTED] ÷ [REDACTED]).[150] Applying this [REDACTED]% reduction in the [REDACTED]% the skips adjustment proffered by Professor Shapiro reduces that skips adjustment to [REDACTED]% (*i.e.,* [REDACTED] × ([REDACTED] – [REDACTED]) = [REDACTED] (rounded to [REDACTED]%). Thus, Professor Shapiro's proposed royalty rate, incorporating his first interactivity adjustment (but rejecting the second), of $[REDACTED], needs to be reduced by [REDACTED]% to $[REDACTED] (*i.e.,* $[REDACTED] × (1 – [REDACTED]), which rounds to $[REDACTED] per play.

This $[REDACTED] per-play rate does not include an adjustment to generate a rate that offsets the Majors' complementary oligopoly power, in order to reflect a market that is effectively competitive. The Judges turn next to that adjustment.

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[150] The percentage of noninteractive skips attributable to subscribers might be *higher* than this percent, because subscribers have unlimited skips, but that percentage might also be *lower,* because subscribers have revealed a preference (by paying to subscribe) for utilizing on-demand features rather than noninteractive features. Thus, utilizing the relative percentages of subscribers is a reasonable middle ground for this small difference, and is certainly preferable to disregarding the skips adjustment in its entirety, when it is undisputed that such an adjustment is necessary.

(C)   Professor   Shapiro's   Proposed   Effective Competition Adjustment

Before considering Professor Shapiro's proposed "effective competition" adjustment, it is instructive to recall the Judges' separate detailed analysis[151] of the effective competition issue and the associated necessary adjustments. To summarize, the Judges offset the 12% effective competition adjustment by an appropriate portion of the [REDACTED] in the effective royalty rate (from [REDACTED]% to [REDACTED]%) that [REDACTED][152] [REDACTED] for any analysis in which Spotify is the benchmark or ratio equivalency comparator. If the benchmark is the interactive market as a whole, then the Judges apply the 12% effective competition adjustment, minus ([REDACTED]% × the market revenue share attributable to [REDACTED] × the share of their royalties paid at or about the [REDACTED]%-of-revenue level).

But Professor Shapiro proposes a different effective competition adjustment for his subscription

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[151] *See supra,* section III.

[152] SoundExchange asserts that [REDACTED]% of revenue after Spotify obtained that [REDACTED]. However, there is insufficient detail in the record relating to [REDACTED]'s negotiations with the Majors, the overall structure of its rates and which tiers of service pay which rates. (In fact, there is evidence that [REDACTED] continues to pay royalties at a rate of [REDACTED] percent-of-revenue. Peterson WRT, tbl.5). Thus, the Judges do not lump the Apple royalty rate together with the Spotify rate, but they do include [REDACTED]'s data in connection with Professor Shapiro's overall industry data.

benchmark.[153] As his "alternative market-power adjustment," Professor Shapiro compares the royalty rate paid by [REDACTED] for its [REDACTED]. He relies on this comparison because of what he understands to be an important difference between the [REDACTED]: Whereas most interactive subscription services have a repertoire of approximately [REDACTED] songs they make available to subscribers, [REDACTED] subscribers have access to [REDACTED] songs. Given this disparity, Professor Shapiro opines that for [REDACTED] listeners the full repertoires of each Major are not "Must Haves," because customers do not expect to find all their favorite artists and recordings on [REDACTED] as they would with a standalone interactive subscription service. Shapiro WDT at 37–40.

Professor Shapiro then takes note that the per-performance royalty rate paid by [REDACTED] for its [REDACTED] service is significantly below the general effective rate for interactive services. Specifically, he relies on the fact that the effective rate for [REDACTED] is $[REDACTED] cents per play, compared with the $[REDACTED] per-play effective rate for other interactive services. Relying on this difference, Professor Shapiro computes the ratio of

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[153] Professor Shapiro proffers an identical effective competition adjustment for his subscription benchmark rate and his ad-supported rate. Because he presents his ad-supported first in his WDT, he essentially incorporates by reference his ad-supported effective competition adjustment. The text immediately following this footnote, is based on Professor Shapiro's substantively identical effective competition adjustment to his ad supported benchmark rate.

the two rates—$[REDACTED]/ $[REDACTED], which yields his proposed adjustment factor of [REDACTED]1, implying an effective competition adjustment of [REDACTED]%.[154]

SoundExchange asserts that Professor Shapiro's subscription benchmark should not be reduced by an effective competition adjustment. It notes Professor Shapiro's characterization of [REDACTED]'s effective per-play rate of $[REDACTED] as an effectively competitive rate. SoundExchange finds this assertion particularly important because that rate is essentially identical to Spotify's effective per-play rate on its subscription service of $[REDACTED] per play.[155] *See* SX PFFCL ¶¶ 483–489 (and record citations therein). Moreover, SoundExchange emphasizes that Professor Shapiro himself concedes that the effective rate for Spotify's subscription service, in his opinion, is "the upper bound for a competitive rate." 8/20/20 Tr. 3116–17 (Shapiro).

Separate and apart from the foregoing issue, SoundExchange asserts that the [REDACTED] royalty rate is an inappropriate input for computing an effective competition adjustment. Specifically, SoundExchange argues that [REDACTED]'s royalty

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[154] The [REDACTED]:1 factor implies a percentage difference in the two rates of [REDACTED]%. The rate differential is thus 1 − [REDACTED] = [REDACTED]. Thus, Professor Shapiro's proposed effective competition adjustment is [REDACTED]% (rounded).

[155] Spotify avers that, at most, a downward effective competition adjustment of approximately [REDACTED]% would be warranted for Professor Shapiro's benchmark, reflecting the difference between the $[REDACTED] ([REDACTED]) and $[REDACTED] ([REDACTED]) rates. SX PFFCL ¶ 487.

rate is [REDACTED] because: (1) [REDACTED] offers listeners only a limited number of new releases,[156] (2) [REDACTED], and (3) [REDACTED]. Orszag WRT ¶ 112; Trial Ex. 5610 ¶¶ 6–7, 9 (WRT of Aaron Harrison).

In response, Pandora concedes that the use of [REDACTED] for this comparative analysis is not "perfect," but asserts that benchmarking exercises are fraught with *inherent complexities,* and thus rarely meet that standard. Pandora also seeks to dismiss the defects in this aspect of its benchmarking exercise by noting that Mr. Orszag failed to identify the need for an effective competition adjustment. Pandora/Sirius XM PFFCL ¶ 219. These arguments are meritless. Although the Judges disagree with Mr. Orszag regarding the need for this adjustment, his opinion in no way serves to support Pandora's reliance on [REDACTED]'s rate to propose a [REDACTED]% effective competition adjustment, which must succeed or fail on its own merits. And the acknowledgement by Pandora that this benchmarking exercise is less than perfect simply begs the question of whether it is so imperfect as to be given no weight in the Judges' benchmarking analysis.

With regard to the substantive merits of Professor Shapiro's proposed adjustment, Pandora does not deny that he acknowledges that his adjustment could reasonably be [REDACTED], particularly the

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[156] SoundExchange notes that Professor Shapiro concedes it would be reasonable to reduce his [REDACTED]-based effective competition adjustment to reflect [REDACTED]'s possibly [REDACTED] have access. 8/20/20 Tr. 3120 (Shapiro).

[REDACTED]. However, Pandora chastises Mr. Orszag for failing to quantify the effect of the limited catalog. The Judges find Pandora's response unavailing. Because it is *Professor Shapiro* who proffers [REDACTED] as a comparator for effective competition purposes, Pandora and he bear the burden of producing evidence that this limited service serves the purpose for which Professor Shapiro intends.

Pandora also asserts that [REDACTED]'s commercial presence—despite its limited repertoire— confirms that the catalogs of all Majors are not "Must Haves," which is why its effective per-play rate is [REDACTED] $[REDACTED]. 8/20/20 Tr. 3119 (Shapiro). The Judges disagree. [REDACTED]'s limited repertoire is more suggestive to the Judges of a significantly differentiated service compared to other interactive services and to noninteractive services. Because [REDACTED] is offered for [REDACTED], and does not accept advertising, it is relatively unique.[157] There is no sufficient evidence in the record indicating that a subscription or ad-supported music service (interactive or noninteractive) could survive commercially if it operated with [REDACTED]'s limited repertoire.

Additionally, the Services make no response to SoundExchange's contention that [REDACTED] receives a lower rate because it serves as a funnel, converting [REDACTED] listeners to [REDACTED] subscribers. The absence of a Services' response is

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[157] In fact, [REDACTED]'s availability to all [REDACTED] suggests it is offered as a sort of "loss-leader," rather than as a stand-alone downstream source for direct monetization.

especially relevant because, as discussed *infra,* Professor Shapiro agreed that the funneling/conversion capacities of another interactive service, Spotify, need to be taken into account when using Spotify's royalty rates (in the ad-supported market) as a benchmarking input.[158]

The Judges now turn from the question of whether the [REDACTED] royalty rate is substantively an appropriate benchmarking input, to SoundExchange's other argument—that if the $[REDACTED] per-play [REDACTED] rate is an effectively competitive rate, then so too is Spotify's effective $[REDACTED] per-play royalty rate. The Judges find that SoundExchange's assertion in this regard is of little practical importance as an opposition to Professor Shapiro's subscription benchmark model.

If the Judges were to treat Professor Shapiro's characterization of the [REDACTED] $[REDACTED] per-play rate as essentially an admission that the Spotify effective per-play rate of $[REDACTED] is also effectively competitive, the setting of a benchmark rate by the Judges would be little changed. Applying Professor Shapiro's proffered [REDACTED]% effective competition adjustment on his $[REDACTED] interactive benchmark generates an effectively competitive rate of $[REDACTED],

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[158] The Judges agree with the Services that SoundExchange's claim that Amazon had relatively greater bargaining leverage (as the record companies' primary physical product distributor) is belied by the [REDACTED] $[REDACTED] per-play royalty rate for [REDACTED]. *See* Shapiro WDT at 42 tbl.10. But the other issues discussed above, are sufficient bases to doubt the usefulness of the [REDACTED] royalty rate as a benchmark.

(which would then be subject other potential adjustments). But the [REDACTED] rate of $[REDACTED] that Professor Shapiro opines to be "effectively competitive" is *virtually identical* (and it too would then be subject to the same potential additional adjustments). Thus, substituting the [REDACTED] effective royalty rate for Professor Shapiro's effective competition adjustment would be inconsequential.

(D) Professor Shapiro's Subscription Benchmark Rate as Adjusted by the Judges

In sum, the Judges find as follows with regard to Professor Shapiro's proposed subscription benchmark rate:

1. The effective interactive industrywide interactive benchmark rate of $[REDACTED] per play is reasonable.

2. The first interactivity adjustment of 2:1 is appropriate, properly reducing his interim calculation to $[REDACTED] per play (rounded).

3. The second (cumulative) interactivity adjustment is rejected.

4. The skips adjustment is reduced to [REDACTED]%, properly reducing the interim calculation to $[REDACTED] (rounded).

5. The [REDACTED]% effective competition adjustment proposed by Professor Shapiro is rejected.

6. The Judges apply the lower effective competition adjustment supported by their overall "effective competition" analysis:

a. − [REDACTED]%

b. [REDACTED][159] × [REDACTED][160]

c. = [REDACTED]%

d. $[REDACTED] × (1 – [REDACTED]) = $[REDACTED] × [REDACTED] = 0.0025 (rounded).

(E) Interactivity "Adjustment" to Mr. Orszag's Benchmark

Mr. Orszag avers that his benchmark model directly and implicitly accounts for the difference in interactivity between the benchmark and target markets, and that any further such adjustment would be unnecessary and improper. In particular, he states that it is his use of the effective percentage of revenue rate paid by interactive subscription services that allows his model to account for the impact of interactivity. More specifically, he testifies that, when he multiplies that benchmark percent-of-revenue rate by the lower revenues in the target market (relative to the benchmark market), the product equals a lower royalty. This lower royalty, he concludes, reflects the lower value consumers place on a service that lacks on-demand functionality. Orszag WDT ¶ 79. Alternately stated in terms of the ratio-equivalency model, the interactivity difference is implicitly modeled because the revenue figure in the target market—the right-hand numerator [C]—is substantially less than the revenue figure in the

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[159] *See* Orszag WDT tbl.4.

[160] *See* Peterson WRT fig.5; *see also* 8/25/20 Tr. 3706 (Peterson) [REDACTED]; 8/11/20 Tr. 1209 (Orszag) (As between the [REDACTED]

benchmark (interactive) market numerator [A]—given that the benchmark subscription service price is substantially higher than the subscription price in the benchmark market and the number of subscriptions in the benchmark market is substantially greater.

The Services do not make any specific challenge to Mr. Orszag's claim that his model implicitly includes an interactivity adjustment. To be sure, the Services vigorously challenge the appropriateness of his model, including its failure, in their opinion, to properly apply the ratio equivalency benchmarking model in *Web IV*.[161] But, assuming *arguendo* that Mr. Orszag's subscription benchmarking model is otherwise appropriate, the Services offer no new or specific criticism regarding its implicit interactivity adjustment, as explained by Mr. Orszag.[162]

(F) Skips Adjustment to Mr. Orszag's Benchmark

According to Mr. Orszag, his benchmarking model also directly and implicitly accounts for the skips differential from the benchmark market to the target market, despite the fact that his benchmark data is weighted very heavily toward Pandora, which, under

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[161] *See* discussion *supra,* section IV.B.1.e.

[162] The Services do criticize Mr. Orszag for not making a "second" interactivity adjustment to reflect the greater interactivity of the mid-tier services that constitute Mr. Orszag's target market, relative to the *non*interactivity of statutory services. However, as explained *supra,* section IV.B.1.e.v(A), in connection with Professor Shapiro's proposed further interactivity adjustment, the Judges find no sufficient evidence in the record or basis in the *Web IV* approach to support a finding that there is greater market value in these mid-tier services compared with statutory services.

its direct license agreements with the record companies, pays royalties for skips (unlike the benchmark services). This difference does not affect Mr. Orszag's proffered per-play royalty rate because in his model he divides the target market's total royalties due by the number of target market plays—including skips—yielding a per-play rate that accounts for skips. That per-play rate accounts for skips because (1) the royalties generated by the skips are included in the numerator *and* (2) the number of skips are included in the denominator, in the same manner as full plays, thus canceling each other out and not changing the per play royalty calculation. 8/11/20 Tr. 1191–92, 1249– 50 (Orszag).[163]

In his WRT, Professor Shapiro asserts that Mr. Orszag had improperly failed to make an explicit skips adjustment. Shapiro WRT at 33. At the hearing, however, Professor Shapiro acknowledges that Mr. Orszag's approach indeed *does not* require a separate skips adjustment. 8/20/20 Tr. 3025–26 (Shapiro).

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[163] For example, assume all plays (including skips) generate $240,000 in royalties (the numerator), and the total number of plays (including skips) totals 120,000,000 plays. The per-play royalty (including skips) is $0.0020 ($240,000 ÷ 120,000,000 plays = $0.0020). Now also assume 20,000,000 of these plays were skips. If in Mr. Orszag's model skips were explicitly eliminated, there would be only *100,000,000 plays in the denominator* (120,000,000 plays ─ 20,000,000 plays = 100,000,000 plays), and only *$200,000 in royalties in the numerator* ($240,000 – (20,000,000 plays $0.0020 in royalties) = $240,000 ─ $40,000 = $200,000. Now, with skips eliminated, Royalties ÷ Plays = $200,000 ÷ 100,000,000 = $0.0020—the same per-play royalty rate with or without skips.

The Judges agree that Mr. Orszag's ratio equivalency benchmarking model, to the extent it is otherwise useful and appropriate, does not require a skips adjustment.[164]

(G) Effective Competition Adjustment to Mr. Orszag's Benchmark

As explained in the separate section of this Determination analyzing the effective competition issue, SoundExchange maintains that the enhanced power of its benchmark interactive service, Spotify, has allowed it to exert countervailing power in its negotiations with the Majors that fully offsets their complementary oligopoly power. *See* SX PFFCL ¶¶ 259–493 (asserting that no competition adjustment is required because the benchmark agreements on which Mr. Orszag's analysis is based reflect effectively competitive rates). For this reason, Mr.

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[164] Mr. Orszag acknowledges though that the two services other than Pandora included in his model's target market (iHeart and Rhapsody) do not report or pay for skips, which would require a skips adjustment. However, according to Mr. Orszag, those two services constitute a *de minimis* portion of the total plays in his target market. *See* 8/11/20 Tr. 1230 (Orszag). The Services agree that: (1) Mr. Orszag's ratio equivalency approach is [REDACTED]'s revenue-per-play; (2) Pandora pays for skips; and (3) the net effect of (1) and (2) is to minimize the impact of Mr. Orszag's failure to include a skips adjustment for iHeart and Rhapsody. Nonetheless, the Services aver that the absence of a skips adjustment for the iHeart and Rhapsody plays has an "unquantified effect" on Mr. Orszag's benchmark subscription royalty rate. Services RPFFCL ¶ 240. Although a benchmark proponent should quantify or estimate a benchmark input that would be significant, here the Judges find that the Services have essentially acknowledged the correctness of Mr. Orszag's skips analysis, and that the "unquantified effect" would be of little consequence.

Orszag makes no effective competition adjustment to his proposed subscription benchmark rate.

However, as the Judges stated *supra* in their analysis and findings regarding the effective competition adjustment, it is appropriate to adjust downward Mr. Orszag's Spotify-based ratio equivalency rate as follows:

(1) Apply the 12% downward adjustment;

(2) [REDACTED] that adjustment by [REDACTED] percentage points to reflect Spotify's [REDACTED]; and

(3) multiply the rate from step (2) by [REDACTED]%, the percent of revenue paid by Spotify at the [REDACTED]% level).[165]

(H) Mr. Orszag's Subscription Benchmark Rate as Adjusted by the Judges

The Judges do not make any adjustments to Mr. Orszag's proffered benchmark other than the foregoing effective competition adjustment. Based upon the analysis in the Judges' discussion of effective competition, *supra,* they calculate their effective competition adjustment to Mr. Orszag's $0.0033 benchmark per-play rate as follows:

1. The Judges adjust Mr. Orszag's proffered benchmark rate to reflect both the complementary

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[165] Unlike their adjustments to Professor Shapiro's approach, the Judges do not reduce Spotify's impact by multiplying by Spotify's market share, because Mr. Orszag uses only Spotify data in his benchmark market analysis, whereas Professor Shapiro uses a weighted average of multiple interactive services in his benchmark market analysis.

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oligopoly power of the Majors (12%) and, in partial mitigation, the extent to which Spotify paid the [REDACTED] percent-of-revenue royalty rate instead of the [REDACTED]% rate (reflecting Spotify's bargaining power).

2. The [REDACTED] of this royalty rate from [REDACTED]% to [REDACTED]% reflects a [REDACTED]% [REDACTED] royalties.

3. To determine the extent to which Spotify paid (approximately) the [REDACTED] percent-of-revenue rate, the Judges note that [REDACTED]% of its royalties were paid on that basis. Peterson WRT, fig.5.

4. [REDACTED]% × [REDACTED] = [REDACTED]% (rounded).

5. The complementary oligopoly adjustment is [REDACTED]% – [REDACTED]%, which equals [REDACTED]%.

6. Mr. Orszag's adjusted rate is calculated as $[REDACTED] × (1 – [REDACTED]), which equals $0.0032 (rounded).

f. The Judges' Synthesis of the Adjusted Rates of Professor Shapiro and Mr. Orszag

As explained *supra,* Professor Shapiro's benchmark approach has a weight of 88.5%, and Mr. Orszag's has a weight of 11.5%, in the Judges synthesized rate based on the benchmark/ratio equivalency approach. The synthesis of their two models, as adjusted by the Judges, is set forth below:

The Shapiro Subscription Benchmark Rate: $0.0025 × 0.885 = $0.00221

+

The Orszag Subscription Benchmark Rate: $0.0032 \times 0.115 = \$0.00037$

=

$0.00258 rounded to $0.0026

Accordingly, the Judges find that the benchmark-derived rate for noninteractive subscription services is $0.0026 per play.

2. The Ad-Supported Benchmark Models[166]

a. SoundExchange's Ad-Supported Benchmark Model

On behalf of SoundExchange, Mr. Orszag uses a benchmarking analysis quite similar to his subscription benchmark model considered *supra.* First, although he is modeling the ad-supported market, his approach again looks to the *subscription* interactive market as the benchmark, using Spotify as the proxy. Next, he calculates an effective percent-of-revenue royalty paid by Spotify in the subscription interactive market, and then converts that benchmark percent-of-revenue rate into an ad-supported per-play rate by dividing royalties by the number of noninteractive plays. Orszag WDT ¶ 96.

Mr. Orszag acknowledges that in *Web IV* the Judges rejected this approach, *i.e.,* the use of *subscription* interactive services as a benchmark for *ad-supported* noninteractive services. *See Web IV,* 81 FR at 26344–46 (significant divergence in WTP between downstream subscription and ad-supported

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[166] The Judges use the phrase "ad-supported services" to refer to nonsubscription services throughout this Determination.

consumers negates a finding of substantial cross-substitution from subscribership to "free to the listener" use, thus rendering inapplicable Professor Rubinfeld's attempted extension of the ratio equivalency approach to the ad-supported calculation of ad-supported royalties). Notwithstanding this *Web IV* finding, Mr. Orszag opines that his particular model, and new market developments, combine to distinguish his approach from that rejected in *Web IV*.

First, in his WDT, Mr. Orszag asserts that the present record evidence demonstrates there is sufficiently greater substitution between the benchmark and target markets than was shown in *Web IV,* justifying his use of interactive services as a benchmark for ad-supported services. Orszag WDT ¶ 88. Moreover, Mr. Orszag takes issue with the Judges' finding in *Web IV* that the ad-supported listeners did not reveal a positive WTP. He asserts that, from an economic perspective, listeners reveal a positive WTP, in that they subject themselves to listening to advertising, which, he argues, is itself a form of payment in time rather than in money.

However, Mr. Orszag does not attempt to measure the dollar value of that time to these listeners. Rather, he notes that the noninteractive services earn revenue from the advertising revenue they receive for making advertising time available on those services, a portion of which the noninteractive services can pay as royalties to the record companies. Mr. Orszag avers that, if it were really true that listeners to ad-supported service have a zero willingness to pay, then ad-supported *services* themselves should also have zero willingness to pay, which plainly is not the case. Orszag WDT ¶ 90; 8/11/

20 Tr. 1240–41 (Orszag). Mr. Orszag also points to record evidence, including Pandora documents, indicating that [REDACTED]. Trial Ex. 5056 at 26. Another Pandora document on which Mr. Orszag relies states that "[REDACTED]" Trial Ex. 5061 at 2; Orszag WDT ¶ 93.

Nonetheless, although Mr. Orszag acknowledges that the sound recording and streaming industry perceives ad-supported listeners as having a "low" WTP, Orszag WRT ¶ 75, SoundExchange points out that a Services' witness, T. Jay Fowler, Director of Product Management for Music Products at YouTube (a division of Google), speculates that this "may be only a temporary or transitory phenomenon," because consumers need time to understand the value of streamed music and thus make the switch from an ad-supported to a subscription service. Trial Ex. 1100 ¶ 17 (WDT of T. Jay Fowler); SX PFFCL ¶ 164. In furtherance of this argument, Mr. Orszag also relies on evidence from Professor Willig's application of data from the Zauberman Survey, which Mr. Orszag characterizes as showing a high cross-elasticity of demand for noninteractive ad-supported listening and interactive ad-supported subscribership. That survey evidence, as applied by Professor Willig, indicates that 9.1% of respondents would switch from ad-supported noninteractive services to a new on-demand subscription, if their ad-supported noninteractive service was not available. Willig WDT ¶ 47, fig.6 (panel A).[167]

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[167] The Hanssens Survey indicates, according to Professor Shapiro, that this diversion to new interactive subscriptions would be [REDACTED], measuring [REDACTED]%. Shapiro

Based on the foregoing rationale, Mr. Orszag utilizes the same "ratio equivalency" model as he used for the subscription tier. SoundExchange summarizes his application of this approach to the ad-supported model as follows:

[A] and [B] remain the total revenue earned by and total royalty paid by Spotify for its subscription interactive service. As before and for the same reasons provided in Mr. Orszag's benchmark analysis for noninteractive subscription services . . . the analysis conservatively uses the effective [percent of royalty] rates paid by Spotify as the basis for the proposed per-play rate for statutory ad-supported noninteractive services. . . . And as before, Mr. Orszag excluded family, student, military, employee, and trial and promotional products in calculating the effective rates because these products are unlikely to be relevant to an ad-supported service. . . . [C] is now the revenue earned by the [noninteractive] ad-supported service.

WDT at 21, tbl.2. This lower figure would not alter the weights assigned to the benchmarking and ratio-equivalency models. The Judges note, though, that despite finding the Zauberman Survey less reliable in other respects than the surveys by Professors Hanssens and Simonson (the latter replicating Professor Hanssens's survey work) only the Zauberman Survey asks respondents directly to identify the source of music to which they would divert if noninteractive subscription services were not available (The Hanssens and Simonson surveys ask more ambiguously what respondents would do if they noticed all relevant services had stopped streaming songs by some popular artists and some newly released music. Hanssens WDT ¶¶ 13, 21–22.)

SX PFFCL ¶¶ 168–169 (and record citations therein).[168]

The effective percent-of-revenue rate in Mr. Orszag's benchmark market, [B]/ [A], of course remains at [REDACTED]% (because he uses the same benchmark market). Mr. Orszag multiplies that [REDACTED]% effective rate by the noninteractive ad-supported gross revenue for Pandora and iHeart, and then divides by the corresponding number of plays in the target noninteractive ad-supported market. *Id.* ¶ 98.[169] His computations and results are set forth in the table below (excerpted from Orszag WDT tbl.9):

Table 9—Noninteractive Ad-Supported Benchmark, May 2018–April 2019 [RESTRICTED]

[REDACTED]

The resulting proposed royalty rate for noninteractive ad-supported services is $0.0025 per

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[168] As with his subscription model, Mr. Orszag excluded family, student, military, employee, and trial and promotional products in calculating the effective rates, claiming that these products would not likely be relevant to an ad-supported service. Orszag WDT ¶ 97. And, as noted in the above quote, for the revenue of noninteractive services ([C] in his model) Mr. Orszag uses revenue earned by Pandora and iHeart. 8/11/20 Tr. 1248 (Orszag); Orszag WDT ¶ 98.

[169] Calculated from a different perspective, Pandora and iHeart's combined average revenue per play was $[REDACTED] [REDACTED] for the twelve-month period ending April 2019. This average revenue per play, when multiplied by the percentage-of-revenue royalty rate for interactive subscription services, results in the per-play royalty rates for noninteractive ad-supported services. *Id.* ¶ 98.

play, as presented in the right-hand column of the table above. *Id.* ¶ 99.[170]

b. The Services' Criticism of Mr. Orszag's Benchmark Ad-Supported Model in His WDT

As an initial matter, the Services criticize the fundamentals of Mr. Orszag's ratio equivalency model in this ad-supported context for the same reasons they criticize his use of this model formulation in his subscription market analysis. Again, they criticize what they construe as Mr. Orszag's improper re-characterization of the *Web IV* ratio equivalency approach because he: (1) Defines [A]and [C] as revenue inputs; (2) fails to identify a per-play rate [B] in the benchmark market; (3) applies the percent-of-revenue paid in the benchmark market to the target market; and (4) uses play counts in the target market instead of the benchmark market to generate per-play rates.

Additionally, the Services criticize Mr. Orszag's decision to input the percentage-of-revenue royalty rate applicable to *subscription* interactive services as an appropriate data point for calculating the *ad-supported* noninteractive royalty, given the clear rejection of that approach in *Web IV*. Further, the

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[170] With regard to potential adjustments to his proposed rate, Mr. Orszag opines first that, as with his subscription benchmark model, his ad-supported mode contains an implicit interactivity adjustment, because it relies on the lower revenue of the ad-supported noninteractive market as the value of [C] (compared to the higher revenue of the benchmark interactive subscription market. Next, Mr. Orszag finds no reason to make either a skips or an effective competition adjustment, for the same reasons discussed *supra* in connection with his subscription benchmark model.

Services aver that Mr. Orszag's ad-supported modeling: (1) Fails to address the difference in the ways the two services generate revenue (advertising versus consumer subscription payments); (2) fails to demonstrate (or even calculate) comparable demand elasticities between the two categories of services as required by *Web IV;* (3) fails to demonstrate comparable WTP as the between the ad-supported and subscription services; (4) fails to demonstrate an opportunity cost even close to approximating the 1:1 opportunity cost (cross-elasticity) between the two categories of service; and (5) fails to apply Spotify's own ad-supported rates into the analysis. Services RPFFCL ¶ 158 (and record citations therein).

Among these criticisms, the Services highlight what they assert are the two *principal* problems in Mr. Orszag's model. First, they point to his decision to duplicate his subscription "ratio equivalency" model by simply substituting noninteractive ad revenue for subscription revenue. They note that the identity and motivations of the different classes of payors— advertisers who pay for listeners' attention, on the one hand, and subscribers who pay for uninterrupted access to music, on the other—renders misguided any attempt to apply the ratio equivalency model in this manner.

Further, the Services emphasize that Mr. Orszag fails to demonstrate how users' willingness to listen to ads can be converted into a dollar value. What the market evidence does reveal, the Services state, is directional in nature— that the amount such users would pay (if any) *must be less* than the subscription price of an on-demand service. *See* Leonard WRT ¶ 54 (noting that, by revealed preference, consumers have

demonstrated that their WTP to avoid ads is less than that of subscribers to paid services); *see also* Peterson WRT ¶¶ 38, 40.

Relatedly, the Services maintain that Mr. Orszag does not provide a reason for his assumption—incorporated into his model—that the amount advertisers pay to transmit ads to noninteractive listeners is actually a proxy for the WTP for music of noninteractive listeners. *See* Peterson WRT ¶ 38 (advertiser WTP for listener attention may be completely unrelated to listeners' WTP for music, and therefore is not a basis to assert that ad-supported services, whose listeners are clearly price sensitive, have an elasticity of demand comparable to that of subscription services); *see also* 8/25/20 Tr. 3702–03 (Peterson) (same). In fact, the Services argue that advertising revenue generated by an ad-supported service is materially determined by that service's *own investment and skill* in building an advertising platform that will attract advertiser dollars. 8/20/20 Tr. 3248 (Shapiro). And, in particular, Pandora has invested significantly to create its advertising platform, allowing it to receive substantially higher advertising rates and more advertising revenue than other "free-to-the listener" noninteractive streaming services.

Specifically, the Services, and Pandora in particular, emphasize Pandora's unique ability to attract and monetize advertisers—a return on its investment of billions of dollars. They note that this revenue generation is unconnected to the level of functionality it offers. 8/20/20 Tr. 3218– 20 (Shapiro) (testifying that Pandora's investment in "systems [on] which . . . advertisers compete for . . . space" increases

the per-play revenue Pandora receives in a way that has "nothing to do with the rights they have licensed, but, rather, with their own capabilities."); Herring WDT (*Web IV*) ¶ 11 ("Pandora derives more than 80% of its revenue from the sale of advertising. . . .").

Further in this regard, the Services maintain there is no evidence that advertiser payments are correlated with the particular level of *interactivity* offered by a service, a correlation, they assert, is implicitly assumed by Mr. Orszag's adoption of a ratio equivalence relationship between subscriber payments in the interactive space and advertisers' payments in the noninteractive space. *See* Services PFFCL ¶¶ 26–27 (and citations therein). As Dr. Leonard testifies, advertisers "have no reason to prefer advertising on a service with greater interactivity. . . ." Leonard WRT ¶ 54.[171]

Even if listeners' tolerance for advertisements could be construed as a form of "payment" for noninteractive listening, the Services maintain that this would still be insufficient to justify Mr. Orszag's adoption of a ratio equivalence between the two broad categories of services. *See* Shapiro WRT at 38–40 (*citing Web IV,* 81 FR at 26349); Peterson WRT ¶¶ 36–40 (citing *Web IV,* 81 FR at 26353). More specifically, the Services maintain that Mr. Orszag's model cannot address the Judges' point in *Web IV* that "[t]he ratio

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[171] The irony of this criticism by the Services is not lost on the Judges. On the one hand, the Services argue that interactivity is irrelevant on the ad-supported tier, because the payors (the advertisers) are uninterested in the functionality of the system. Yet, as discussed *infra,* the Services propose that the Judges make *two interactivity adjustments* to the ad-supported rate.

equivalency approach assumes that listeners who willingly pay for a subscription to a service have a WTP *equal to* the WTP of those who use ad-supported (free-to-the-listener) services." *Web IV,* 81 FR at 26345. (emphasis added). Moreover, the Services point out that Mr. Orszag himself concedes that consumers of advertising-supported and subscription services have a different WTP. 8/12/20 Tr. 1548 (Orszag). This underscores the relevance of the Services' claim that Mr. Orszag did not provide, or even attempt to provide, the demonstration of comparable demand elasticities that the Judges previously required. *See Web IV,* 81 FR at 26349. And the Services point to Dr. Peterson's testimony, in which he notes that the low WTP of ad-supported listeners indicates that their demand is far more elastic than the demand of interactive subscribers. 8/25/20 Tr. 3702 (Peterson); Peterson WRT ¶ 37.

Turning to the particular issue of *cross-elasticity,* the Services note the Zauberman Survey, as applied by Professor Willig, reveals that about 90% of ad-supported noninteractive listeners are *unwilling* to pay for a subscription interactive service. Services RPFFCL ¶ 165. This point, the Services claim, underscores the importance of their criticism that neither Mr. Orszag nor the survey evidence demonstrates the existence of a sufficiently high cross-elasticity of demand between ad-supported noninteractive listening and subscription interactive (on demand) listening to support the application of Mr. Orszag's ratio equivalency. In this vein, the Services emphasize that Mr. Orszag does not deny that he has *not* demonstrated the 1:1 opportunity cost required by the *Web IV* "ratio equivalency" approach,

i.e., that, in this context, a dollar spent by an advertiser on an ad-supported noninteractive service would otherwise be spent on a subscription to an interactive service, or, alternatively, that if users discontinued listening to an ad-supported noninteractive service, the resulting reduction in advertising revenue would otherwise create a commensurate increase in subscription revenue for an interactive service. *See* 8/ 13/20 Tr. 1948 (Orszag).

The Services further claim that SoundExchange's reliance on Pandora's internal documents, Trial. Exs. 5056 and 5061, is misplaced. They point out that neither of these documents actually shows how many [REDACTED]. Services RPFFCL ¶ 163 (and record citations therein). Similarly, the Services maintain that SoundExchange has the relevant direction of the evidence wrongly reversed with regard to its analysis of Spotify's customer behavior. That is, the fact that [REDACTED] % of Spotify's subscribers had originally used Spotify's ad-supported service provides no useful information regarding the appropriate metric: How many Spotify ad-supported users in fact have a WTP for a Spotify subscription. Indeed, the Services note, SoundExchange's argument in this regard is belied by Mr. Orszag, who acknowledges that only [REDACTED]% of Spotify's ad-supported listeners convert to Spotify's subscription tier within the first two years using Spotify's ad-supported service. Services RPFFCL ¶ 164 (citing Orszag WRT ¶ 75 n.167).

c. The Judges' Analysis and Findings Regarding Mr. Orszag's Ad-Supported Benchmark Model From His WDT

The Judges reject the ad-supported model Mr. Orszag presents in his WDT.[172] At an obvious level, his approach deviates from the Judges' finding in *Web IV,* in which they rejected the use of a ratio equivalency formula that utilized subscription inputs on the left-hand benchmark side of the model. Moreover, Mr. Orszag's *rationale* for his departure from *Web IV* is unavailing. There is simply no evidence to support his assertion that there is anything approaching a 1:1 substitutability (cross-elasticity) from interactive services to noninteractive services.

Perhaps in recognition of the fact that the 9.1% substitution figure he cites from the Zauberman Survey does not reflect significant cross-elasticity, Mr. Orszag adds in a footnote, that "no particular level of cross-elasticity is necessary for one market to serve as an appropriate benchmark for another market." To support this point, he presents as an example, quoted in part *supra,* the hypothetical that the subscription price for a cable television service in Chicago may be "an ideal benchmark" to use in order to set an appropriate subscription price for a cable television service in Philadelphia, "even though there

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[172] Alternatively, in his *WRT and hearing testimony,* in response to the models proffered by Professor Shapiro and Dr. Peterson, Mr. Orszag acknowledges that it is also reasonable to rely on Spotify's effective *ad-supported* percent-of-revenue paid as the benchmark rate, rather than the subscription percent-of-revenue it pays (as he proposes in the benchmark model) in his WDT. The Judges analyze Mr. Orszag's alternative approach *infra,* after considering the models proposed by Professor Shapiro and Dr. Peterson, that also use Spotify's ad-supported service as a benchmark.

is zero cross-elasticity for cable services between the two cities, because residents of Philadelphia cannot access the Chicago service and vice versa." Orszag WDT ¶ 95 n.132. But this example only underscores the narrow relevancy of a ratio equivalency approach and its implicit assumption of a substitutability of (or proximate to) 1:1, to constitute effective cross-substitutability.[173]

In this regard, Mr. Orszag's "intercity" analogy reflects a subtle but important shift in his reasoning: He is dispensing with the *Web IV*/Professor Rubinfeld underpinning of the ratio equivalency model—high cross-substitutability (assumed or actual)—and asserting that his approach is consistent with the more traditional pure benchmarking approach, which relies on the *similarity—not the cross-elasticity or substitutability*—between sellers/licensors, buyers/licensees, and the rights being transferred between the benchmark and target products. *The Judges' discern from Mr. Orszag's distinction a confirmation of their rationale for relying substantially on Professor Shapiro's benchmarking approach, because the cross-elasticity/substitutability revealed by the record is relatively low, whether in the subscription market (as discussed supra) or in the ad-supported market (as discussed here).*[174]

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[173] The Judges incorporate by reference here their citations to *Web IV* and *SDARS III, supra,* in their consideration of Mr. Orszag's subscription model, pertaining to the import of the absence of sufficient cross-elasticity. *See* discussion *supra,* section IV.B.1.e.ii.

[174] The Judges also agree with the Services that Mr. Orszag's failure to estimate the own-elasticities of demand for his

The Judges also place no weight on Mr. Orszag's assertion that the willingness of ad-supported listeners to subject themselves to advertisements indicates a positive WTP. Although there is certainly disutility in listening to advertising that is annoying, uninformative or irrelevant, other advertising can be pleasant or amusing (or at least neutral), informative

benchmark and target services compromises his attempt to apply the *Web IV* benchmark approach. "Own-elasticities" of demand reflect the responsiveness of quantity demanded to increases or decreases in the price of a product— typically a negative (inverse) relationship, as represented in the downward-sloping demand curve. Cross-elasticity measures the responsiveness of demand for product A in response to a change in the price of product B—a positive relationship for substitute products. *See generally* Robert S. Pindyck & Daniel L. Rubinfeld, Microeconomics at 33–36 (8th ed. 2013). As the Judges have noted in both *SDARS III* and *Web IV,* a significant level of cross-elasticity (proven or reasonably presumed) is necessary for the ratio-equivalency model to be broadly applicable, or else, as here, its application is limited by the extent of cross-elasticity demonstrated between the benchmark and target markets. Own elasticities can also be relevant because they indicate the relative pricing power of each tier of service (a low elasticity (*i.e.,* high inelasticity) indicates relatively greater pricing power, and *vice versa,* pursuant to the Lerner Equation discussed in *Web IV*). If own-elasticities are roughly equal, then the services have a roughly equal concern over the impact on quantity (and thus revenue) of a change in retail prices, making the ratio equivalency model more appropriate, *ceteris paribus.* Further, high own-elasticity can be *suggestive* of significant cross-elasticity with regard to clearly substitutable products. A relatively high own-elasticity suggests that a given percentage increase in price will engender a larger percentage decrease in quantity, that is likely to result in substitution of a product sufficiently similar in price and characteristics, even in the absence a more specific measuring of cross-elasticity, such as through the use of consumer surveys.

or relevant. Also, advertising interruptions allow a user to take advantage of the break to attend to other personal necessities. Moreover, ad-supported listeners are made aware of the presence of advertising, so they are already a self-selected cohort of consumers who have a tolerance for advertising. In any event, measurement of the cost of any disutility would be difficult, and Mr. Orszag certainly did not attempt to do so. Additionally, by choosing an ad-supported service, as Dr. Leonard notes, listeners have revealed a preference (given their budget constraints and utility preferences[175]) for that bundle of music + advertising over pure music priced at $4.99 per month or more. And of course, an immediate problem with Mr. Orszag's assertion is that the payments of advertising revenues reflect the WTP of *advertisers*—not the WTP of *listeners*. (Again, Mr. Orszag does not attempt to convert listener time into a direct monetary measure.)

Further, advertising, like music, is an "experience" good. One does not know that certain advertising will be useful or not until it is heard. And in this context, it is important to appreciate that technological advancements in targeted advertising make it much more likely that advertising will be

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[175] Economic jargon often obscures reality. "Budget constraints" refer to consumers' limited incomes; for example, poor people will not have extra cash to spend on music, even if they would prefer the "utility" of an ad-free service, because they cannot transfer spending from necessities to the luxury of a subscription to a music service.

more useful to listeners than the former more blunderbuss approach.[176]

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[176] The Judges do not endorse in full Pandora's criticism that the record companies should not receive royalties based on advertising revenues generated by Pandora's arguably superior advertising platform. As SoundExchange notes, noninteractive services, including Pandora, also benefit from the superior identification, development and promotion of sound recordings and artists. Moreover, the advertising revenue is derived from the presence of listeners, who are attracted to Pandora in large measure because of the music produced by the record companies. Therefore, the advertisers' demand, and Pandora's investments in better monetization of that advertiser demand, are derived in part from the attributes of, and investments in, the underlying sound recordings. It is more accurate to state that Pandora's advertising revenues are *jointly produced* as a consequence of what economist call a "joint production function," consisting of the quality of: (i) The record companies' music; (ii) Pandora's curation of the music; and (iii) Pandora's advertising platform. *See* 8/20/20 Tr. 3248 (Shapiro) ("the revenue earned [by Pandora's ad-supported service] is a combination of the music . . . creating the experience, the person . . . listening more, and then how much money can be collected per-play will depend also in an important way on value brought by the service [including] [Pandora's skill at monetization."). Additionally, the purpose of a rate setting process, whether by negotiating counterparties in an unregulated market or by the Judges, is to apply economic analysis to determine how the overall value of these inputs will be allocated as between licensors and licensees. Although each side of the licensing market can accurately claim that its investments are responsible for generating value, and that the other side is wrongly appropriating that value for itself, such self-serving claims do nothing to assist in the allocation of value and, hence, the setting of royalty rates. *See generally* Richard Watt, *Revenue Sharing as Compensation for Copyright Holders,* 8 Rev. Econ. Res. Copyright Issues 51, 56 & n.8 (2011) (economically a royalty rate derived from a percent-of- revenue approach is analogous to an *ad valorem* tax on the service).

All of these advertising-related concerns were not addressed in the record, and their absence makes Mr. Orszag's speculation regarding listeners' revelation of a positive WTP unpersuasive.

In order to distill value from advertising revenues, the Judges agree with Dr. Leonard that Mr. Orszag would have been better served if he had analyzed the ad-supported tier as a "multi-sided platform, where listeners, record companies and advertisers converge to create economic value for all participants. *See* Leonard WRT ¶ 54; 8/24/20 Tr. 3561 (Leonard) (describing advertising-supported services as "two-sided platform[s]" connecting users to advertisers and distinguishing them from subscription services for which there is no "other side of the market that you need to be worried about"); *see generally* David S. Evans & Richard Schmalensee, Matchmakers: The New Economics of Multisided Platforms (2016); Ruth Towse, *Dealing with Digital: The Economic Organisation of Streamed Music,* 42 Media Culture & Society, no. 7–8, 1461 (2020).[177]

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[177] Dr. Evans and Professor Schmalensee define a "multi-sided platform" as:

A business that operates in a physical or virtual place (a platform) to help two or more different groups find each other and interact. The different groups are called 'sides.' For example, Facebook operates a virtual place where friends can send and receive messages, where advertisers can reach users, and where people can use apps and app developers can provide those apps.

Evans & Schmalensee, *supra,* at 210. Professor Towse notes the particular application of multisided platform economics to the analysis of ad-supported music services. *Towse,* 42 Media Culture & Society, at 1465 ("In the streaming market, the upstream price is negotiated by the [Digital Service Provider] for

Additionally, the Judges find that the documents indicating that many Spotify subscribers originated as ad-supported listeners is uninformative. The Judges agree that the relevant measure is the extent to which ad-supported listeners convert to subscribers. Interestingly, that figure, [REDACTED]%, (as noted *supra*) is [REDACTED] to the 9.1% substitution figure from the Zauberman Survey (cited *supra*), which tends to confirm the low cross-elasticity between ad-supported and subscription tiers. Similarly, the internal Pandora documents on which SoundExchange relies do not [REDACTED], but rather purportedly estimate, [REDACTED].

In sum, the Judges find no sufficient basis to apply the benchmarking approach for the ad-supported noninteractive market that Mr. Orszag proffers in his WDT.[178]

d. Professor Shapiro's Ad-Supported Benchmark Model

Professor Shapiro's ad-supported benchmark comes from the *interactive* ad-supported market.

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the rights to stream the music . . . for ad-based services, [it is] the price charged to the advertiser. *It is an obvious application of platform economics.*") (emphasis added).

The Judges note that Mr. Orszag essentially endorses a platform-based approach in his WRT and hearing testimony, by acknowledging the appropriateness (in his model) of using revenue from the ad-supported service rather than subscription revenue. His testimony in that regard is discussed *infra*.

[178] The Judges' rejection of Mr. Orszag's ad-supported benchmark model moots any issues regarding his ad-supported benchmark adjustments.

According to Professor Shapiro, this is an appropriate and direct benchmark, consistent with *Web IV,* in which the Judges likewise used ad-supported benchmarks to develop the ad-supported statutory rate.[179]

To apply this benchmark, Professor Shapiro begins by calculating weighted average *effective* per-play royalty rates. Specifically, he begins by analyzing the effective per-play rates paid by Spotify and SoundCloud[180] to the Majors for performances on their *ad-supported* interactive tiers from May 2018 through April 2019—which he calculates as $[REDACTED] per play. Shapiro WDT at 33, 36 & tbl.8; 8/19/20 Tr. 2900 (Shapiro). As discussed *supra,* although he includes SoundCloud data, essentially, the $[REDACTED]. Shapiro WDT at 36 & tbl.8; 8/19/20 Tr. 2900 (Shapiro). Professor Shapiro further testifies that, to his knowledge, $[REDACTED] was the [REDACTED] at that time. 8/19/20 Tr. 2900 (Shapiro).

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[179] More particularly, in *Web IV,* the Judges relied on *noninteractive* ad-supported benchmarks: the Pandora/Merlin and iHeart/Warner agreements.

[180] It is undisputed that SoundCloud is not comparable to the target market services primarily because it has a high level of user-generated content and lacks access to the full catalogs of the record companies. 8/11/20 1408–09 (Orszag). Further, unlike other services, SoundCloud has always been mainly a platform where unsigned artists can post their music for downstream discovery. Harrison WDT ¶12; Trial Ex. 5289 at 7. The Services maintain that the issue regarding SoundCloud's suitability as a benchmark is "much ado about nothing," because [REDACTED], Services RPFFCL ¶ 206, and Professor Shapiro notes that [REDACTED] 8/19/20 Tr. 2100 (Shapiro). Accordingly, the Judges do not rely on SoundCloud as an appropriate benchmark.

More particularly, Professor Shapiro divides: (1) The total royalty fees paid by Spotify and SoundCloud to each Major between May 2018 and April 2019; by (2) the play counts on their ad-supported interactive tiers during the same period. Shapiro WDT at 36 & tbl.8, 63 (Appx. D).

Professor Shapiro includes in his (pre-adjustment) $[REDACTED] per-play rate a previously omitted [REDACTED]. Shapiro WDT at 31 & Appx. D at 1. This [REDACTED] was needed because, pursuant to its contract with [REDACTED].[181]

In addition, Professor Shapiro includes in his (pre-adjustment) $[REDACTED] per-play proposed rate a value for [REDACTED]. Professor Shapiro calculates this further value at $[REDACTED] per play. Shapiro WDT at 33 n.47; Appx. D at 1–2 & n.4; *see also* Trial Ex. 4044 at 14, 43; Trial Ex. 5037 at 58–63 ([REDACTED]).

Before considering potential adjustments to his $[REDACTED] benchmark rate that may be required to account for differences between the benchmark and target markets, Professor Shapiro characterizes this $[REDACTED] per-play *interactive market* derived rate as exceeding an "upper bound for the zone of reasonableness" for ad-supported services. He

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[181] However, Professor Shapiro declines to include a similar [REDACTED] payment by Spotify to Warner, asserting that the payment data he had been provided reflected a global true-up payment rather than a U.S. payment, without information to enable a break-out of the U.S. portion of the "true-up." Shapiro WDT, app. D at 1 n.3; 8/19/20 Tr. 2911–12 (Shapiro). The Judges discuss the [REDACTED] issue *infra.*

reaches this opinion because he finds it would be "unreasonable for [noninteractive services] to pay more per-performance for streams of sound recordings than the rate . . . for . . . interactive performances," which, because of its greater functionality, he characterizes as "far more valuable" than noninteractive performances). Shapiro WDT at 37.[182]

i.   Professor Shapiro's Adjustments

Professor Shapiro proposes the same three adjustments to his benchmark rate for ad-supported webcasters as he did for his subscription benchmark rate: (1) An interactivity adjustment; (2) a skips adjustment; and (3) an effective competition adjustment. Shapiro WDT at 37–40. He supports the application of all three adjustments on the same general bases he advocates for making these adjustments to his subscription benchmark, as discussed *supra.*

(A) Professor Shapiro's Proposed Interactivity Adjustment

Professor Shapiro proposes to make the same two-step adjustment he applies to the subscription benchmark. He relies on the principle he applies in the subscription market, *viz.,* that "the rights conferred to play music interactively . . . are much more valuable than the rights conferred for statutory

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[182] To be clear, this benchmarking approach is *not* the ratio equivalency method. Because Professor Shapiro is applying effective noninteractive rates as his benchmarks, his model does not require an assumption of a particular level of substitution (cross-elasticity) between the benchmark and target markets that would affect the per-play rate in the target market.

services. . . ." Shapiro WDT at 33–34. To make this adjustment—and even though Professor Shapiro eschews reliance on the ratio equivalency approach for this ad-supported benchmark—he proposes that his unadjusted $[REDACTED] benchmark be reduced by 50% *by applying the same 2:1 "ratio equivalency" ratio that the Judges have only applied in connection with subscription services.* Shapiro WDT at 38–39. To apply this ratio adjustment in the ad-supported context, Professor Shapiro relies on the relative retail prices charged by ten leading *subscription* interactive services, $9.99 per service, and three mid-tier services (offering limited interactivity), $4.99 per service.[183] This adjustment reduces Professor Shapiro's benchmark rate from $[REDACTED] to $[REDACTED]. Shapiro WDT at 38–39.

Professor Shapiro testifies that he found further support for his 2:1 interactivity adjustment and the concomitant rate reduction to $[REDACTED] by comparing: (1) The rate Pandora pays Warner for limited Premium Access on-demand intervals on Pandora Free: $[REDACTED]; with (2) the noninteractive rate Pandora pays Warner: $[REDACTED] for noninteractive plays on its noninteractive tier. Trial. Exs. 5126, 4031; Shapiro WRT at 34. Similarly, Professor Shapiro notes that Pandora's contract with Sony contains a per-play royalty rate of $[REDACTED] for noninteractive performances on its ad-supported noninteractive

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[183] The services on which Professor Shapiro relies are the same as those he relied on to make this adjustment in the subscription market (Pandora Plus, Slacker LiveXLive Plus, and Napster unRadio).

service, Trial. Exs. 5012 at 10; 5024 at 3, compared with a $[REDACTED] rate for *interactive* plays on that same ad-supported noninteractive tier. Shapiro WRT at 34 n.93.

As he asserts regarding his proposed subscription benchmark interactivity adjustment, Professor Shapiro claims the above 2:1 adjustment remains insufficient because it compares the retail subscription price from the benchmark market to mid-tier services with *limited* interactive features— not to statutory *non*interactive services. Shapiro WDT at 38. To complete the interactivity adjustment to account for this point, Professor Shapiro proposes (again, as with his subscription benchmark) to make an adjustment that reflects the percentage difference between: (1) The effective per-play mid-tier royalty rate for subscription services, $[REDACTED]; and (2) the statutory rate paid by subscription noninteractive services: $0.0023. Shapiro WDT at 30 & tbl.5, 38–39. This percentage difference is [REDACTED]%, based on a [REDACTED]:1 ratio of $[REDACTED]:$[REDACTED]. *Id.* Applying this [REDACTED]% adjustment on top of the 2:1 adjustment reduces Professor Shapiro's interim rate (before any other adjustments) from $[REDACTED] to $[REDACTED].

However, in an acknowledgement that Spotify's ad-supported mobile tier (a part of his benchmark service) is less than fully interactive, with functionality more like that of a mid-tier limited interactive service, Professor Shapiro testifies that it would be reasonable for the Judges to apply *only* his second interactivity adjustment—*i.e.,* the [REDACTED]:1 that he asserts adjusts for the

difference between the value of (1) mid-tier services; and (2) statutorily-compliant functionality. 8/19/20 Tr. 2905. Applying only this second interactivity adjustment, Professor Shapiro lowers his $[REDACTED] per-play rate (described above) to $[REDACTED] (subject to the additional adjustments detailed below).

(B) Professor Shapiro's Proposed Skips Adjustment

Professor Shapiro next proposes to make a skips adjustment, which he asserts is required because noninteractive licensees are required by statute to pay for plays under thirty seconds, but the benchmark interactive services do not pay for such truncated plays. Shapiro WDT at 39. Applying the same analysis as in his subscription benchmark model, and noting that recent Pandora data shows less-than-thirty second performances account for about [REDACTED]% of total radio performances, he derives a [REDACTED]:1 ratio for his skips adjustment. Shapiro WDT at 39. This adjustment lowers Professor Shapiro's benchmark rate for ad-supported services from $[REDACTED] to $[REDACTED] (applying both of his interactivity adjustments), or from $[REDACTED] to $[REDACTED] (applying only his second interactivity adjustment).

(C) Professor Shapiro's Proposed Effective Competition Adjustment

Professor Shapiro proposes the same effective competition adjustment here, as he did for his subscription benchmark. That is, he calculates the difference between the effective per-performance rates paid to the Majors by [REDACTED] interactive

service ($[REDACTED]) and the weighted average of the effective per-performance rates paid by ten other major on-demand streaming services ($[REDACTED]). Shapiro WDT at 39–40, 42 & tbl.10. This results in a [REDACTED]:1 adjustment factor. This adjustment lowers Professor Shapiro's benchmark rate for advertising supported webcasters from $[REDACTED] to $[REDACTED] (if both interactivity adjustments are applied) or from $[REDACTED] to $[REDACTED] (if only the second interactivity adjustment is made). 8/19/20 Tr. 2906–2907 (Shapiro).[184]

As discussed in detail *supra,*[185] the Judges found that the 12% effective competition adjustment derived in *Web IV*—based on the pro-competitive effects of steering—remains the best measure, *ceteris paribus,* for transforming rates inflated by the Majors' complementary oligopoly market power into effectively competitive rates. But, as also noted above, all other things were *not* equal (comparing the *Web IV* and *Web V* evidence) in the *subscription* benchmarking exercise, whereas here, the [REDACTED].[186]

e. SoundExchange's Criticisms of Professor Shapiro's Ad-Supported Benchmark Model

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[184] The Judges consider Professor Shapiro's proposed effective competition adjustment in light of (1) their finding that the 12% steering adjustment remains appropriate; and (2) SoundExchange's criticism, discussed *infra.*

[185] *See supra,* section III.C

[186] *See supra,* section III.D

i. Professor Shapiro's Decision Not To Include the [REDACTED] Value

Professor Shapiro declines to apply a [REDACTED].[187] He explained in his WDT that, although he applies a [REDACTED], he declines to apply a *Warner* "true-up" because it is his understanding that, although "[REDACTED]." Shapiro WDT at 63; Appx. D at 1 n.3 (emphasis added); *see also* 8/19/20 Tr. 2911–12 (Shapiro).[188]

However, Mr. Orszag, in his WRT, asserts that Professor Shapiro should have made the [REDACTED]. Moreover, Mr. Orszag identified the document upon which he relies as supportive of this testimony. Orszag WRT ¶ 80 n.178 (identifying the royalty statement document as "SOUNDEX_W5_NATIVE_PROD_000751_RESTRI CTED.xlsx." (henceforth the "000751" document)).[189] SoundExchange had produced the "000751" document to the Services in discovery, and Professor Shapiro specifically identified it as one of the documents he reviewed in preparing his written testimony. Shapiro WDT, Appx. C; *see also id.* app. D

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[187] A "true-up" in this context is an increase in total royalties paid at the end of the year. The additional royalties are due because, although [REDACTED]" *See* 9/3/20 Tr. 5668 (Harrison); Shapiro WDT at 31 n.47.

[188] The omission of this [REDACTED] is significant. When this royalty payment is included, Professor Shapiro's (unadjusted) benchmark rate increases from approximately $[REDACTED] to approximately $[REDACTED]. *Compare* Orszag WRT tbl.8 *with* 8/19/20 Tr. 2912 (Shapiro) (describing the impact of applying or not applying the [REDACTED]).

[189] This document was not proffered as evidence at the hearing and, accordingly, is not part of the hearing record.

at 1 & n.1 (identifying the documents on which Professor Shapiro relies to calculate ad-supported royalty payments as SOUNDEX_W5_NATIVE_ PROD_000001–001558, a sequence that includes "000751," the document identified by Mr. Orszag).

Professor Shapiro had an opportunity at the hearing to contest Mr. Orszag's written rebuttal testimony in this regard, and, if he had contested that testimony, to explain why the aforementioned document was insufficient. Professor Shapiro did continue to claim at the hearing that [REDACTED]" *but he did not address Mr. Orszag's assertion that the document the latter cited,* the "00751" document, in fact [REDACTED]. 8/19/20 Tr. 2911–12 (Shapiro) (Professor Shapiro asserting that he "[REDACTED]).

The Judges find Professor Shapiro's failure to offer a substantive rebuttal relating to this document to be especially problematic because, as noted above, Professor Shapiro had already reviewed that document, had possession of it (or access to it) and presumably was familiar with its contents. Further, in its post-hearing proposed findings, the Services continue to ignore the "07751" document, asserting that "Mr. Orszag did not calculate the value of the true-up himself or provide the data required to do so." Pandora/Sirius XM PFFCL ¶ 225. But, as noted above, Mr. Orszag did identify a document that he said contained the necessary data, and that specific testimony remained unchallenged.

It is also noteworthy that Google's expert economic witness, Dr. Peterson, having access to the same data, decided to apply the [REDACTED] *in toto.* 8/25/ 20 Tr. 3780 (Peterson) [REDACTED]"); *see also*

8/10/20 Tr. 1172–73 (Orszag) ("Dr. Peterson and I have similarly found the same result . . . .").

Professor Shapiro's failure to challenge the sufficiency of the document identified by Mr. Orszag, combined with Dr. Peterson' application of a [REDACTED] convinces the Judges that Professor Shapiro's failure to apply a [REDACTED] was incorrect. Applying this [REDACTED] increases Professor Shapiro's ad-supported benchmark rate, before any adjustments, from $[REDACTED] to $[REDACTED] (rounded). Orszag WRT tbls.7 & 8.[190]

ii. Professor Shapiro's Failure To Account for the Funneling (Conversion) Value of Spotify's Ad-Supported Service

Mr. Orszag claims that a fundamental problem with Professor Shapiro's use of the Spotify ad-supported tier as a benchmark is that he fails to account for the fact that this benchmark also incorporates a successful and thus valuable feature: The ability to convert users to Spotify's more lucrative subscription tier. Orszag WRT ¶ 72.

SoundExchange notes that, at the hearing, Professor Shapiro acknowledges this point. First, as a general matter, he agreed that the more promotional a music service is of other revenue streams (net of substitution for other revenue streams, the lower the royalty rate the service should be able to negotiate.

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[190] Mr. Orszag, like Professor Shapiro, includes in his calculation of the Spotify effective rate the value of marketing considerations (alternatively valued at the functionally equivalent rate $[REDACTED] per-play) in the agreements between Spotify and major record companies. *Compare* Shapiro WDT at 31 n.47 & app. D at 2 *with* Orszag WRT tbls. 7 & 8.

Then, specifically, Professor Shapiro admitted that, if [REDACTED], then [REDACTED] 8/19/20 Tr. 2967 (Shapiro).

Mr. Orszag further explains that the importance of funneling ad-supported users into paid subscriptions is thus a [REDACTED] component of the bargain between the record companies and Spotify. That value is manifested in the parties' negotiations by the record companies' [REDACTED]. Orszag WRT ¶ 73.

Another SoundExchange economic witness, Professor Tucker, places Spotify's funneling/conversion value in the broader contemporary economic context of "freemium" pricing models. More particularly, she notes the need for sellers to experiment constantly with different ways of "nudging people to upgrade" and reminding them of the potential benefits of the premium paid product, " so as to overcome the risk that customers will become "anchored to a zero price." 8/17/20 Tr. 2116 (Tucker). Professor Tucker opined that the record companies' [REDACTED] was a striking application of the commercial necessity to funnel and convert to a premium service. *Id.* at 2120–21. (Tucker).

The Services contend that SoundExchange has failed to demonstrate adequately the [REDACTED]. Also, they contend record company witnesses have indicated that, notwithstanding any discounts/ penalties based on listener tenure, the record companies have [REDACTED] Services RPFFCL ¶¶ 179–183 (and record citations therein).

Notwithstanding these rejoinders, the Services propose that, if the Judges find Spotify's ad-supported

tier rates to include [REDACTED], rather than reject the ad-supported rates as benchmarks, the Judges should adjust the Spotify ad-supported benchmark rate upwards in an attempt to isolate and remove the [REDACTED] in that rate tier. *See* 8/19/ 20 Tr. 2912 (Shapiro). In that regard, Professor Shapiro agreed that other potential evidence exists to calculate this adjustment: The express terms in [REDACTED] 8/19/20 Tr. 2912–13, 2914 (Shapiro) (agreeing with Judge Strickler's suggestion that the [REDACTED]); *see generally* Services PFFCL ¶ 146; Pandora/Sirius XM PFFCL ¶¶ 242–243 (and record citations therein).

The Judges find that, despite the various incentives and market power that may have led to the [REDACTED],[191] the [REDACTED], serve as a useful basis by which to isolate the [REDACTED]. Indeed, as discussed at length *infra,* the parties have adopted a basis by which to apply these [REDACTED].

Having considered SoundExchange's criticisms of Professor Shapiro's establishment of a benchmark, the Judges next proceed to a consideration of SoundExchange's criticisms of the potential adjustments proffered by Professor Shapiro.

iii. Criticism of Professor Shapiro's Interactivity Adjustment

Taking on Professor Shapiro's first interactivity adjustment, SoundExchange challenges the

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[191] Any potential impact from differences in market or bargaining power, such as from the licensors' complementary oligopoly market structure, Spotify's unique position as a pureplay service, interactivity differences or play counts, is addressed by the Judges elsewhere in this Determination, both generally and with specific regard to the experts' rate proposals.

correctness of applying a supposed value for interactivity derived from the subscription market in the ad-supported market. More particularly, SoundExchange asserts, relying on Professor Shapiro's own testimony, that the added value, if any, of interactive functionality depends on its value *to consumers* in the downstream market. In a subscription market, SoundExchange avers the service's demand for interactive functionality is a derived demand, arising from its downstream customers' WTP for interactive functionality. SX RPFFCL (to Pandora/Sirius XM) ¶ 229 (citing 8/19/20 Tr. 2975–76 (Shapiro)).

In contrast to a subscription market, SoundExchange maintains, an ad-supported service's demand for interactive functionality would be irrelevant to the calculation of advertisers' WTP for advertisements, and the users' willingness to listen to them. *Id.* (citing 8/19/20 Tr. 2977–80 (Shapiro)). Thus, SoundExchange maintains that Professor Shapiro errs in using an interactivity adjustment derived from the subscription market to adjust his ad-supported rates. In further support of this argument, SoundExchange relies on the testimony of two of the Services' economists, testifying for the NAB and Google, respectively, in this proceeding. *Id.* (citing Leonard WRT ¶ 54 ("[T]he relationship between revenue generation and interactivity is substantially different for ad-supported than for subscription services."); and 8/25/20 Tr. 3702–03 (Peterson) ("[I]t's really the willingness to pay of advertisers and the ability of the service to attract advertisers that is going to affect the revenue on the service. It's not listeners that are providing that revenue.")).

Turning to Professor Shapiro's second interactivity adjustment based on mid-tier subscription services, SoundExchange offers the same criticism as it asserts immediately above because this adjustment is also derived from the subscription market. SX RPFFCL (to Pandora/Sirius XM) ¶ 230. SoundExchange also raises the criticism of this second interactivity adjustment it makes in connection with Professor Shapiro's subscription benchmark adjustments. That is, SoundExchange re-asserts that Professor Shapiro: (1) Entirely ignores consumer WTP to pay in the downstream market by relying on upstream royalty differentials; (2) cannot cite to evidence any positive WTP of consumers in the downstream market for the additional functionality that Pandora obtained for its mid-tier Pandora Plus service; (3) wrongly dismisses the fact that the subscription price for Pandora's prior noninteractive service was the same ($4.99) as its subsequent mid-tier Pandora Plus service; (4) merely speculates that the additional functionality of Pandora Plus may have increased consumer demand compared to demand for its prior noninteractive service; (5) ignores the fact that any increase in subscribership that may have occurred simply adds more plays and more revenue, without necessarily changing revenue per play; (6) fails to address the fact that [REDACTED] and (7) wrongly uses a statutory rate (the $0.0023 rate) as his base against which to compute the percentage value added by Pandora's mid-tier service. *See* SX PFFCL ¶¶ 143–156 (and record citations therein).

SoundExchange also takes issue with the implicit premise that Spotify's ad-supported service has the full functionality necessary to justify the interactivity

adjustments Professor Shapiro proposes. It notes that (as Professor Shapiro himself acknowledges), although Spotify's ad-supported service is fully interactive when used on a desktop, its mobile service is not fully interactive, but rather provides a "shuffle" feature that lets listeners select an artist or playlist and hear a somewhat randomized stream of tracks by that artist or from that playlist. *See* 8/19/20 Tr. 2985 (Shapiro).[192] However, SoundExchange notes that Professor Shapiro does not reduce his proposed interactivity adjustment to reflect the lower functionality of the mobile service, 8/19/20 Tr. 2986 (Shapiro), even though he acknowledges that "[REDACTED]" and its [REDACTED] 8/19/20 Tr. 2986–87 (Shapiro).[193]

SoundExchange also takes issue with Professor Shapiro's reliance on the per-play rates of $[REDACTED] for Premium Access plays on

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[192] Spotify's mobile shuffle service also allows up to 6 songs from an album within a 60 minute period, compared to the statutory sound recording performance complement which allows only 3 songs from an album within a 3 hour period. *See* Peterson WDT ¶ 45 n.33.

[193] It was for this reason that Professor Shapiro proposes the alternative interactivity adjustment approach, as discussed *supra,* whereby only the difference between the mid-tier royalty rate and the statutory rate (his "second" interactivity adjustment) would be applied. However, SoundExchange characterizes this approach as a "tactical retreat" without economic meaning, because Professor Shapiro offers no explanation for why an interactivity adjustment for a mid-tier subscription service–with the same functionality available on *both* desktop and mobile devices–is applicable to Spotify's ad-supported service (with functionality that differs depending on whether the music is delivered via a mobile or a desktop method). SX RPFFCL (to Pandora/Sirius XM) ¶ 233.

Pandora's noninteractive service. It notes that, for example, Sony's contract with [REDACTED]" Trial Ex. 5097 at 1. Accordingly, SoundExchange maintains that these per-play rates embody a promotional value, and thus do not reflect the stand-alone value of on-demand functionality on Pandora's ad-supported service.

iv. Criticism of Professor Shapiro's "Skips" Adjustment

SoundExchange questions the probative value of the data upon which Professor Shapiro relies for his [REDACTED]% skips adjustment on the same basis as it challenges his application of this data to his skips adjustment in the subscription market. To recap the criticism, SoundExchange notes that Professor Shapiro acknowledges that this data came from noninteractive plays available on all three tiers of Pandora's service—ad-supported, mid-tier and fully interactive. 8/20/20 Tr. 3028–29 (Shapiro). As a consequence, Mr. Orszag asserts, the [REDACTED]% "skips" rate is likely overstated because subscribers to Pandora's two interactive tiers have unlimited skips, making them more likely to skip when accessing noninteractive plays on those two tiers. Orszag WRT ¶ 120. SoundExchange notes that Professor Shapiro agrees but testifies that any such upward bias would have had a *de minimis* impact, so he did not measure the effect. 8/20/20 Tr. 3030–32 (Shapiro).

v. Criticisms of Professor Shapiro's Effective Competition Adjustment

SoundExchange asserts that no effective competition adjustment is warranted. Because

Professor Shapiro proffers the same [REDACTED]% effective competition adjustment to the ad-supported rate as he does to the subscription rate, for the same reasons, SoundExchange sets forth the same substantive opposition. *See* SX PFFCL ¶¶ 487–489. Accordingly, the Judges' recitation of that argument *supra* is incorporated by reference here.[194]

SoundExchange also repeats its argument regarding the virtual equivalency of the $[REDACTED] effective per-play rate for [REDACTED] and the $[REDACTED] effective per-play rate for Spotify. Again, SoundExchange notes that Professor Shapiro characterizes this [REDACTED] rate as effectively competitive, whereas he asserts that [REDACTED] reflects the Majors' complementary oligopoly power. *See* SX PFFCL ¶¶ 483–486 (and record citations therein).

f. The Judges' Analysis and Findings Regarding Professor Shapiro's Proposed Adjustments

i. Professor Shapiro's Proposed First and Second Interactivity Adjustments

The Judges reject Professor Shapiro's proposed interactivity adjustments to his proposed ad-supported rate. In reaching this finding, the Judges agree with SoundExchange that the concept of added economic value for interactivity is not a suitable basis to adjust downward a proposed benchmark rate. Advertisers, not listeners, pay the royalties. And there is insufficient evidence to establish that advertisers' payments to noninteractive ad-supported services are a function of the level of interactivity of

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[194] *See supra,* section IV.B.1.e.v(C).

that service.[195] Moreover, Professor Shapiro's attempt to apply the 2:1 interactivity adjustment derived from the subscription market is not only unsupported, it is ironic, because Professor Shapiro has rightfully chastised Mr. Orszag for applying subscription market data to divine an ad-supported rate, as discussed *supra.*

The Judges also decline to endorse Professor Shapiro's alternative proposal to apply only his second interactivity adjustment. As the Judges explained *supra* regarding Professor Shapiro's proffer of this [REDACTED]% adjustment in the subscription market, there is no sufficient evidentiary basis to use the *entirety* of the upstream royalty differences to generate downstream differences in interactivity value, nor is there sufficient evidence that *any* of the royalty difference ($[REDACTED]) reflected actual value differences, given the $4.99/month price for both Pandora's prior Pandora One statutory subscription service and its subsequent Pandora Plus mid-tier subscription service. Moreover, because this royalty differential relates to the subscription market, the Judges find it (like professor Shapiro's proffered first interactivity adjustment) to be uninformative with regard to the ad-supported market.

ii. Professor Shapiro's Proposed Skips Adjustment

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[195] To be sure, listeners to ad-supported services may well prefer interactive functionality to noninteractive functionality, because the former provides greater utility. The problem is that such a preference is not revealed in this multi-sided platform context because the listeners do not make purchasing decisions.

SoundExchange does not add any other criticisms of Professor Shapiro's skips adjustment to its discussion of his ad-supported adjustment to his subscription skips adjustment. Accordingly, the Judges adopt (and incorporate by reference here) the same analysis and the same finding of a [REDACTED]% skips adjustment as they found for the subscription market.

iii. Professor Shapiro's Proposed Effective Competition Adjustment

Because Professor Shapiro's proffered ad-supported effective competition adjustment, and SoundExchange's criticism thereof, are identical to their positions regarding this potential adjustment in the subscription market, the Judges incorporate by reference here their rejection of that adjustment, and the reasons for that rejection.[196]

The Judges' rejection of Professor Shapiro's proposed effective competition adjustment does not

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[196] *See supra,* section IV.B.1.e.v(C). The Judges add, though, that Professor Shapiro's ad-supported methodology appears to shed light on Pandora's decision (discussed *supra*) to propose an effective competition adjustment ([REDACTED]%) based on the difference between the interactive average royalty rate ($[REDACTED]) and the [REDACTED] royalty rate ($[REDACTED]), rather than the difference between the $[REDACTED] average rate and [REDACTED]s $[REDACTED] effective per-play rate. *Because Pandora uses the Spotify ad-supported rate as its benchmark, if it identified Spotify's effective per-play rate (based on a [REDACTED]) as effectively competitive, it could not then rely on that rate to generate a downward effective competition adjustment, as exposed by SoundExchange.* That would have significantly increased Pandora's proposed benchmark rate.

mean that no such adjustment is warranted. Rather, the Judges apply the same analysis to the ad-supported sector as they have in the subscription context. However, the Judges' *application* of that approach here in the ad-supported sector differs from their analysis in the subscription sector. To recap, in the subscription sector, [REDACTED].[197] Thus, when applying the [REDACTED]% effective competition adjustment based on the price-competitive impact of steering, the Judges offset the percentage difference between the [REDACTED]% and [REDACTED]% rates—[REDACTED]%—to set an effective competition adjustment of [REDACTED]% (*i.e.,* [REDACTED]% – [REDACTED]%).

However, in the ad-supported sector, [REDACTED]. Indeed, the Majors [REDACTED]. Ultimately, the Majors and Spotify [REDACTED]. Trial Ex. 4040 (Universal/Spotify 2017Agreement); Trial Ex. 5038 (Warner/Spotify Agreement).

With regard to the headline per-play rates, the 2017 Universal-Spotify Agreement [REDACTED]. *Compare* Trial Ex. 2062, Fees Annex, p. 3 (2013 Agreement) *with* Trial Ex. 4040, Fees Annex, p.1 of 3; *see also* Harrison WDT ¶ 24 (noting [REDACTED]); Shapiro WRT at 19 n.60 ([REDACTED]. Similarly, [REDACTED]. *Compare* Trial Ex. 5020 ex. I (Rate Card) (2013 Agreement) *with* Trial Ex. 5038 app. 1 (Rate Card) (2017 Agreement).[198]

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[197] Under the 2017 Agreements, [REDACTED]. Shapiro WDT at 40, tbl.10; *see also* Orszag WDT ¶ 153 & tbl.15 ([REDACTED]).

[198] The Sony/Spotify 2013 and 2017 Agreements [REDACTED]. *See* Trial Exs. 5074 (2013 Agreement) and 5011 (2017 Agreement); *see also* Orszag WDT, fig.6..

In the other tier of its 2017 Agreements with [REDACTED], Spotify [REDACTED]. Spotify has been paying royalties [REDACTED] 2017 Agreements because that [REDACTED]. 8/20/20 Tr. 3085–86 (Shapiro); 8/11/20 Tr. 1233 (Orszag). But, as Mr. Harrison of Universal acknowledged, [REDACTED]. 9/3/2020 Tr. 5710–11 (Harrison); SX PFFCL ¶ 291 (acknowledging the [REDACTED]). Further, there is no evidence to indicate that the effective per-play rate on the ad-supported tier [REDACTED] under Spotify's 2017 Agreements with the other two Majors, *i.e.,* Warner or Sony.

Mr. Harrison asserts that the reason Spotify's *[REDACTED]* was because Spotify was [REDACTED]. But the ability of a licensor to extract value from a licensee's [REDACTED] is precisely the sort of "heads-I-win, tails-you-lose" advantage that the Judges noted in *SDARS III* is part-and-parcel of a licensor's complementary oligopoly power. *SDARS III,* 83 FR at 65228. Accordingly, the 2017 Agreement between Universal and Spotify, with regard to the ad-supported rates (and unlike with regard to the subscription rates), is consistent with an undiminished exercise of complementary oligopoly power.[199]

[199] The Judges discussed this phenomenon elsewhere in this Determination, regarding the Majors' obtaining a share of the value of Pandora's investment in the monetization of its advertising platform. In that context and in the present context, the extent to which the Majors can share in the increase in advertising revenue is a function of their complementary oligopoly power (as is every aspect of the rate-setting process). This *particular* aspect of the Majors' complementary oligopoly power is mitigated by the Judges' *general* inclusion of the

Additionally, by obtaining [REDACTED] in the 2017 Agreements, Universal and Warner [REDACTED], relative to their 2013 Agreements, [REDACTED]. Thus, *[REDACTED]* of the 2017 Agreements, these Majors had [REDACTED]—which, as noted above, [REDACTED], according to Mr. Harrison.

The Judges find these facts to belie any assertion that [REDACTED]. Thus, the effective competition adjustment on the ad-supported tier remains at [REDACTED]%, as it pertains to Professor Shapiro's benchmark rate.

g. Applying the Skips and Effective Competition Adjustments

Because the Judges do not apply any interactivity adjustment to Professor Shapiro's ad-supported benchmark rate, they adjust the $[REDACTED] per-play ad-supported rate by first applying the [REDACTED]% adjustment for skips, which reduces the rate to $[REDACTED]. The Judges then apply the effective competition adjustment of [REDACTED]. The resulting rate is $[REDACTED] ($[REDACTED]) rounded).

3. Supplementation by Mr. Orszag and Professor Shapiro to Their Original Ad-Supported Benchmarking Approaches

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[REDACTED]% effective competition adjustment, which is broadly intended to offset all aspects of the Majors' complementary oligopoly power (that is not otherwise offset by Spotify's countervailing power in the subscription benchmark market).

Both Mr. Orszag and Professor Shapiro supplement their ad-supported benchmarking models in manners that narrow the differences between their proposed rates. Each expert's supplemental position is examined seriatim below.

a. Professor Shapiro Acknowledges the Propriety of Adjusting His Proposed Spotify Ad-Supported Benchmark Rate Higher To Account for Spotify's Ability To Funnel Ad-Supported Users Into Its Higher Royalty-Bearing Subscription Tier

Professor Shapiro takes notice of SoundExchange's criticism that his ad-supported benchmark model fails to account for Spotify's added value as a funneling tool, converting ad-supported listeners into subscribers who pay a higher retail price and generate higher royalties. 8/19/20 Tr. 2912 (Shapiro) ("[[REDACTED]"); *see also* Orszag WRT ¶ 72. Further, for benchmarking purposes in this proceeding, Pandora assumes that [REDACTED]a value to the Majors that [REDACTED]. Pandora/ Sirius XM PFFCL ¶ 241.[200]

Having adopted this assumption, Professor Shapiro testifies that the appropriate response is not to disregard Spotify's ad-supported tier rates. Rather, the correct approach is to address Spotify's ad-supported rate structure by [REDACTED]. 8/19/20 Tr. 2912 (Shapiro); Shapiro WRT at 42.

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[200] Consistent with this assumption, the Judges have described *supra* the ad-supported rate structure in Spotify's agreements with Universal and Warner, respectively, that provide Spotify [REDACTED].

Taking note of the aforementioned Spotify agreements with Warner and Universal, Professor Shapiro focuses on the per-play royalty rates Spotify pays [REDACTED]): $[REDACTED].[201] Each of these rates, Professor Shapiro notes, represents a [REDACTED]% [REDACTED] the base per-play minimum specified in the agreements. Shapiro WRT at 43; Harrison WDT ¶ 67 (regarding the Universal agreement); Adadevoh WDT ¶ 21 (regarding the Warner Agreement).

According to Professor Shapiro, it would be appropriate to use the [REDACTED]users, as the basis for an upward adjustment to his benchmark rate, in order to [REDACTED]. In other words, [REDACTED]. 8/19/20 Tr. 2912–14 (Shapiro).

Professor Shapiro at first intended to adjust his benchmark rate higher to reflect the full [REDACTED]% [REDACTED]. However, Mr. Orszag pointed to a fact that indicated Professor Shapiro would actually *overstate* his benchmark if he applied [REDACTED]. Specifically, Mr. Orszag testified:

> You just can't take the rate and [REDACTED]. That would be inappropriate. One would want to weight by the number of subscribers who have been—have been [REDACTED] [REDACTED].

8/11/20 Tr. 1382 (Orszag). Mr. Orszag used this data to determine that, to adjust the proposed royalty rate derived by Professor Shapiro (and by Dr. Peterson), as well as the proposed royalty rates he

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[201] There is no evidence of a comparable [REDACTED] rate in its agreement with Sony.

derived—to eliminate the funneling/conversion value in the rate structure—required a [REDACTED] adjustment (a [REDACTED]) in their respective rates. 8/11/20 Tr. 1382, 1405–06 (Orszag); 8/25/20 Tr. 3816 (Orszag).[202]

Professor Shapiro analyzed this background worksheet and came to the same conclusion as Mr. Orszag, quantifying the smaller upward adjustment of [REDACTED]% to the proposed rate, rather than [REDACTED]%. *Compare* 8/25/20 Tr. 3816 (Orszag) ("Professor Shapiro in his testimony has introduced a new adjustment. He proposed a [REDACTED] × adjustment to the Spotify Free rate . . . that works to correct the [REDACTED] that are associated with the Spotify Free benchmark. And with that, *I am more comfortable with that benchmark.*") *with* 8/19/20 Tr. 2913, 2921, 2970 (Shapiro) ("I have calculated, for the same calculation he did . . . that the proper adjustment would be a [REDACTED] adjustment factor. . . . [W]e did the same calculation and we both got to this same number.. . . And that ratio is also [REDACTED]. So we're doing the same thing.. . . I [had] said something like the [REDACTED], but Mr. Orszag corrected me and pointed out it should be [REDACTED].").

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[202] Mr. Orszag calculated this [REDACTED] adjustment from a worksheet he utilized in this proceeding that had been produced by SoundExchange to the Services in discovery, Bates #W5 00492–00502. 8/11/20 Tr. 1408 (Orszag) (promising to identify the underlying worksheet the next hearing day); 8/12/20 Tr. 1486 (identification of the worksheet the next hearing day by David Handzo, Esq, counsel for SoundExchange, without objection).

Applying this [REDACTED] factor to the Judges' calculation (conducted *supra*) of Professor Shapiro's benchmark effective rate for ad-supported noninteractive services, $[REDACTED], results in a final effective rate of $[REDACTED] (*i.e.,* $[REDACTED] × [REDACTED]), or $0.0023 (rounded).

b. Mr. Orszag Acknowledges the Propriety of Using Spotify's Ad-Supported Service as a Benchmark for the Statutory Benchmark Service

Although SoundExchange and Mr. Orszag continue to advocate for the latter's *subscription benchmark-based rate* of $0.0025 as the statutory ad-supported rate,[203] Mr. Orszag subsequently testified that he had become "comfortable" as well with applying Spotify's *ad-supported rate* as the benchmark in his own ratio equivalency model. He came to this conclusion after discerning that "[t]he percentage of revenue for the Spotify subscription tier is virtually the same as the percentage of revenue for the Spotify Free tier." 8/25/20 Tr. 3809 (Orszag).

More particularly, he notes that the effective percent-of-revenue rate paid by [REDACTED] (*i.e.,* as a percent of advertising revenue) is [REDACTED]%. Peterson WDT, ¶ 51. By comparison, the royalty rate on which Mr. Orszag relies in his WDT is based on a very similar [REDACTED]% subscription market effective rate paid by [REDACTED]. Orszag WDT, tbls.7, 9.

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[203] "I continue to believe that license agreements for subscription on-demand services can be useful benchmarks for statutory ad-supported services." Orszag WRT ¶ 75.

Mr. Orszag notes, though, that his percent of revenue calculation differs from the calculations of Dr. Peterson and Professor Shapiro. Dr. Peterson bases his royalty percentage on net revenue, which is lower than gross revenue. By contrast, Mr. Orszag makes his percent-of-revenue calculation off Spotify's gross revenues. The revenue figure (whether gross or net) is the denominator in the calculation of effective percent-of-revenue royalties. (The royalties paid comprise the numerator.). Thus, Dr. Peterson's [REDACTED]% figure, Mr. Orszag acknowledges, must be restated using gross revenues, to make an apples-to-apples comparison with Mr. Orszag's benchmarking approach. Mr. Orszag performs this restatement and recalculates Spotify's effective percent-of-revenue royalty payments, on a gross revenue basis, as [REDACTED]%. Orszag WRT ¶ 71 n.155. Mr. Orszag also notes that the effective percent-of-revenue rate (apparently on gross revenues) determined through Professor Shapiro's data is similar, at [REDACTED]% (after correcting for (1) Professor Shapiro's acknowledged double-counting in connection with the [REDACTED]) and (2) his decision not to provide [REDACTED].). Orszag WRT ¶ 71 nn.155–156.

Mr. Orszag explains that, when establishing percent-of revenue rates using net advertising revenues, his own ratio equivalency approach (*not* the benchmarking approach of either Dr. Peterson or Professor Shapiro) per-play rates decrease by [REDACTED]%, from $[REDACTED] to

$[REDACTED] (a $[REDACTED] reduction). *Id.*[204] Specifically, when Mr. Orszag applies Dr. Peterson's [REDACTED]% of revenue figure, Mr. Orszag calculates a per-play royalty of $[REDACTED] ($[REDACTED] rounded). Similarly, when Mr. Orszag applies Professor Shapiro's [REDACTED]% rate, Mr. Orszag calculates an effective per-play rate of $[REDACTED] (which also rounds to $[REDACTED]). Orszag WRT ¶ 71 n.156.

In his WRT, Mr. Orszag continues to cast doubt, though, on Spotify's ad-supported rate as a useful benchmark. He emphasizes that Spotify's ad-supported tier is "wholly different" from, *inter alia,* statutory noninteractive ad-supported services because of the former's separate attribute as a [REDACTED] funneling tool, inducing ad-supported listeners to convert to subscribership and its concomitant higher royalty payments. Orszag WRT ¶¶ 72–75. However, as noted *supra,* when the [REDACTED] adjustment was made to control for the separate value of funneling/conversion,[205] Mr. Orszag

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[204] To be clear, Mr. Orszag is here plugging in calculations of percent-of-revenue rates in the benchmark market by using Dr. Peterson's and Professor Shapiro's own percent-of-revenue calculations in order to generate a percent-of-revenue rate in the benchmark market that Mr. Orszag, *using his ratio equivalency model,* then applies to the target market; Mr. Orszag is *not* applying his percent-of-revenue calculations, as derived from these other two experts, in *their benchmarking models. See* Services PFFCL ¶¶ 48– 56 (and record citations therein).

[205] Mr. Orszag also contends that the [REDACTED] rate is still too low because: (1) Some Spotify ad-supported listeners ultimately convert to the subscription tier [REDACTED]; and (2) Spotify's contract with the Majors require it to [REDACTED]. Orszag WRT ¶¶ 73, 75 n.167. However, the Services

became, if not a full-fledged convert, "more comfortable" with the "Spotify Free benchmark." 8/25/20 Tr. 3816 (Orszag).[206]

When Mr. Orszag applies the [REDACTED] adjustment to reflect the number of Spotify listeners [REDACTED], his proposed rate— derived from his ratio equivalency model but using Spotify's ad-supported data—increases from $[REDACTED] to $[REDACTED] *See* 8/11/20 Tr. 1406 (Orszag).

The final step in this analysis would be to apply an appropriate adjustment for effective competition. For the reasons discussed, *supra,* regarding the effective competition adjustment necessary for Professor Shapiro's ad-supported benchmark rate, the Judges apply the same 12% effective competition adjustment.

Applying the 12% effective competition adjustment to Mr. Orszag's $[REDACTED] rate

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convincingly note that: (1) [REDACTED]; and (2) there is no evidence that [REDACTED], resulting in a loss of revenue. Services RPFFCL ¶¶ 195, 204; *see also* 8/19/20 Tr. 2971 (Shapiro) (noting that an adjustment based on additional revenue arising from an [REDACTED].").

[206] The Services nonetheless do not agree with the methodology utilized by Mr. Orszag, as it does not reflect the need to make any appropriate adjustments. *Id.;* Pandora/Sirius XM PFFCL ¶ 244 n.33. However, the Judges examine the relative merits of the Services' proposed adjustments separately, in their analysis of each expert's model. The salient point here though is that Professor Shapiro's approach (and Dr. Peterson's approach) yield effective per-play royalty rates on the ad-supported tiers that are quite proximate, prior to the consideration of particular adjustments.

reduces his ad-supported rate, to $[REDACTED] ($0.0024 rounded).

As in the subscription market analysis, the Judges need to weight the relative impacts of: (1) The benchmark approach of Professor Shapiro (joined in the ad-supported analysis by the identical rate identified by the Judges from Dr. Peterson's analysis) and (2) Mr. Orszag's (*de facto*) ratio equivalency approach. The Judges use the same approach here as they did *supra* for the subscription rate. That is, they look to the Zauberman Survey,[207] as applied by Professor Willig, for SoundExchange's' estimate of the diversion ratio from ad-supported *noninteractive* listeners to a new ad-supported *interactive* service, which is [REDACTED]%.[208]

Thus, Mr. Orszag's $0.0024 rate has a weight of [REDACTED]% in the calculation of the overall benchmark rate in the ad-supported market. Professor Shapiro's $0.0023 rate has a weight of

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[207] As the Judges noted regarding their use of the Zauberman Survey in their subscription rate calculation, although they find the Zauberman Survey less reliable in other respects than other surveys in the record, only the Zauberman Survey asks respondents directly the necessary diversion question, here, to identify the source of music to which they would divert if noninteractive ad-supported services were not available, not if they were merely downgraded.

[208] Professor Willig estimated the number of monthly plays on Pandora to be [REDACTED]. Willig WDT ¶ 45. The diversion of monthly plays to interactive ad-supported services (*i.e.,* to a service such as Spotify's) is [REDACTED], according to Professor Willig's application of the Zauberman Survey. Willig WDT, fig.6 (panel A). [REDACTED]=[REDACTED]% (rounded).

[REDACTED]% (*i.e.,* 1– [REDACTED]). The resulting rate is $0.0023 (rounded).[209]

4. Dr. Peterson's Ad-Supported Benchmark Model

a. Dr. Peterson's Interactive Benchmark

Dr. Peterson, testifying on behalf of Google, derived his ad-supported benchmark analysis from the *interactive* ad-supported market. According to Dr. Peterson, this is an appropriate benchmark, consistent with *Web IV,* in which the Judges used ad-supported benchmarks to develop the ad-supported statutory rate. 8/25/20 Tr. 3631 (Peterson); Peterson WDT ¶¶ 10, 12. Google and Dr. Peterson posit that Spotify's ad-supported service is the closest benchmark available for statutory ad-supported services. Google LLC's Amended Proposed Findings of Fact and Conclusion of Law ¶ 24 (Google PFFCL); 8/25/20 Tr. 3633–34 (Peterson). Google further suggests that the Judges have indicated a preference toward benchmark analysis and that prior determinations have tended to eschew non-benchmark-based approaches. Google PFFCL ¶ 13–18; *Web IV,* 81 FR at 26320, 26327; *Distribution of Cable Royalty Funds,* Final Allocation Determination, 84 FR 3352, 3602 (Feb. 12, 2019) (*2010–13 Cable Allocation Determination*).

To apply his benchmark, Dr. Peterson began by calculating effective per-play royalty rates, derived from the royalties paid by Spotify to Warner, UMG, Sony, Merlin and Ingrooves on a percent-of-revenue [REDACTED], in which the other [REDACTED]. Peterson WDT ¶¶ 10, 48–51; 8/25/20 Tr. 3634

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[209] [REDACTED].

(Peterson) (explaining that he divided the total royalties paid or to be paid by the reported royalty-bearing plays for each label); Peterson WDT ¶¶ 13, 48.[210] Dr. Peterson used the payments due under the [REDACTED]. 8/25/20 Tr. 3636–3637 (Peterson) ([REDACTED]). Under the Spotify licenses, Dr. Peterson found that the effective per-play rates [REDACTED]. Peterson WDT ¶¶ 10, 48–51.

On behalf of SoundExchange, Mr. Orszag, as noted *supra,* proposed that an upward adjustment was necessary to address the funneling/conversion value [REDACTED], namely a [REDACTED] adjustment (a [REDACTED]% increase) in the respective rates. 8/11/20 Tr. 1382, 1405–06 (Orszag); 8/25/20 Tr. 3816 (Orszag).[211] Dr. Peterson set forth

[210] Dr. Peterson also analyzed SoundCloud Limited's (SoundCloud) licenses with UMG and Warner for the SoundCloud ad-supported tier to corroborate his findings based on the five Spotify licenses. The SoundCloud licenses were offered as confirmatory benchmarks rather than primary benchmarks because the SoundCloud ad-supported tier includes comparatively less than a full catalog of content and significant user-generated content. Peterson WDT ¶ 11. As previously indicated, the Judges find that SoundCloud is not comparable to the target market services primarily because it has a high level of user-generated content and lacks access to the full catalogs of the record companies. 8/11/20 1408–09 (Orszag). Further, unlike other services, SoundCloud has always been mainly a platform where unsigned artists can post their music for downstream discovery. Harrison WDT ¶ 12; Trial Ex. 5289 at 7.

[211] Pandora and Sirius XM's expert witness Professor Shapiro also accepted a similar [REDACTED] upward adjustment. *See, e.g.,* 8/19/20 Tr. 2913, 2921, 2970 (Shapiro) ("I have calculated, for the same calculation he did . . . that the proper adjustment would be a [REDACTED] adjustment factor. . . . [W]e did the same calculation and we both got to this same number. . . . And

that any adjustment to Spotify ad-supported rates to account for value attributable to funneling or conversion of users from ad-supported to paid subscription tiers that may occur should not look toward funneling occurring from the Spotify ad-supported tier to the Spotify subscription tier, but instead should seek to assess the difference in the upselling capabilities of the Spotify ad-supported benchmark compared to statutory services. Dr. Peterson noted that Mr. Orszag did not attempt such an analysis, despite evidence that statutory services are funneling consumers into subscription offerings. Therefore, he suggested, the Judges should reject Mr. Orszag's incomplete attempt to support a [REDACTED]× upward adjustment without comparing the upsell potential of Spotify against statutory services such as Google, Pandora, and iHeart. Peterson WDT ¶¶ 60–61.

Dr. Peterson further countered Mr. Orszag's suggested adjustment by offering that the premise for applying an upsell adjustment is unfounded. He argued that the evidence does not support the notion that [REDACTED] that accounts for the conversion of users to subscription tiers. Instead, he contended that the labels [REDACTED]. Google notes testimony from executives at Warner Music and UMG regarding both [REDACTED]. Dr. Peterson suggested that Mr. Orszag's analysis was erroneous because he arrived upon a ratio using headline per-play rates ([REDACTED]) to form a proposed adjustment to

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that ratio is also [REDACTED]. So we're doing the same thing. . . . I [had] said something like the [REDACTED], but Mr. Orszag corrected me and pointed out it should be [REDACTED].").

apply to Dr. Peterson's analysis, which is based on effective rates [REDACTED]. Peterson WDT ¶¶ 62–65.

Relatedly, in the hearing Dr. Peterson offered an alternative adjustment to account for funneling or conversion from ad-supported to paid subscription, whereby the starting point for his analysis (to which his proposed adjustments would be applied) would be the [REDACTED] for ad-supported customers who used the ad-supported service [REDACTED], as opposed to the payments due under the [REDACTED]. He reasoned this starting point may be appropriate if the Judges feel they need additional adjustment for funneling value, because any funneling value, [REDACTED], would have been exhausted or otherwise be *de minimis*. And, he offered, that was the amount [REDACTED] was willing to accept under the agreement. 8/26/20 Tr. 3955, 3960, 3961–63 (Peterson).

b. Dr. Peterson's Adjustments

Dr. Peterson and Google proposed four adjustments to the benchmark rates for ad-supported webcasters: (1) An interactivity adjustment, (2) a skips adjustment, (3) an effective competition adjustment, and (4) a marketing adjustment. Peterson WDT ¶¶ 15.[212]

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[212] Dr. Peterson's testimony also suggested that the decrease in length of the average hit song indicates that per-play rates should decrease. Peterson WDT ¶¶ 78–79 (suggesting that a hit-driven station would have to play more songs per hour such that any decrease in the statutory rate is likely to be offset, at least partially, by an increase in the number of royalty-bearing plays). Google did not argue for such an adjustment but instead

i. Dr. Peterson's Proposed Interactivity Adjustment

Dr. Peterson proposed a downward interactivity adjustment because the benchmark agreements he used are from an interactive market, whereas the target, statutory market is for noninteractive. 8/25/20 Tr. 3632, 3638 (Peterson). His testimony noted that interactive services receive a greater grant of rights (including the ability to let listeners hear on-demand whatever songs they want whenever they wish) and that licensors expect higher rates from interactive licenses than noninteractive licenses. Peterson WDT ¶ 52; 8/25/20 Tr. 3648 (Peterson).

Dr. Peterson proposed a downward interactivity adjustment of [REDACTED]%. 8/25/20 Tr. 3632 (Peterson); Peterson WDT ¶¶ 15(a), 55. His proposal came from his comparison of [REDACTED] [REDACTED] service to the statutory rate. 8/25/20 Tr. 3642 (Peterson); Peterson WDT ¶¶ 53–55. Peterson explained that [REDACTED] service, while meeting most of the statutory criteria, is not eligible for the statutory license because it [REDACTED], and that [REDACTED]. 8/25/20 Tr. 3641–43 (Peterson); Peterson WDT ¶¶ 53, 54. Dr. Peterson offered that the incremental amount [REDACTED] agreed to pay above the statutory rate is a useful measure of how a willing buyer and willing seller value the additional interactive functionality. Peterson WDT ¶ 54; *see also* 8/25/20 Tr. 3649, 3678–79 (Peterson). He set forth that the [REDACTED]% difference represents an incremental premium [REDACTED] paid for non-statutory functionality and that the difference is not

suggested the issue as a reason to view its rate proposal as a modest one. Google PFFCL ¶ 79.

meaningfully influenced by the statutory rate, but rather, that the comparison with the statutory rate allows for calculation of the delta between the respective rates. 8/25/20 Tr. 3632; 3646 (Peterson).

ii. Dr. Peterson's Proposed Skips Adjustment

Dr. Peterson also proposed to make a skips adjustment, which he asserts is required because the noninteractive licensees are required by statute to pay for plays under thirty seconds, but the benchmark interactive services do not pay for such brief plays. Peterson WDT ¶ 67. Dr. Peterson set out that the effective per-play rate he calculated (total royalties paid/reported streams) has a denominator (streams 30 seconds or longer) that excludes plays for which a statutory service would pay, thus leading to a higher per-play rate for interactive services. Peterson WDT ¶ 67. Based on information from Spotify on the number of total plays and plays of less than 30 seconds on its ad-supported interactive service, Dr. Peterson calculated that a downward adjustment of [REDACTED]%, applied to Spotify's effective per-play rate results in what Spotify would have paid on a dollar-per-stream basis. *See* 8/25/20 Tr. 3680–81 (Peterson); Peterson WDT ¶¶ 15(c), 68. He proposed an alternative skips adjustment by calculating the adjustment to the statutory rate that would be required for statutory payments to remain unchanged if statutory services were to pay only on performances of 30 seconds or longer. He offered that relevant information provided from Pandora showed that on its ad-supported radio service [REDACTED]% of total performances are less than 30 seconds, thus leading him to arrive at an alternative [REDACTED]%

reduction in the benchmark rate to account for skips. *Id.*

iii. Dr. Peterson's Proposed Effective Competition Adjustment

As with other participants and experts, Google and Dr. Peterson propose that a competition adjustment is necessary because labels have complementary oligopoly power in the benchmark market for licensing of music services, which means those rates do not reflect effective competition, but rather they result in royalty rates set at supracompetitive levels even higher than a single monopolist would charge. 8/25/20 Tr. 3652–53 (Peterson); *see also* Peterson WDT ¶¶ 19, 21–22, 34–35. Dr. Peterson offered that the consumer expectation that all interactive services will have the full catalog of each significant record label means that the labels' catalogs do not substitute for one another and are instead "must haves" for interactive services, which thus creates a licensing market where the major labels have complementary oligopoly power. 8/25/20 Tr. 3653 (Peterson); Peterson WDT ¶¶ 33, 57.

Dr. Peterson also set out that statutory streaming services have a greater ability to steer listeners' experience than interactive services, using techniques such as designing playlists to meet listeners' tastes that omit recordings from certain labels or reducing the number of plays for a given label's recordings if the license rate is too high. Dr. Peterson opines that this ability to steer is a marker of effective competition. Peterson WDT ¶ 58–59. He sought to replicate such effective competition through his competition adjustment, which reflects a

statutory licensee's ability to avoid high license rates by substituting or steering away from high royalties. Peterson WDT ¶¶ 65–66; *see also* 8/25/20 Tr. 3662 (Peterson). Dr. Peterson offered an analysis that chiefly used a Pandora- Merlin agreement that was in effect at the time of *Web IV,* which required Pandora to increase (*i.e.,* steer toward) Merlin spins by at least 12.5% and allowed Pandora to effectively engage in significant steering without negative reaction, to arrive at a proposed lower bound for his downward competition adjustment of 11.1%–12.5/(100+12.5) = 11.1%. Peterson WDT ¶¶ 62, 65. Dr. Peterson also looked to an agreement between iHeart and Warner, in effect at the time of *Web IV,* with a different [REDACTED] structure which required iHeart to pay royalties to Warner [REDACTED] at the time the deal was struck, which Dr. Peterson found indicative of an intention to steer of more than 50%. Peterson WDT ¶ 63. In his analysis, he set out that evidence of the ability to steer ranges from [REDACTED]% in the case of the Pandora/Merlin agreement to more than 50% in the case of iHeart/Warner. Dr. Peterson also looked at Pandora's steering experiments, cited in the *Web IV* determination, finding some consumer resistance to steering at a rate of 30%, thus arriving at a proposed upper bound for the downward competition adjustment of [REDACTED]% [REDACTED]. Peterson WDT ¶¶ 62, 65.

Dr. Peterson asserted that his competition adjustment is conservative because it is calculated based only on a reasonable ability to steer, which does not fully address or compensate for complementary oligopoly power. 8/25/20 Tr. 3662–63, 3664–65 (Peterson). He added that other market data supports

that even higher levels of steering are possible in the target noninteractive market, again noting evidence that Pandora engaged in steering toward Merlin by [REDACTED]% (instead of [REDACTED]%), without negative feedback. Peterson WDT ¶ 62.

iv. Dr. Peterson's Proposed Marketing Adjustment

Dr. Peterson offered that a marketing adjustment to the Spotify benchmark licenses may not be appropriate. While he recognized that the agreements [REDACTED], he concluded that the value of [REDACTED] may be zero. The provisions, he indicated, [REDACTED]. Peterson WDT ¶ 69. Dr. Peterson offered that the marketing value stated in the Spotify benchmark licenses likely does not reflect [REDACTED]. Peterson WDT ¶¶ 69–70. Dr. Peterson calculated a potential valuation by allocating the total advertising value across active countries and dividing the value of advertising attributable to the United States by the number of performances. Dr. Peterson determined this additional unadjusted value at $[REDACTED] per play. To address any uncertainty of the actual value of such negotiated advertising in the current record, Dr. Peterson calculated the adjusted Spotify benchmark range with and without the advertising adjustment. Peterson WDT ¶¶ 71, 75. Google argues that no advertising adjustment is justified, given the acknowledged uncertainties in assigning specific valuation and admitted inability to value such benefits on a dollar-for-dollar basis with the value stated in the agreements. Google PFFCL ¶¶ 66–69.

v. Dr. Peterson's Application of His Proposed Adjustments

The range of Dr. Peterson's proposed adjustments are reflected below, in Dr. Peterson's Figure 2. Peterson WDT ¶ 74.

The top section of each panel shows the unadjusted benchmark rates and the adjusted rates based on three adjustments (Interactivity, Competition and Skips adjustments). In order to determine the benchmark rate reflecting these adjustments the unadjusted rate is multiplied by one minus the adjustment for each rate. Thus, the adjusted rates are equal to:

Adjusted Rate = (1–Interactivity Adj) × (1–Competition Adj) × (1–Skips Adj) × Unadjusted Rate.

Peterson WDT ¶ 74. The top panel of Figure 2 uses the [REDACTED]% Skips adjustments and the bottom panel uses the [REDACTED]% skip rate. The adjustment range of [REDACTED]% to [REDACTED]% using the Pandora free tier skips data is arrived at by applying, to the Unadjusted Rate, Dr. Peterson's proposed interactivity adjustment of [REDACTED]%, Skips adjustment of [REDACTED]% (Pandora free tier), and competition adjustment of [REDACTED]%. The adjustment range of [REDACTED]% to [REDACTED]% using the Spotify free tier skips data is arrived at by applying Dr. Peterson's proposed interactivity adjustment of [REDACTED]%, skips adjustment of [REDACTED]% (Spotify free tier), and competition adjustment of [REDACTED]%. The range of adjusted rates before accounting for the potential value of marketing support is $[REDACTED] to $[REDACTED] per play. Dr. Peterson offered the midpoint of this range as being a reasonable estimate of a rate, when treating

advertising allowances as having no value. That midpoint is equal to $[REDACTED] per play. Peterson WDT ¶ 74; Figure 2.

Both the top and bottom panels of Figure 2 show the calculation of the adjusted value of advertising in the benchmark agreements. The top row of the middle section reflects the unadjusted value of advertising per play in the United States. The value is calculated by allocating the total advertising value across active countries and dividing the value of advertising attributable to the United States by the number of performances. The adjusted advertising ranges are calculated in the same way as the adjusted rates indicated above, where the adjusted rate = (1–Interactivity Adj) × (1–Competition Adj) × (1–Skips Adj) × Unadjusted Rate. The range of adjusted benchmark rates including the stated value of advertising allowances is $[REDACTED] to $[REDACTED] per play. Dr. Peterson offered the midpoint of this range as being a reasonable estimate of a rate, when advertising allowances are included. The midpoint is equal to $[REDACTED] per play. Peterson WDT ¶¶ 75–76.

Figure 2—The Adjusted Benchmarks [RESTRICTED]

[REDACTED]

c. SoundExchange's Criticisms of Dr. Peterson's Ad-Supported Benchmark Model

SoundExchange acknowledges that the Judges have found benchmark-based approaches useful in the past. However, SoundExchange disputes that the Judges have expressed a preference of benchmarking

over other approaches, such as modeling. Instead, it offers that the Judges have assessed each type of analysis on the merits, as established by the record in each case. SoundExchange's Corrected Replies to Google's Amended Proposed Findings of Fact and Conclusions of Law ¶¶ 14– 17 (SX RPFFCL (to Google)).

SoundExchange also initially disputed that the benchmarks proposed by Google are appropriate. SoundExchange argues that Dr. Peterson improperly used Spotify's ad-supported rates as a benchmark, suggesting that subscription interactive services are a better starting point than ad-supported interactive services. SoundExchange also urged that Spotify's ad-supported service should not be used as a benchmark without an upward adjustment to account for its [REDACTED] ability to promote sales of subscriptions. SX RPFFCL (to Google) ¶¶ 22–26. However, in the hearing Mr. Orszag testified that he had become "comfortable" with applying Spotify's *ad-supported rate* as the benchmark in his own ratio equivalency model. He came to this conclusion after discerning that [REDACTED]." 8/25/20 Tr. 3809 (Orszag). When a [REDACTED] adjustment was made to control for the separate value of funneling/conversion, Mr. Orszag became, if not a full-fledged convert, "more comfortable" with the "Spotify Free benchmark." 8/25/20 Tr. 3816 (Orszag).

i. SoundExchange's Criticisms of Dr. Peterson's Proposed Interactivity Adjustment

SoundExchange faults Dr. Peterson's interactivity adjustment because, in its view, the adjustment is not based sufficiently on the

incremental value placed on the interactive functionality by consumers in the downstream market. It notes that in past cases the Judges have accepted interactivity adjustments based on downstream market value, evidenced by consumers' willingness to pay for the functionality. It offers that there is little evidence from Google that consumers actually value the additional functionality that [REDACTED] obtained under its direct licenses and that, in fact, the additional functionality on [REDACTED]'s ad-supported service was minimal. SX PFFCL ¶ 228–231; *Web IV,* 81 FR at 26345, 26348; *see also Web II,* 72 FR at 24902 (accepting SoundExchange's interactivity adjustment, based on average consumer subscription price and the average per-subscriber royalty rate for on-demand services). SoundExchange adds that Dr. Peterson was unable to indicate whether increased functionality generated more revenue per play on the ad-supported tier. SX PFFCL ¶ 232; 8/11/20 Tr. 1401 (Orszag). It adds that, per [REDACTED] (Trial Ex. 5321), [REDACTED]. SX PFFCL ¶ 232. SoundExchange suggests that the true motivation for [REDACTED] to license the increased functionality was to offer customers a sample of the full interactive function as a way to promote and upsell its subscription interactive service. SX PFFCL ¶¶ 235–236; 8/31/20 Tr. 4646 (Phillips).

SoundExchange asserts that Dr. Peterson's interactivity adjustment—being based on a comparison of [REDACTED]'s effective per-play rate for its ad-supported [REDACTED] service to the statutory rate—is based in part on the statutory rate, which violates requirements that benchmark rates be free from the influence of regulation. Sound Exchange

raises further issues with regard to the relationship between the negotiated and statutory rates, with Mr. Orszag testifying that if the statutory rate that Dr. Peterson relied on in his adjustment is too low (as SoundExchange argues it is) then Dr. Peterson's interactivity adjustment will be too large. SX PFFCL ¶¶ 237–239; Orszag WRT ¶ 95.

ii. SoundExchange's Criticisms of Dr. Peterson's "Skips" Adjustment

SoundExchange questions the probative value of the data upon which Dr. Peterson relies for his [REDACTED]% skips adjustment on the same basis as it challenges his application of this data to Professor Shapiro skips adjustment. SoundExchange notes that Dr. Peterson's data came from noninteractive plays available on all three tiers of Pandora's service, ad-supported, mid-tier, and fully interactive. 8/20/20 Tr. 3028–29 (Shapiro). As a consequence, Mr. Orszag asserts, the [REDACTED]% "skips" rate is likely overstated, because subscribers to Pandora's two interactive tiers have unlimited skips, making them more likely to skip when accessing noninteractive plays on those two tiers. Orszag WRT ¶ 120. SoundExchange notes that Professor Shapiro agrees with the concern in principle but testified that any such upward bias [REDACTED], so he did not measure the effect. 8/20/20 Tr. 3030–32 (Shapiro).

SoundExchange also takes issue with Dr. Peterson's alternative skips adjustment and its reliance on the Spotify ad-supported service's skip rate [REDACTED]%), alleging Dr. Peterson's analysis is faulty for only considering the benchmark

market's skip rate and ignoring the target market's skip rate. It argues that Spotify pays for its ad-supported service on a percentage of revenue basis and, therefore, whether Spotify's skip rate is [REDACTED]% has no impact on what Spotify pays the record companies on the percentage of revenue basis. It notes Mr. Orszag's view that the benchmark market's skip rate may only be used if there is a basis to assume that the benchmark market and the target market have the same skip rate and that there is no evidentiary basis for such a conclusion. SX PFFCL ¶¶ 244–247.

iii. SoundExchange's Criticisms of Dr. Peterson's Effective Competition Adjustment

SoundExchange criticizes Dr. Peterson's analysis asserting that it relied on stale evidence, from the time of *Web IV,* namely a 2014 agreement between Merlin and Pandora, a 2013 agreement between iHeart and WMG, and a 2014 litigation experiment conducted by Pandora. SoundExchange argues that the market for subscription interactive services has changed since *Web IV,* and that the increased competition would require a downward shift of the competition adjustment used in *Web IV.* It adds that the application of the evidence from *Web IV* would need to account for the differing market evidence used in that proceeding, involving many services and not just the service with the [REDACTED]. SX PFFCL ¶¶ 490–493.

iv. SoundExchange's Reaction to Dr. Peterson's Proposed Marketing Adjustment

SoundExchange reiterates that value is derived by the record companies in the relevant agreements

through provisions for the streaming services to provide marketing support in the form of uncompensated advertisements to the record labels. SX PFFCL ¶¶ 490–493. It points out that Dr. Peterson calculated proposed adjustments based on advertising benefits and that Google should not be able to walk away from the adjustments. SX RPFFCL (to Google) ¶ 69.

d. The Judges' Analysis and Findings Regarding Dr. Peterson's Ad-Supported Benchmark Model

As an initial matter, the Judges clarify that they do not strictly adhere to any preference toward any particular method of analysis, benchmark or otherwise, but instead assess all reasoned analyses on their merits and on the record of each case.

Taking into account the entirety of the record, the Judges determine that it is appropriate to utilize the proposed benchmarks from the interactive ad-supported market, provided that an appropriate conversion adjustment is applied.[213] The Judges apply the aforementioned [REDACTED] adjustment to the rates for [REDACTED]). Where negotiated provisions place a value on funneling in the benchmark agreements, the Judges find an adjustment is appropriate. While Dr. Peterson started his analysis with the higher-end per-play rate under the [REDACTED] for customers who [REDACTED], the Judges note that this is not necessarily the [REDACTED]. The Judges find that

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[213] The Judges find insufficient basis to find that any shift in song length is not adequately accounted for in the benchmark markets.

Mr. Orszag's proposal is a superior mode to account for the value of funneling. However, as there is insufficient evidence and analysis of analogous funneling value in the [REDACTED], the Judges make no such adjustment to those benchmark rates.

Applying this [REDACTED] factor to Dr. Peterson's calculated per-play rates for [REDACTED], results in a final effective rate of $[REDACTED] (*i.e.,* $[REDACTED] × [REDACTED]) or $[REDACTED] (rounded) [REDACTED]; and $[REDACTED] (*i.e.,* $[REDACTED] × [REDACTED]) or $[REDACTED] (rounded) for [REDACTED]. The starting point benchmark per-play rates calculated by Dr. Peterson for [REDACTED] remain.

i. The Judges' Analysis and Findings Regarding Dr. Peterson's Proposed Adjustments

(A) The Judges' Analysis and Findings Regarding Dr. Peterson's Proposed Interactivity Adjustments

Based on the entirety of the record, the Judges decline to apply Dr. Peterson's—proposed interactivity adjustments. The Judges agree with SoundExchange that the record does not clearly demonstrate added economic value for interactivity as a suitable basis to adjust the proposed benchmark rates downward. Advertisers, not listeners, pay the royalties. And there is insufficient evidence to establish that advertisers make payments to noninteractive ad-supported services based upon the level of interactivity of that service.

While we do not foreclose the possibility of a record that may allow measuring interactivity value by looking toward how the service and the labels (as

opposed to downstream users) value that interactivity in an ad-supported context, on this record the Judges will not apply an interactivity analysis which fails to appropriately consider oligopoly power in a direct deal such as the proposed [REDACTED] benchmark. The Judges' decline to apply the proposed interactivity adjustment in part because the record, [REDACTED], indicates that major labels exert oligopoly power in similar direct deals. When Judge Strickler asked Dr. Peterson whether any of the proposed [REDACTED]% adjustment for interactivity constitutes a complementary oligopoly premium, he conceded that he could not preclude that oligopoly power could be a cause of the higher rate. 8/25/20 Tr. 3645 (Peterson). Absent accurate consideration of oligopoly power, which is persuasively established elsewhere, we find it inappropriate to apply the proposed interactivity adjustment.

(B) The Judges' Analysis and Findings Regarding Dr. Peterson's Proposed Skips Adjustment

As indicated previously, the Judges are in agreement with SoundExchange's criticisms of both Professor Shapiro's and Dr. Peterson's skips adjustment for ad-supported services. Additionally the Judges agree that the reliance on the Spotify ad-supported service's skip rate ([REDACTED]%) as a basis for adjustment is in error. The Judges agree that there is insufficient basis to conclude that the benchmark market and the target market have the same skip rate, and that absent reliable evidence to that effect a direct adjustment as proposed would be incorrect. Accordingly, and based on the entire record, the Judges adopt (and incorporate by reference here) the same analysis and the same finding of a

[REDACTED]% skips adjustment as they found for the subscription market.

(C) The Judges' Analysis and Findings Regarding Dr. Peterson's Proposed Competition Adjustment

Taking into account the entirety of the record, the Judges are persuaded of the necessity to apply an effective competition adjustment. For the reasons discussed with regard to the effective competition adjustment to Professor Shapiro's ad-supported benchmark, the Judges apply a 12% effective competition adjustment to Dr. Peterson's ad-supported rate. The Judges' Analysis and Findings regarding Dr. Peterson's Proposed Marketing Adjustment.

Based on the entirety of the record, the Judges find that it is appropriate to apply the marketing adjustment, as offered by Dr. Peterson. While we note that Google and Dr. Peterson offer rationales that an adjustment may not be appropriate, Dr. Peterson also found a basis to place a value on this factor. Additionally, while Dr. Peterson offers calculations performed with and without the marketing adjustment, his ultimate analytical step, finding a midpoint within the range of rates he calculated, was done based on calculations that included the marketing adjustment. Finally, we are in agreement with SoundExchange that Google has not offered a sufficient basis to distance itself or the Judges from applying a factor offered by Google's own expert analysis.

ii. Dr. Peterson's Benchmark Rate as Adjusted by the Judges

In sum, the Judges find as follows with regard to Dr. Peterson's proposed ad-supported benchmark rate:

1. The effective ad-supported benchmark per-play rates of $[REDACTED] for [REDACTED], $[REDACTED] for [REDACTED], $[REDACTED] for [REDACTED], $[REDACTED] for [REDACTED], and $[REDACTED] for [REDACTED] are in the range of a reasonable starting point.

2. Applying the [REDACTED] factor to account for funneling/conversion to Dr. Peterson's calculated per-play rates for [REDACTED], results in a final effective rate of $[REDACTED] (*i.e.,* $[REDACTED] × [REDACTED]) or $[REDACTED] (rounded) for [REDACTED]; and $[REDACTED] (*i.e.,* $[REDACTED] × [REDACTED]) or $[REDACTED] (rounded) for [REDACTED] The starting point benchmark per-play rates calculated by Dr. Peterson's for [REDACTED] remain respectively as $[REDACTED], $[REDACTED], and $[REDACTED].

3. The interactivity adjustment is rejected.

4. The skips adjustment is reduced to [REDACTED]%, properly reducing the interim calculation to $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], and $[REDACTED] (rounded) for [REDACTED].

5. The 24% effective competition adjustment proposed by Dr. Peterson is rejected.

6. The Judges apply the 12% effective competition adjustment. This effective competition adjustment properly reduces the interim calculation to $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], $[REDACTED] (rounded) for [REDACTED], and $[REDACTED] (rounded) for [REDACTED].

7. Applying the Marketing adjustments set forth by Dr. Peterson, increasing the per-play rates as follows of $[REDACTED] [$[REDACTED] + $[REDACTED]] for [REDACTED], $[REDACTED] [$[REDACTED] + $[REDACTED]] for [REDACTED], $[REDACTED] [$[REDACTED] + $[REDACTED]] for [REDACTED], $[REDACTED] [$[REDACTED] + $[REDACTED]] for [REDACTED], and $[REDACTED] [$[REDACTED] + $[REDACTED]] for [REDACTED].

8. The range of adjusted rates is $0.00197 and $0.00228 per play, and the midpoint of $0.002125, when rounded (or, more precisely, rounded further) is *$0.0021,* which is a reasonable estimate of the rate applying the Judges' modifications to Dr. Peterson's model.

5. Separate Rate for Nonportable Services

a. Google's Proposal

Google seeks a separate rate for certain nonportable uses, citing the statutory directive that the Judges "shall distinguish among the different types of services then in operation." 17 U.S.C. 114(f)(1)(B). Google argues that the rise of nonportable smart speaker devices, and streaming

services tailored to those devices, has created such a different type of service. Google PFFCL ¶¶ 91–92. It offers that separate rates for nonportable uses have been adopted by the Board in other regulations and that the Judges should set a separate rate for nonportable, nonsubscription services that is 50% of whatever headline rate the Judges set for portable nonsubscription services. Google PFFCL ¶¶ 93–94. Specifically, Google seeks a per-performance rate for the new type of service that it refers to as "Nonsubscription Nonportable Webcasting Services" which Google proposes to define as "a service offered by a Licensee that makes an Eligible Transmission available solely over a nonportable device, such as a smart speaker, a smart home appliance, or a personal computer." Google Proposed Rates and Terms at 3.

Google offers proposed benchmark licenses between major labels ([REDACTED]) with Google as evidence in support of its proposal, which include [REDACTED]. Google PFFCL ¶ 102. It [REDACTED]. Google PFFCL ¶ 103. Google asserts that the [REDACTED] reflect an understanding that consumers are willing to pay an incremental amount for the ability to take music with them on phones and portable devices. Google PFFCL ¶ 104. Google also points toward lower rate structures for certain nonportable services in the context of the mechanical compulsory license under 17 U.S.C. 115. Google PFFCL ¶ 105.

b. SoundExchange's Criticism of Google's Proposal for a Separate Rate for Nonportable Services

SoundExchange asserts that Google has not established that streaming services that are available

only on nonportable devices are a different type of service warranting a different rate, and that there is no evidence that a willing buyer and willing seller would agree to lower rates for such a service. SX RPFFCL (to Google) ¶ 94. It contends that Google confuses nonportable devices with nonportable services in its attempts to highlight "Nonsubscription Nonportable Webcasting Services" as an allegedly different type of service. SoundExchange argues that the dichotomy that Google proposes is undermined by the fact that portable services can also be consumed on nonportable devices. SX RPFFCL (to Google) ¶ 96. SoundExchange challenges the notion that any growing popularity of smart speakers supports the notion that streaming services that can only be operated on a smart speaker are growing in popularity or exist as a different type of service. SX RPFFCL (to Google) ¶ 97. It argues that Google "bears the burden of demonstrating not only that" nonportable services "differ[] from other forms of commercial webcasting, but also that [they differ] in ways that would cause willing buyers and willing sellers to agree to a lower royalty rate in the hypothetical market." SX RPFFCL (to Google) ¶ 100 (citing *Web IV,* 81 FR at 26320 (applying that principle to simulcasters)).

SoundExchange contends that the proposed benchmark agreements do not match up with Google's rate proposal. It notes that the [REDACTED]. Through Mr. Orszag, SoundExchange posits that [REDACTED] and does not support the notion that the rate should be half of the per-performance rate for a service available on a broader range of devices. SX RPFFCL (to Google) ¶ 94; Orszag WRT ¶¶ 139–140.

SoundExchange further addresses concerns that the proposed benchmarks do not provide useful information about the *per-performance* rate for a service tier accessible on *multiple* nonportable devices to which a willing buyer and a willing seller would agree. SX RPFFCL (to Google) ¶ 101. It notes that even if the offered [REDACTED] were relevant, it would be inappropriate to attribute all of the difference in [REDACTED] to nonportability because the rates are also driven by the fact that they are for single-device services, which excluded classes of devices that would be eligible under Google's proposed rates and terms, *e.g.,* a personal computer. SoundExchange suggests these distinctions discount the notion that [REDACTED]. SX RPFFCL (to Google) ¶¶ 102–104, 110. SoundExchange also challenges the notion that the cited rates for certain nonportable mechanical licensing royalties are not appropriate support for Google's proposal because they address different rights to different works with different sellers. SX RPFFCL (to Google) ¶¶ 104–106.

c. The Judges' Analysis and Findings Regarding Google's Proposal for a Separate Rate for Nonportable Services

Based on the entirety of the record the Judges are not persuaded that Google has established the basis for a separate rate for Nonsubscription Nonportable Webcasting Services. While the Judges have concerns about the extent to which the [REDACTED] and the appropriate use of mechanical rates within the context of the section 115 compulsory regime as persuasive evidence for the purpose of sustaining a separate rate, those are relatively minor concerns. The Judges find the case for a separate rate is most

profoundly undermined because the requested rates would extend far beyond the bounds of the proposed benchmark agreements.

The benchmark agreements are tied to [REDACTED] and to very specific device characteristics,[214] whereas the requested rate (and defined bounds) are not tied or specifically limited to the same specific types of devices, nor are they limited to [REDACTED]. This makes them poor benchmarks and makes for a poor case for the existence of the requested distinct different type of service. Furthermore, Google did not adequately acknowledge or offer appropriate adjustments to account for the fairly profound distinctions between its request and the limitations represented in its proposed benchmarks. While the Judges may amend a request to comport with the offered evidence, on this record we find an inadequate basis to do so. Additionally, in a case such as this where the request diverts so profoundly from the offered benchmark evidence, prudence compels the Judges not to engage in such refining of the requested rates or terms.

C. Evaluation of Game Theoretic Modelling Evidence

1. Professor Willig's Shapley Value Model

Professor Willig describes his Shapley Value Model as a "multi-party bargaining approach." Willig WDT ¶ 9. He explains that his Shapley Value Model is a form of economic game theory that assumes a

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[214] [REDACTED], Trial Ex. 5090 at 37 ([REDACTED] [REDACTED]); [REDACTED], Trial Ex. 1006 at 50 [REDACTED]); [REDACTED], Trial Ex. 1010 at 65–66 ([REDACTED]).

"cooperative" relationship among the bargaining parties, *id.* ¶ 12, providing a "generalized solution to the problem of how to apportion among the members of a multi-party bargaining group the surplus created by their productive cooperation with each other." *Id.* ¶ 14.[215]

Professor Willig's Shapley Value Model indicates a royalty rate for *ad-supported* noninteractive services of $0.0028 per play in 2021, and, for *subscription* noninteractive services, a per-play royalty rate of $0.0030 in 2021. Willig WDT ¶ 55. He derives these 2021 royalty rates from the average royalty rates over the entire five-year (2021–2025) rate period generated by his Shapley modeling, which are $0.0030 and $0.0031 for the ad-supported and subscription services, respectively.[216]

According to Professor Willig, the Shapley Value Model has properties that make it well suited for establishing royalties in this proceeding. He explains that this modeling, when combined with relevant data, identifies the following values and properties:

1. The "fallback value" which any party (record company or streaming service in the present case)

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[215] A "cooperative" game assumes that the participants' "joint action agreements are enforceable," and are distinguished from "noncooperative games," "in which such enforcement is not possible, and individual participants must be allowed to act in their own interests." Avinash Dixit et al., Games of Strategy 26 (3d ed. 2009).

[216] More particularly, Professor Willig derives his proposed 2021 rates from his five-year average by discounting back from the mid-point of the rate period to the start of the period, using the Federal Reserve Open Market Committee's inflation forecast. *Id.*

could create on its own without an agreement among one or more of the other parties. Willig WDT ¶ 13.

2. The extra value—the Shapley "surplus"—that the parties collectively could generate in "notional" [217] agreements with the other parties, above their fallback values. *Id.*

3. The ordering of "every possible combination of unilateral, bilateral and multilateral deals that may be struck by the different parties." *Id.* ¶ 14.[218]

4. The portions of the surplus—the "incremental contribution"—that each party adds to the total amount of value created, is "assessed as increments to every possible combination of unilateral, bilateral, and multilateral deals that may be struck by the different parties . . . ." *Id.*

5. Each party's "incremental contribution" is then averaged across all such combinations." *Id.*

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[217] The Judges use "notional" to identify the negotiations assumed in Shapley Value modeling, and to distinguish those ersatz negotiations from the "hypothetical" negotiations the Judges must construct to establish the statutory royalty rates. More precisely, the "notional" Shapley Value negotiations generate "notional" royalty rates that may: (1) Constitute a "hypothetical" rate that would constitute an effectively competitive rate; (2) fail to reflect a "hypothetical" effectively competitive rate; or (3) serve as a building block that, with adjustments or offsets, is an input into a "hypothetical" effectively competitive rate.

[218] As Professor Willig explains: "In Shapley Value analysis there are always N! (*i.e.,* N factorial) different arrival orderings, where N is the number of negotiating parties. For example, with three negotiating parties, there are 3! (*i.e.,* $3 \times 2 \times 1$) = 6 different arrival orderings. *Id.* ¶ 20 n.13.

Each party's average incremental contribution is its Shapley Value. *Id.* ¶ 16 ("The Shapley Value accorded to a party rests on the value that it brings to the group's cooperation, taking into account all the subsets of the group to which it can join.").

To further explain the Shapley Value concept, Professor Willig provides the following example:[219]

> The concept of a Shapley Value is best understood by reference to a simple analogy. Imagine that parties A, B, and C are negotiating a deal in person. Party C can be the first, the second, or the third to arrive in the room. The value it brings to the bargaining table may be contingent on the order in which it arrives. For example, if Party C is last to the negotiation it may have more bargaining power as a result of its ability to hold up or frustrate consummation of a deal to which Parties A and B are otherwise amenable. When C is first to the negotiation, it has no bargaining power over the others. Shapley analysis takes into account all such possible differences in Party C's bargaining power that are contingent on its order of arrival to the negotiation. It does so by taking the average of each "incremental value" created by Party C in each possible sequence of arrivals. As such, Party C's Shapley Value will only be high

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[219] In this proceeding, the economic experts appropriately proffer potentially illuminating examples (as in the accompanying text) in an attempt to state clearly the principles and methods underlying their work. The Judges find their use of such examples to be consistent with the evidentiary principles set forth in 37 CFR 351.10(e).

relative to the other parties' Shapley Values if, on average, it brings a relatively high incremental value to all possible orderings and sub-orderings of Parties A, B, and C. *Id.* ¶ 15.

The value of a sub-set—*i.e.,* a Shapley coalition— prior to joinder by other parties to the notional negotiation, is denominated as its "Characteristic Function." The calculation of its Characteristic Function is "necessary to assess and delineate the value that can result from the cooperation of any subset of the overall cooperating group." *Id.* ¶ 17. The value of each coalition's Characteristic Function is based on the fundamental economic principle that a coalition of willing sellers (like any individual seller) "is assumed to act in the manner that maximizes the collective surplus of the coalition.". Willig WDT app. C at C–4 (¶ 6 therein); *see also id.* app. F at F–4 (¶ 7 therein) (same). After specifying these coalitions and calculating the maximum values of their characteristic functions, the modeler can derive Shapley Values for each party to the notional Shapley "negotiation." *Id.* ¶ 33.

Professor Willig contends that Shapley Value modeling is related to the royalties that are to be determined in the present proceeding, with the record companies and the noninteractive streaming services constituting the "arriving" participants. The record companies must: (1) Recover their opportunity costs,[220] identified as their fallback values in

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[220] "The opportunity cost" of anything of value is what you must give up to get it," and thus "is inseparably bound up with choice." John Quiggin, Economics in Two Lessons: Why Markets Work So Well, and Why They Can Fail So Badly 15 (2019).

Professor Willig's model; and (2) receive their Shapley Values, *i.e.,* their average share of the surplus they contribute across all arrivals. Thus, unless royalty payouts are *high* enough to at least allow the record companies to receive their fallback values (*i.e.,* their opportunity costs) plus their Shapley Values, they would not license their repertoires to the noninteractive services. In similar fashion, the noninteractive services will receive their average share across all arrival orderings, corresponding to their Shapley Values (also calculated across all arrivals, of Shapley-derived Surplus). *See* Willig WDT ¶ 24 (describing this application of Shapley Value modeling).

According to Professor Willig, in this proceeding, a record company's "opportunity costs" include any marginally higher royalties it might have earned by licensing to other distribution methods (such as, *e.g.,* interactive services), rather than licensing its sound recordings to noninteractive services.[221] Thus, he

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[221] Note that his application of the opportunity cost concept does not include the value of additional royalties that a record company would have earned *by licensing* its sound recordings to noninteractive services—such as royalties earned because some listeners to terrestrial radio, (which does not pay sound recording royalties) might have converted to noninteractive listening (as indicated by the surveys presented in this case, discussed *infra,* section IV.A). These negative opportunity costs (opportunity benefits) would need to be offset against the opportunity costs described by Professor Willig in the accompanying text, to determine *the net value of all opportunities foregone. See* Paul J. Ferraro and Laura O. Taylor, *Do Economists Recognize an Opportunity Cost When They See One? A Dismal Performance from the Dismal Science,* 4 J. Econ. Analysis & Pol'y 1, 7 (2005) ("An avoided benefit is a cost, and

claims that Shapley Value modeling is "an appropriate approach for assessing rates that would be negotiated in the hypothetical marketplace for noninteractive webcasting [because it] fit[s]within the requirements of the relevant legal statute." *Id.*

a. The Specifications in Professor Willig's Shapley Value Model

A necessary initial step for an economist constructing a Shapley Value model is the delineation and enumeration of the parties to the notional negotiations, *i.e.,* the types and the number of sellers and buyers (licensors and licensees in this proceeding). *Id.* ¶ 25. According to Professor Willig, this process should "strike[] a balance between offering a granular and realistic description of the hypothetical market [while] maintaining enough simplicity around the number of entities being modeled such that the model can be readily solved and necessary data inputs can be estimated." *Id.* ¶ 26.

In the notional negotiations of his Shapley modeling, Professor Willig assumes a market with four upstream record companies and two downstream noninteractive webcasting distributors. Willig WDT ¶ 25. Three of these four record companies represent each of the major record companies (Sony, Warner and Universal) (collectively the Majors), and the fourth represents a "combination" of all independent record companies (Indies). *Id.* Thus, these four entities comprise the entirety of the record company licensors in his market model. The two noninteractive

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an avoided cost is a benefit. Thus, the opportunity cost . . . is . . . the *net benefit forgone.*") (emphasis added).

services represent, respectively, a combination of all ad-supported noninteractive distributors, and a combination of all subscription noninteractive distributors, thus comprising the entirety of the noninteractive licensees. *Id.* According to Professor Willig, these assumptions strike the required balance between granular realism and model tractability. *Id.*

Professor Willig claims that the assumptions he makes regarding these specifications are necessary and prudent because they allow the model to generate the following economic information:

1. The effects of the "potentially different negotiating positions" of the Majors vis-à-vis the Indies.

2. The difference, if any, in royalty rates, between ad-supported noninteractive services, on the one hand, and subscription noninteractive services, on the other.

3. The effects of "competition between the collective ad-supported noninteractive distributor and the collective subscription noninteractive distributor." Willig WDT ¶ 26. Professor Willig adds that his model will generate royalty rates that are *lower* than would exist in the actual market because the model's "grouping" of services "simplifies away rivalry among the various extant ad-supported noninteractive distributors and among the various extant subscription noninteractive distributors, [which] eliminate[es] consideration of competition

within these groups of distributors," artificially *elevating* "their respective market power. *Id.*[222]

Next, Professor Willig calculates the value of the "characteristic functions" created by each possible cooperative grouping ("coalition") of these six parties to the notional negotiation (*i.e.,* the four record companies and two noninteractive distributors). To make these "characteristic function" calculations, he first determines the value that each party or set of parties contributes upon arriving to the coalition. *Id.* ¶ 27.

Starting with the record companies, Professor Willig defines the value each brings to these coalitions as "a function of both the costs it incurs and the revenue it could generate by licensing its sound recordings to distributors other than interactive services." *Id.* ¶ 28. Professor Willig characterizes this value as a record company's "fallback value"—*i.e.,* a value it would retain in the absence of agreements with the noninteractive distributors. *Id.*[223]

According to Professor Willig, in order to determine this fallback value the model must "evaluat[e] what would happen if each noninteractive

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[222] This specification may not be a simplification so much as an approximation of reality. As noted *infra,* Professor Willig finds that in the noninteractive market Pandora has a market share of more than [REDACTED]% in the ad supported and subscription sectors, respectively, making the "one noninteractive service" specification fairly realistic.

[223] Professor Willig acknowledged that the "fallback value" in his model doesn't specify whether that fallback value is generated from markets that are perfectly competitive, monopolistically competitive, oligopolistic or monopolistic. 8/5/20 Tr. 378–79 (Willig).

[service] did not have access to that record company's music." *Id.* ¶ 29. In that regard, he testifies that the model must explain—assuming the absence of noninteractive services from the market—"how much of each noninteractive [service's] audience would divert to other music listening options (including to the other noninteractive distributor)." *Id.*[224]

Because of the importance to his Shapley Value Model of the value of this diversion, Professor Willig begins the model-building aspect of his testimony by describing the type of data necessary to calculate the diversionary impact of noninteractive services. Specifically, he explains that his model requires the following inputs:

1. The size of the audience of each noninteractive distributor;

2. The diversion parameters that represent the proportion of these audiences that would divert to each alternative mode of distribution; and

3. The respective share of noninteractive plays for each record company specified in the model. *Id.*

Professor Willig explains that the value the noninteractive services bring to the notional Shapley negotiation is based on the profits they can generate, *i.e.,* from the revenues they receive from subscribers and advertisers, less "various costs"—including the

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[224] As noted *supra,* his model does not net out the positive royalties record companies would earn by listeners who would listen to a noninteractive service rather than to terrestrial radio (or, any other non-royalty bearing substitute, such as listening to existing music sources or listening to less music, for that matter).

copyright royalties noninteractive services pay to music publishers for musical works. *Id.* ¶ 30. These costs of course do not include the sound recording royalties, as these are the "unknowns" for which the Shapley Value model is intended to solve. *See id.* ¶ 30.

Professor Willig's Shapley Value Model treats licenses from all three Majors as essential to the viability of a noninteractive service, in each Shapley subset of negotiating parties. As Professor Willig notes, incorporating this "must have" input into the Shapley Value model means that "without access to the sound recordings of all three of the major record companies, a noninteractive distributor does not operate and contributes zero profits to the rest of the subset of the bargaining parties." Willig WDT ¶ 31.[225]

To support his treatment of each Major as a "Must Have," Professor Willig relies on an abundance of record facts and prior statements by the Judges, as enumerated below.

First, Professor Willig notes that, in *Web IV,* the Judges stated that "[t]here appears to be a consensus that *the repertoire of each of the three Majors is a 'must have' in order for a noninteractive service to be viable.*" *Web IV,* 81 FR at 26373 (emphasis added). This statement by the Judges was supported by testimony

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[225] By contrast, Professor Willig's model does not assume that the repertoires of the specified aggregate of Indies are "must have" inputs for a noninteractive service. Rather, his model assumes that a noninteractive service without access to all of the Indies' sound recordings would not suffer a complete loss of profits attributable to the Indies, but would instead would see a decline in profits commensurate with listeners' preferences for content carried by [I]ndies." *Id.*

in *Web IV.* In that proceeding, Professor Michael
Katz, the NAB's economic expert witness, and
Professor Shapiro, testifying for Pandora, both
declined to conclude that the Majors were not "Must
Haves" for noninteractive services. *Web IV,* 81 FR at
26364. Additionally, in *Web IV* the Judges found that
the "Must Have" status of noninteractive services was
demonstrated by Pandora's own data showing the
high percentage of total plays on Pandora that were
comprised of the most popular songs (hits), *i.e.,* from
the top 5%, 10%, and 20% of "weekly spins," a
percentage greater than the total percent of overall
plays of Majors' recordings on Pandora. As the Judges
stated, "[t]hese 'top spin' figures are indicative of the
'must have' aspect of the Majors' repertoire," and
explain "why steering away from [the Majors']
repertoires cannot be pursued beyond a certain level,
and why [Professor] Shapiro candidly declined to
reject the idea that the Majors' repertoires were 'must
haves' even though noninteractive services could
steer away from them to an extent." *Id.* at 26373
n.155.

In this proceeding, SoundExchange notes that an
even earlier proceeding took note of the importance to
a noninteractive service of accessing all the "hits." SX
PFFCL ¶ 595 (citing *SDARS II,* 78 FR at 23064
(quoting a Sirius XM witness who testified that
"Sirius XM is very hits driven, and they want to have
the most successful service they can, so they're going
to use what's popular.")). Further, SoundExchange
identifies the body of evidence in the present record
that belies a view that a noninteractive streaming
service could simply eliminate a Major's entire
repertoire:

Numerous documents produced by Pandora explain that [REDACTED]. Tr. Ex. 5153 at 35–56; *see* 8/5/20 Tr. 467:17–468:5 (Willig); 8/10/20 Tr. 960:3–961:1 (Willig); *see, e.g.,* Ex. 5156 at 17 [REDACTED] Ex. 5157 at 22 [REDACTED]); Ex. 5154 at 18 ([REDACTED]); Ex. 5155 at 31 ([REDACTED]"); Ex. 5158 at 13 [REDACTED]).

SX PFFCL ¶ 596.[226]

The only new evidence that the Services proffer that would potentially support their claim that noninteractive services can move beyond steering and forego the entire repertoire of a Major are the results from Pandora' Label Suppression Experiments. However, as explained in the Judges' consideration of Professor Shapiro's game theoretic modeling they find that evidence to be deficient and accord it no weight.

For the foregoing reasons, the Judges find Professor Willig's decision to treat each of the three Majors as a "Must Have" to be reasonable and proper.

Having specified the "characteristic functions" in his model, Professor Willig derives the algebraic expression of the Shapley Values for each party in the negotiation styled by the Shapley Value methodology. *Id.* ¶ 33 & app. C. Applying the "characteristic function" concepts he delineated earlier, Professor Willig notes that his algebraic analysis identifies "[t]he difference between the characteristic function

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[226] SoundExchange also relies on evidence regarding the "Must Have" status of the Majors' individual repertoires to *interactive* services. The Judges do not find that evidence germane to the question of whether the Majors are "Must Haves" for *noninteractive* services.

for a subset of the parties *without* the [noninteractive service] and the characteristic function for that subset *with* the [noninteractive service] added . . . ." *Id.* at 33. Applying this mathematical difference, Professor Willig states that his model allows for the implementation of the applicable "Shapley Value algorithm." *Id.* app. C at C–5 (¶ 9 therein). This algorithm allows Professor Willig to evaluate "every possible arrival ordering" and determine the negotiating parties' "incremental value." *Id.*

He then utilizes his model to determine the "incremental value" contributed by each "arriving" negotiating party identified in his model, relative to the value created by the parties that preceded the "arriving" party. Professor Willig then averages the sum of these incremental contributions for each negotiating party across all 720 arrival orderings.[227] *Id.* Each party's average incremental contribution constitutes its individual Shapley Value.

Professor Willig next explains how his model makes the link between Shapley Values and the royalties to be paid to the record companies:

> [O]nce Shapley Values are derived, the corresponding royalties from the two noninteractive distributors to the record companies can be computed. These are the payments that result in each party's bottom line equaling its Shapley Value.
>
> For each [noninteractive service], the total royalty payments it makes to the record

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[227] Given the presence of six "players" in his model, there are 6! (*i.e.,* 720) arrival orderings.

companies must equal the difference between its profits from its market operations and its Shapley Value.

For each record company, the total royalty payments it receives must equal the difference between its Shapley Value and the total compensation it receives from its other sources of distribution, less its costs of operation.

Id. ¶ 34; *see also id.* app. C, p. C–6 (¶ 10 therein).

b. The Empirical Inputs in Professor Willig's Shapley Value Model

Having specified his Shapley Value Model, Professor Willig then identifies the following necessary categories of data inputs:

1. Royalty rates that record companies earn from other forms of music distribution;

2. noninteractive distributors' audience sizes;

3. diversion ratios reflecting the amount of a noninteractive distributor's audience that would switch to other forms of music distribution and generate royalties if that noninteractive distributor were unavailable;

4. record company play shares; and

5. noninteractive distributors' fixed costs and marginal profit rates. Willig WDT ¶ 35. He then explains how he selected the data for each of these five input categories, as described below.

i. Royalties From Other Forms of Distribution

Professor Willig uses "currently observable" sound recording rates as proxies for the sound

recording royalty rates that will prevail during the rate period, 2021–2025. *Id.* ¶ 36. The *first* alternative category of distribution he considers is comprised of *subscription* on-demand streaming music and video services. Professor Willig obtains the royalty payment data detail for eight such services[228] from the royalty statements of the three Majors and Merlin Network (Merlin), a digital rights agency for independent record labels. *Id.* ¶ 37.[229] This royalty data reflected payment over the 12-month period ending March 2019, the most recent four-quarter period for which data was available to Professor Willig. *Id.* The average monthly royalties paid by these eight services, weighted by each service's subscriber count, was approximately $[REDACTED] per subscriber. *See id.* app. D at ex. D.1.

The *second* alternative rate/service category Professor Willig considers is comprised of *ad-supported* on-demand streaming music and video services. He obtained the royalty payment data detail for three such services—Spotify, YouTube (free version) and Vevo. *Id.* ¶ 38. The royalty data was produced by the same four entities that provided the royalty data for subscription on-demand services, and covered the same four-quarter time period. The average amount of royalties these three services paid over this period, weighted by each service's total

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[228] The eight services are: [REDACTED]. Willig WDT app. D, ex. D.1.

[229] Merlin is a non-profit association for independent labels with more than 800 members representing tens of thousands of labels from 63 countries, including the United States. Orszag WDT ¶ 25.

plays, was approximately $[REDACTED] per play. *See id.* app. D at ex. D.2.

The *third* alternative rate/service category Professor Willig considers is Sirius XM *satellite radio transmission.* He obtained data on effective royalty rates, over the same 12-month period identified above, from: (i) Statements of Account provided by Sirius XM to SoundExchange showing the dollar value of royalties paid for satellite radio performances; and (ii) Sirius XM's SEC Forms 10–K and 10–Q filings setting forth its subscriber counts. *Id.* ¶ 39 & n.21 (and exhibits referenced therein). Professor Willig uses these data to compute average monthly subscriber counts, and then divides that count into average monthly royalties. *Id.* This division results in Sirius XM monthly royalties per subscriber of $[REDACTED].[230]

The *fourth* alternative royalty-bearing category Professor Willig considers is generated not by royalty payments from intermediaries, but rather by consumer payments to *purchase* digital downloads and physical music (*i.e.,* CDs and vinyl records). *Id.* ¶ 40. He relies on 2018 wholesale and retail sales data

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[230] Professor Willig asserts that the royalty rates he calculated for Sirius XM are "artificially" low, because they do not account for: (i) Royalties paid through licenses directly negotiated between Sirius XM and certain record companies; or (ii) royalties that—only since the October 2018 enactment of the *Music Modernization Act*—SiriusXM must pay for its performance of sound recordings fixed prior to February 15, 1972. *See id.* n.22 (and accompanying text). However, because Professor Willig does not provide a basis for the Judges to make an actual or estimated adjustment based on this assertion, the Judges make no such adjustment.

from the Recording Industry Association of America (RIAA) and from a 2018 Annual Music Study by an industry research firm, MusicWatch, prepared for the RIAA. These data provide information on the average dollar amount spent by purchasers of sound recordings in these formats. *Id.* Professor Willig also relies on additional 2018 RIAA data on the percent of the retail prices of digital downloads, CDs and vinyl records, respectively, that is paid as royalties on sales in these three categories. *Id.* ¶ 40 app. D at ex. D.3. He then multiplies each retail revenue amount by the applicable royalty percentage, to generate the following calculation of "average monthly royalties per purchaser":

$[REDACTED] for digital download purchasers

$[REDACTED] for CD purchasers

$[REDACTED] for vinyl record purchasers

Professor Willig then calculates an average royalty per purchaser of $[REDACTED], weighted by retail revenue percentages across these three sales formats. *Id.* app. D at ex. D.3.

The *fifth* (and final) alternative category of distribution Professor Willig considers is comprised of *AM/FM broadcasts* (to be clear, these are broadcasts via terrestrial radio rather than "simulcasts" over the internet) and a miscellaneous category for all other forms of music. *Id.* at 41.

The royalty rates calculated by Professor Willig for the foregoing categories are set forth in the figure below:

Figure 4—Royalty Rates for Outside Distributors (RESTRICTED)

[REDACTED]

Willig WDT fig.4.

Professor Willig testifies that in his Shapley Value Model, for the outside distributors identified in the above table, "[e]ach of their respective royalty rates are taken as they actually are or are expected to be." Willig WDT ¶ 28. Accordingly, "the options of listening to broadcast AM/FM radio or not listening to music . . . are modeled realistically as not producing any royalties for the record companies." *Id.; see also* 8/5/20 Tr. 406 (Willig) ("I took those elements of opportunity costs from the market data as they are."); *id.* at 378–79, 488–89 (Willig). SoundExchange notes that Professor Willig's treatment of "outside distributors," including those that do not generate any royalties, such as AM/ FM radio, is "[c]onsistent with the "fork in the road" approach taken by Professor Willig and adopted in *SDARS III*." SX PFFCL ¶ 625 (citing *SDARS III,* 83 FR at 65328).

ii. Noninteractive Distributors' Audience Sizes

In order to estimate the extent of diversion to alternative distribution methods and thus the value of the record companies' opportunity cost in licensing to noninteractive services (in the hypothetical market), Professor Willig also needs to estimate audience sizes for the noninteractive distributors. He identifies "total numbers of plays per month" as an appropriate measure to use in order to gauge audience size. Willig WDT ¶ 43.

To make this calculation, Professor Willig relies on Pandora's publicly reported financial projections to estimate its audience size, *see id.* ex. D.6, and he relies on SoundExchange's royalty statements and other data to estimate Pandora's *play share* of the noninteractive markets. These data indicate that Pandora which has approximately [REDACTED]% of the *play share* of the *ad-supported* noninteractive market and an [REDACTED]% play share of the *subscription* noninteractive market. *See id.,* app. D at ex. D.4. Professor Willig uses this *play share percentage* data as a proxy, to estimate Pandora's *audience share percentage* of the noninteractive ad-supported and subscription markets. He further assumes that Pandora will have the same shares of these markets throughout the 2021–2025 rate period as it did over the recent 12-month period ending March 2019. Willig WDT ¶ 43.

Using these Pandora's market shares, Professor Willig grosses up the Pandora audience size to reflect the total size of the noninteractive audience in these markets. By this method, he estimates that the *ad-supported* noninteractive market has an audience of [REDACTED], and that the *subscription* noninteractive market has an audience of [REDACTED]. *Id.* ¶ 44 & Fig. 5.

To adapt his audience size analysis to his opportunity cost analysis, Professor Willig converts the play count data into play-per user and play-per subscriber metrics.[231] Using Pandora's public

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[231] Professor Willig converts this data into a per-user metric in order to apply it in conjunction with the per-user information

financial projections, *see id.* app. D, ex. D.6, he divides the projected average monthly play counts for Pandora's two tiers (respectively, for the ad-supported and subscription tiers) by the projected number of active users (for the ad-supported tier) and by the projected number of subscribers (for the subscription tier). By this exercise, Professor Willig estimates that "users of Pandora's ad-supported service are projected to listen to approximately [REDACTED] plays per month and subscribers to Pandora's subscription noninteractive service (*i.e.,* Pandora Plus) are projected to listen to approximately [REDACTED] plays per month over the 2021–2025 period." *Id.* ¶ 45.

iii. Estimating Opportunity Costs With Diersion Ratios

Professor Willig utilizes the dollar value of the previously discussed alternative distribution methods—"if a noninteractive distributor were no longer available in the marketplace"—to estimate the "opportunity cost that record companies experience by licensing to noninteractive distributors instead of only licensing to all the outside forms of music distribution" *Id.* ¶¶ 46, 47. More particularly, he multiplies these dollar values by the diversion ratios indicated by the survey work undertaken by another SoundExchange expert, Professor Gal Zauberman (the Zauberman Survey).[232] Professor Willig's opportunity cost estimates for each alternative

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derived from the survey results upon which he relies in the development of his opportunity cost estimates.

[232] *See* Zauberman WDT. Professor Zauberman's survey testimony is discussed elsewhere in this Determination.

method of distribution are set forth in the figure below:

Figure 6: Diversion Ratios and Opportunity Cost (RESTRICTED)

			If Ad-Supported Noninteractive Were Unavailable	If Subscription Noninteractive Were Unavailable
Panel A Diversion to:	Subscription On Demand	(% of respondents buying new subscriptions)		
	SiriusXM	(% of respondents buying new subscriptions)		
	Ad-supported On Demand	(# of add'l plays per month per respondent)		
	CDs/Vinyl/Digital Downloads	(% of respondents becoming new purchasers)		
	Ad-supported Noninteractive	(# of add'l plays per month per respondent)		
	Subscription Noninteractive	(# of add'l plays per month per respondent)		
Panel B Royalty from:	Subscription On Demand	($ per subscriber per month)		
	SiriusXM	($ per subscriber per month)		
	Ad-supported On Demand	($ per play)		
	CDs/Vinyl/Digital Downloads	($ per subscriber per month)		
Panel C Opportunity Cost of Record Companies:	Subscription On Demand	($ per noninteractive user per month)		
	SiriusXM	($ per noninteractive user per month)		
	Ad-supported On Demand	($ per noninteractive user per month)		
	CDs/Vinyl/Digital Downloads	($ per noninteractive user per month)		
	Outside Distributor Subtotal	**($ per noninteractive user per month)**		
	Outside Distributor Subtotal	**($ per play on noninteractive service)**		

Willig WDT ¶ 47 & fig. 6.[233]

iv. Record Company Play Shares in the Noninteractive Market

Because Professor Willig constructed his Shapley Value Model to identify the separate values attributable to each of the Majors and to his aggregation of Indies, he must identify their separate "play shares" in the noninteractive markets. To estimate these "play shares," he relies on "the royalty statements that music streaming and video services provide to record companies when operating under directly negotiated license agreements." *Id.* ¶ 48. More particularly, he analyzes the most recent monthly royalty statements available for the 12-

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[233] Professor Willig provides a detailed explanation of how he incorporated Professor Zauberman's survey results as inputs in his calculation of diversion ratios needed to estimate record company opportunity costs.

month period ending March 2019, from: (i) *Nonstatutory* streaming music and video services (with varying degrees of interactivity); (ii) statutory noninteractive services; and (iii) Pandora's and iHeart's noninteractive play counts ([REDACTED]).[234]

Professor Willig explains that these royalty statements set forth the total plays on each service in any given month, itemized by the record company that owned each copyrighted sound recording. He also states that he has no reason to believe these shares would be substantially different over the 2021– 2025 rate period, compared to the data he had applied. *Id.*

From this data, Professor Willig calculates the relative proportions of plays of sound recordings whose copyrights are owned by, respectively, Sony, Warner, and Universal, as well as from his grouping of Indies. More specifically, he computes each Major's play share, and then computes the Indies' play share

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[234] Even more granularly, Professor Willig evaluates all tiers of service (with varying degrees of interactivity) on the following services: Apple Music, Amazon Music Unlimited, Amazon Prime, Google Play, iHeart (both interactive and noninteractive tiers), Pandora (both interactive and noninteractive tiers), Napster, Spotify, Vevo, and YouTube. He notes that play share data from two other distribution methods—satellite via SiriusXM and physical retail and digital downloads—were "not available" to him. However, he testifies that he has "no reason to think the content of any of the record companies is played with more or less frequency on these distribution methods, when compared to the distribution methods (interactive and noninteractive streaming) for which I did have data." Thus, he asserted that he had "no reason to believe this additional data would materially change" his play share estimates. Willig WDT ¶ 48 n.26.

as equal to 100% minus the sum of the Majors' shares. *Id.* at ¶ 48 & app. D at ex. D.5.

Professor Willig summarized these play shares in the following figure:

Figure 7: Estimated Play Shares (RESTRICTED)

[REDACTED]

v. Noninteractive Services' Fixed Costs and Marginal Profit Rates

As noted *supra,* Professor Willig's Shapley Value Model also requires data quantifying: (i) Each record company's "fallback value"; and (ii) the surplus value brought by each of the negotiating parties to the notional Shapley market negotiations. With specific regard to the noninteractive services, Professor Willig states that the value they bring to the notional Shapley negotiations depends on their ability to generate profits, which subtract out from revenues variable costs, including the royalties noninteractive services pay for musical works (but not the sound recording royalties, which, to repeat, are the *outputs* of the Shapley Value Model). Willig WDT ¶ 49. To make this calculation, Professor Willig compiles categorical data relating to "fixed costs, variable or marginal costs and the associated marginal profit rates of noninteractive distributors . . . ." *Id.*

c. Professor Willig's Chosen Source of Financial Data

i. Financial Statements vs. Financial Projections

Professor Willig relies on the "Pandora Merger Proxy," dated December 20, 2018, and filed with the Securities and Exchange Commission (SEC), Trial

Ex. 5045, that described the proposed merger (subsequently consummated) between Pandora and Sirius XM. *Id.* & app. D, ex. D.6 (p.3 therein). Professor Willig utilizes Pandora data exclusively to represent the noninteractive services because: (i) Pandora was the only noninteractive service for which he could find "forward-looking estimates" of the data that he required; and (ii) Pandora is the largest noninteractive distributor in the market, accounting (as noted *supra*) for more than [REDACTED]% of total plays in the noninteractive market. *Id.* & app. D at ex. D.4.

Perhaps in (correct) anticipation of the Services' rebuttal, Professor Willig explains in detail why he decides to rely on the "Pandora Merger Proxy"— which included predictions (what he characterized as "forward-looking estimates") of Pandora's future financial performance, and which Pandora sent to its shareholders in connection with the then-proposed (and subsequently consummated) acquisition of Pandora by Sirius XM. More particularly, he explains why he favored these projections, rather than *older* data in Pandora's most recent financial statements contained in its 2017 Form 10–K (annual report) filed with the Securities & Exchange Commission (SEC), Trial Ex. 5043, or data *even more current than the proxy statement data* in Pandora's financial statements for the first half of 2019. Trial Ex. 5054. *See* Willig WDT, app. D (¶ 2 therein).

Professor Willig acknowledges Pandora's "recent history of operating losses" (before and after Sirius XM's proposed acquisition of Pandora). However, he opines that such operating losses do not "accurately reflect expectations about the incremental value" that

Pandora could bring to the notional Shapley Value negotiation concerning royalty rates for the 2021–2025 period. Willig WDT app. D (¶ 2 therein). Rather, he states, it is more appropriate to rely on: (i) Financial projections that undergird "the approximately $3.5 billion purchase price paid by Sirius XM" to acquire Pandora; and (ii) Pandora's substantial market capitalization of approximately $2.4 billion immediately prior to the announcement of the Sirius XM acquisition . . . ." *Id.* According to Professor Willig, these are *market*-based values, and therefore the data on which they were based—utilized by Pandora's investment bankers as an input into their merger fairness opinions—are more probative of Pandora's likely financial performance over the forthcoming 2021–2025 rate period. Willig WDT app. D (¶¶ 2–3 therein).

Although Professor Willig states a preference for projections as opposed to the most recent historical financial information, he also chose to ignore different financial projections created for Pandora by Sirius XM *after* it had acquired Pandora. He acknowledges that these newer financial projections "[REDACTED]." Regardless, as a basis for rejecting these projections, Professor Willig states: "I "understand" Pandora . . . produced [these] additional projections . . . for these proceedings . . . .[,]"—*but he does not attribute his understanding to any source. Id.* ¶ 3 n.4.[235]

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[235] As discussed elsewhere in this Determination, Pandora vigorously denies the unattributed assertion that it created these newer projections, labeled "Long Run Scenarios" by Sirius XM, for the purpose of these proceedings.

ii. Professor Willig's Reliance on Merger "Scenario 2" Data

The Proxy Statement on which Professor Willig elects to rely contains two different sets of projections, denoted as "scenarios," regarding Pandora's predicted financial future. "Scenario 1a" projected a relatively lower value for Pandora, whereas "Scenario 2" projected a relatively higher value. Professor Willig elected to utilize the higher-value Scenario 2 projections, ignoring the lower-value Scenario 1a projections. He made this decision because he understood that Pandora's investment bankers relied on the Scenario 2 projections to produce their valuation of Pandora in connection with the Sirius XM acquisition, and those projections were "in-line with the $3.5 billion market price paid by Sirius XM to acquire [Pandora]." Willig WDT app. D, ¶ 3 & n.5.[236] He notes that, by contrast, the Scenario 1a projections implied valuations substantially below this $3.5 billion market price." *Id.*

Using the higher-valued Scenario 2 projections, Professor Willig estimates Pandora's annual fixed costs at $397 million for its Pandora Free ad-supported service, and annual fixed costs of $85 million for its Pandora Plus subscription service. He then converts these annual figures into monthly fixed costs. To convert these monthly *Pandora* fixed cost estimates into noninteractive service *industrywide* data, he grosses them up by dividing by Pandora's

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[236] Professor Shapiro concedes that the Scenario 2 data needs to be taken "seriously" and are "a big deal," because they were included in the "merger proxy documents . . . used as part of the acquisition." 8/19/20 Tr. 2732–33 (Shapiro).

market share (as he did when grossing up the audience size). Through this method, Professor Willig estimates monthly fixed costs of $40.4 million for ad-supported noninteractive services, and $8.9 million for subscription noninteractive services. Willig WDT app. D, ¶ 4 & n.6.

Having identified and segregated the fixed costs, Professor Willig then utilizes the Scenario 2 data for his estimate of Pandora's variable costs.[237] In this regard, Professor Willig also relies on other information, including a September 24, 2018 report by an investment banking firm (JMP Securities, engaged to analyze Sirius XM's acquisition of Pandora), that projected "content acquisition costs" for Pandora's three service tiers (Pandora Free, Pandora Plus and Pandora Premium). Willig WDT app. D at ex. D.6 (nn.8, 11 and 14 therein).

Generally, Professor Willig allocates Pandora's multi-tier variable costs on a per-tier basis proportionate to each tier's share of projected total (all-tier) revenue, through 2025, except where he identifies specific per tier costs. Specifically, these other identifiable variable costs include: (i) "Cost of Goods Sold" (including musical works royalties (performance right and mechanical rights royalties)); (ii) "Operating Expenses"; (iii) "Product Development Expenses"; (iv) "Sales and Marketing"; (v) "General and Administrative Expenses" and "Stock Based

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[237] As noted *supra,* these variable costs are necessary inputs in the Shapley Value model because these are costs that must be subtracted from revenue in order to estimate the "surplus" that can be the shared by the participants in the notional Shapley arrival orderings.

Compensation." Willig WDT app. D, ex. D.6 (at 3 therein).

Professor Willig also makes the following revenue-related assumptions regarding Pandora:[238]

(i) Revenue growth per subscriber annually from 2021–2025;

(ii) monthly revenue per subscriber for Pandora Plus in 2020;

(iii) annual revenue growth per subscriber for years 2021 to 2025;

(iv) monthly revenue per subscriber for Pandora Plus in 2020; and

(v) continued existence of the 2018 ad-supported and subscription noninteractive per-play royalty rates from 2021–2025 equal to the current statutory rates plus an annual 2% inflation rate.

Id. He bases his calculations of these five types of revenue information on "the assumptions accompanying the Proxy Scenario 2 projections and recent history which indicate that Pandora Premium is expected to grow faster than Pandora Plus." *Id.*[239]

Based on the data upon which he relies, and the assumptions he makes in connection with that data,

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[238] Revenue data is necessary in the Shapley Value Model because revenue minus variable costs yields the surplus that can be allocated among the negotiating parties according to their respective Shapley Values.

[239] Professor Willig also assumes that the number of ad-supported users for years 2021–2024 should be "calculated based on a liner [sic] user growth trend between the 2018 actual and 2025 projected figure. *Id.*

Professor Willig estimates an ad-supported marginal profit rate of $0.0042 per play, and a subscription marginal profit rate of $0.0048 per play. Willig WDT app. D, ex. D.6 (at 2 therein).[240]

iii. Professor Willig's Caveat Regarding the Foregoing Cost and Profit Data

Although Professor Willig elects to rely in his corrected written direct testimony on the Scenario 2 data, he recognizes that the data sets he then possessed when drafting that direct testimony did not contain granular cost and revenue information regarding Pandora. Accordingly, the assumptions he was compelled to make, as itemized *supra,* were necessarily tentative in nature. Specifically, Professor Willig acknowledged:

> [C]ertain key inputs to the Pandora projections were not disclosed in Pandora's proxy statements (*e.g.,* projected ad-supported user and subscriber counts, projected plays, and a breakdown of subscription revenue into its underlying Pandora Plus and Pandora Premium component parts). Accordingly, certain allocation assumptions were required to estimate key parameters from Pandora's projected financial information. Estimates derived from these projections may require amendment following the completion of discovery.

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[240] For the avoidance of confusion, the Judges point out that these figures are *not Professor Willig's proposed royalty rates,* but rather his estimated marginal profit rates. His calculation of royalty rates is discussed *infra.*

* * * * *

The Pandora projections on which these estimates are based do not disclose certain key inputs that were used to create the projections. For instance, the projections do not include a breakdown of subscription revenue into the portions related to its Pandora Plus noninteractive and Pandora Premium on-demand services, respectively, and therefore require an allocation assumption to exclude Pandora Premium revenue and costs from the analysis. Moreover, the projections do not include the projected subscriber counts, active user counts, and play counts underlying the projections, requiring these figures to be derived so that profit rates can be computed. Accordingly, the assumptions required to estimate key parameters for use in my Shapley Value model may need to be updated following the completion of discovery.

Willig WDT ¶ 50 n.30, app. D at D–3. Professor Willig did not amend his direct testimony to update these "key parameters."

In *Pandora's* rebuttal testimony, it criticizes Professor Willig's assumptions, and demonstrates that the more granular data provided an accurate description of Pandora's economic condition that served as the basis for the Scenario 2 projections on which Professor Willig elected to rely. *See* Trial Ex. 4109 (WRT of Jason Ryan) (Ryan WRT); Shapiro WRT (applying Mr. Ryan's economic data).

Later, in his written *rebuttal* testimony, Professor Willig utilizes the more granular economic data

underlying the Scenario 2 projections to amend his direct testimony by substituting that data for the assumptions he had made in his direct testimony. Specifically, he testified as follows regarding the "updates" he made in his rebuttal testimony (at Appendix L):

> These revised profit rate estimates adopt certain of Professor Shapiro's cost allocation assumptions, his definition of variable costs, and make use of further details relating to the projections publicly disclosed in Pandora's merger proxy . . . (including subscriber counts, Pandora Plus revenues, advertising hours, and operating expense synergies).

Willig WRT ¶ 75 n.138.

Further, Professor Willig essentially adopted the analysis undertaken by Pandora's Vice President of Financial Planning and Analysis, Jason Ryan, regarding the allocation of advertising revenues; projected growth of subscription revenue; classification of certain sales and marketing expenses; classification of product development costs; and projected number of users, subscribers and plays. *See* 8/5/20 Tr. 525 (Willig) ("[W]hen you check the numbers that [Mr. Ryan] says are right against the numbers I use in my rebuttal report, they are exactly the same."); *see also* Willig WRT app. L at 1, 3–4 & nn.2–4, 11 55–58 & 72–74; 8/5/20 Tr. 361–62, 520–25, 527–528 (Willig); SX PFFCL ¶¶ 669–674 (noting that Professor Willig's testimony, mooted many of the issues raised by Mr. Ryan and Professor Shapiro). Accordingly, the Judges adopt Mr. Ryan's analysis of the more granular cost and revenue data necessary to

generate Pandora's profit margins on its subscription and ad-supported services. Additionally, the Judges find that Mr. Ryan, as a financial executive at Pandora, is a more competent witness to make the necessary categorizations and allocations of revenue and costs than Professor Willig.[241]

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[241] Thus, the Judges do not rely on Professor Willig's assertion that the more granular revenue and cost information did require him to materially change his royalty rate calculations. *Id.* More particularly, Pandora asserts that Professor Willig's analysis is still erroneous in two respects because he: (1) Misallocates product development costs across the ad-supported and Pandora Plus services by applying revenue proportions; and (2) fails to deduct non-music revenue from his calculation of Pandora's margin. Services PFFCL ¶¶ 277–286 (and record citations therein). These disputes do not require extended analysis. Suffice it to say, with regard to the first issue, the Judges repeat their finding that Professor Willig's attempt—for the first time in rebuttal testimony—to justify his allocation of product development costs across Pandora's services, is less credible than the analyses made by Mr. Ryan, who is a *fact witness* with direct knowledge of these details regarding Pandora's product development costs. *However,* with regard to the second numbered issue above, Professor Willig explained persuasively that Pandora's criticism of his treatment of non-music revenue did not impact the royalty rate he calculated, because he made his profit calculations on a per-play basis that was unaffected by the treatment of non-music revenue, in that "non-music revenue and non-music listening travel together in roughly equal proportion," with each representing approximately [REDACTED]% of revenue and listening." SX RPFFCL (to Services) ¶ 284 (and record citations therein). Moreover, because the amount of listening and revenue at issue in this allocation is only [REDACTED]% of each metric, the allocation of this revenue would have only a *de minimis* impact on the royalty rate ultimately estimated by Professor Willig's Shapley Value Model.

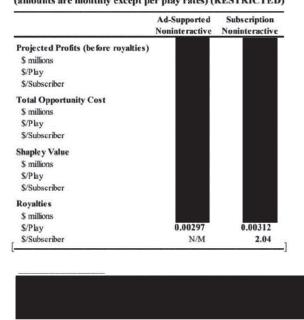d. Professor Willig's Calculation of the Record Companies' Opportunity Costs

As noted *supra,* Professor Willig assumes that each of the three Majors in his Shapley Value Model provides a "Must Have" repertoire for a noninteractive service. Willig WDT app. C at C–1 (¶ 1 therein). Therefore, his modeling assumes that "only when all three [Majors] are present in a coalition can the [noninteractive service] begin making profits." *Id.* at C–3 (¶ 5 therein). This means that "in any other case"— including when a noninteractive service obtains licenses from only one or two Majors— Professor Willig's Shapley Value Model assumes that the noninteractive service "cannot operate." *Id.* at C–5 (¶ 8 therein).

Professor Willig acknowledges that the assumed "Must Have" status of each Major generates "complementary oligopoly power" in the market. However, he understands that the Judges' determination in a prior proceeding, *Phonorecords III,* "credited a Shapley Value analysis as one way of addressing concerns about complementary oligopoly power [because] the analysis performed in the proceeding eliminated this 'walk away' power by valuing all possible orderings of the players' arrivals." Willig WDT ¶ 14 (quoting *Phonorecords III,* 84 FR at 1933 n.69).[242]

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[242] The Judges again discuss the issue of whether the repertoire of each Major is a "Must Have" *infra,* in connection with Pandora's assertion that its Label Suppression Experiments (LSEs) demonstrate that no one Major's repertoire is a "Must Have."

e. The Noninteractive Services' Shapley Values Derived by Professor Willig

By inserting the data inputs, discussed above,[243] into the Shapley Value formulas,[244] Professor Willig derives Shapley Values and corresponding royalty rates for ad-supported and subscription noninteractive services, respectively. *Id.* at 51 & fig.9. These results are set forth below:

Figure 9: Estimated Shapley Values and Royalty Rates for Noninteractive Distributors[31]
(amounts are monthly except per play rates) (RESTRICTED)

	Ad-Supported Noninteractive	Subscription Noninteractive
Projected Profits (before royalties)		
$ millions		
$/Play		
$/Subscriber		
Total Opportunity Cost		
$ millions		
$/Play		
$/Subscriber		
Shapley Value		
$ millions		
$/Play		
$/Subscriber		
Royalties		
$ millions		
$/Play	0.00297	0.00312
$/Subscriber	N/M	2.04

Because the royalty rates derived by Professor Willig are based in part on the diversion ratio results obtained from the Zauberman Survey, *i.e.,* a survey of a sample from the larger population, the royalty rates are statistically inexact. Accordingly, Professor Willig

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[243] *See also* Willig WDT app. D.

[244] *See* Willig WDT app. C.

calculates a confidence interval for his results, utilizing a "bootstrap procedure"[245] that produces a 95 percent confidence interval. This confidence interval establishes ranges for the royalties from $0.00290 to $0.00299 for the ad-supported noninteractive royalty rate and of $0.00299 to $0.00316 for the subscription noninteractive royalty rate. Willig WDT ¶ 51 & app. E.

Professor Willig emphasizes and explains several features of his results. First, he points out that "the resulting Shapley Value for the ad-supported noninteractive [service] is near zero." *Id.* ¶ 51. The reason for this near-zero Shapley Value, he opines, is that "the record companies' opportunity costs are high relative to the total projected profits of [the ad-supported noninteractive services]." *Id.* Stating this point in commercial terms, Professor Willig explains that it reflects the alleged fact that "the vast majority of those profits are necessary to compensate the record companies for the ad-supported noninteractive distributors' cannibalization of listeners that would otherwise consume music via other compensatory forms of music distribution." *Id.*[246]

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[245] The Judges have previously described the "bootstrap" procedure in the survey context as "a sampling of the survey respondents [that is] itself randomly selected and thereby create[s] a confidence interval around each of the reported survey results"—in this case the entirety of the Zauberman Survey. *SDARS III,* 83 FR at 65232 n.90. There is no challenge by any of SoundExchange's adverse parties to this process.

[246] Professor Willig also finds support for these high opportunity costs and royalties in: (i) Pandora documents that he understands [REDACTED]; and (ii) testimony from record

f. The Royalty Rates Derived From Professor Willig's Shapley Value Model

Based on the foregoing analysis, and as stated at the outset of this description of Professor Willig's modeling, he opines that his Shapley Value Model generates a royalty rate for ad-supported noninteractive services of $0.0028 per play for 2021 and for subscription noninteractive services of $0.0030 per play for 2021.[247]

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company witnesses that [REDACTED]. *See* Willig WDT ¶¶ 52–54.

[247] Professor Willig also uses a different set of survey results as a check on his Shapley Values and royalty rates. Specifically, he utilizes data from market research conducted by Edison Research— known as the "Share of Ear" study—that analyzes the share of time Americans spend listening to all different forms of music distribution. He concludes that this alternative data set confirms the royalty rates he derived from the Zauberman Survey results. Willig WDT ¶¶ 56–60 & ex.F. The Judges analyze this alternative approach in their discussion of the Services' criticisms of Professor Willig's Shapley Value modeling, *infra* section IV.C.1.g.

Additionally, Professor Willig tested the sensitivity of his Shapley Value model using a Nash-in-Nash (N–I–N) bargaining framework, another approach for modeling a multi-party negotiation. Willig WDT ¶¶ 61–67); 8/6/20 Tr. 738– 39 (Willig). Under that framework, each potential negotiating record company/noninteractive service pair reaches a "Nash" bargain in which the record company receives its fallback value and each counterparty receives one half of the surplus created by the deal. Willig WDT ¶ 62. In these Nash-in-Nash (N–I–N) negotiations, the parties assume that all other pairs of parties have reached (or will reach) an equilibrium agreement. *Id.* A solution is reached when there is no negotiating pair with an incentive to change its agreement. *See id.* ¶¶ 65–66 & fig.11, app. G. His N–I–N model produces royalty rates similar to those obtained from Professor Willig's Shapley Value model—royalty rates for 2021

g. The Services' Criticisms of Professor Willig's Shapley Value Model Approach and the Judges' Analysis and Findings

i. Is Professor Willig's Shapley Value modeling appropriate for setting noninteractive rates?

(A) Professor Willig's Shapley Value Model is Inconsistent With the Shapley Modeling in *Phonorecords III* and Thus Fails to Generate Effectively Competitive Rates

Professor Willig's Shapley Value Model—like all Shapley modeling— incorporates all potential "arrival orderings." Therefore, unlike in the actual market, the modeling does not include any scenario in which a Major record company can leverage a threat to "Walk-Away" from negotiations into a royalty rate that includes the effect of its complementary oligopoly status. As noted *supra,* Professor Willig—relying on *Phonorecords III*—thus opines that a Shapley Value analysis is "one way of addressing concerns about complementary oligopoly power . . . ." Willig WDT ¶ 14. Therefore, in his opinion his Shapley Value Model is "an appropriate approach for assessing rates that would be negotiated in the hypothetical marketplace for noninteractive webcasting." *Id.* ¶ 24.

However, notwithstanding the fact that Shapley modeling includes all possible "arrival orderings," expert economic witnesses for Pandora and Google, respectively, argue that Professor Willig's Shapley Value Model nonetheless incorporates

of $0.0030 per play for ad-supported noninteractive services and $0.0030 per play for subscription noninteractive services. Willig WRT ¶ 82 n.147; 8/6/20 Tr. 739 (Willig).

complementary oligopoly power. *See* Shapiro WRT at 52, 57 (Jan. 10, 2020); Peterson WRT ¶¶ 82, 85, 100 n.103 (Jan. 10, 2020). As a second criticism, Professor Shapiro further asserts that Professor Willig misapplies the Shapley Value analysis in *Phonorecords III*. Shapiro WRT at 57.

Dr. Peterson summarizes his first criticism and that of Professor Shapiro regarding the purported presence of a complementary oligopoly effect in Professor Willig's Shapley Value Model:

> Professor Willig explicitly assumes that the major record labels are essential to a noninteractive streaming service. This implies that a single label can shut down the service, which allows the label to guarantee itself a high value or monetary payoff when acting alone.
>
> * * * * *
>
> [Because] Professor Willig's Shapley Value model explicitly models the major record labels as being essential . . . each [Major] can individually extract the value that a monopolist would extract from the streaming service or distributor. In the Shapley Value model, this set up allows the essential labels to extract the monopoly value of their recordings from the streaming service . . . .

Peterson WRT ¶ 87.

There is no dispute that in Professor Willig's Shapley Value Model—when the last arriving party is assumed to be a "Must Have" Major—that this last arriving Major will generate the *entire* value generated by noninteractive streaming. *That*

monopoly value is repeated for each of the three Majors when it is the last to arrive in a Shapley ordering. Thus, when the modeling assumes the presence of complementary oligopolists—as does Professor Willig's modeling—it preserves a substantial measure of the Majors' "Must Have" power and translates it into higher shares of the Shapley surplus and, ultimately, higher royalty rates.

The validity of this criticism is made obvious by the following simple example, which reveals the different Shapley Values that arise even though all arrival orderings are present in a Shapley model:[248]

Assume the total Shapley Surplus = 12 Assume 2 Majors ("1" & "2") with "Must Have" repertoires (*i.e.,* complementary oligopolists) Assume 1 Noninteractive Service, "S"

Arrival orderings	Contribution by S	Contribution by #1	Contribution by #2
1, 2, S	12	0	0
2, 1, S	12	0	0
S, 1, 2	0	0	12
1, S, 2	0	0	12
S, 2, 1	0	12	0
2, S, 1	0	12	0

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[248] The following examples assume only one service, in order for the example to be tractable and simply to demonstrate that, *ceteris paribus,* changing the number of licensor record companies alone will change the relative Shapley Values and resulting royalties. *Cf. Phonorecords III,* 84 FR at 1950 n.119 (discussing the practical value of attempting to model effective competition by limiting the number of "arrival orderings" via a reduction in the number of licensees rather than an increase in the number of licensors). The Judges are not suggesting that an appropriate Shapley Value Model would necessarily contain only a single service, unless supported by the marketplace facts.

Shapley Value for S = 4 (24/6); Shapley Value for #1= 4 (24/6); Shapley Value for #2 = 4 (24/6)

So, in a Shapley Value model *with complementary oligopoly,* Service S pays 8/12 of surplus (67%) toward royalties to Record Companies #1 and #2.

But, compare below the royalty payment by the service *if there was no complementary oligopoly structure,* and instead one record company (#1) owned all the copyrights for sound recordings:

Arrival orderings	Contribution by S	Contribution by #1
1, S	12	0
S, 1	0	12

Shapley Value for S = 6 (12/2); Shapley Value for #1 = 6 (12/2)

So, in the Shapley Model *with monopoly instead of complementary oligopoly,* Service S pays only 6/12 of surplus (50%) toward royalties to Record Companies #1 and #2, substantially less than if a complementary oligopoly exists.

Alternatively, the Judges note that, if the market structure contains two *substitute* oligopolies that compete with each other (rather than *complementary* oligopolies) and each is able to satisfy 50% of market demand, the Shapley modeling would look as follows:

Arrival orderings	Contribution by S	Contribution by #1	Contribution by #2
1, 2, S	12	0	0
2, 1, S	12	0	0
S, 1, 2	0	6	6
1, S, 2	6	0	6
S, 2, 1	0	6	6
2, S, 1	6	6	0

Shapley Value for S = 6 (36/6); Shapley Value for #1 = 3 (18/6); Shapley Value for #2 = 3 (18/6)

So, in the Shapley Model *with substitute competing oligopolies instead of complementary oligopoly,* Service S pays only 6/12 of surplus (50%) toward royalties to Record Companies #1 and #2, again substantially less than if a complementary oligopoly exists.[249]

In sum, these examples demonstrate how Shapley Value modeling is sensitive to the number of participants, the number of orderings, substitutability and perfect complementarity of the services, *even though in each case all arrival orderings are generated by the Shapley modeling.*

[249] The purpose of these examples is to demonstrate the significant limitations of a Shapley Value Model that simply takes as a given the complementary oligopoly structure of the market being modeled. Monopolies or oligopolies may well exist because of their "efficiencies and economies of scale and/or their superior operations." *Web IV,* 81 FR at 26368. Whether any such entity utilizes such power in a manner that generates rates that are inconsistent with the workings of an effectively competitive market is a separate issue not addressed in the application of the Shapley Value Model in this proceeding. *See Web IV,* 81 FR at 26335 (distinguishing between "'[c]omplementary oligopoly' power exercised by the Majors designed to thwart price competition and thus inconsistent with an 'effectively competitive market,' [and] the Majors' non-complementary oligopolistic structure not proven to be the consequence of anticompetitive acts or the cause of anticompetitive results."). The narrow point here is that the *complementary* oligopolistic market structure is not well-modeled via the Shapley approach, without an adjustment to offset the complementarity of the "Must Have" repertoires, as was done by Professor Marx in *Phonorecords III* and adopted by the majority in *Phonorecords III* in its application of the Shapley approach.

With regard to the second criticism, Professor Shapiro claims:

> [T]he Shapley Value models used in *Phonorecords III* explicitly avoided complementary oligopoly power among separate copyright holders for each set of rights by removing the oligopoly. Professor Willig does *not* follow that approach to removing complementary oligopoly power among the major record companies in his Shapley Value model. As a result, for the very reasons given by the Judges in *Phonorecords III,* Professor Willig's model gives additional returns to the major record companies by endowing them with complementary oligopoly power.

Shapiro WRT at 57.

In this regard, in *Phonorecords III,* the Judges analyzed two Shapley Value models and one "Shapley-inspired" model in the same context of perfect complements/complementary oligopoly. Ultimately, the Judges combined elements of all three approaches, but, importantly here, they credited the Shapley Value model of Professor Leslie Marx for the purpose of calculating the total amount of royalties. In determining that total, Professor Marx first equalized the number of licensees in order to reduce the complementary oligopoly effect that is embodied in a Shapley Value approach, even though the use of Shapley "arrival orderings" eliminates the complementary oligopolists' "walkaway" (hold-out) power. In this manner, she intentionally altered the number of arrival orderings in which one of the complementary oligopolists provided the entirety of

the additional value. *Phonorecords III,* 84 FR at 1948–50 ("Professor Marx . . . offset the concentrated market power that the rightsholders possess, *separate and apart from any holdout power,* which the Shapley ordering algorithm would address . . . *address[ing] an issue— market power—that the Shapley Analysis does not address.*").[250]

Professor Willig's Shapley Value Model specifications deviate in another important manner from those in the Shapley modeling in *Phonorecords III.* In that case, all the economists' Shapley modeling *aggregated the record companies as a single entity,* eliminating their complementary oligopoly power. Moreover, one of the economists who utilized Shapley Value modeling in that case, Professor Leslie Marx, utilized two different market structure models—her "baseline" model in which these two perfectly complementary ("Must Have") rights (for sound recordings and musical works) were assumed to be

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[250] In this regard, it should be noted that the *Phonorecords III* dissent was in accord with the Majority. The dissenting opinion pointed to expert testimony and evidence making clear that there is a distinction between: (1) The "abuse of market power" that arises when a "Must Have" licensor holds-out (or threatens to hold out) during negotiations, in order to earn economic rents arising from the fragmentation of ownership of "Must Have" inputs; and (2) the presence of existing market power disparities that may otherwise be implicit in Shapley Value modeling. The former "abuse" of market power is indeed ameliorated by the Shapley Value approach, whereas a complementary oligopoly effect inconsistent with effective competition can only be mitigated in Shapley Value modeling if the modeler adjusts for that market power disparity. *See Phonorecords III,* 84 FR 2023 & n.342 (dissenting opinion) (applying consistent testimony from, and evidence regarding, four economic expert witnesses, Professors Watt, Marx, Katz and Gans).

owned by a single collective, and her "alternative" model in which these complementary rights were assumed owned by two separate entities. She used these two models (like the Judges use their examples above) as a pedagogical demonstration of how the fragmentation of ownership of complementary rights leads to higher and more inefficient royalty rates, *even in Shapely modeling that includes (by definition) all possible arrival orderings.*[251] *See Phonorecords III,* 83 FR at 2022 (dissenting opinion) (Professor Marx "made this adjustment to offset the concentrated market power that the rights holders possess . . . *that the Shapley value approach does not address.*"). By contrast, Professor Willig here models each Major as a separate "Must Have," which *incorporates the complementary oligopolists' pricing power, notwithstanding the inclusion of all arrival orderings.*

Professor Willig did not address this aspect of *Phonorecords III,* either in his WDT or WRT. At the hearing, the Judges asked Professor Willig if he had read the *Phonorecords III Determination* before he wrote those written testimonies, and he responded: "Portions of it, yes [but] I must confess, not the whole thing." 8/ 25/20 Tr. 3863 (Willig). (In both of his written testimonies, though, he identified the *Phonorecords III Determination* as a document upon which he relied, without noting that he did not read it in its entirety. Willig WDT, app. B at B–2; Willig WRT, app. I. at I–1.).[252]

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[251] That is, Professor Marx demonstrated precisely what the Judges have shown in the example in the text, *supra.*

[252] Professor Willig was also unable to recall, and did not address, an article on which the Judges expressly relied in *Web*

The Judges then asked Professor Willig if he had read the portions regarding "the distinction between holdout power and market power . . . that was . . . actually adopted by way of adjustments by the majority . . . in *Phonorecords III,* [or] discuss that *Phonorecords III* issue in either of your written testimonies?" 8/25/20 Tr. 3864 (Willig). Professor Willig's response made it clear that he had not addressed that specific issue. Rather, he provided a discursive answer in which he repeated that his Shapley Value Model "has *at least* a prominent virtue *on this very subject that you are mentioning* of eliminating any special hold out power, or market power *that derives from the ability to be a holdout . . . .*" 8/25/20 Tr. 3864–65 (Willig) (emphasis added). But the usefulness of the Shapley Value approach in eliminating "hold out power" was *not* "the very subject" of the Judges' question. Rather, their inquiry was whether Professor Willig had addressed the issue in *Phonorecords III* as to whether the "arrival orderings" themselves embedded the complementary oligopoly power of the Majors.

Continuing his response to the Judges' inquiry, Professor Willig further stated that it is necessary to "to distinguish between the holdout power and the

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IV for the proposition that "even economists quite unwilling to assume that a given monopoly or oligopoly structure is inefficient and anticompetitive bristle at the idea that supranormal pricing arising from a complementary oligopoly is reflective of a well-functioning competitive market. *Web IV,* 81 FR at 26368 (citing Francesco Parisi & Ben DePoorter, *The Market for Intellectual Property: The Case of Complementary Oligopoly, in* The Economics of Copyrights: Developments in Research and Analysis (W. Gordon and R. Watt eds. 2003).

value that a party to the negotiations brings to the enterprise. And if one of the parties is a must-have, because it's so important, well, it shouldn't be denied the value that it brings . . . you don't want to strip away the value because that's part of the marketplace and part of the incentives to the parties to do what they need to do to provide that value." 8/25/20 Tr. 3865 (Willig).

But, this too does not resolve the issue of whether the arrival orderings in his Shapley Value model embed complementary oligopoly power into his Shapley Values and thus, ultimately, inflate the royalty rates. Moreover, his answer essentially states that a "must have" licensor should retain the value of that status, even though it is an artifact of the fragmented ownership of the "must have" nature of their repertoires, leading to a consequence where the Shapley Value modeling would provide the Majors with the value of this artifact, beyond the considerable value of their repertoires. *See Web IV,* 81 FR at 26368 (noting that eliminating the "must have" power of complementary oligopoly does not "diminish the firm-specific monopoly value of each Major's repertoire taken as a whole."). Moreover, the perfect complementarity generates market consequences that are even worse than monopoly. *See Web IV,* 81 FR at 26342 (relying on the "logic first identified by Antoine Cournot in 1838, *firms offering complementary products tend to set higher prices than would even a monopoly seller . . . .*") (emphasis added);

see also id. at 26368 & n.142); 8/18/20 Tr. 2642–43 (Shapiro); 8/25/20 Tr. 3655–56 (Peterson).[253]

Accordingly, the Judges agree with Professor Shapiro's criticism of Professor Willig's approach for failing to "remov[e] complementary oligopoly power among the major record companies in his Shapley Value model," and "for the very reasons . . . in *Phonorecords III,* giv[ing] additional returns to the major record companies by endowing them with complementary oligopoly power." Shapiro WRT at 57.[254]

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[253] Professor Willig did address the type of adjustment made by Professor Marx to her Shapley Value model in *Phonorecords III,* in response to a general question from the Judges. He testified as follows: I think it would matter if somehow the majors were collapsed into a single major. That would affect the results, but in a way that would deviate from the features of the marketplace that are realistic and important. 8/5/20 Tr. 323 (Willig). However, the Judges find that changing the structure of the licensor-side of the market to eliminate complementary oligopoly effects is necessary. Although the Judges do not dispute Professor Willig's characterization of that complementary oligopoly power as "realistic" or "important" in an *actual* market for the licensing of noninteractive services, they find, as they did in *Web IV,* that a rate formula incorporating complementary oligopoly power is antithetical to an effectively competitive rate.

[254] To be clear, the Judges do not disagree with Professor Willig as to the "Must Have" status of each Major as a "Must Have." Rather, as noted in the Judges' prior discussion in this Determination regarding "effective competition," they continue to find that an appropriate downward adjustment must be made to royalty rates that reflect the effects of a complementary oligopoly market structure. The Judges consider *infra* whether the record provides a basis for making the necessary effective competition adjustment to Professor Willig's Shapley Value Model.