

MUSIC LICENSING FOR NON-INTERACTIVE AND OTHER RADIO-STYLE SERVICES: A COMPETITIVE APPROACH

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ABSTRACT. Despite significant changes over the last two decades in the way people listen to music and the primary means through which music copyright owners monetize their intellectual property, blanket or collective licensing remains the norm. The music licensing marketplace continues to have almost no actual price competition between rightsholders to have their music performed. But some of the same technological advancements that led to the changes in the way that people listen to music can also be used to transform the way that music is licensed – moving towards a more competitive alternative. In this paper we provide a framework for a marketplace that, if implemented appropriately, would allow for individual rightsholders to set their own prices subject to the forces of competition, all while still maintaining many of the transactions costs efficiencies associated with blanket licensing. Critical to the emergence of such a marketplace is a comprehensive database of all sound recordings and the associated musical works with individual prices set by the individual rightsholders for the rights necessary to use their music. With such a database in place, rightsholders could set their own prices knowing that music services will take those prices into consideration when creating playlists, thereby extending competition to pricing and freeing the licensing market from the need for price regulation.

1. INTRODUCTION

In Ebin and Reitman (2021), we provide an overview of the changes to music consumption patterns that have taken hold over the last two decades, driven in large part by advances in technology. This technological progress has led, among other things, to the rapid rise of digital streaming services, which have become the dominant way that people listen to music. Along with this change in music consumption patterns, there has been a shift in how music copyright holders are compensated for the use of their intellectual property, with the royalties paid by digital streaming services accounting for a larger and larger portion of overall royalty payments. Copyright law protections have expanded to include the use of music on digital streaming platforms, but the methods for licensing music and the approach for compensating rightsholders retains the same basic framework

We thank Andrea Asoni for helpful comments and Joe Lembo for excellent research assistance.

used for older music-delivery platforms – one that is based on blanket licenses, uniform pricing, regulatory oversight in certain cases, and almost no role for price competition.

We further discuss how the traditional forms of licensing were arguably a reasonable way of doing things given the transaction costs of direct negotiations, scale economies from collective administration, the available technology for monitoring usage, and the information requirements of a competitive alternative. In doing so, we review the literature discussing the tradeoffs between equitable remuneration, transaction costs, and efficiency that arise when licensing music to certain types of music users. Against that backdrop, we review the patchwork of licensing institutions, regulations, and mechanisms that have arisen in the U.S. for licensing rights to broadcast or stream music so as to highlight some of the benefits and drawbacks with the current licensing regime. We then explore whether the technological innovations that have led to changes in the way that music is consumed might also allow for the licensing of music rights directly with individual rightsholders with radically lower transaction costs than has historically been presumed would be necessary, and thereby potentially tilt the balance in favor of a more competitive licensing framework.

But such a competitive system for the licensing of rights has not taken off. There have been only a handful of instances of which we are aware in which rightsholders have engaged in any form of actual price competition.¹ While the way music is consumed has changed as a result of technological progress, those technological breakthroughs do not appear thus far to have had any meaningful impact on the way that music services license the music rights necessary to offer their products. Streaming services continue to secure those rights largely through collective licensing of one type or another, whereby a service secures the rights to perform and/or reproduce thousands or even millions of individual works for a set price or at a price that does not vary based on the particular works used. While collective licensing takes on a variety of forms, in all cases it limits, and in some cases it eliminates, the incentive for individual rightsholders to actually compete with each other on price.

¹There is undoubtedly non-price competition in the production and distribution of music; our focus is on the opportunity and benefits from also inducing price competition, both to add an additional element of competition and to replace regulatory-constrained pricing.

In this companion paper to Ebin and Reitman (2021), we propose a framework for a marketplace that, if implemented appropriately, could take advantage of some of the technological innovations that have led to a change in the way that music is consumed to also change the way music rights are licensed by certain music services. The goals behind this marketplace are to: (i) eliminate or at least lessen the need for collective licensing and one-size-fits-all payments; (ii) give individual rightsholders the ability to set their own prices for each of the individual compositions and/or recordings they own; and (iii) allow for the emergence of an actual competitive marketplace, while still providing many of the transactions costs efficiencies associated with blanket licensing. The overall goal is to transform what is currently a marketplace plagued with market power problems and a patchwork of regulations aimed at mitigating the potential for abuses of that market power into an efficient and effectively competitive marketplace, and one that is free of large-scale regulation. While we focus on how such a system could be implemented to improve the way in which non-interactive digital streaming services secure necessary music rights, we also briefly discuss how this system could be modified to allow for broadcast and satellite radio providers to use it.

We fully recognize that what we propose is, in many respects, quite different from the licensing structures in place today, and, as a result, there will likely be significant concerns with moving toward such a system. Our aim here is not to provide a comprehensive plan that solves all problems or that describes a detailed transition path to competition, although we try to address the more significant concerns that we are able to anticipate. Instead, our goal is to provide a framework that can be used as a meaningful starting point for moving toward a deregulated and efficient solution for the licensing of at least some music rights, and to describe the benefits of this competitive alternative. At a minimum, this framework can provide a means for comparing the current licensing regime to plausibly more efficient, deregulated, and competitive alternatives.

2. A COMPETITIVE MARKET FOR MUSIC RIGHTS USED BY NON-INTERACTIVE STREAMING SERVICES

We first consider how a market-based royalty mechanism could operate for licensing rights to stream music on non-interactive webcasting services.

As discussed in greater detail in Ebin and Reitman (2021), non-interactive webcasting services provide a radio-like experience to their listeners: the service selects the songs played for each listener along with the frequency with which each particular song is played overall on the service. These services typically rely heavily, if not exclusively, on algorithms to select what song is played next to each listener, often influenced by each user's song preferences or "likes." Nevertheless, listeners do not have control over which songs are played or when they are played, nor do they know what songs are upcoming. As a result, the service has complete control over what songs are ultimately heard by each listener. While a service may feel that it needs to play certain songs to attract or retain listeners and/or subscribers, it is still ultimately up to the service to determine exactly what songs will be played and with what frequency.

Our proposed market mechanism for licensing the necessary music rights takes advantage of the algorithmic selection of recordings streamed to individual customers of non-interactive streaming services. The key to implementing a market mechanism for licensing rights is a database of all or nearly all works that could potentially be streamed. For each work, the database would need to indicate all rightsholders that are entitled to compensation every time the work is played, including both rights for the sound recording and the embedded musical composition, and encompassing both performance and any necessary reproduction rights.

While a comprehensive database of works and owners is not currently available, a database that is intended to capture much of this information is being developed by the Mechanical Licensing Collection (MLC), pursuant to the Music Modernization Act (MMA).

This database is required to include, for each sound recording, identification of the underlying musical composition and the individual rightsholders of the musical composition.² The purpose of the database (among other things) is to create a more efficient means of identifying and paying musical composition rightsholders when their compositions are reproduced by certain music services. While it is not yet clear how comprehensive and accurate this database currently is or will be in the coming years, it does at least suggest that creating the database that would be necessary for a decentralized market for royalties is possible. And, as we discuss below, there are certain steps that can be taken to incentivize those with the necessary information to come forward to improve the accuracy and comprehensiveness of the database. Information on sound recording ownership would still need to be added, although SoundExchange already maintains a database with such information and it is not hard to see how SoundExchange’s data could be combined with that of the MLC to provide all of the necessary non-price information. In any case, we will presume that the creation of such a database is feasible in describing the way a decentralized market for royalties would operate.

The MLC database, augmented with sound recording ownership information, is a crucial first step, but in order to facilitate a competitive market, the contemplated database needs to have royalty information as well as ownership information for any recording the music service might stream to its listeners. As discussed in Ebin and Reitman (2021), there are a number of components of royalties associated with any recording (which will vary depending on the use) – performance and reproduction rights for both the recording and the embedded composition, and each of those rights may have multiple owners who receive compensation every time the recording is streamed. We will assume that royalty information for each of those rightsholders is part of the database (and we address some of the challenges with obtaining such information below).

²Music Modernization Act (MMA) §102, 17 U.S.C. §115 (2018) (“The mechanical licensing collective shall establish and maintain a database containing information relating to musical works (and shares of such works) and, to the extent known, the identity and location of the copyright owners of such works (and shares thereof) and the sound recordings in which the musical works are embodied. In furtherance of maintaining such database, the mechanical licensing collective shall engage in efforts to identify the musical works embodied in particular sound recordings, as well as to identify and locate the copyright owners of such works (and shares thereof), and update such data as appropriate.”).

Setting aside for the moment the question of how those royalty amounts get into the database, the sum of the royalties associated with a given recording for all of the necessary rights gives the total royalty cost associated with one stream of that recording. Only the total royalty cost of a particular stream, and not the individual components, would be relevant to a music service. The music service would then be able to take into account the cost of a particular recording when making decisions about what to stream. While many characteristics and considerations factor into the sequence of recordings streamed to each customer, the royalty database would enable the music service to incorporate differential royalty rates as one factor.

In one sense, this is a mind boggling proposition. Pandora's non-interactive, advertising-supported service, for example, reportedly provided 13.4 billion listening hours in 2019, which amounts to initiating on average more than 6,000 streams every second.³ Accounting for relative royalties for streams to individual listeners can only be implemented algorithmically, as part of the software used to serve customized streams to each user.

On the other hand, streaming services already use sophisticated algorithms that make customized decisions about each song streamed to each listener. These algorithms take into account a range of factors related to listener preferences and characteristics of each recording, as well as other factors that impact what is played (such as the "performance complement" requirements that apply to statutorily-compliant non-interactive services). Relative royalty rates could simply be one more factor that would enter into the algorithm, and could be used, for example, to tip the scale between two recordings that would otherwise produce almost the same incremental value according to the algorithm.

In effect, streaming services would be purchasing rights to perform individual songs for every stream in a miniature market, with each purchase made taking into account prices of alternative songs, and with those miniature markets operating billions of times per year. As such, the choice of recordings used for streams, and the compensation paid to rightsholders for each stream, would be akin to the marketplaces that have become an

³"SiriusXM Reports Fourth Quarter and Full-Year 2019 Results" (February 4, 2020), available at <http://investor.siriusxm.com/investor-overview/press-releases/press-release-details/2020/SiriusXM-Reports-Fourth-Quarter-and-Full-Year-2019-Results/default.aspx>.

integral part of sales of online advertising, in which miniature auctions are run billions of times per year to determine which ad is streamed to customers when performing searches or opening a page on a website.

We now turn to the mechanism by which prices are entered into the database. There are a number of possible ways this could be implemented. Unlike the demand side, the supply side of the market does not require billions of real time decisions – royalty rates can be set once and made available to music services, and either left alone or changed occasionally as rightsholders find it desirable to revise rates. This is again analogous to online advertising markets, in which buyers of advertising set criteria for purchases, which are then taken into account by the advertising auction mechanism as it runs in real time to determine which ad is served to each user. As discussed below, in practice many rightsholders may delegate the royalty setting function to publishers, record companies, or other agents.

The simplest pricing mechanism would allow rightsholders (or their representatives) to set the royalty rate for each work when it is streamed. There would be a price, in fractions of a dollar per play, for each right when it is triggered by streaming a work on the music service. There would be separate rates for sound recordings and for compositions, potentially separate rates for performance and reproduction rights, and, in the case of collaborative works with multiple rightsholders, potentially rates set for each fractional share of a work. The aggregate royalty for all these rights would be available as an input to streaming service algorithms.

In setting rates, rightsholders would be expected to take into account two fundamental determinants of the optimal rate: the willingness of music services to substitute toward or away from the work in response to changes in the royalty rate, which is represented by the elasticity of demand for each work streamed by music services, and the opportunity cost to rightsholders for those streams. The demand elasticity for the work measures how much music services would reduce streams of a given work if the overall royalty rate were increased. The optimal royalty trades off the additional revenue earned by setting a higher royalty rate with the margin received on lost plays as music services switch to other works,

where the margin takes into account the opportunity cost to rightsholders if some of those lost plays divert to other forms of music listening.⁴

There are several aspects to the rightsholder opportunity cost. It may be that if a user of a music service does not hear a particular recording after some time listening to the service, that user may be more likely to switch over to an interactive service such as Spotify and request that specific track, which generates royalties to the rightsholder. More generally, the user may switch time spent listening to one type of music service in hope of finding another medium that plays more of the songs the user wants to hear. There also can be a promotional value to streams that factors into the opportunity cost. If streams on a music service increase awareness of an artist or a song, that may translate into other revenue streams such as attendance at live performances, purchases of downloads, or increased listening to the artist or song on other music services, all of which generate revenue to the rightsholders and reduce the opportunity cost to having works streamed on the particular music service in question. The opportunity cost that factors into the margin on lost performances takes into account these various substitutional and promotional aspects of streaming.

It is possible to envision more complicated implementations, perhaps operating more like the auction mechanisms used for internet ads or some kind of bargaining mechanism. However, a simple pricing mechanism captures all the important elements of a deregulated market for music rights. Rightsholders would take into account their opportunity costs in setting prices, so works would only be streamed at a price that sellers concluded at least covered that cost. Rightsholders also would be able to set the price at whatever level they believe is fair and adequate, with the understanding that services may choose to stream their works less often as the price rises. There is no expectation that rightsholders have complete information about demand, costs, and pricing of alternative products, but, as with other markets, sellers make their best decision given the information that they have, and can adjust prices as necessary to increase their return. Services would take into account their ability to substitute different works based on cost differences, which

⁴This tradeoff is analogous to the Lerner condition for a profit-maximizing monopolist.

constrains the pricing power of rightsholders, and would only choose to stream a work if the incremental value of that stream exceeds its royalty rate.

As an alternative to setting a price as a fraction of a dollar per play, rightsholders could instead set a royalty rate represented as a percentage of service revenue. There are several advantages to framing royalties in these terms: it is closer to how many royalties are currently structured, it may be simpler for rightsholders and their agents to conceptualize, and it is closer to the mechanism we will propose in the next section for radio services. As it turns out (and as we show below), there is an equivalent percent of revenue mechanism that gives the same compensation to rightsholders as a per-play royalty, at least in terms of expected value.

The way the percentage of revenue mechanism could work is that rightsholders choose a percentage of service revenue that would go toward royalties for a particular right. That percentage is scaled as if it applies to all works, and represents the overall percentage of service revenue that gets paid out in royalties for that right. If all rights holders choose the same percentage, then that is in fact what will happen: the commonly chosen percentage of revenue is paid out to rightsholders collectively, and then divided among them according to stream shares.

More generally, because rightsholders can be expected to choose different percentages, the total royalty paid would be the weighted average of the chosen percentage royalties, with the weights given by share of plays attributable to each percentage. Thus if each work i receives n_i plays on the service, the rightsholder for i chooses a royalty percentage of v_i , and total service revenues are R , then the total royalties paid by the service are $\sum_i (v_i n_i) R / \sum_i n_i$. Rightsholder i receives $v_i n_i R / \sum_i n_i$.

To see that this is equivalent to setting per-play rates in dollars for each work, suppose the rightsholder for i chooses a per-play price of p_i . Total royalties for i are $p_i n_i$. So if the percentage of revenue rate is set such that $p_i = v_i R / \sum_i n_i$, the total payment to rightsholder i will be the same under the two mechanisms. Note that $R / \sum_i n_i$ is

the average revenue per-play earned by the music service. Thus the per-play royalty is equivalent to the percentage of revenue rate multiplied by average revenue per-play.⁵

2.1. Multiple rights. A single stream can involve quite a number of separate royalty payments given multiple rights and fractional ownership. This raises two main issues. First is the added complexity of populating the database, tracking, and compensating multiple rightsholders for each stream. The second is the impact of complementary rights on total royalty payments. Both issues should be taken into account in the design of the royalty database mechanism.

One dimension of multiplicity can be easily dealt with at the outset: having separate performance and reproduction rights associated with each stream. While there can be separate legal rights triggered every time a work is streamed, the royalty for the two rights can be bundled together in a single payment without any loss to rightsholders.⁶ If rightsholders optimally set prices for both performance and reproduction rights, they would choose the same total royalty for both as if they optimally set a single royalty price.

To see that this is the case, consider a music service that is required to obtain both performance and reproduction rights and that chooses how frequently to play a particular work. The number of plays depends on the royalty, w , chosen by the rightsholder for that work. The number of plays, denoted $Q(w)$, is a derived demand for the service that reflects both the value to the service from a reduction in royalty costs and also downstream demand when costs savings are passed through to customers, as discussed below. Demand for a work also depends on other factors such as the royalties charged by other rightsholders, but those other factors are taken as given and for simplicity are omitted from the notation. We initially focus on a single type of right (whether for compositions or sound recordings), treating other licenses and royalties as exogenous and omitting them from the notation. Whenever the work is performed on the service, it generates a net opportunity cost to the rightsholder of c . Later we consider setting both composition and sound recording rights.

⁵Overall royalties paid by the music service are also equivalent: as shown above, with a percentage of revenue mechanism the total royalties are $\sum_i (v_i n_i) R / \sum_i n_i$, while with a per-play mechanism total royalties are $\sum_i (p_i n_i)$. These are equivalent if $p_i = v_i R / \sum_i n_i$.

⁶This assumes that the owners and ownership shares for performance and reproduction rights are the same, as would generally be the case.

The rightsholder chooses a royalty rate to maximize value, $V(w)$, which is given by

$$V(w) = Q(w)(w - c).$$

The first order condition characterizing the optimal choice of royalty is

$$Q(w) + Q'(w)(w - c) = 0 \tag{(1)}$$

which can be written as

$$\frac{wQ'(w)}{Q(w)} \left(1 - \frac{c}{w}\right) = -1. \tag{(2)}$$

Let w^* denote the optimal royalty rate, and let $e = (w^*Q'(w^*))/Q(w^*)$ be elasticity of demand for the work on the music service at the optimal royalty rate, with $e < 0$. Solving for w^* gives

$$w^* = \frac{ec}{e + 1}.$$

The rightsholder sets the royalty rate as a markup over the net opportunity cost, where the markup percentage depends on the elasticity of demand for that work: more flexibility to substitute other works means more elastic demand and a lower markup.

Now suppose the rightsholder can set two royalty rates for the work, w_p and w_r , corresponding to the performance and reproduction rights for the work. As noted above, this music service must obtain both licenses before it can use the work, and the number of times the work is played depends on the total royalty, $w_p + w_r$. The total value received by the rightsholder is

$$V(w_p, w_r) = Q(w_p + w_r)(w_p + w_r - c).$$

Taking the first order condition with respect to either of w_p and w_r gives the same equation,

$$Q(w_p + w_r) + Q'(w_p + w_r)(w_p + w_r - c) = 0.$$

Using (1), this equation is satisfied as long as $w_p + w_r = w^*$. Thus the rights holder will optimally set the total royalty for the two licenses equal to the optimal royalty rate if there were only a single license.

2.2. Multiple Rightsholders. The next dimension of multiplicity stems from co-authored works. From a procedural standpoint, having multiple rightsholders for a single right is not an issue; as long as each owner sets a rate for their share of the work, the database can easily add up those pieces and report a total royalty for each work to music services.

But there are two other issues associated with having multiple rightsholders. One is the administrative question of what happens when all rightsholders do not actively participate in the price-setting process; we defer this to our discussion of implementation issues. The second is a more fundamental problem, which arises because the individual fractional rights are complements for a user wanting to perform or reproduce a work. For a music service, having some or most of the fractional rights to a work is useless if the service can only legally stream the work if it has acquired rights from all rightsholders. In that case, rights from individual rightsholders are complements, and the externality from that complementarity raises rates above the optimal level.

To see this, consider the elasticity of demand for the shared work and the elasticity perceived by each rightsholder. A single entity setting the royalty rate for all rightsholders collectively would take into account the demand elasticity for the work – how much music services would reduce streams if the total royalty rate were increased. As is the case for a single owner, the optimal royalty trades off the margin received on those lost plays from a higher price (taking into account the opportunity cost to rightsholders if some of those plays impact other revenue channels) and the additional revenue earned on remaining streams due to the higher royalty.

Now suppose that fractional rightsholders each set a royalty for their share, with the music service paying the total royalty set by all rightsholders. For simplicity, assume that all rightsholders agree about the overall elasticity and opportunity cost. Rightsholders each have a similar tradeoff between lost marginal plays and higher margins on retained

plays when choosing the royalty on their ownership share as when a single entity sets the overall royalty. The difference is the perceived elasticity of lost sales, which will be lower for a single fractional rightsholder.

To illustrate, suppose that one rightsholder has a 25% ownership share, the overall elasticity is -4 , and individual rightsholders are symmetrically positioned when setting royalty rates. An elasticity of -4 implies that streams of the work will decline by 4% if the total royalty rate increases by 1%. Now suppose that one rightsholder considers raising the price for her share by 4% taking as given the royalty component charged by other rightsholders. With a 25% ownership share, that raises the total royalty by 1%. A 1% increase in royalty decreases streams by 4%. Thus, the perceived elasticity for one rightsholder is that a 4% increase in her component of the total royalty produces a 4% decrease in streams. The corresponding elasticity is $-4\%/4\% = -1$. That is, the perceived elasticity for one rightsholder (-1) is far less elastic than the overall demand elasticity (-4). That changes the tradeoff for each fractional rightsholder, compared to what a single rate setter faces: since demand for one rightsholder is less elastic, there is a smaller decrease in streams for a given (fractional) royalty increase, and so the tradeoff tilts in favor of raising the royalty rate. Ultimately the fractional rightsholders end up setting rates that produce a higher total royalty than what a single entity would charge. All participants in the market – rightsholders, services and users – would be better off if the complementarity externality could be internalized when setting royalty rates.

To see this intuition more formally, suppose there are n rightsholders that jointly own rights to a work, and that rightsholder i has ownership share s_i , $i = 1 \dots n$, which pertains both to shares of royalties on this music service and also to shares of other revenue streams that determine the opportunity cost for the work. Rightsholder i independently sets royalty rate w_i , which is the rate for the entire work that applies to i 's share; the total royalty to license the work is $\sum s_i w_i$. Rightsholder i maximizes

$$\begin{aligned} V(w_i) &= Q(\sum s_i w_i)(s_i w_i - s_i c) \\ &= s_i Q(\sum s_i w_i)(w_i - c). \end{aligned}$$

The first order condition for rightsholder i is

$$s_i Q(\sum s_i w_i) + s_i^2 Q'(\sum s_i w_i)(w_i - c) = 0. \quad ((3))$$

Suppose that the royalty rate set by all rightsholders is equal to the optimal single owner royalty: $w_i = w^*$ for $\forall i$. At that royalty level, the left-hand side of (3) can be written as

$$s_i Q(w^*) + s_i^2 Q'(w^*)(w^* - c) = s_i Q(w^*) \left[1 + s_i e \left(1 - \frac{c}{w^*} \right) \right] > 0.$$

Comparing to (2) (the optimal royalty when there is only one rightsholder), rightsholder i optimally sets the price as if the elasticity is only $s_i e$. When evaluated at w^* , the first order condition is positive and the rightsholder has an incentive to raise the royalty above the jointly optimal level.

Fortunately, there are several ways that the royalty database can be implemented that would overcome this complementarity issue, making all market participants better off. One is simply to designate a single rightsholder as the one who sets the royalty rate. While administratively straightforward, it may be problematic to retroactively implement this approach for the existing catalog of shared works. The alternative that we propose has the effect of making individual rightsholders act as if they were choosing the total royalty when setting their fractional component, while still allowing all rightsholders to individually participate in the process.

Rate setting with complementary rights can be thought of as each rightsholder proposing a total rate for the right to stream the jointly owned work, and then taking the weighted average of those rates, with weights equal to the fractional ownership shares.⁷ In our proposed alternative, each rightsholder still proposes a total rate for the right to stream

⁷This is equivalent to taking the sum of the proposed rate for each fractional share, with the rate for the fractional share equal to the rate proposed by one rightsholder for the entire work times the fractional share for that rightsholder.

the jointly owned work, and the royalty rate that results is either the maximum or the minimum of the proposed rates rather than the weighted average. Rightsholders each receive their fractional share of the final rate.

To see that this overcomes the complementarity problem, suppose again that there are four rightsholders, each owning one quarter of a work. Using the maximum form of the rate-setting rule, suppose that rightsholder #4 proposes the highest rate. If rightsholder #4 considers making that rate a little higher or lower, it is with the understanding that the rate paid by services will change dollar for dollar with the proposed rate, since the proposed rate is the maximum rate. Thus rightsholder #4 takes into account the full demand elasticity for the work and sets an optimal price accordingly. Meanwhile, the other rightsholders can raise or lower their proposed rates by a small amount and it will have no effect on the ultimate royalty rate unless the proposal exceeds the rate proposed by #4. But in that case the new rightsholder with the highest proposed rate would then effectively set the total royalty rate and would also take into account the full elasticity of demand for the work.

The same reasoning holds if the final rate is the minimum of the proposed rates, in which case the rightsholder proposing the lowest rate takes into account the full demand elasticity at that rate. In fact, if all rightsholders face the same trade-off between higher margins relative to opportunity costs versus fewer streams, then the maximum rule and the minimum rule will both result in the same total royalty for the work. And both will result in a lower total royalty than would emerge if the price were set by taking a weighted average of the proposed rates (or equivalently, taking the sum of proposed rates for each fractional share.)

Rightsholders will not necessarily face the same trade-off when setting proposed royalty rates, and therefore will not necessarily all propose the same rate. For example, individual rights holders may have different beliefs about the willingness of music services to switch between alternative works, or they may have different opportunity costs for streams of the work. In that case, choosing the minimum rule will result in lower royalty rates than

the maximum rule, though both will typically still be lower than what would result from taking the average of royalties proposed by each owner.

While either the maximum or minimum rule would work to overcome the complementary goods externality, it is arguably more consistent with the goals of copyright law to pick the minimum rule, as that would tend to better reflect the balance between promoting the creation and dissemination of works.⁸ It is also consistent with the long established principle in US copyright law for licensing jointly owned works that any one co-owner can grant the non-exclusive right to use the copyrighted work without consent of the others, so long as the licensing co-owner accounts to the other co-owners (as would effectively happen in our contemplated system).⁹ In the case of the minimum rule, the royalty rate is set at the level that at least one co-owner believes to be not only an acceptable rate, but the optimal rate. Moreover, such a pricing rule might encourage co-creators to come together to mutually agree on a single price for the work, thereby internalizing the externality.

2.3. Composition and sound recording rights. The last dimension of multiple ownership of rights for streamed works is the necessity of obtaining both sound recording and musical composition rights. In some cases, parts of these royalties accrue to the same person, if the rightsholder is both the songwriter and performer of the streamed work. Similarly, for works in the catalogs of major record companies and publishers, part of the royalties can accrue to the sound recording and publishing arms of the same parent company. In these cases, the owner would have an incentive to internalize the complementary input externality and set optimal prices. But in general, independent determination of royalty rates will result in prices that are too high both for rightsholders and for users.

⁸See H. COMM. ON THE JUDICIARY, 87TH CONG., COPYRIGHT LAW REVISION: REPORT OF THE REGISTER OF COPYRIGHTS ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW 6 (Comm. Print 1961) (“The primary purpose of copyright is to foster the creation and dissemination of intellectual works, thus advancing ‘the progress of science and the useful arts.’”); Samuelson (2010) (“Copyright law should encourage and support the creation, dissemination, and enjoyment of works of authorship in order to promote the growth and exchange of knowledge and culture.”); *Canadian Broadcasting Corp. v. SODRAC 2003 Inc.*, 2015 SCC 57 at para. 145 (“The Copyright Act strikes a careful balance between promoting the public interest in the encouragement and dissemination of creative works and obtaining a just reward for creators.”).

⁹*Davis v. Blige*, 505 F.3d 90, 98 (2d Cir. 2007); United States Copyright Office (2016) (“Each co-owner may thus grant a nonexclusive license to use the entire work without the consent of other co-owners, provided that the licensor accounts for and pays over to his or her co-owners their pro-rata shares of the proceeds.”).

To see this, let w_m and w_s be the royalties for musical compositions and sound recording rights, respectively, with corresponding (net) opportunity costs of c_m and c_s . We first show that if royalties for each right are determined independently, and at least one royalty rate is unregulated and set in order to maximize returns for that right, then total royalties accruing to all rightsholders would be higher at a lower combined royalty rate.

Suppose the royalty for licensing the musical composition is w_m , with $w_m > c_m$; w_m could be set either in a regulated or unregulated manner. An agent who maximizes the returns from the sound recording right would maximize $V_s = Q(w_m + w_s)(w_s - c_s)$, since the demand for the work depends on the combined composition and sound recording royalties. The first order condition for w_s is

$$\frac{dV_s}{dw_s} = Q(w_m + w_s) + Q'(w_m + w_s)(w_s - c_s) = 0$$

Let \hat{w}_s be the royalty rate that maximizes sound recording royalties. Now suppose that w_s is set to maximize total royalties for both rights, or equivalently that a rightsholder owns both set of rights and sets w_s to maximize her total copyright revenues. Total revenues are $V = Q(w_m + w_s)(w_m + w_s - c_m - c_s)$, and the first order condition for w_s is

$$\frac{dV}{dw_s} = Q(w_m + w_s) + Q'(w_m + w_s)(w_m + w_s - c_m - c_s) = 0$$

Now, evaluating this first order condition at \hat{w}_s ,

$$\begin{aligned} \left. \frac{dV}{dw_s} \right|_{w_s=\hat{w}_s} &= Q(w_m + \hat{w}_s) + Q'(w_m + \hat{w}_s)(w_m + \hat{w}_s - c_m - c_s) \\ &= 0 + Q'(w_m + \hat{w}_s)(w_m - c_m) \\ &< 0 \end{aligned}$$

Therefore, combined composition and sound recording royalties will always increase by decreasing the sound recording royalty rate from the level set by an agent who maximizes sound recording royalties alone, regardless of the level of the musical composition royalty rate.

Finally we show that an increase in the composition royalty rate will exacerbate the market distortion: if the composition royalty rate increases, and the sound recording royalty rate is set to maximize sound recording royalties, then total royalties will increase (in other words, there will not be 100% crowding out, which would occur if sound recording royalties decrease dollar for dollar with the increase in musical work royalties). And since the total royalty rate at the lower composition royalty was already above the level that maximizes total rightsholder revenues, total revenues will decrease further with a higher royalty rate.

Define the initial level of the composition royalty as w_m^0 , at which the sound recording royalty that maximizes sound recording revenues is \widehat{w}_s . As shown above, \widehat{w}_s satisfies

$$\left. \frac{dV}{dw_s} \right|_{w_m=w_m^0} = Q(w_m^0 + \widehat{w}_s) + Q'(w_m^0 + \widehat{w}_s)(\widehat{w}_s - c_s) = 0.$$

Now suppose the composition royalty increases to w_m^1 , with $w_m^1 > w_m^0$. Assume to the contrary that total royalties do not change, so that the sound recording agent sets a royalty so that $w_s + w_m^1 = \widehat{w}_s + w_m^0$. Looking at the sound recording agent's first order condition at this value for the sound recording royalty,

$$\begin{aligned} \left. \frac{dV}{dw_s} \right|_{w_m=w_m^1} &= Q(w_m^1 + w_s) + Q'(w_m^1 + w_s)(w_s - c_s) \\ &= Q(w_m^0 + \widehat{w}_s) + Q'(w_m^0 + \widehat{w}_s)(\widehat{w}_s + w_m^0 - w_m^1 - c_s) \\ &= Q'(w_m^0 + \widehat{w}_s)(w_m^0 - w_m^1) \\ &> 0. \end{aligned}$$

since $Q' < 0$. Therefore, the sound recording agent, seeking to maximize sound recording royalties, will always choose a level of royalties that increases total royalties when the composition royalty rate increases.

Solving this variation of the complementarity problem raises additional issues. Unlike the cases in which both performance and reproduction licenses are needed to stream a particular recording, or the case of multiple owners of a composition, where the rights from all co-owners are at issue when a work is played, sound recording and composition

rights do not always go hand in hand every time one work is streamed. In particular, the same composition can be associated with many different recordings. Therefore, it can be more complicated to have consolidated royalties for recordings and compositions versus having separate sound recording and composition royalty rates, which then get aggregated in the music royalty database to generate the total royalty cost for each recording available to be streamed. However, there is no reason in principle why owners of composition rights could not set separate royalty rates for each recording that embodies the composition other than the complexity of keeping track of all such recordings. Doing so would make the complementarity issues from composition and sound recording rights correspond to the complementarity arising from dual ownership of a single right.

Nevertheless, there are simple mechanisms that can be used to overcome the complementarity problem for compositions and sound recordings that do not entail separate composition royalty rates for each recording of the composition. Suppose that composition rightsholders, rather than setting a per-performance or percentage of revenue royalty rate as discussed above, instead set a rate as a percentage of the sound recording rate. Thus, composition rightsholders could set the composition royalty to be perhaps 20% or 100% or 150% of the sound recording royalty. Then sound recording rightsholders would set their royalty rate knowing that an increase or decrease in the sound recording rate will lead to a proportional increase or decrease in the musical works royalty. If the sound recording royalty increases by 10%, then the musical works royalty and the total royalty will also increase by 10%. In this way, sound recording copyright holders take into account the true elasticity of demand for a particular sound recording and will set the royalty rate that maximizes total revenues for all copyright holders jointly, thereby fixing the complementarity problem. Of course, there is no reason why the roles could not be reversed: sound recording copyrights could be set as a percentage of the composition royalty.

In countries such as Canada where the guiding standard is parity between composition and sound recording royalties, one could use an alternative mechanism more directly comparable to that used for fractional rightsholders: sound recording and composition rightsholders would each submit proposed rates into the database, and the resulting rate

would be the minimum (or maximum) of the rates submitted. As with fractional ownership, this ensures that rightsholders take into account the impact on the total royalty paid for streaming a particular recording when setting rates. As an alternative, the sound recording rightsholders and musical works rightsholders could agree amongst themselves as to a particular split that they are comfortable with, whether it be parity or otherwise, and such a split can be revisited as appropriate.

It is worth repeating that implementing a mechanism that addresses the market distortion from complementary provision of rights is in the interests of all market participants: rightsholders as well as services and customers. When owners of complementary rights independently set rates, they end up picking rates above what would jointly maximize their revenues: each owner is harmed by the other owner setting a rate that is too high. If they could coordinate, they would choose to set a lower rate. And if they do not coordinate, they are at a disadvantage relative to owners of other works that do not have fractured ownership.

Consider the simple case of a work by a singer-songwriter in which the artist is the sole owner of the recording, the sole owner of the musical composition, and the only artist thus far to have recorded the song. The artist is entitled to royalties for both the composition and the recording. Suppose the artist delegates her publisher to determine a royalty for the composition and her record company to determine a royalty for the recording. Because the two rights are perfect complements (to music services that require both sound recording and composition rights), the two agents will independently set rates that are above what would generate the most revenue for the artist if the rates were set jointly. The artist would be better off delegating a single agent to set the royalties for both the composition and sound recording rights (or just setting prices herself). Since the work is a substitute for other recordings for a non-interactive music service, the lower rate will stimulate more plays, which drives the increase in revenue for the singer-songwriter and works against owners of works with separate owners for the composition and recording rights or with fractional ownership of each right.

At the opposite end of the spectrum, the three major record labels and three major publishers are owned by parent companies with both recording and publishing arms: Universal, Sony, and Warner. Given the large market shares of all three companies, some works published by, for example, Warner’s publishing arm would be recorded on Warner record labels. To the extent that these entities take into account the return to the entire group, rather than just the publishing or recording arm, they would internalize the externality from complementary ownership and set lower royalty rates for jointly controlled works than for works where Warner controls only the publishing or recording right (but not both). Smaller independent publishers and record labels that do not jointly control both composition and recording rights would be at a disadvantage relative to these jointly controlled works from major labels. These differences in incentives can be overcome by implementing a mechanism that induces rightsholders to internalize the externality on other rightsholders and sets rates that maximize revenue.

We will revisit this issue when discussing the role of record labels, publishers, and PROs in implementing the music royalty database.

2.4. Implications for pricing. An immediate implication of letting rightsholders select their own royalty rates is that the uniformity in pricing that is a fixture of the regulated rates for non-interactive services would disappear, likely replaced by a widely varying patchwork of different rates for different works.¹⁰ Popular and established artists might be expected to license performances at relatively higher rates. And lesser known or newer artists may offer a relatively lower royalty rate to encourage trial by streaming services.

The variation in rates would extend beyond differences between large and small record labels, and between established and new artists, down to the level of individual works. There is no reason why all works by an artist would be priced at the same level – the optimal royalty rate for more popular works may often be higher than the rate for less familiar works by the same artist or on the same album.

These variations are consistent with the fundamental trade-off that determines optimal rates, as discussed earlier. To the extent that music services are less likely to substitute

¹⁰The main exception to uniform pricing in the current marketplace is the zero royalty for public domain works.

away from a more popular work if the royalty for that work is raised, the elasticity of demand for that work is lower, and the optimal price is higher. Meanwhile, it may be that more popular works have a higher opportunity cost to the rightsholder. For example, switching over to YouTube or Spotify to hear a track that has not been played by a non-interactive streaming service may be a more likely response for more popular recordings. A higher opportunity cost gives the rightsholder an incentive to set a higher royalty rate. The opportunity cost would also take into account switching between different works of the same rightsholder. If the royalty for one work by an artist is raised, perhaps the most likely next option chosen by the music service algorithm is another work by the same artist, which generates royalties to the artist. The more likely it is that the next best alternatives to one work are other works owned by the same rightsholder, the more incentive for the rightsholder to raise the royalty on that work. Differences in opportunity costs also reflect differences in promotional value to rightsholders from having their works streamed.

This dispersion in pricing will change the distribution of performances on streaming services as well, relative to the current regime in which there is a uniform or near-uniform royalty across all performances. More popular works and artists, and generally works that are given a relatively higher royalty rate, will be streamed less frequently as music services incorporate royalty rates into their algorithms for picking works to stream. Meanwhile, works that are assigned a lower royalty rate would be streamed relatively more often.

These shifts in performance shares have important consequences. Foremost is that price dispersion will result in a higher share of performances for works in the “long tail” of less familiar artists and works, while popular works priced at a premium would get a lower share of performances. To the extent that a goal of the copyright system is to promote availability and encourage production of new works, there is a clear benefit in shifting away from uniform pricing to a system with more variable rates.

Note that, while a royalty database mechanism would shift performance shares to less established works, the implications for revenue shares are ambiguous. Popular works get relatively higher royalties but fewer plays, so total revenues could go up or down. And works at a relatively lower royalty would generate more performances, but again total

revenues could go up or down. In general, using the music royalty database would not necessarily shift dollars either toward or away from major music companies and artists. But it should bring greater exposure to less established artists, and could increase overall welfare.¹¹

Thus far we have been discussing a single royalty rate in a database that would apply to all streams of works by non-interactive music services. But a single rate for each individual work is not necessarily in the interests of either rightsholders or music services. Suppose, for example, that users tend to be less particular about the music they hear, and more open to exploring unfamiliar songs at 3 AM than they are at 6 PM. Music services can take advantage of that increased flexibility by expanding the repertoire of songs streamed at night, going deeper into the catalog, and including recordings with lower total royalty rates. For rightsholders this manifests as increased elasticity of demand for their works. A higher elasticity of demand means a lower optimal royalty rate. This suggests that at least some music services and rightsholders would benefit from having the option to set different royalty rates for works streamed overnight and works streamed during the rest of the day.

The additional complexity from this type of price discrimination is fairly minimal. Rightsholders would not have to take advantage of this pricing flexibility, and could continue to charge the same royalty rate for all streams. The algorithm used by the music service would only have to reference the time of day to pull the right royalty rate from the database. Meanwhile, price discrimination allows market suppliers to expand demand when it is more elastic, which generally would reduce deadweight loss.

Once price discrimination through setting multiple royalty rates for the same work is on the table, there are other dimensions where it may be in the interest of rightsholders or services to allow differentiated rates. For example, the US Copyright Royalty Board, which determines the royalty paid for the right to stream sound recordings on statutory non-interactive webcasters, has established separate rates for advertising-supported and

¹¹See Ben Shiller and Joel Waldfogel (2011) (finding that non-uniform pricing of digital music could increase both producer and consumer surplus.)

subscription services.¹² The rationale for setting different rates is that customers of paid subscription services have a greater willingness-to-pay for music, which affects the value of streaming to those customers and should be reflected in higher rates for subscription services. Having customers with a higher willingness-to-pay does not necessarily translate into lower elasticity of demand for subscription music services. But it would if subscribers are more responsive to whether they can hear particular artists and recordings than users of ad supported services. In that case, subscription music services would be less willing to switch away from those recordings in response to higher rates. As long as there is a difference in substitutability among recordings for subscription and advertising-supported services (and/or if there is a difference in the opportunity cost to rightsholders from streams on the two types of services), there is a benefit to allowing rightsholders to price discriminate and assign different rates for the two types of services. And if there is no difference, rightsholders can always pick the same rate for both types of services, so there is no cost (other than marginally more complexity) to allowing the possibility of additional price discrimination.

Other forms of price discrimination could be contemplated, including differentiating between types or sizes of streaming services, between for-profit and non-profit webcasters, or giving a discount for the first number of times a music service streams a particular work. The same general principle holds: if there is a way to expand usage by allowing services and rightsholders to distinguish users with greater or lower price sensitivity, or greater or lower opportunity costs to rightsholders, such differentiation will generally be beneficial.

It may appear counterintuitive that switching from a blanket licensing system, where the incremental cost to a service of streaming an additional work is zero, to an alternative system with a (generally positive) incremental price for each work would reduce deadweight loss rather than increase it. The resolution comes by focusing on the right increment of usage: new users rather than additional works for each user. Consider first a subscription streaming service: the choice of how much music to play for each listener is made by

¹²Copyright Royalty Board (2016), 81 FR 26316, 26344-46, 26404-05.

the listeners themselves, who face a zero incremental price and decide how much time to spend on the service. Streaming services do not generally cut users off (though they may check to make sure that someone is in fact still listening to a stream.) So the cost of an incremental song streamed to a listener does not directly impact the amount of time users spend listening to a subscription service. This is true under a blanket license and would still be true in our proposed licensing marketplace.

Where the royalty cost does make a difference for output is in the users' decisions about whether to subscribe. With blanket licensing, streaming services generally pay a percentage of the subscription revenue or a per-play rate and make a decision about what price to charge based on their total royalty obligations, taking into account other costs of operating the service. At the margin, a higher royalty induces a higher subscription price, given competition among streaming services. Under the proposed licensing marketplace, services would still base their subscription price decision on the royalty cost per subscriber. With competition among streaming services, if royalty costs decrease, at least some of the cost savings would be passed on to customers in the form of lower subscription prices or in improvements in the quality of the service. Moreover, regardless of the level of royalties, services would have an incentive to select music that would lower royalty costs, and again competition should ensure that some of the savings are passed on to customers (either directly in the form of lower subscription fees or indirectly in the form of an improved product).

The welfare benefits of royalty competition are largely the same for ad-supported services, although the mechanism is somewhat different. Under both a blanket license and the competitive alternative, the service earns incremental ad revenues if listeners spend more time on the service. Services determine the ad load of the service, taking into account ad load elasticity (which must be at least somewhat elastic, or services would offer nothing but ads.) The optimal ad load depends on that elasticity and the incremental royalty cost as listening time and ad revenues increase. Even with a blanket license, if more time means more ads and more ad revenues, then there is an incremental royalty cost. As with a subscription service, if an ad-supported service can lower its incremental royalty

costs through the choice of songs to be streamed, that would, because of downstream competition, induce a lower ad load and more listening.

For both subscription and advertising supported services, competition among services is a critical driver of the incentives for services to incorporate relative pricing in their song selection algorithms and to pass along some of the savings to users. With uniform pricing under the current system, one would expect the difference between the “optimal” song choice and the next several best options is negligible, and therefore that “small” deviations in favor of lower cost songs will have minimal impact on the quality of song selection for listeners. More extensive changes in the mix played might lower the value of the service to listeners, but users may still prefer the new system if the impact of changes in mix are less than the differences in subscription price or ad load. Since a streaming service can always choose to ignore prices in its algorithms, competition between services should ensure that services will only incorporate price in their algorithms if they can present a more valuable product to their customers.

One additional form of price discrimination has been implicit in this entire discussion: we assume that there will be one music royalty database that applies to non-interactive music streaming services, but that different royalty rates or royalty structures might be appropriate for other types of services. We now turn to how a similar music royalty database could be implemented for over-the-air and satellite radio services.

3. EXTENSION TO RADIO SERVICES

One key technological distinction between over-the-air and satellite radio services on the one hand, and non-interactive webcasting services, on the other when it comes to compensation for rightsholders is that the over-the-air and satellite radio services have no direct way to monitor how many consumers are listening to each work broadcast.¹³ Accordingly, a per-stream royalty mechanism would not be appropriate for over-the-air and satellite radio services. However, the basic structure of the music royalty database could work in much the same way as for non-interactive streaming services using a percentage of

¹³Radio stations can use surveys to monitor overall listenership over time and at different segments of the day, but not to monitor listenership at any given time when a particular recording is being broadcast.

revenue royalty framework, and applies to both subscription services (like satellite radio) and advertising supported services (like most broadcast radio.)

Before discussing the changes to adapt the music royalty database for over-the-air and satellite radio, we first remind the reader of a more fundamental issue: under U.S. copyright law, over-the-air radio stations are not required to pay performance royalties for sound recordings, though they do for musical works. Historically, this distinction between over-the-air radio and other distribution media for music has been based on the presumption that AM/FM radio stations promote sales of music through other channels.¹⁴ Under that premise, rightsholders benefit sufficiently when their recordings are played on AM/FM radio, such that no additional compensation is necessary.

This premise can be expressed in the terminology we have been using for optimal pricing of sound recording performance rights. If rightsholders were to choose how to price performance rights for playing their recordings on AM/FM radio, they would take into account the net opportunity cost associated with having their recordings played. If radio airplay is a substitute for buying a download or hearing the recording on streaming services, then that pushes the opportunity cost and the optimal royalty upward. But if radio airplay promotes other revenue streams (whether sales, streams, concert attendance, or any other avenue through which revenue flows back to the rightsholders) that pushes down the net opportunity cost, and the optimal royalty is lower. If the promotional benefits are large enough, it is possible that the rightsholder would want to waive the royalty or even offer a negative royalty (i.e., pay the radio station) to encourage more airplay on the radio.

If rightsholders are free to set royalties for their works, they will take into account these promotional benefits. And if the promotional benefit from radio airplay is large enough, they will set low, zero, or even negative royalties.¹⁵ But under a market mechanism, there

¹⁴See Scherer (2018).

¹⁵Various commentators have pointed to the history of record labels paying to have their songs played on the radio (until the FCC prohibited undisclosed payments, referred to as “payola”, in 1960) as evidence that there are large promotional benefits, so large that the net flow of money would naturally be from artists and record companies to radio stations. See Coase (1979); Goldstein (1992) (“Given their druthers, I expect that many record companies would gladly trade performance royalties for free air-time to increase record sales in the marketplace. Indeed, rules against payola suggest that record companies would pay a positive price for air-time.”). The ban on payola prohibits this transfer of money to radio stations. Nevertheless, even with payola restrictions (which by limiting the types of expenditures for promotion also restricts offsetting payments for airplay by competing record companies)

is no reason to embed a presumption about promotional benefits into the royalty structure. Rightsholders can themselves determine the value of airplay and price performance licenses for radio accordingly. Therefore, with a competitive mechanism for music royalties, there is no longer a basis to treat over-the-air radio differently from satellite radio, webcasting, or other media, even if the presupposition about the promotional value of radio is correct.

Implementing a competitive marketplace for over-the-air and satellite radio means having separate royalty rates for radio airplay (and potentially separate royalty rates for over-the-air and satellite radio airplay). This allows rightsholders to set different rates that reflect any differences in the promotional value (and other differences in opportunity cost and substitutability of works) across different media. And, of course, if a rightsholder concludes that there is no meaningful difference, the rightsholder could set the same rate across a variety of different media. Separate royalty rates are also necessary if the webcasting royalty is implemented on a per-stream basis, since, as noted above, such a mechanism could not be applied to over-the-air or satellite radio.

The approach that has generally been used for musical works performance royalties by satellite and over-the-air radio is to pay a percentage of revenue rate. A percentage of revenue approach would also work for the competitive market database. Similar to the percentage of revenue approach for webcasters, rightsholders would propose a percentage of revenue rate that applies to over-the-air and satellite radio revenues. If all rightsholders were to propose the same rate, that would be the fraction of revenues that would be paid to rightsholders by the radio station. Otherwise the different percentage of revenue rates proposed by rightsholders would be weighted by “spins” (the number of times the work is played by the radio station), and the radio station would pay that weighted average percentage of revenue. Each work would receive the royalty rate associated with that work times the share of spins for the work on the radio station.¹⁶ An advantage of specifying

radio companies continued to spend considerable amounts on broadcast radio promotion. See Katz (2005) (“It is estimated that US record companies spend more than \$100 million on radio promotion each year, with a typical per-song spending of \$200,000 to \$300,000, and occasionally more than \$1 million.”)

¹⁶To account for the fact that radio station audience size varies over the course of the day, certain time of day weights could be added to give more weight to spins that occur at high audience times than to those that occur when there is a relatively small audience size. Alternatively, different royalty rates could be set for different times of day.

radio royalties as a percentage of revenue is that it tends to scale with the audience size of the radio station. Large stations with more listeners should have greater advertising revenues, and so rightsholders will receive proportionally larger royalties from a large station than a smaller station while applying the same royalty rate to each.

Other aspects of the marketplace for broadcast radio licensing would be similar to the webcasting royalty marketplace: It would still be redundant to have separate fees for performance and reproduction rights, since rightsholders would optimally charge the same total percentage-of-revenue fee whether they set separate fees for performance and reproduction rights or one aggregate fee for both. With regard to fractional ownership, there still needs to be a rule, like the minimum royalty rate rule, that overcomes the complementarity problems previously discussed. There would continue to be separate royalties for musical works and sound recordings, and one of the mechanisms discussed for non-interactive webcasting to internalize the complementarity externality should be implemented for radio as well.

As with webcasting licensing, there may be opportunities to price discriminate in ways that would be preferable for both rightsholders and radio stations. With radio, there likely would be a stronger incentive to offer lower rates for off-peak broadcasting hours, since listenership (and associated advertising revenues) are lower at those times. That gives radio stations more incentive to seek out recordings with lower royalties in off-hours, and affords more opportunity for less popular works and artists to discount in order to attract airplay at those times. It probably makes sense to charge different rates to over-the-air and satellite radio services since, as with webcasting, there may well be different derived demands with different elasticities stemming from the fact that satellite radio users pay for subscriptions, whereas AM/FM radio is an advertising-supported, free-to-the-listener service.

It may also be the case that there are different promotional benefits to airplay on satellite and over-the-air radio. That at least is the premise underlying the different treatment of performance rights for sound recordings on the two media, and having different prices

will allow for any actual difference in promotion and substitution effects to be incorporated endogenously in royalty rates. More generally, as with webcasting, any systematic characteristics that lead to different propensities to substitute or different net opportunity costs could be a basis for permitting different rates, which again would typically benefit rightsholders, services, and users in the aggregate: radio stations could lower their royalty costs, and would pass on at least part of those savings through lower subscription prices or ad loads.

4. IMPLEMENTATION ISSUES

A move away from current practice towards a system along the lines discussed will undoubtedly have many complications that need sorting out. In this section we address some of the more significant foreseeable implementation issues, while recognizing that there will likely be other issues that are not discussed here.

A first issue to consider is what the process of transitioning to this more competitive marketplace might look like. There are many different systems in place to license various music rights to a wide variety of music services, some of which have existed for over a century. It is clearly not a simple task to just drop everything and switch to a new way of doing things, even if that new mechanism has widespread support.

The most likely means of transitioning to a licensing mechanism along the lines discussed is through legislation. One potential approach is to draft legislation that requires the creation of the database contemplated herein, potentially by extending the mandate of the MLC or as a joint venture between the MLC and SoundExchange (so as to capture sound recording ownership information that SoundExchange maintains). That raises the question of who should pay for the creation and maintenance of the database. One possibility is to fund the database by taking a small portion of the royalties that will flow through this new system, as SoundExchange and the PROs currently do today. As an alternative, those services that will be able to take advantage of the database could pay for its creation and upkeep, in a manner that is similar to how the MLC is currently funded. Another possibility is a hybrid of these two, where some of the cost is paid directly by the services

and the remainder is funded through taking a small portion of the royalties flowing through the system.

Were this proposed mechanism implemented through legislation, an important issue to consider is whether this new approach to licensing should continue to maintain one of the features of statutory blanket licensing – that the music user has the right to use any musical work or sound recording so long as the appropriate royalties are paid. Maintaining this feature of existing blanket and statutory licenses has the benefit of promoting widespread use and dissemination of copyrighted works. It does, however, take away some control that would otherwise be held by the copyright owner, as the owner would not have the right to refuse to allow his or her works to be used by any of the services that can take advantage of this new way of licensing. Of course, the rightsholder could always set a very high price for her works to provide a strong incentive for the service to not use the work, but the service would still be able to use the work if it was willing to pay the high price.¹⁷ On balance, it does seem preferable to allow each service using the contemplated mechanism to have access to all musical works and sound recordings so long as it pays the fee set by the rightsholders for each of the works it does ultimately use. This should promote the widespread use of copyrighted works without impinging on the rightsholders ability to set her own price (subject to one caveat we now discuss). In principle, however, the rightsholder could be allowed to enter a “do not play” flag in the database, which would in effect remove a work from consideration for certain types of services.

It is also worth considering whether there should be certain rules that are put in place on a temporary basis to ease the transition from the current systems to a more competitive alternative. To mitigate against any major shocks to the current systems, it may be worth having certain minimum and maximum royalty rates that can be charged for the use of each work for some fixed period of time, so as to ensure that there are not drastic swings in royalties received or royalties owed as market players adapt to a new licensing regime. Such minimums and maximums could be derived by looking at what rates are effectively

¹⁷The inability to say no to statutory licensees has been a frequent concern raised by rightsholders, as they believe it leads to artificially depressed statutory rates. United States Copyright Royalty Board (2019) at 1932. That concern should not apply here, as rightsholders would be free to set their own prices, subject to the forces of competition.

being paid today by each type of service that might use the new licensing mechanism, and to allow the prices being set by the rightsholders to deviate, either upward or downward, by no more than a fixed percentage. For example, if the effective per-play rate paid by non-interactive streaming services today is 1¢ , to ease the transition to the new marketplace, the price that can be charged for each work can be allowed to be within 25% of this average, or range between 0.75¢ and 1.25¢ (or by some other percentage that is acceptable). This would allow for competitive forces to begin to take hold, while preventing immediate and dramatic shifts in either total royalty payments or overall rightsholder compensation. Similarly, if royalties are set as a prorated percentage of revenue rate, one could limit the range of permissible percentage rates during the transition period. Once all of the relevant stakeholders have had sufficient time to adapt to the new system, these restrictions could either be taken away entirely or gradually relaxed over time.

A second implementation issue that warrants discussion is how to address unidentified rightsholders. While perhaps a bit surprising in this day of information, we understand that there still are very significant issues related to the identification of some sound recording and musical work rightsholders. We provide some possible solutions for addressing works for which no owner of a sound recording or musical work comes forward. Under such circumstances, there would be no pricing information in the database. There are several potential approaches here. One is that the work simply cannot be used and, if it is, the service would be subject to a copyright infringement lawsuit. If the work is not used and, as a result, generates zero royalties, that gives the copyright owners an incentive to come forward and set a price so they get their works performed and can be compensated. However, if copyright owners have not voluntarily come forward under the current system, there is no particular reason to think they will under the new system either.

An alternative approach is to set the price for such works at zero. This would allow the services to make the work available, and, because there is a zero royalty, would encourage the copyright owner to come forward and set a non-zero price. Such an approach would also tend to further the overarching goal of maximizing the use of existing creative works.

A final possibility is to set the price for such works at either a pre-determined level, such as the level under the current licensing framework or at the average of all prices in the database for the same use, with the royalties being set aside in an escrow account for the copyright holders when they make themselves known. This approach arguably provides greater incentive for the copyright holders to come forward, as there will be royalties waiting for them when they do. Once identified, these copyright owners would presumably set their own price for their works on a going forward basis.

A variation of the just-discussed issue is what to do if some, but not all, of the owners come forward and set prices for their works. Given the mechanisms discussed above to internalize the complementarity externality from joint ownership, the natural solution is that the missing co-owners would simply not play a part in determining the royalty for the work. Under the minimum or maximum rule, the royalty rate would be determined only by owners who have entered a rate in the database. Under the delegation rule, it would be as if the missing owner had delegated the responsibility to set rates to a joint owner who has offered a royalty rate. And as with the entirely unidentified works, the royalties for the missing co-owners could be placed into an escrow account and be paid out when the missing co-owner comes forward.

It is not clear which approach for unresponsive owners is best, as they all have their benefits and drawbacks. But what is clear is that there are multiple possible approaches (including, undoubtedly other options that we have not considered) for addressing this issue. Whatever approach is taken, one of the key considerations should be to provide the right incentives for rightsholders to come forward and set their own prices. This leads to a more fulsome database and allows for the fostering of a more competitive marketplace, with more and more rightsholders setting competitive prices in an effort to have their works performed.

An additional implementation issue worth considering is what sorts of rules would have to be put in place to ensure, to the extent possible, that prices are not set collusively (either explicitly or tacitly). Whether done through existing antitrust laws or through an agency with oversight of the licensing system, there should be some entity charged with

monitoring pricing behavior to help to ensure that prices are not being set collectively or collusively, with appropriate penalties in place should it be determined that certain entities are not setting prices for each work independently. While there should be sufficiently diverse pricing incentives across owners and works to limit collusion and foster competitive pricing, the key here is to do what is necessary to prevent this contemplated competitive licensing system from reverting back to one devoid of meaningful price competition.

Finally, while not strictly an implementation issue, it is natural to question what role current licensing intermediaries might play in a marketplace along the lines we discuss. Many of these intermediaries have expended tremendous resources to allow the market to function as it currently does and provide significant value. PROs, for example, have developed extensive systems that allow them to track a wide variety of uses of the musical works in their repertoires and to distribute the royalties they take in to their affiliates pursuant to certain pre-determined formulas. To be sure, this is no easy task and the work that has gone in to developing these systems has undoubtedly been time consuming and expensive. As a result, PROs have valuable information and expertise that could be called upon to ensure that the marketplace envisioned herein can function properly. For example, the databases maintained by PROs could form some of the backbone for the database we contemplate.

PROs also have significant experience negotiating with services over musical works performance rights license fees and terms. While this function would no longer be necessary for those services that are able to use the database we contemplate, PROs could still be of assistance to their affiliates to help evaluate potential prices for their individual musical works (and, of course, PROs could continue to serve the function they do today for those licensees that are not able to take advantage of the marketplace we describe). This is not to suggest that PROs must evolve in these ways—only that there very well may be a continued and valuable service that PROs can provide to their affiliated composers and publishers, albeit one that differs in at least certain respects from those they provide today.

Along similar lines, SoundExchange and the MLC have extensive information and expertise in collecting license fees and identifying and paying rightsholders. While at least

some of what these organizations do would no longer be needed, these organizations could still serve very useful functions, including by serving as some of the backbone for the contemplated database. Indeed, the MLC database, when it is fully up and running and has had sufficient time to develop, is supposed to have all of the information on musical works that the contemplated database would need to have, other than pricing information. As we understand it, the MLC database is supposed to contain the necessary information to identify which musical work is embedded in each sound recording and who the owners are of each of those musical works (along with the information necessary to pay those owners). SoundExchange's database likely has much, if not all, of the sound recording information that is needed, again other than pricing information. That much of this information is already compiled, or is in the process of being compiled, into various databases gives us greater optimism that the database necessary for the marketplace we discuss is obtainable.

Music publishers and record labels would likely operate much in the same way they do today, and they would also need to set prices for the copyrighted works that they own. In addition, record labels and music publishers may prove to be extremely useful in either helping artists and songwriters to set prices for the portions of works that they own, or even to set the prices directly on behalf of these rightsholders.

5. CONCLUSIONS

The current music marketplace has undergone an enormous shift in music consumption from purchases of physical media to a market dominated by digital streaming. This shift, together with other technological changes like algorithmic selection of music and music recognition software, opens the way to a correspondingly large shift in the way that music rights are licensed and paid for and makes it possible to contemplate a truly competitive marketplace for music rights, with all the associated benefits of efficient allocation and pricing. Our goal in this paper is to sketch out how that competitive marketplace might operate, and to suggest that this transition, while substantial, is feasible and potentially has large benefits to music rightsholders, music rights licensees, and consumers alike.

The feasibility of the competitive alternative as we have described it hinges on the availability of a music rights database linking musical works to sound recordings and linking both rights to the owners of those rights. A comprehensive music database has been discussed for years, but it received legislative impetus in the U.S. from the 2018 Music Modernization Act, which mandated the creation of this type of database for compensating mechanical rights for compositions starting in January 2021. We presume that a database along the lines of what we have discussed can become available in the near future, whether through relatively modest adjustments to the MLC database contemplated by the MMA or other means, and also that it can become the foundation of a competitive music licensing alternative by adding royalty information to the database.

There are a number of design and implementation issues in transitioning to a licensing mechanism using a royalty database. We have tried to demonstrate how these issues can be accommodated in a way that promotes efficiency and fair compensation to rightsholders, without claiming that the mechanisms we propose are the only feasible alternatives. In particular, we have discussed in detail the externality from the licensing of complementary rights (due both to multiple rights and multiple rightsholders). Again, while the mechanisms we describe would internalize these externalities and promote efficient pricing and distribution, there may be other ways to accomplish the same goal.

Throughout the paper we have discussed the royalty rates that would emerge from a competitive licensing mechanism, and have focused on the price dispersion that would inevitably emerge from a competitive mechanism, with less popular or newer works licensed at relatively lower rates and more popular or established works licensed at relatively higher rates. Further price dispersion would be driven by differences in opportunity costs among licensors and differences in substitution possibilities among licensees. But otherwise, we have not tried to predict overall price levels. With the transition to a competitive licensing mechanism there would be multiple forces pushing prices both higher and lower. Rates would tend to be higher because rightsholders would set take-it-or-leave-it rates rather than negotiating rates, and set rates without the backstop of regulatory or judicial involvement. Rates would tend to be lower because with price dispersion, services

could increase performances of lower priced works, thus introducing competition into rate setting, and because the proposed mechanisms for determining the total royalty rate internalize the complementarity externalities. Rates would also incorporate the net promotion or substitution effect of individual works on rightsholder income streams, which would tend to push rates for some works higher and other works lower.

The net effect of all these changes on rate levels is difficult to predict, other than that it is very likely that some works on some services will be licensed at higher rates, while others will be licensed at lower rates, with competition determining the overall mix. There will be additional movement of prices upward and downward if more price discrimination is introduced into the database mechanism, based on such distinctions as time of day or the type of user. There may be value in trying to predict the net impact on a “representative” work using a licensing system along the lines we outline to model how an effectively competitive marketplace would function for licensing webcasting services. Since current regulatory standards often call for setting effectively competitive rates, the licensing database may provide a better picture of effective competition than the methods typically used in regulatory settings, which rely on predicting or adapting negotiated uniform rates for blanket licenses. However, we have not tried to model the overall implications for effectively competitive rates in this paper.

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