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The Competitive Market Value of Copyright In Music: A Digital Gordian Knot (The Working Paper Version - v2)

MARCEL BOYER

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The Competitive Market Value of Copyright In Music: A Digital Gordian Knot (The Working Paper Version - v2) *

Marcel Boyer[†]

Abstract

Pricing copyrighted works or assets so that creators are competitively compensated has always been a difficult task given the information good character of such works. Doing it in the digital era is even more challenging. I consider Hertzian radio, satellite radio, and interactive music streaming services and I argue that annual competitive royalties in Hertzian radio should be increased from \$100 million to \$450 million. I further argue that this gap should not be filled by primary users alone but by a broader set of beneficiaries, including the general public and their government.

Keywords: Copyrights, Hertzian Radio, SiriusXM, Music Streaming Services, Pandora, Spotify

JEL Codes: D23, L38, O34, Z11

Résumé

La tarification des œuvres protégées par le droit d'auteur assurant aux créateurs une rémunération concurrentielle a toujours été une tâche difficile étant donné le caractère biens d'information de ces œuvres. Le faire à l'ère du numérique est encore plus difficile. Je considère la radio hertzienne, la radio par satellite, et les services de musique interactive et je prétends que les royautés dans la radio hertzienne devraient être augmentées de \$100 à \$450 million. Je prétends en outre que cet écart devrait être comblé non pas uniquement par les utilisateurs primaires, mais par un ensemble plus large de bénéficiaires, y compris le grand public et leur gouvernement.

Mots-clés: Droits d'auteur, Radio hertzienne, SiriusXM, Services de musique en ligne, Pandora, Spotify

Codes JEL: D23, L38, O34, Z11

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Introduction

There is currently an important debate among both academics and professional practitioners on the proper definition, coverage and characterization of intellectual property rights of all kinds: patents, copyrights, trademarks, etc. In many jurisdictions, the legal foundations and enforcement of intellectual property rights are being questioned and reconsidered in the context of the digital era. New laws and extensive revisions of existent laws are discussed with powerful political and business groups on all sides of the debates.

At the center of those debates one finds arguments on the costs and benefits of protecting and enforcing intellectual property rights. The balance of costs and benefits is seen differently by different actors. Some see the costs of such policies, in terms of a lower dissemination of creations and innovations and therefore a loss of socio-economic value, in part in terms of further creations and innovations, as larger than benefits. Others see those benefits, in terms of adequate protection of intellectual property rights allowing proper compensation of creators and innovators thereby inducing them to increase their valuable and significant but risky investments in the production/expression of creations and innovations, as overshadowing costs.

Clearly, intellectual property rights should not be an undue impediment to further creations and innovations and therefore, should be properly defined and restricted in time and scope. As clearly, creations and innovations do not fall from heaven but are the results of significant efforts exerted and risks taken by creators and innovators. The balancing act here is to provide sufficient incentives for creators and innovators while at the same time foster the dissemination of creations and innovations. This is where market and market-like institutions for transactions on intellectual property rights, including fair use/dealing exceptions, compulsory licensing, as well as administrative boards and tribunals¹ acting as social welfare maximizers or market surrogates, can play a major role.

The recorded music and book publishing industries are particularly important in the digital economy. Music is in a sense leading the digital transition and fuels the Internet. First, recorded music and books are prone to digitization. Second, new technologies used to sell and distribute music and books on the Internet (webcasting and on-demand streaming, e-books) raise the possibility of valuable large-scale dissemination and customization at relatively low marginal costs. Third, those technologies open music and book markets to increased intensity of competition due to the lower costs of entry of creators (authors, composers, performers, writers) on a world-wide and time-wide scale.

Before the advent of digitization, music and books were information assets whose distribution costs were significant, while those latter costs are now reduced to almost zero. Marginal distribution or dissemination costs were possibly sufficiently high to allow profits over variable costs to cover the cost of creation through royalties. It is not the case anymore.

The digital revolution comes at a time when the value of copyrighted works appears to be both significantly underestimated and continuously eroded by new copyright exceptions. Active users' groups claim that a reduction in copyright price, scope and duration would favor an increase in social and economic welfare as well as a more intensive and extensive development of innovations and creations.

Those technological developments have made it increasingly difficult to affirm and enforce traditional intellectual property rights.² Moreover, they raise new risks of copyright erosion and non-competitive compensation of creators, which I consider as unfair. I tackle in Boyer (2017c) the determination of the competitive market value of copyrighted music. I argue that in the case of Canadian Hertzian radio annual royalties should be increased from \$100 million to \$450 million and furthermore that this gap should not be filled by primary users alone but by a broader set of beneficiaries, the elephant in the room, including the general public as represented by government.

And significant challenges pave the way to copyright reforms aimed at reaping the benefits of digital technologies while protecting creators. Although the challenges and pitfalls are similar for both literary works and musical works, the rest of this paper will mainly deal with music. But most of it can be read *mutatis mutandis* with in mind literary works or patents, scientific contributions, as well as innovations.

The remainder of this paper is organized as follows. Section 1 presents an overview of what the new digital economy means for copyright: the recent market trends, the questions that an economic research programme should address, and the recent debates and projects of reforms currently on the table, including recent decisions by the Supreme Court of Canada, which will shape for the better or worse the future financials of the copyrighted works industries. Section 2 discusses the Gordian knot that copyright pricing represents as a quasi-unsolvable conflict between first best and second best principles with numerous challenges and pitfalls. The conflict rests in good part on the difficulty to characterize in theory and measure empirically the competitive market value of copyright, which is tackled in Section 3, given the digitization of musical works and sound recordings and the information good or asset feature of copyrighted works. Comparing the competitive market value of copyright and the overall compensation of rightsholders on different music distribution platforms lead us to the observation that a significant gap exists between the two. Section 4 raises the question of the missing royalties and proposes an approach to fill the gap in an appropriate way. The Conclusion then recalls and summarizes the main policy messages.

Section 1. Copyright and the New Digital Economy

As the debate on the re-examination of copyright legal foundations and enforcement, coverage, exceptions, and compensation takes place, the market or markets of music delivery are changing rapidly.

Beard et al. (2017, 2) of the Phoenix Center claim that: "In 1999, the year the Digital Millennium Copyright Act ("DMCA") was enacted, revenues for the recording industry in the United States

reached nearly \$21 billion (in current dollars), growing nearly 5 percent annually over the preceding decade. The future looked bright. Fifteen years later, due in large part to digital piracy made possible by technology and high-speed Internet connections, sales were only \$7 billion, a decline of 65 percent in real terms.”

Friedlander (2017, 1) writes: “Although our 2016 revenue report catalogues substantial overall improvement for the industry, revenues [7.7 billion US \$] are still only about half what they were in 1999, and revenues from more traditional unit-based sales (physical products and digital downloads) continued to decline significantly ... [The] streaming music platforms generated the majority of the U.S. music industry’s revenues [51 percent comes from streaming platforms, 24.1 percent from Digital Downloads and Ringtones, 21.8 percent from Physical sales, and 2.7 percent from synchronization]. The streaming category includes revenues from subscription services (such as paid versions of Spotify, TIDAL, and Apple Music), streaming radio services including those revenues distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and ad-supported on-demand streaming services (such as YouTube, Vevo, and ad-supported Spotify) ... In 2016, revenues from sales of digital tracks and albums declined faster than in any previous year. Overall digital download revenues were \$1.8 billion, down 22 percent versus 2015. Individual track sales revenue was down 24 percent, and digital album revenue was down 20 percent compared with the previous year. Revenues from sales of digital albums were 49 percent of the download total, their highest share ever ... The industry showed another increase, albeit from levels that remain well below their peak in the late 1990’s. The growth of streaming music and prevalence of digital platforms show that music consumption is higher than ever – which is great for fans. But challenges remain significant as physical shipments and digital downloads, two of the industry’s three major revenue sources, continued to decline in 2016. A similar evolution is observed in other countries.”

However, U.S. radio listening hours in 2016 is still accounted for mostly by traditional radio, Hertzian (79 percent) and Satellite (8 percent), while webcaster Pandora is coming at 10 percent. Regarding U.S. music streaming hours, Pandora leads with 55 percent followed by Spotify with 32 percent (Pandora Analyst Day, 25 October 2016). On a worldwide scale, Pandora and Spotify appear neck to neck. As a whole, music represents 79 percent of audio listening time (Edison Research 2016). And 61 percent of Americans say that they discover music through radio (AM/FM and Satellite) compared to 27 percent for online audio or video streaming websites/apps (Nielsen Music 360 Report, 2015).

Interlocking financial arrangements are also developing. Major music labels acquired minority stockholder positions in Spotify, namely Sony BMG (5.8 percent), Universal Music (4.8 percent), Warner Music (3.8 percent), EMI (1.9 percent) and Merlin (1.7 percent).³ Moreover, it was announced on June 9 2017 that SiriusXM invested US\$ 480 million for a 19 percent stake in Pandora and obtained three seats on its board of directors (Roettgers 2017). Rightsholders organizations are also active on that front. It was announced recently that U.S. based

SoundExchange acquired the Canadian Musical Reproduction Rights Agency (CMRRA). The acquisition of CMRRA will provide SoundExchange, a sound recording collective present in the digital world, with an opportunity to enter the music publishing administration market. The transaction comes at a time of increasing consolidation in the marketplace, so this is another example of the changing market. Those are the most recent among other cross ownership deals that existed in the recent past and exist today.

Such financial deals in a sense blur the lines between different business models in the music delivery industry and it is not clear how they will impact the intensity of competition among the different (digital) technologies and business models, hence the copyright royalties. But one thing is clear: unless rightsholders can avoid the risky position of residual claimants in the development of the digital age, they will end up on the losing side of history.

With these trends as background, the digital era can be defined as encompassing drastic innovations in the production and distribution or dissemination technologies as well as in business organizational governance associated with the digitization of goods and services and the digitalization of firms and businesses. Their impacts on the competitive landscape of markets, in particular markets for intellectual property products such as copyrighted musical works, is of major importance. All current and past musical works of the world are increasingly becoming available to all at a low if not zero marginal dissemination cost.

The significant reduction of dissemination costs of music poses important challenges for the delicate balance between the creators' right to a fair or competitive compensation or share of the market value of their works and the users' right to the benefits of digital technologies. The situation is made even more challenging as musical works are *information goods*: once produced, each unit can be consumed by all, as one person's use (listening or reading) of a work does not prevent its simultaneous or subsequent use by others. Moreover, musical works are assets that survive indefinitely with practically no physical depreciation. Hence, they are better referred to as *information assets*.

Although related, the information asset character of musical works and sound recordings and the digitization of music are two different factors. The first one relates to the permanence of the product or asset as one's consumption of a unit does not destroy the unit, which remains available for everyone else now and in the future, while the second one relates to the distribution or dissemination costs of that product or asset.

The economics program

Striking the right balance between creators' and users' rights in such a context is a difficult multifaceted endeavor. In a nutshell: musical works are *costly* information assets; digital technologies reduce the marginal cost of dissemination or distribution of works to almost zero; copyright made works excludable information assets, thereby favoring the emergence of markets

and market-surrogate institutions. But this excludability level may have become too severe for the digital world, hence possibly less efficient at its current level and less effective than before.

The significant challenges of digitization for the valuation and pricing of musical works and sound recordings raises the importance for economic theorists and empirical economists to take a serious look at the paradigm-changing potential that comes from large scale digitization, digitalization, dissemination and customization both to better understand those phenomena and to suggest adequate efficiency-prone policies. David R. Strickler (2015), a judge on the US Copyright Royalty Board, emphasizes the judicial need for comprehensive research in copyright economics.

Indeed, two important objects of economics as a social science are first the analysis of static and dynamic *mechanisms* that can best contribute to meeting the virtually unlimited needs of human beings with the limited resources available to them, and second the design and characterization of *institutions* that can implement or concretize those mechanisms. The appropriate welfare-generating production and distribution mechanisms and institutions will depend on the nature and characteristics of the goods and services that citizens and consumers demand or need.

Given the deep turmoil in the world of copyright, numerous law and economics questions are raised. Why do we observe an increasing breadth, intensity and scope of fair use/dealing exceptions? If fairness in compensation must be based on competitive market compensation, then what is the competitive market compensation level in the context of information assets with quasi zero dissemination or distribution costs? Should fair use/dealing provisions be compensated? If yes, by whom? What about other exceptions? Why not make copyrighted works royalty-free? And if so, how can creators' compensation be ensured?

Recent debates and projects of reforms

A recent US Copyright Office (USCO 2015) report⁴ develops a series of guiding principles and preliminary recommendations for change. Affirming that the time is ripe to question the existing paradigm for the licensing of musical works and sound recordings, the report addresses concerns of songwriters and recording artists that they cannot make a living under the existing structure while music publishers and performance rights organizations are frustrated that so much of their licensing activity is subject to government control and therefore constrained in the marketplace, making it difficult to innovate. As in Europe, there is a general if mixed consensus in the US and Canada regarding the need for reform. But the consensus brakes down when specific measures and changes are considered, especially if they are considered on a one-by-one basis.

The USCO makes five important recommendations. First, the need to extend the public performance right in sound recordings to presently exempted terrestrial radio broadcasts;⁴ Second, the adoption of a unique market-based rate setting standard, whether denominated “willing buyer/willing seller” or “fair market value” hence mimicking rates that would be negotiated in an unconstrained market, in order to stop the subsidization by music creators of users who seek to profit from their works; Third, the licensing of mechanical rights on a blanket basis bundled with

performance rights, possibly under the same collectives, with an opt-out option for digital rights; Fourth, the creation of a general music rights organization GMRO to maintain a publicly accessible database of musical works and sound recordings appropriately matched to simplify and facilitate more efficient licensing; Fifth, the regrouping of all government rate setting under the Copyright Royalty Board, hence the abolishment of rate courts currently in charge of setting rates for musical works.

The advent and growth of digital technologies have favored an increase in the value of musical works insofar as consumption has increased, but at the same time have put more emphasis on social demands to make them more available than before, in other words have put more emphasis on reducing the excludability that the granting of copyright was supposed to ensure.

Such a proposed policy of making music (and books) more widely available, that is, freer or at lower prices overall, begs the question: who should bear the cost of such a policy? The creators as providers of musical works and sound recordings? Alone or along with some other groups? Indeed, the cost of a public policy of enhanced dissemination of copyrighted works through lower royalties and expanded exceptions and limitations of copyright can be expressed in terms of the compensation of creators.

Whatever the public policy pursued, it would be wrong to simply expropriate the intellectual property of rightsholders without properly compensating them. And properly compensating rightsholders requires ab ovo a sound understanding of the competitive market value of copyright in musical works, that is, of musical works themselves.⁶

Fair use/dealing in copyrighted works is a central exception in the current debate. It warrants some discussion as one must properly understand and apply the present and proposed fair use/dealing objectives and provisions as well as the associated regulatory frameworks. A rigorous economic analysis is essential for that matter, as fair use/dealing is too important to be left to legal squabbles.⁶

Following landmark decisions of the Supreme Court of Canada in 2012 and the revision of the Canadian *Copyright Act*⁷ which came into effect in November 2012, the Canadian Copyright Board (CCB) began to modify previously set royalty formulas and eat away at royalties by reducing in particular the types of reproductions that could be subject to copyright tariffs. The after-the-fact approach was contested among others by Boyer and Cremieux (2013) who claimed that if some selling prices of jointly-produced goods are lowered, by regulation for instance, a firm in a competitive context will need to adjust one way or another its pricing and production strategies in order to maintain its profitability or survival, while properly compensating its resources and suppliers.

Their competitive response argument implies that there is *in fine* no economic rationale for modifying the overall amount of royalties paid to rightsholders even in the presence of exceptions. In other words, contrary to users' claims, even if new exceptions were to impose the non-

compensation of certain types of music reproductions, they would not in this framework imply a reduction in royalties for the right to reproduce recorded music.

Section 2. The Gordian Knot of Copyright Pricing/Compensation in the Digital Era

The most important *general* principles or concepts that have been present in numerous if not all decisions of the different copyright boards and authorities are the following: the economic concept of works as information assets, the socio-economic efficiency criteria, the willing buyer willing seller paradigm, the willingness to pay and the ability to pay for the rights by different users, the concept of proxy for a nonexistent price, and finally the role of the copyright boards and commissions or authorities, under different institutional settings, acting as surrogates of competitive markets and informed negotiations (Boyer 2011).

How can we define the level of production of or investment in an information asset to ensure not only that the maximum well-being is provided to citizens but also that existing institutions (markets, competition, regulations) will be able to achieve this level of production or investment? It is a complex issue.

Social efficiency: first best and second best policies

For many goods and services, the optimal level of consumption is generally considered to be the level achieved when the price of the good is equal to its marginal production cost, insofar as demand or total consumption of the good at this price is such that the total net surplus generated, defined as the total value of consumption less the total cost, is positive. Otherwise, it is better not to produce the good in question. Thus the optimal consumption level (production, distribution, and dissemination) is either zero or equal to the level obtained under marginal cost pricing. This level corresponds to what economists call a first-best optimum, which requires that fixed costs be covered one way or another. A competitive market is generally the preferred mechanism for defining and achieving an optimal level of production and consumption for these goods.

With information goods or assets, the problem is somewhat more difficult since the same unit (think of a musical work or sound recording) can be listened to and enjoyed many times by many different users or consumers now and in the future as consumption does not destroy or alter the unit in question. The optimal production level will therefore involve the marginal cost and the (*discounted*) *sum* of marginal values enjoyed over time by all users: as long as the former is lower than the latter, it will be welfare enhancing to produce the unit in question. And additional units should be produced as long as the sum of marginal values enjoyed over time through multiple uses by multiple users remains above the marginal cost incurred by creators as investors, hence up to the point where the two are equal. Meeting such a condition is difficult as it implies, when the sum of marginal values is equal to marginal cost, that marginal values across users will differ.⁹

However, for an information good or asset whose marginal cost of distribution is quasi zero, the optimality condition requires that the sum of users' marginal values be equal to zero, which implies that each and every user's marginal value be equal to zero. Clearly, such a price will not enable the creator/seller/producer to generate enough revenue, in fact any revenue, to cover all costs involved in generating and marketing the information asset, and in particular the significant fixed costs, including the proper compensation for risk taking.

A competitive market, which would implement the condition "price = marginal cost = 0", cannot therefore ensure an optimal allocation of resources unless and until the compensation of fixed costs of production or creation is achieved. With a quasi-zero price, too few individuals would be prepared to take up a career as a creator and to devote the time and resources needed to generate zero-priced information assets, such as original musical works.

In response to these problems, two streams of thought have developed. The first argues that one ought to assign property rights to creators over their created assets, in particular over the transfer/communication and reproduction of their creations, and allow markets to emerge and determine equilibrium prices, that is, prices that ensure that creators and consumers/users are satisfied with the exchange level that would thereby be achieved.

Because of the property right conferred, creators might be able to restrict access to those users who actually pay for this access. The resulting equilibrium price would be higher than the marginal cost and could make it possible to cover all of the production and distribution costs, at the expense of lower than optimal consumption levels or use levels (second best) of the asset.

The other stream of thought argues that the strict attainment of an optimum must be promoted with transfer/communication, reproduction and consumption allowed at marginal cost, hence free of charge (first best). Creators should then be compensated in various ways from some combination of private sponsorship and grants, concerts with limited admission capacity hence priced above zero, and government subsidies.

Each of these approaches poses problems.

Overly strict copyright provisions could give the producers of the work a monopoly over the asset, or group of assets if creators can regroup under a common roof: the price of each unit could then be too high and the number of creations distributed or disseminated too low, thereby reducing the production of new works as each new work is in some sense the indirect result of previous works: A dwarf sitting on a giant's shoulders can see much farther than the giant.¹⁰ However, if copyright were loosened it might be easier to stand on the shoulders of giants but there might be fewer giants.

Free use has its own set of problems. If an organization composed of private parties and/or governments had to fund the production of works through fixed or variable grants to creators and to that effect keep a record of every use, how could it establish the absolute and relative value of the works produced in order to properly compensate creators? The organization might want to control its disbursements, reduce them or even link them to arbitrary factors, to the detriment of creators and users. Which and how many authors or creators would spend time and resources to produce quality

works whose valuation depends on the goodwill and sagacity of some organization of private parties and government bureaucracies?

A combination of these policies.

Economic analysis can provide or suggest answers to these questions. The problem is complex, as Landes and Posner (1989, 326) suggested: “Copyright protection - the right of the copyright's owner to prevent others from making copies - trades off the costs of limiting access to a work against the benefits of providing incentives to create the work in the first place. Striking the correct balance between access and incentives is the central problem in copyright law.” Obviously, solutions will not be completely efficient or first-best optimal.

Three principles are at the forefront of the copyright pricing challenge, First, the competitive level playing field principle, which ensures that all users of musical works and sound recordings, whether in hard or digital form, compete for customers on equal terms given the various business models characterizing the different users: same pricing for similar uses, different but compatible pricing for different uses. Second, the competitive market value principle, which ensures that the compensation of rightsholders achieve fairness for both users and rightsholders as well as efficiency and effectiveness. Third, the information good pricing principle, which ensures that users can have access if not consume all available musical works given that those musical works are permanent, that is, not expended in consumption.

The whole art lies in finding a solution that can be useful and be implemented at low cost while at the same time come close to an optimal allocation. The best that one can hope for would be to regulate market pricing in order to minimize distortions from the first-best solution, that is, to introduce appropriate distortions-minimizing wedges between prices and marginal costs to meet a budget objective, which in the present context takes the form of a competitive compensation level for creators.

The first-best solution is to price at marginal cost and find other ways than revenues generated from sales to compensate creators, as those revenues will not be sufficient to do so. The second-best solution is to introduce wedges between prices and marginal costs in the different market segments, or at different links in the chain between creators and users, in such a way that the resulting use or consumption levels allow the proper compensation of creators but diverge as little as possible from the first-best ones.

This can be done through what economists call the “Ramsey inverse elasticity principle”: wedges between prices and marginal costs should be inversely proportional to the elasticity of demand, that is, be higher when demand is less elastic, indicating a low reactivity of users or consumers to price increases. In this way, second-best consumption levels will remain as close to first-best levels as possible given the budget constraint.

One may also think of a combination of the above two solutions: partly first-best principled and partly second-best principled. The problem and its solutions are complex and it is important to remember that as soon as one enters into a realm of solutions that have imperfect and incomplete information bounds or constraints placed upon them, the best becomes the enemy of the good: things gets messy when “you run with the hare and hunt with the hounds.”

The creators’ competitive compensation as the budget constraint to be covered

What should be the creators’ compensation constraint to impose on the overall pricing program? That is another Pandora’s Box. The historical prices and royalty revenues effectively received by rightsholders are of little help here as they were obtained and developed through self-referencing rate determination procedures and hearings, with little if any theoretically-sound empirical justifications.

It is the competitive market value of copyrights in music that provides the compensation constraint to be imposed on the overall pricing system. Since musical works and sound recordings are information goods or assets, the competitive market value of copyrights, hence the determination of relevant tariffs, rests not so much on the cost of creation, which is underlying the supply function of new works and new sound recordings, but rather on the value of such goods for the users.¹¹ We thus need a more rigorous basis and more rigorous analytical tools for ascertaining the competitive market value of copyright in copyrighted works or assets.

Moving away from simple heuristics and traditional analysis towards sounder, more advanced economic analysis and renewed institutional frameworks is a demanding endeavor, which could be miscarried if not properly understood. The challenges and pitfalls are numerous. Besides those we have discussed above, namely the fact that musical works and sound recordings are *costly* and risky information goods or assets, the fact that digitization is a drastic innovation that reduces significantly the dissemination costs of music, the possibility that copyright is increasingly eroded by new exceptions and limitations, one can add the following. (i) The level of royalties being paid by users to rightsholders is one concern, but the distribution of the pie among creators of different types/groups (authors, composers, music publishers, performing artists, producers of sound recordings, and music labels) is also a major but different concern.¹² (ii) The current framework of sequentially determining royalty payments and rates, each case being heard or negotiated on a standalone basis thereby making it difficult for the royalty boards as well as negotiated contracts to implement significant adjustments; if all rates were to be determined at the same time, a level playing field of competition could more easily be maintained with the different rates being based on proper competitive market values; making changes in a sequential fashion may prevent the unavoidable challenges of the status quo. (iii) There is always a real danger of inadvertently tilting the level playing field of competition between different delivery technologies of musical works, namely traditional, analogue, digital, and Internet technologies, which are all competing for listeners’ ears. And (iv) there is also a real danger to lose sight of the forest for the trees, as the big picture itself keeps evolving. As the US Copyright Office (2015, 3) puts it: “The Copyright Office

has previously highlighted the outmoded rules for the licensing of musical works and sound recordings as an area in significant need of reform. Moreover, the Office has underscored the need for a comprehensive approach to copyright review and revision generally. This is especially true in the case of music licensing - the problems in the music marketplace need to be evaluated as a whole, rather than as isolated or individual concerns of particular stakeholders.”

Section 3. The Search for the Competitive Market Value of Music

The competitive pricing of copyrights in such a context aims to achieve both balance and neutrality between rightsholders’ rights and users’ rights, both business users’ rights and consumers’ rights, through the *proper* compensation of creators for the valuable assets they create, the *proper* compensation of business users for the costs and risks they incur, and the *proper* if not maximal dissemination of musical creations. Achieving such competitive pricing requires to move away from traditional heuristics toward sounder analytics.

Indeed, the current procedures for determining royalty payments and rates are based mainly if not totally on path-dependent heuristics and rules of thumb whose foundations in theoretical and applied economics are relatively weak and clearly inadequate to tackle the current and upcoming copyright agenda.

The fundamental issues or questions before us are the following: What is or are the competitive market value/values of copyright given the “information good” aspect of copyrighted works (music and books), as the advent of digitization makes the emergence of properly functioning competitive markets difficult, even impossible? How to balance the creators' right to a fair compensation and the users' right to the benefits of digital technologies, at a time when the conflict between fairness and efficiency has become more acute than ever before?

The competitive market value principle, which is the very foundation of the proper or fair compensation of creators, relies on the consumers’ valuation of music and willingness to pay for it. But the ways payments are to be made may not be the traditional ways (tariffs or per play rates). A consumers’ advocate economist would say: Although we value music a lot and want to consume more of it and although we want creators and providers of such music to be properly compensated (competitive market compensation), the pricing of such music should take into account the fact that music is an information good or asset and the fact that adding consumers or enhancing dissemination of works cost almost nothing. This calls for a significant reassessment of both the way copyright protection has historically been understood and enforced and the channels through which creators’ proper or fair compensation can be achieved. This is at best a difficult multifaceted endeavor, whose end point solution likely lies outside the box.

Pricing copyrighted works or assets has always been a difficult task given the information good character of such works. Doing it in the digital era is even more challenging. In Boyer (2017c), I propose an approach to characterizing the proper competitive market value of copyrights in music.

The approach infers the competitive market value of copyrights in music, hence the competitive market compensation of rightsholders, from the observation of the behavior and choices made by operators of Hertzian radio, satellite radio (SiriusXM), and interactive music streaming services (Spotify). The approach does not rely on traditional path-dependent heuristics and rules of thumb, which represent the bulk if not the totality of current procedures to determine royalties and whose foundations in theoretical and applied economics are relatively weak and clearly inadequate to tackle the current and upcoming challenging copyright agenda.

I stress the important link between the competitive market value of music and the ensuing fair compensation of creators, which corresponds to what would be paid on well-functioning competitive markets. A competitive equilibrium is a situation in which economic forces are balanced at a stable resting point suitable for both willing buyers (demand) and willing sellers (supply). Therefore, a competitive equilibrium price or a properly negotiated price would necessarily account for balance between creators' interests and users' interests since any investments, costs, risks, and derived benefits would be incorporated in the resulting competitive market or negotiated price.

In spite of the fact that musical works are different from standard goods like apples or cars - they are information goods -, the same fundamental principles apply. However, two possibilities arise: either users pay the same price regardless of the value they derive from the work or users pay some proportion of the value they derive from the good (Lindahl pricing). And a negotiated price between sophisticated and symmetric parties is analogous to a competitive equilibrium price.

The results derived in Boyer (2017c) suggest that rightsholders are significantly shortchanged and poorly served by the current copyright pricing or royalty framework, to the annual tune of billions of dollars. That result follows as a corollary from three propositions developed in (Boyer 2015, 2017b):

- In Hertzian radio (HR), the competitive market values of music and talk are necessarily proportional to their "shares" of broadcast time. The argument is that program time is allocated by the profit maximizing operator in such a way that the last minute of music and the last minute of talk share the same marginal value. The observation of how much on-air personalities (talk) are paid, expressed on a per minute basis, gives us an estimate of this same marginal value. Then the competitive market value of music, as revealed by the HR operator's choice of programming time allocation, is given by this same marginal value times the program time in minutes allocated to music. The competitive value is not obtained through a market process where creators would compete between each other in selling their music but through the observation of choices made by operators.
- In satellite radio (SR), such as SiriusXM, the competitive market values of music and other inputs such as talk are necessarily proportional to their relative capacity to attract subscribers. The argument is based on a comparison of the contract of radio host Howard Stern and a survey of SR subscribers' willingness to pay for music content.

- In the interactive music streaming services industry (Spotify), the competitive market value of music is the negotiated per-play rate, which includes a premium for interactivity.

Cost Structures and Royalty Formulas

Differences in cost structures, namely cost of entry and cost of audience reach, favor the existence of different royalty formulas in different industries although those industries compete with each other up to a certain point for listeners' ears. To maintain a level playing field of competition between different technologies and industries, royalty formulas must differ.

In HR and SR industries, costs of entry (broadcasting spectrum license) and fixed costs of audience reach (broadcasting equipment) are relatively high while marginal costs of audience reach are relatively low, even zero. This favors a percentage of revenues formula. In music streaming or webcasting services industry, costs of entry are relatively low while fixed and marginal costs of audience reach (bandwidth costs) are relatively high and increasing with audience size. This favors a per play rate formula.

Hence, a royalty formula expressed as a percentage of revenues through a blanket license for repertoires is socially efficient for HR and SR, while a royalty formula expressed as a per play rate is socially efficient for interactive and semi-interactive music streaming and webcasting services. Per play rates in webcasting and music streaming services allow rightsholders to avoid being "residual payees" and favor healthy competition first by eliminating uncompetitive or inefficient webcasters who use huge amount of recorded music with little revenue generating capacity, and second by reducing destructive competition intensity (Bertrand trap). A per play formula thus induces webcasters, as resellers of recorded music, to develop value added features such as the interactivity (Spotify) or genomic features (Pandora).

Competitive Market Value(s)

As mentioned above, I show in Boyer (2017c) that in commercial terrestrial/Hertzian radio, the relative competitive market values of music and talk are necessarily proportional to their respective shares of program time if the operators are maximizing their profits. Using data obtained for the Canadian context, I obtain that the competitive market value of music is equal to 28 percent of revenues. And, as mentioned above, it is socially efficient that royalties be expressed as a percentage of revenues in HR.

I show also that for SR, the relative competitive market values of music and talk are necessarily proportional to their relative capacities to attract subscribers. In the case of US SR (SiriusXM), this competitive market value is equal also to 28 percent of revenues. And it is socially efficient that royalties be expressed as a percentage of revenues in SR.

Finally, I show that for interactive online music streaming services, the competitive market value of music corresponds to the mainly unregulated negotiated royalty payments (per-play rate) paid by

interactive music streaming services, including the premium for interactivity. In the case of interactive music streaming service Spotify, this competitive market value is equal to \$US0.006/play (or \$US6.00 per 1000 plays). And it is socially efficient that royalties in webcasting be expressed as a per play rate.

All three competitive value estimates, qualifying as competitive market values, are obtained separately by observing the behavior and choices of operators / primary users, not from value judgments. They nevertheless point to similar or compatible competitive market values! To verify if the above royalty formulas and rates satisfy the competitive level playing field principle, I translate them into royalty rates and payments that can be compared with each other.

The 28 percent of revenues competitive market value of music in the Canadian HR industry can be expressed as a per play rate as follows. Given that a play is defined as a four-minute piece listened to by one person, then given the program time (number of minutes) devoted to playing music and given the estimated audience reach, we can obtain the number of plays. Dividing the royalty payment by the estimated number of plays gives us the per play rate. The Canadian HR competitive per play rate falls between \$0.00235/play, based on Audley and Boyer (2007) program time estimates, and \$0.00324/play, based on averaging program time estimates of five different reports.¹⁵ The competitive per play rate interval can be directly compared to competitive market value per play rates of non-interactive or semi-interactive music streaming services.¹⁴

To be comparable with the interactive music streaming services royalty rate, the above HR rates must be adjusted upwards for the value of interactivity (+92 percent, estimated from music downloads in Boyer, Blit and Audley (2013), which takes us to a range of \$0.0045/play (Audley and Boyer) to \$0.0061/play (average of the five different reports). The interactive streaming service Spotify paid in 2015 a per play rate of \$US0.006/play, which is somewhat of the same order, before adjusting for the exchange rate, which is a rather interesting and comforting result.

Semi-interactive service Pandora paid in 2016 a regulated per play rate of \$US0.00245/play while its competitive market value per play rate, based on Spotify rate less the premium for interactivity, should be \$US0.0031/play. I conclude therefore that the competitive market value of music on Pandora is somewhat of the same order as the competitive market value of music in HR (and SR), before adjusting for the exchange rate, It is again a rather interesting and comforting result.

A note on YouTube (Google) may be useful here. According to the Recording Industry Association of America (RIAA), which represents the major music companies, YouTube pays actually about \$US0.001/play in royalties. As Cary Sherman, Chairman and CEO of RIIA, puts it: “it makes no sense that it takes a thousand on-demand streams of a song for creators to earn \$1 on YouTube, while services like Apple and Spotify pay creators \$7 or more for those same streams.”¹⁵ YouTube claims on the other hand that it is advertising-based and therefore more comparable to Hertzian radio than to subscription-based interactive webcasting like Apple Music and Spotify. Recall from above that the Canadian HR industry presently pays between \$0.00039/play and \$0.00052/play, while Apple Music pays about \$US0.012/play, Spotify \$US0.006/play,¹⁶ and Pandora \$US0.00245/play. Beard et

al. (2017, 20) claim that “Using 2015 data ... a plausible royalty rate increase [on YouTube, based on an average royalty rate between non-interactive streaming and interactive streaming rates] could produce increased royalty revenues in the U.S. of \$650 million to over one billion dollars a year.”

Section 4. The Missing Royalties

The implied change in royalties is significant. In the Canadian HR industry case, the competitive market value of music is more than 4.5 times larger than the current level of royalty payments: 28 percent versus 6 percent, or C\$450 million versus C\$100 million. In the US SR industry (Sirius XM), the competitive market value of music is 2.8 times larger than current royalty payments: 28 percent of revenues versus 10 percent, or US\$1.28 billion versus US\$457 million. In non-interactive webcasting (Pandora), the competitive market value of music is about 28 percent larger than current royalty payments: \$0.00312/play versus \$0.00245/play, or US\$937 million versus US\$734 million. In all these cases, royalty rates presently paid are determined or strongly influenced by regulatory bodies, hence neither really competitive nor really monopolistic. In the interactive music streaming industry (Spotify), it may be considered to be at the proper level (\$0.006/play), given the mainly unregulated negotiation process between users and rightsholders (music labels) in that industry.

This begs the questions: Where are the missing values? If Governments and royalty-fixing authorities (copyright boards and commissions) design and implement rules, regulations and exceptions that significantly reduce tariffs below competitive market values, thereby expropriating part of rightsholders’ assets, who should pay for such policies?

It is difficult to generalize the above results across different jurisdictions as copyright structures differ across jurisdictions. But a realistic figure of rightsholders’ under compensation, as compared to the competitive market value of their works and rights, runs into billions of dollars per year. This begs the question: How to and who should fill the shortfall?

The Economics of Public Policy toward Culture: The Elephant in the Room

The fundamental element of a public policy towards culture insofar as compensation of creators is concerned is to identify different royalty mechanisms (rates / percentages / prices / grants, bases) to ensure a maximal dissemination of copyrighted works/assets, while ensuring a fair and equitable, that is, competitive compensation of creators. Such an approach combines first best and second best mechanisms.

Since it is difficult and possibly non-efficient and non-optimal to charge directly end consumers for the music they consume given the information good character of musical works and sound recordings and the significant value generating properties of digital technologies through low cost dissemination and customization, we must find other complementary ways to compensate rightsholders for the competitive market value of their works as assets.

It might be useful to recall here that in the context of public policies towards educational services there is a clear separation between the pricing of services to end users, the students and their parents,

and the compensation of educational services or content providers, namely teachers and administrators and other personnel who are arguably compensated at their competitive market value.

Similarly in public policies towards healthcare, there is a clear separation between what end consumers, the patients, pay and what the providers of healthcare services or content, namely doctors, nurses, administrators and other personnel are receiving as compensation, which arguably correspond to their competitive market value.

Another possibility to achieve the competitive market compensation of creators might be to bring all “beneficiaries” (primary users – HR, SR, and online music services –, ISP, equipment manufacturers, end consumers, and Governments) into one class or group of stakeholders and to make that group as a whole jointly and severally responsible for ensuring the proper competitive market compensation of creators. Those beneficiaries would be responsible for finding a sharing formula to determine their respective contributions and to foot the bill, a complex but feasible endeavor.

Although it may seem far-fetched at first sight, this chain of beneficiaries represents in a way the elephant in the room. That is a difficult problem, never properly addressed before. Its analysis and solution could make use of cooperative game theory. The current standard analytical framework considers only two stakeholders, creators and primary users. A more appropriate analytical framework could be a two-stage procedure. In the first stage, only two stakeholders’ groups would be considered: creators on one side and a single group of users or beneficiaries on the other side. In the second step, the latter group would be disaggregated into a number of beneficiaries responsible for honoring the liabilities of the single group of users in the first stage. The two-step formulation appears to be a less complex approach to rein in the elephant.

Conclusion

A solution to Gordian Knot of balancing the fair and equitable, that is, competitive compensation of creators/rightsholders’ rights and the users’ right to the benefits of digitization of music, properly recognizing the “information asset” characteristics of musical works and sound recordings, can be achieved. The competitive market value(s) of copyrights in music and the program proposed to implement such value are properly grounded in the economics of efficient allocation of resources, efficient negotiation/mediation, and cooperative game theory. This article sets the table in meeting the significant challenge to develop the proper theoretical argument and to write it in a user-friendly and convincing way for all stakeholders.

The sought-after solution to this Gordian Knot would involve the design of tariffs or contributions imposed at different stages of the value chain between creators and end consumers, hence on different beneficiaries of copyrighted musical assets, those beneficiaries being once again the direct users, ISP, equipment manufacturers, and end consumers and their Governments as their collectives. The challenge is significant as a proper competitive compensation of creators may require to increase royalties. I argue in Boyer (2017c) that the competitive market value of copyrighted music in Canadian

Hertzian radio is of the order of \$450 million per year as compared with the current payment level of \$100 million.

Therefore, it may not be impossible to implement a solution that balances the rightsholders' interests and the users' interests with different sources of payments to rightsholders, namely the primary users, other benefactors, and Governments as collectives of end consumers. If indeed music fuels the Internet and is leading the digital transition, implementing such a program is urgently needed.

Appendix¹ - The Structure of Rights in Music: a Brief Survey

The above analysis and proposition dealt with the overall value of copyright in musical works and sound recordings. In reality, copyright royalties are determined through a somewhat decentralized system of negotiations and rate setting hearings.

In the musical industry namely terrestrial/Hertzian radio, Internet or non-interactive radio, and streaming or interactive services, as well as the direct sale of music on physical supports (CDs and others) or digital downloads, there are basically two copyrights, a performance right and a mechanical (reproduction) right, and two broad groups of rightsholders, a first group comprising authors, composers and music publishers who own the performance and mechanical rights in musical works or compositions, the so-called original or longtime rightsholders, and a second group comprising the performers and the makers of sound recordings (record labels) as well as other non-featured artists and musicians who own the performance and mechanical (reproduction) rights in the sound recordings, the so-called new or neighboring rightsholders (in most jurisdictions since the end of the 1990s).

Each of the four combinatory subsets, each subset being composed of one copyright and one group of rightsholders, is typically occupied by one or more Collectives in charge of representing the relevant rightsholders in negotiations or rate setting hearings before courts or regulatory bodies.

In the following paragraphs, the cases of US and Canada are first explicitly presented, followed by a discussion of different cases in European countries, namely France, Germany, United Kingdom and Spain. As we will see, the copyright landscape differs between jurisdictions: not all combinatory subsets are present in a given industry across jurisdictions and care must be exert when comparing royalties or rates between those jurisdictions.

In the following tables,

- “----” stands for the absence of a Collective organization responsible for collecting and distributing royalties, in which case rightsholders (such as music publishers and record labels) negotiate licenses and royalties directly with users if and when a right can be exercised.
- “N.A.” stands for the explicit absence of a right to be exercised, because of a legal regulatory statute for instance.
- “I” stands for the first group of rightsholders as defined above, that is, authors, composers and music publishers (rights in musical works or compositions).
- “II” stands for the second group of rightsholders as defined above, that is, performers and record labels, as well as non-featured artists and musicians (neighboring rights in sound recordings).

¹ In this Appendix, notes appear as footnotes rather than endnotes as for the main text.

*The USA*²

1. Terrestrial radio, live venues, and other public places (clubs, restaurants, etc.)

Rights ↓	Rightsholders →	I	II
Public Performance		PRO: ASCAP, BMI, SESAC, GMR	N.A.
Mechanical (Reproduction)		N.A.	N.A.

PRO is the acronym of Performance Rights Organization. To avoid an exercise of market power by PROs, BMI and ASCAP are governed by consent decrees, which means that a “rate-court” can set the rates (per radio play, per stream, etc.) if no agreement between parties is reached. Hence the rate court is ultimately fixing the rate in any case. BMI and ASCAP are responsible for collecting performance royalties for musical compositions. In exchange for the power to collect on behalf of songwriters (authors and composers) across the land, they can only negotiate under the umbrella of this rate court.³

The ASCAP and BMI consent decrees were enacted in 1941 as a resolution to antitrust cases brought up against the PROs. The decree maintained the PROs and therefore recognized implicitly the capacity of a PRO to efficiently reduce transaction costs in contracting and monitoring for both rightsholders and users.⁴ The decrees (including subsequent modifications) restricted ASCAP’s and BMI’s capacity to negotiate and made the Federal District Court for the

² <https://www.futureofmusic.org/article/article/music-and-how-money-flows>

³ <https://www.royaltyexchange.com/learn/music-royalties/>

⁴ A long convincing if sobering quote from Lenard and White (2015) illustrates this point: “In the absence of PROs, publishers and other copyright owners would have to interact directly with users and distributors such as bars and restaurants, radio stations, and digital services. The number of transactions would be enormous. However, the terrestrial broadcast radio industry bargains collectively with ASCAP and BMI through the Radio Music License Committee (RMLC). Similar collective negotiation occurs between the Television Music Licensing Committee (TMLC) and the PROs. With PROs in the middle, each of the entities (and both side s of the transaction) only has to deal with the two organizations— ASCAP and BMI—for the composition rights for most music (and with SESAC and GMR for a much smaller amount) and, for non-interactive digital services, with SoundExchange for the administration of sound recording rights. The PROs themselves are able to take advantage of economies of scale in negotiating licenses, monitoring licensees, and collecting and distributing royalties. Transactions costs are further minimized through the use of the blanket license. The collective negotiation of rights, however, creates market power issues: ASCAP and BMI, for example, control the overwhelming majority of music composition performance rights in the United States. This market power is (in principle) limited by the consent decrees (as modified over the years) and the antitrust rate court, which determines rates if negotiations fail. Similarly, SoundExchange has antitrust immunity, which enables it to represent the record labels with respect to sound recording rights. By setting rates for statutory licenses, the CRB is a check on the actual or potential market power of copyright owners. Some licenses are negotiated without the benefit of a PRO intermediary, which suggests that the severity of the transactions cost issue differs depending on the license and on the parties that are involved. Interactive digital services, such as Spotify, are not covered by the CRB rate- determination process and negotiate directly with the record labels. Interactive services also pay royalties for mechanical rights (that non-interactive services are not required to pay), which reflects the belief that interactive services are a substitute for the actual purchase of the recording. Increasingly, as discussed below, distributors that would be covered by a statutory license, such as non-interactive services, are negotiating directly with record labels and publishers.”

Southern District of New York an effective regulator or arbitrator responsible to hear the parties in negotiations, namely the PROs and user groups as would-be licensees, and set the terms of licenses including royalties to be paid for the use of musical works.

In the late 1990s, the US Congress enacted two Acts, the Digital Performance Right in Sound Recordings Act (DPRA) of 1995 and the Digital Millennium Copyright Act (DMCA) of 1998, which expanded copyright protection to sound recordings, both the public performance right and the mechanical (reproduction) right, when music is delivered through certain digital audio transmissions, such as the emerging satellite services (Sirius and XM) as well as forthcoming Internet-based radio and streaming services (Pandora, Spotify, and many others). Those acts made the licensing of music compulsory for non-interactive digital services.

Terrestrial radio do not compensate the second group of rightsholders when broadcasting over-the-air performers’ performances and sound recordings. This arrangement is the result of a long-standing argument made by terrestrial broadcasters that performers and music labels benefit from the free promotion received through radio play. Broadcasters contend that airplay increases album sales, which leads to compensation for performers and record labels. As a result, broadcasters have been able, for decades, to convince Congress that they should be exempted from paying the public performance royalty for sound recordings.

But the broadcasters’ argument is steadily losing relevance as album sales plummet, and their exempted status becomes more questionable and challenged when compared to other countries’ broad requirements for performance royalties.⁵

2. Internet radio (non-interactive or semi-interactive* webcasters like Pandora, Songza, Galaxie Mobile, plus over 2500 other services, and satellite services like Sirius and XM, now SiriusXM)

Rights ↓	Rightsholders →	I	II
Digital Performance		PRO: ASCAP, BMI, SESAC, GMR	PRO: SoundExchange
Mechanical (Reproduction)		-----	-----

* A *non-interactive webcast* refers to a stream over which the recipient exercises no control over the content of the signal or the time of the transmission. A *semi-interactive webcast* enables only the (near) real-time communication of the streamed content, but allows recipients to exert some measure of influence over the content or timing of the webcast.

SoundExchange isn’t governed by a consent decree, which means that it can negotiate on the free market. Recording artists are not compensated when their performances are played on AM/FM

⁵ See The Future of Music Coalition 2013 at <https://www.futureofmusic.org/article/fact-sheet/public-performance-right-sound-recordings>

radio (because as stated above there’s no performance right for recordings on terrestrial radio), but they are typically paid at least five times more than songwriters and composers when music is performed digitally, like on Pandora.⁶ That’s because of SoundExchange’s negotiation power and BMI/ASCAP’s legal antitrust limitations. AM/FM broadcasters do pay songwriters (more precisely authors, composers and music publishers), although at a royalty rate ultimately set by the courts.⁷ SoundExchange, the PRO established by the Digital Performance Right in Sound Recordings Act (DPRA) of 1995, distributes the royalty payments directly to performers (45 percent), to the sound recording copyright owners, most often the record label (50 percent), and to non-featured artists and performers (5 percent).⁸

3. Music streaming services (permanent downloads, interactive* streaming services such as Spotify, Rdio, Apple Music, Google Play, Deezer, Tidal)

Rights ↓	Rightsholders →	I	II
Digital Performance		PRO: ASCAP, BMI, SESAC, GMR	PRO: SoundExchange
Mechanical (Reproduction)		HFA (now SESAC)	-----

* An *interactive communication* is any form of streaming where a specific sound recording can be listened to at a time and place of the recipient’s choosing. This includes services such as Spotify and Rdio.

HFA (Harry Fox Agency) issues mechanical licenses for products manufactured and distributed in the U.S. A mechanical license grants the rights to reproduce and distribute copyrighted musical compositions (songs) for use on CDs, records, tapes, ringtones, permanent digital downloads, interactive streams (Spotify), and other digital formats supporting various business models. Spotify pays as royalties about 10% of its revenues to songwriters and publishers I (covering both performance and mechanical rights, whose rates are set by the government or the rate court, and 60% of its revenues to record labels II, through arm’s length negotiations with SoundExchange.

4. Rate or Price setting/regulating Organization

⁶ Some observers claim that Pandora pays about 10x more royalties to SoundExchange than to PROs representing authors, composers and publishers of musical works, the latter being covered by consent decrees (rates determined by “rate court” judges). See for instance <http://aristake.com/post/what-is-soundexchange-ascap-bmi-pros-hfa-mechanicals-and-how-to-get-all-your-royalties>

⁷ <https://www.royaltyexchange.com/learn/music-royalties/>. Royalty Exchange is a form of Stock Exchange for royalties, as one can read on their website: “Founded in 2011, Royalty Exchange started after identifying the need for a centralized marketplace where royalty owners could monetize their royalties and investors seeking to purchase alternative assets could invest in them. Our mission is simply to provide a platform where all types of royalty assets, such as music, television and film or patents, intellectual property, and mineral rights, can be bought or sold in an effort to bring value to both the investor and seller.”

⁸ See The Future of Music Coalition 2013 at <https://www.futureofmusic.org/article/fact-sheet/public-performance-right-sound-recordings>

As mentioned above, performance rights collective organizations BMI and ASCAP are governed by consent decrees, which means that royalty rates can be set by a “rate-court” if necessary. BMI and ASCAP collect songwriting performance royalties for group I, but they are limited in their ability to negotiate by this rate court. Hence, AM/FM broadcasters do pay songwriters, but at a royalty rate ultimately set by the courts.

As Lenard and White (2015) put it: “The Digital Performance Right in Sound Recordings Act (DPRA) of 1995, and the Digital Millennium Copyright Act (DMCA) of 1998, which expanded copyright protection to public performances of sound recordings through certain digital audio transmissions ... also mandated compulsory licensing for non-interactive digital services. The rates that most digital services pay for sound recording performance rights under the compulsory license are determined by the Copyright Royalty Board (CRB). Royalties are collected and distributed by a new PRO, SoundExchange. SoundExchange also participates in CRB proceedings on behalf of the copyright holders. The CRB applies different standards in determining rates for different categories of digital services. Interactive digital services (e.g., Spotify) are exempted from the CRB process (which means that these services negotiate directly with the performing artists and labels). Terrestrial radio broadcasting is free of the necessity to seek such licenses at all ... and thus ‘pay’ a rate of zero”.

As Strickler (2015) put it: “In section 114 ratemaking proceedings before the CRB, the principal adverse parties are SoundExchange, which is the administratively-approved licensor collective, appearing on behalf of the record companies and other copyright owners; and the services/licensees that transmit sound recordings, whether pureplay non-interactive webcasters or non-interactive simulcasters on the Internet of terrestrial radio performances of sound recordings”.

CANADA

1. Terrestrial radio, live venues, and other public places (clubs, restaurants, etc.)

Rights ↓	Rightsholders →	I	II
Public Performance		SOCAN	Re:Sound
Mechanical (Reproduction)		CSI (SODRAC, CMRRA)	CONNECT, SOPROQ, and Others

2. Internet radio (non-interactive or semi-interactive webcast like Pandora, Songza, Sirius XM)

Rights ↓	Rightsholders →	I	II**
Digital Performance		SOCAN	Re:Sound
Mechanical (Reproduction)		CSI (SODRAC, CMRRA)	----*

3. Music streaming services (interactive streaming services such as Spotify, Rdio, Apple Music, Google Play, Deezer, Tidal)

Rights ↓	Rightsholders →	I	II
Digital Performance		SOCAN	Re:Sound
Mechanical (Reproduction)		CSI (SODRAC, CMRRA)	----

There are at this time no Collective involved in the determination and collection of performers' and sound recordings' (group II) mechanical (reproduction) royalty rates on Internet radio and music streaming services, as the labels negotiate directly with the users for the use and licensing of such rights if applicable.

4. Rate or Price setting/regulating Organization

In Canada, the Copyright Board of Canada, established in 1989, is an economic regulatory body empowered to establish, either mandatorily or at the request of an interested party, the royalties to be paid for the use of copyrighted works, "when the administration of such copyright is entrusted to a collective society," The Board can act as an arbitrator if the collective society and a user cannot agree on the terms and conditions of a license.

As stated on its website, the Board certify tariffs in the following fields: the public performance or communication of musical works and, since the 1997 amendment to the Copyright Act, of sound recordings of musical works, the retransmission of distant television and radio signals, the reproduction of television and radio programs by educational institutions, and private copying.

The total amount of royalties generated by the tariffs the Board certifies is estimated at \$434 million in 2013: SOCAN collects \$220M, Retransmission \$109M, CSI \$33M, Re:Sound \$26M, Access Copyright \$18M (reproduction of literary works), Private Copying \$8M, Others \$20M.

EUROPE (France, Germany, UK, Spain)

This section provides a comparison between four European countries, namely France, the United-Kingdom, Germany and Spain, regarding the current situation on the determination and collection of author's rights (group I) and neighboring rights (group II).⁹

FRANCE

1. Author's Rights Organizations

In terrestrial radio, live venues, and other public places, the organization responsible for the granting of licenses for public performance is SACEM (Société des Auteurs, Compositeurs et Editeurs de Musique). The collection and distribution of mechanical rights is made through the SDRM (Société pour l'administration du Droit de Reproduction Mécanique). SDRM includes the SACEM and the AEEDRM (Association des éditeurs pour l'exploitation des droits de reproduction mécanique). SDRM does not have its own repertoire of direct members. It has received the mandate to administer the repertoire of its founding member collectives.

In Internet radio (non-interactive or semi-interactive webcasting), SACEM is responsible to administer the public performance rights and the mechanical (reproduction) rights. For music streaming services (interactive services), SACEM is responsible to administer the public performance rights and the mechanical (reproduction) rights. Public performance rights and mechanical rights are noticeably not separated, but treated together within the framework of a form of exploitation.

2. Neighboring Rights Organizations

In Terrestrial radio, live venues, and other events in public places, SPRE (Société pour la Perception de la Rémunération Equitable) is responsible for the collection and the distribution of neighboring rights. It is composed of four organizations: ADAMI (Société pour l'Administration des Droits des Artistes et Musiciens Interprètes), SPEDIDAM (Société de Perception et de Distribution des Droits des Artistes Interprètes de la Musique et de la danse), SCPP (Société Civile des Producteurs

⁹ Among the sources consulted for this section:

http://ec.europa.eu/internal_market/copyright/docs/management/monitoring-report_en.pdf

http://ec.europa.eu/internal_market/copyright/docs/management/study-collectivemgmt_en.pdf

https://societe.sacem.fr/docs/SACEM_statutes_2015.pdf

https://circabc.europa.eu/sd/a/57a571ce-68d7-4014-9c0d-64955f39c8ed/sacem_fr.pdf

<http://www.scpp.fr/SCPP/Portals/0/DownLoads/Adhesion/REGLEMENT%20GENERAL%202011%20.pdf>

<http://www.spedidam.fr/medias/plaquette-spedidam-final-150306.pdf>

http://www.spedidam.fr/artistes/vos-droits/3_26_33_remuneration-equitable.html

<http://www.musikindustrie.de/lizenzen/>

<http://www.keanet.eu/docs/music%20licensing%20and%20transaction%20costs%20-%20full.pdf>

Phonographiques), and SPPF (Société des Producteurs de Phonogrammes en France). SACEM was mandated by SPRE to collect the equitable remuneration from events in public places on SPRE's account, but SPRE carries out the collection from radios directly.

According to Article 214-1 of the Intellectual Property Code, the fees collected by SPRE within the framework of neighboring rights (group II) are allocated for 50% to the performing artists and 50% to the record labels. Regarding the fees distributed to performing artists, 50% are attributed to SPEDIDAM and 50% are attributed to ADAMI.

In Internet radio (non-interactive or semi-interactive webcasting), SPPF administers the performance rights. SPPF also administers mechanical rights in this area¹⁰. In music streaming services (interactive streaming services), SPPF directly collects royalty payments on behalf of its members when their music is reproduced (mechanical rights), communicated and/or made available to the public. SPPF has signed an agreement with Deezer in 2007¹¹. Nevertheless, it is still unknown whether SPPF is today mandated to administer the neighboring rights related to the use of music on streaming services. According to its statutes (Art. 3.1), SPPF's mandate is to administer the rights pertaining to communication and reproduction recognized by Art. L214-1 and L311-1 of the Intellectual Property Code, in which there is no reference to music streaming services.

As for the exploitation of music in the case of web radios, SPEDIDAM states that performing artists in France do not perceive any right when their music is made available to the public through music streaming services or on-demand downloads. Their rights are not taken into account by the Intellectual Property Code (Art. L 212-3) in the way this article is written, and as such, SPEDIDAM advocates for changes in the law.

3. Rate or Price setting Organization

SACEM is the price setting organization for author's rights. When setting its tariffs, in accordance with the European Court of Justice's and the French court's and competition authorities' case law, SACEM takes into account the economic value of both the use of music in a particular context and the service it provides. In certain areas, SACEM's tariffs are accepted by representatives of music users through negotiations, when SACEM enters into collective bargaining agreements with users' associations / organizations.

¹⁰ For this organization at least, we can find a confirmation in the information they disclose on its website that they effectively administer the rights mentioned.

¹¹ « Jérôme Roger, le directeur général de la SPPF. « L'accord avec la SACEM est une condition nécessaire mais pas suffisante » pour que Deezer soit 100% légal, indique-t-il, ajoutant que la SPPF, qui peut négocier sur la musique en flux de type « webradio », n'est pas encore mandatée par ses membres pour engager des négociations concernant des offres de ce type. Elle se contente pour l'instant de « bien comprendre le modèle d'exploitation de Deezer » pour en expliquer le fonctionnement à ses membres, et le cas échéant, obtenir un mandat à partir du début de l'automne. » - Le Figaro (2007)

According to the article L214-4 of the Intellectual Property Code, the tariffs of the equitable remuneration (neighboring rights) are fixed by an Administrative Committee chaired by a representative from the State and composed in equal share of persons designated by the organizations representing music users on the one hand and of persons designated by the SPRE on the other hand. The decisions of the Committee are published in the “Journal Officiel de la République Française”.

Although French case law does not prescribe specific methodology criteria as such, French courts may issue a ruling involving a CMO’s tariffs (in particular in cases where users claim that tariffs are too high as an argument to justify their refusal to pay royalties for their use of music) which may have an impact on the concerned CMO’s tariffs.

The supervisory body of the collective societies in France is the “Commission Permanente de Contrôle des SPRD”, a committee affiliated to the “Cour des Comptes” (Court of Auditors), which supervises their accountancy and their management.

GERMANY

1. Author’s Rights Organizations

In terrestrial radio, live venues, and other events in public places (clubs, restaurants, etc.), GEMA (Gesellschaft für Musikalische Aufführungs- und mechanische Vervielfältigung) is responsible for granting licenses for both public performance rights and mechanical rights.

In Internet radio (non-interactive or semi-interactive webcasting) and satellite radio, GEMA is responsible for administrating both digital performance rights and mechanical rights.

In music streaming services (interactive streaming services), GEMA is responsible for administrating both digital performance rights and mechanical rights.

2. Neighboring Rights Organizations

In terrestrial radio, live venues, and other public places (clubs, restaurants, etc.), GVL (Gesellschaft zur Verwertung von Leistungsschutzrechten mbH) is mandated to manage both performance rights and mechanical rights.

In Internet Radio (non-interactive or semi-interactive webcasting) and satellite radio, licenses for neighboring rights in the online sector generally have to be obtained directly from the rightsholders, not the GVL. Exceptions are the usage of background music on websites and webcasting for which GVL has published tariffs.

In music streaming services (interactive streaming services), there is no collective organization mandated to manage neighboring rights in the online sector.

3. Rate or Price setting Organization

The Collective Societies in Germany are required by law to set up the tariffs and to publish them as well as any changes in the Bundesanzeiger (Federal Official Publication). Thus, GEMA sets itself the tariffs applying to author's rights, acting as an effective monopoly. The tariffs established by GVL depend on the kind of music exploitation and are set as a percentage of the GEMA-tariff.

In terrestrial Radio, both GEMA's and GVL's basis of calculation is represented by the revenue of the licensee. Further the tariff in both cases equals a percentage thereof limited by a minimum amount. But the rates differ significantly. For the minimum amount the GEMA uses a very sophisticated method for determining the proportion of music, the music share and duration of the program to set an appropriate minimum amount. But GEMA has no insight in GVL's methodologies for setting up the percentage or minimum regarding their Radio tariff.

GEMA-field service licenses background music/ communication to the public. With regard to background music (not the actual broadcast) the majority of the tariffs are negotiated with the respective user-associations.

For public performances (discotheques, restaurants, hotels, etc.), the majority of the tariffs are negotiated with the respective user-associations. GVL mainly set an additional fee as a percentage of the GEMA remuneration.

The supervisory body of the collective societies is the German Patent and Trademark Office - DPMA, which ensure that collective societies comply with the law.

UNITED-KINGDOM

1. Author's Rights Organizations

In terrestrial radio, live venues, and other events in public places (clubs, restaurants, etc.), PRS for Music is responsible for granting licenses for both public performance rights and mechanical rights. PRS for Music is an operational alliance between the Mechanical Copyright Protection Society (MCPS) and The Performing Right Society (PRS).

In Internet radio (non-interactive or semi-interactive webcasting) and satellite radio, PRS for Music is responsible to administer both digital performance rights and mechanical rights for authors (group I).

In music streaming services (interactive streaming services), PRS for Music is responsible to administer both digital performance rights and mechanical rights.

2. Neighboring Rights Organisations

In terrestrial radio, live venues, and other events in public places (clubs, restaurants, etc.), PPL (Phonographic Performance Limited) is the organization which administers neighboring rights in the UK¹². PRS for Music and PPL offer joint licensing arrangements for several kind of public places, such as schools, churches, small workplaces.

In Internet radio (non-interactive or semi-interactive webcasting) and satellite radio, PPL (Phonographic Performance Limited) is the organization which administers neighboring rights¹³.

In music streaming services (interactive streaming services), PPL (Phonographic Performance Limited) is the organization which administers neighboring rights¹⁴.

3. Rate or Price setting Organization

In the UK, the respective tariffs are set by the collecting societies, often following negotiation with a trade body for the relevant affected industry sector and/or key interested parties. A scheme may be referred to the Copyright Tribunal, which has certain powers to confirm or vary a scheme. During the course of negotiations with the relevant trade body, the threat of a tribunal reference may be made which in itself may have an impact on the tariff set as a result of that negotiation.

SPAIN

1. Author's Rights Organizations

In terrestrial radio, live venues, and other events in public places (clubs, restaurants, etc.), SGAE (Sociedad General de Autores y Editores - Collecting Society for Authors and Publishers) is the author's rights organization in Spain. It is mandated to manage both performance and mechanical rights.

In Internet radio (non-interactive or semi-interactive webcasting) and satellite radio, SGAE is competent to administer digital performance rights and mechanical rights for authors (group I).

¹² At least with regard to public performance. *PPL does not mention the administration of mechanical rights on its website. Mechanical rights: still to be determined*

¹³ At least with regard to digital performance. *Mechanical rights: still to be determined*

¹⁴ At least with regard to digital performance. *Mechanical rights: still to be determined*

In Music streaming services (interactive streaming services), SGAE is competent to administer author's rights with regard to digital performance in the field of music streaming services. SGAE's tariffs are 10% of the user's total income with respect to the streaming exploitations, and 12% of the user's total income with respect to downloading exploitations (2013).

2. Neighboring Rights organizations

In terrestrial radio, live venues, and other events in public places (clubs, restaurants, etc.), the management of neighboring rights is shared between two organizations, namely AIE (Artistas Intérpretes y Ejecutantes), which administers the rights of performing artists, and AGEDI (Asociacion de Gestion de Derechos Intelectuales), representing music producers. AIE and AGEDI work together with respect to the collection activity, through an organization called OCR (Organo Conjunto de Recaudacion).

In Music streaming services (interactive streaming services) is competent to administer neighboring rights within the framework of music streaming services.

3. Rate or Price setting Organization

Rates and tariffs are set by the collecting societies in their respective area, i.e. SGAE for author's rights and AIE-AGEDI for neighboring rights. For the latter, tariffs are fixed by common agreements between AIE and AGEDI. There have been several cases in which users appealed to the Spanish Competition Authority to question the tariffs imposed by the collecting societies representing artists and producers. In many decisions rendered by the courts and authorities, these collecting societies were recognized as abusing a monopolistic position.

EU-wide licensing

Some EU-wide licensing initiatives are listed below:

- SACEM, SGAE, and the Italian SIAE launched ARMONIA (2007), a Joint-Venture whose mandate is to license the online and mobile uses of the repertoire of the three societies and manage their online rights.
- CELAS (Central European Licensing and Administration Services) has been set up by GEMA and MCPS-PRS to cover the EMI Music Publishing's Anglo-American and German repertoire for online and mobile uses.
- In an initiative called PEDL, (Pan-European Digital Licensing), GEMA, MCPS-PRS, and the Swedish STIM signed agreements with Warner/Chappell Music to provide EU-wide digital licenses covering Warner/Chappell's Anglo-American repertoire.
- SACEM-UMPG Initiative: SACEM and Universal Music Publishing Group signed an agreement covering online and mobile uses of their joint repertoire.

Notes

I would like to thank the referees for their constructive criticisms. I am also indebted to the many colleagues, economists and lawyers, from academia, Collectives, and private and public organizations and corporations, on both sides of the copyright sometimes highly charged debates, including those at the Copyright Board of Canada, with whom I had the chance to discuss these issues with over the last twenty years. They are too numerous to list. I would like to acknowledge finally the Toulouse School of Economics Jean-Jacques Laffont Center on the Digital Economy for its support.

1. Such as the US Copyright Royalty Board for sound recordings, the US Rate Courts for musical works, the Copyright Board of Canada for literary and musical works and sound recordings.
2. A striking case at hand is private copying exception and provisions where the early promises of fair compensation for the expropriation of reproduction rights disappeared in some jurisdictions (Canada for instance) but maintained in others (France and Germany for instance). See Boyer (2017b).
3. <https://www.musicbusinessworldwide.com/heres-exactly-how-many-shares-the-major-labels-and-merlin-bought-in-spotify-and-what-we-think-those-stakes-are-worth-now/>
Accessed September 7 2018.
4. In Boyer (2017a), I review recent reports that spell out the above concerns, namely de Cock (2015), Reda (2015), Malka (2015), and the US Copyright Office (USCO 2015), and I present the main characteristics of music copyright structures in different jurisdictions. Malka (2015) lists 21 planned “compulsory” exceptions to EU copyright law. If enacted, they would seriously undermine the capacity of the book publishing industry to pay fair compensation to authors and creators. One of those exceptions for instance would allow libraries to lend e-books without limit of time or number, a serious threat of cannibalization of book and eBook sales and possibly of royalties.
5. See Boyer (2017a, Appendix) for a brief survey of the different institutional frameworks in different jurisdictions.
6. Michele Boldrin and David Levine (2008) make a case against the institution of copyright itself. This is not the place for a critique of their work. Their analysis is unfortunately filled with traps and analytical mishaps. The problem is not whether copyright is good or bad *per se*, it is whether anyone should have the right or not to capture the value of intellectual creations away from the creator *against his or her will* and be allowed to modify and transform them *against the creator’s will*. Copyright is a complex institution, which can be understood as a second-best policy outcome. What are the substitutes? Trying to mix first-best allocation characteristics in a world of angels, incomplete historical references, and a few anecdotes never engender success-prone public policies is not a proper path to follow.
7. For a comparative analysis of fair use in the US and fair dealing in the UK and Canada post-CCH, see G. D’Agostino (2008). I proposed in Boyer (2012) an economic analysis of the landmark decision of the Supreme Court of Canada in CCH Canadian Ltd. v. Law Society of Upper Canada.

https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/2125/index.do?r=AAAAAQATQ2FuYWRhIEV2aWRlbnNlIEFjdAE&site_preference=mobile

8. http://laws-lois.justice.gc.ca/PDF/2012_20.pdf
9. Achieving the optimality condition through decentralized decision making by individual users would for instance require different prices for different users in order to induce them to consume the proper quantity, each user thereby facing his own particular price (Lindhal equilibrium). The sum of those individualized prices must then be sufficient to cover the marginal cost of production.
10. Jean de Salisbury ([1159], 1955, 167) writes: “Bernard of Chartres used to compare us to dwarfs perched on the shoulders of giants. He pointed out that we see more and farther than our predecessors, not because we have keener vision or greater height, but because we are lifted up and borne aloft on their gigantic stature.”
11. The Canadian Copyright Board recognized, in its 2002 *Pay Audio Decision*, that: “in information industries, pricing tends to be based on the value to the buyer, not on cost to produce” (page 8).
12. Suzanne Combo of GAM (Guilde des Artistes de la Musique, an association created in March 2013 in Paris to bring together the community of authors, composers and performers behind a single collective voice aiming to be a source of proposals to national and European public authorities, cultural institutions and professional bodies in order to effectively promote the interests of music artists in the digital age) wrote in *Le Monde - Éco&Entreprise*, March 1 2017 (free translation): “The big winners of streaming remain the majors. The contracts of the artists, all confidential and varying according to their notoriety, are not adapted because they are modeled on the old model of the sale of records ... The contract provides for the artist from 10 percent to 12 percent of net sums cashed by the producer ... The pie remains opaque and doubtful since the producer no longer has storage or manufacturing costs, as for a CD. In addition, the artist finances part of the promotion. So in the end, he often does not touch more than 5 percent ... of the deals between majors and platforms, the former being minority shareholders of the latter ... As a whole, artists are unaware of the content of exchanges between labels, producers and streaming companies.”
13. Those estimates include the following share of music and talk in program time obtained through different methodologies applied to different periods, different contexts, and different samples: (70 percent, 30 percent) in Steven Globberman (2007), (81 percent, 19 percent) in Erin Research (2008), (81 percent, 19 percent) in Copyright Board of Canada (2014), (67 percent, 33 percent) in David Touve (2015), and a weighted (60 percent, 40 percent) in Audley and Boyer (2007). The Canadian HR industry currently pays about C\$100 million per year (C\$180 million before deductions) in music royalties, which corresponds to \$0.00052/play (Audley and Boyer 60/40) or \$0.00044/play (AVG5 71/29) or \$0.00039/play (Board’s 2014 81/19). Therefore, the Canadian HR industry currently pays between \$0.00039/play and \$0.00052/play.
14. The available data do not allow me to estimate the number of plays on satellite radio SiriusXM.
15. <https://medium.com/@RIAA/2016-a-year-of-progress-for-music-4e9b77022635>
16. The RIAA claims that Spotify pays closer to \$US0.007/play.

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