Does Digital Music Piracy Beget A Revitalization of Copyright Law?

By

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Abstract

Music piracy through the Internet remains a concern for many copyright holders in the United States. To determine the efficiency of current music copyright law and which changes should be implemented to improve it, several factors were taken into account: the legal policies historically and currently in place to protect music copyrights, a survey of court cases related to peer-to-peer file sharing, and copyright holders' viewpoints on music piracy. Cohesively, these factors support a need for changes in current copyright law and in how music piracy is currently handled. These changes might take the form of reform to the AHRA and/or to the Fair Use Doctrine, a tax on certain music-related products, legalizing free downloading and sharing for noncommercial purposes, informing music consumers more accurately about different aspects of music piracy, and/or utilizing blockchain technology. Implementation of any of these measures or others to improve music copyright law and reduce music piracy requires participation from all those who are affected by music piracy and copyrights.

Does Digital Music Piracy Beget A Revitalization of Copyright Law?

The first 19 years of the 21st century have seen a powerful boom in the expansion and innovation of technology certainly for the sake of improving daily life, but also, importantly, for the sake of meeting increasingly higher standards and demands for entertainment. Arguably in the music industry, the most significant development is increased facility in music streaming and sharing through the Internet. Music sharing programs have completely revolutionized how people instantaneously listen to music and view music videos. Inevitably, in this Digital Age where music is simply one click and swipe away, this growth in the capability for fast streaming and sharing has resulted in individuals partaking in illegal music practices. Though programs like *YouTube*, *Spotify*, and *Pandora* offer millions of songs subscribers can listen to, the programs are not without their drawbacks. All three include advertisements, which, while short, quickly become annoying due to their frequency and repetitiveness. *YouTube* users can't listen to songs while not on the application on their phones, which is the device most people regularly use to listen to music. *Spotify* and *Pandora* only allow users to skip a certain amount of songs per day and users are not allowed to play a specific song at once, but have to wait until the song comes up on the shuffled album the song is in, which may not happen for a while or, in the case of *Pandora*, at all.

Granted, all three programs include paid subscription options in which these issues magically disappear and users can listen to whichever music they want to their heart's content. However, many individuals simply don't want to pay $10 and up a month to receive these subscription benefits when a free and easy alternative is readily available (McIntyre, 2017). The fact that this free and easy option is illegal certainly hasn't been a deterrent and illegal music downloading programs have become a dime a dozen. A quick Google search of 'YouTube to

MP3 converter' yielded eight different results just on the first page and the process is simple and straightforward. Additionally, there are generally no repercussions for the individuals who download the music nor for sharing it. When the alternative is forking up $10 or more a month, the practice of illegal music sharing and downloading suddenly becomes extremely appealing. Copyright holders' attempts to stem the flow of music piracy just by warning people against music piracy and attacking the developers of music piracy programs have not proven fruitful, as will be demonstrated through a later discussion of court cases. The burden of either stopping illegal music sharing or ameliorating its effects on the music industry should not be placed on music consumers as it has been typically, but rather on musicians, record companies, and on the system which was created to protect musicians' rights: copyright law.

This paper represents an endeavor to cover the continuous quarrel between copyright law and copyright infringers. The first part of the paper is a brief history of copyright law pertaining to music protection. Next, there will be a review of court cases focusing on peer-to-peer digital networks[1] for music piracy that highlight both the strengths and weaknesses of current copyright laws. Wrapping up the review will be an account of how different artists feel about copyright infringement and how it affects the music industry. I will conclude with an analysis of whether copyright law has truly been efficient and proactive in defending artists and their music and how it can change. Technology has fundamentally changed the way people interact with each other and the world around them, but it has particularly altered the relationship between individuals and the music industry, as well as the music industry itself. The technological advancements of the 21st century are virtually irreversible, thus it is the job of all the other industries affected by them to constantly adapt and accommodate for the proliferation of illicit practices. Whether the

[1] In the context of Napster and other music sharing software, a peer-to-peer network is one in which individual users are connected to each other via software for the purpose of downloading and sharing music with each other.

copyright legal industry has successfully remained toe-to-toe with music piracy and the digital programs associated with it is the main focus of this paper. Hopefully that consensus will then foster thoughtful discussions about the changing technological environment and both the positive and negative effects it has had on music copyrights.

History of Music Copyright Law

Early Beginnings of Music Copyright Law

To be able to fully discuss the efficiency of music copyright law in preventing and combating the effects of illegal music sharing, a historical survey of the evolution of music copyright law in the United States is necessary for context. According to the U.S Copyright Office, the first copyright law in the U.S was introduced in 1790, but it was very limited in nature and did not cover music in its protection; it wasn't until 1831 that musical compositions became protected by copyright law. Eventually, copyright law began to expand more not only in its legal protection of music but in the enforcement of these laws as well. In 1897, a law prohibiting unauthorized music performances without a copyright was introduced and a few years later, in 1914, the ASCAP, or the American Society of Composers, Authors, and Publishers, was created (U.S Copyright Office, 2016). The ASCAP was, and remains, a strong advocate for the copyright protection of music and for the protection of artists' rights.

In 1917, *Herbert v. Shanley Co.* paved the way for ASCAP to invest in and enforce official music licensing (ASCAP, 2014). In 1916, a songwriter called Victor Herbert sued Shanley's Restaurant in NYC for playing his copyrighted dramatico-musical composition[2] without paying him any royalties or even informing the artist of the fact the restaurant would be playing his music (*Herbert v. Shanley Co.*, 1916). Originally, the outcome of the case was in

[2] A dramatico-musical composition is "an opera, musical play or show, revue or pantomime for which the music has been specially written" (PRS for Music, 2019)

favor of Shanley's Restaurant. The court stated that Herbert did not clarify that he owned the copyright for the composition and that Herbert's copyright of the music and lyrics from a specific song in the composition were not violated by Shanley's Restaurant (*Herbert v. Shanley Co.*, 1916). However, in 1917, the United States Supreme Court overturned the original decision to find in favor of Herbert, stating that even if the restaurant did not intend to profit from the music and Herbert did not state that the composition was copyrighted, Shanley's Restaurant violated the copyright for the composition owned by Herbert and should pay the royalties they were supposed to have paid (*Herbert v. Shanley Co.*, 1917). This decision allowed for more serious attention to be awarded to music copyright enforcement and protection. Shortly thereafter, in 1921, ASCAP cemented its efforts in legal music licensing by implementing a *blanket license*. This blanket license pooled musical copyrights held by composers, authors, and publishers, and collectively licensed the rights to use those works to different music users, such as restaurants and radio stations, for a single fee, instead of licensing individual works to individual music users for different fees (Herlihy & Zhang, 2016). Blanket licensing became the popular practice for media such as TV and radio stations due to its concrete protection of artists' rights and increased facility and rapidity in licensing for a large number of songs without cumbersome and time-consuming individual negotiations (Herlihy & Zhang, 2016).

Modern Copyright Legal Policies

Copyright Act of 1976. At this point, change in music copyright law stagnated until 1972 when federal protection was awarded to sound records fixed after that year and the first sound recording registrations were made (U.S Copyright Office, 2016). In 1976 came the latest official Copyright Act to date, with the most resounding effect being the indoctrination of fair use into the Copyright Act. According to Reyburn (2000), fair use refers to the select rights

copyright owners have over their works and which types of uses by those who don't hold copyrights are permissible and not liable for accusations of infringement. In the Copyright Act of 1976, there were four factors identified that could potentially protect those who don't hold copyrights for a work, but exercise the select rights granted to copyright holders. The four factors were:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
> (2) the nature of the copyrighted work;
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
> (4) the effect of the use upon the potential market for or value of the copyrighted work (Fair Use Doctrine, 1976).

The first factor is pretty self-explanatory; if a person who doesn't hold a copyright for a work shares it for profit, they would be violating the copyright holder's select rights and could be held liable for infringement. The second factor deals more with the concept of creative originality, which will be explained in more detail below. The third factor references whether an entire copyrighted work is shared, or whether only a small portion of it is. Sharing a small preview of a song isn't illegal, but sharing an entire song, or even just a majority of it, can be illegal. The fourth factor concerns the financial impact that the use of the copyrighted work by those who don't own the copyright would have on actual copyright holders. If music was shared for free by anyone other than the copyright holder, then the copyright holder would lose money they could've had if that person/organization hadn't shared the work for free.

AHRA and creative originality. Jumping now to 1991, there began an explosion in changes to music copyright law correlated with the explosive changes in technology that were developing. In 1991, creative originality as a requirement for copyright protection of a work was officially reinforced and properly defined as a threshold (*Feist Publications v. Rural Telephone Service Co., Inc.,* 1991). Throughout the years, originality in respect to copyright law has had different definitions, in essence developing parallel to copyright law (Gervais, 2002). While a single formal definition wasn't outlined in 1991, the idea of creativity as a threshold requiring a minimal amount of creativity for a work to be copyrighted was established (Gervais, 2002). The creativity threshold is a double-threat, ensuring both that some degree of creativity is required to be present for copyright protection, but also that artists and innovators don't have to be deathly afraid that their works aren't wholly original. Often, complete originality might not be an achievable goal and would just prevent the production of new works (*CCC Information Services v. Maclean Hunter Market Reports, Inc.,* 1994). One year later, royalties for artists and copyright owners were introduced for sales of digital audio recording devices and other recording media with the Audio Home Recording Act of 1992 ("AHRA"). The AHRA was a direct assault by music copyright owners on the emerging digital recording industry because copyright owners correctly perceived a financial threat in technology that could produce copyrighted work independently of musicians and recording companies (Gaffney, 2000). The AHRA was the beginning of the shaky tension between the music copyright and technology industries.

DPRSRA. On the heels of the AHRA came the Digital Performance Right in Sound Recordings Act of 1995 ("DPRSRA") which sought to tackle Internet piracy by granting copyright owners "the exclusive right [specifically for sound recordings] to perform the work publicly by means of digital audio transmission" (Lubash, 1998, p. 499). In simpler terms, the act

allowed copyright owners of sound recordings to receive royalties when people access their sound recordings online. This means that if a program transmitted sound recordings without the copyright owners' permission or without compensating them, they would be in violation of the copyright and the owner could sue for copyright infringement. While the DPRSRA was a huge win for copyright owners, arguably the most significant win for music copyright in the 90s was the Digital Millennium Copyright Act of 1998 ("DMCA"), which amended several issues the DPRSRA did not properly address.

DMCA. The DMCA mainly helped in decreasing confusion between the companies involved in the distribution of content on the Internet and copyright owners. While it is just that copyrighted work should not be distributed without the owners' permission and proper compensation, it would also be unfair financially to hold every Internet Service Provider ("ISP") involved in helping the Internet run responsible for one program's, or person's, crime (Balaban, 2000). Such an action would alienate ISPs from distributing music on the Internet, which in turn would end up hurting copyright owners as well. The DMCA's purpose was to strike a balance between the desires of copyright owners and ISPs by setting a restriction on which ISPs could be held guilty of infringement and which could not. This balance took the form of four safe harbors—Conduit Functions, System Caching, User Storage, and Information Location Tools—which define the specific situations where an ISP might not be, or might be, held liable for infringement (Digital Millennium Copyright Act, 1998).

As Balaban (2000) explains it, the Conduit Functions limit ensures that ISPs cannot be held directly/primarily guilty of infringement if a program using that ISP is found to be illegally sharing music, since it is not clear that the ISP had knowledge that such activity was taking place or could have prevented it. The System Caching limit gives ISPs permission to make a temporary

copy of a sound recording “to provide quicker access for its users” (Balaban, 2000, p. 319). As long as the temporary copy is not distributed continuously to unintended users without providing monetary compensation to the copyright owners, then the ISP couldn’t be held liable of infringement. The User Storage limit is the most flexible in protecting ISPs against infringement by permitting that ISPs retain an illegal copy of a sound recording, that users of the ISPs could access, as long as they either don’t know the copy is illegal or receive no financial compensation from it (Balaban, 2000). The Information Location Tools limit protects ISPs from copyright infringement claims when the ISPs simply provide links to illegal sound recordings rather than store the recordings themselves (Balaban, 2000). All four of these safe harbors allow significant protection for ISPs from copyright infringement, but that does not mean that ISPs cannot still be held liable if they try to justify their actions through these safe harbors and fail to meet the requirements necessary to qualify for an exemption from liability.

The DMCA also served to spread the breadth of certain music copyrights by clarifying performers’ sound recording copyrights and the compensation they should receive from online transmissions of their performances. The scope of sound recording copyrights for performers, versus the scope of other music copyrights for recording companies and for artists holding the copyrights of lyrics/compositions, was very limited as a whole and virtually non-existent on the Internet (Balaban, 2000). The lack of range for sound recording copyright protection and compensation for performers on the Internet was rightfully worrying for performers as the emerging online music industry was taking off. Others in the music industry were reaping benefits performers couldn’t, due to confusion on what royalties performers holding sound recording copyrights could demand and to whom those demands should be aimed at (Balaban, 2000).

The DPRSRA attempted to provide the legal avenue through which performers could get compensation for online transmissions of their performances, but it did not account for every type of online transmission through which a performance could be heard or viewed (Balaban, 2000). The DPRSRA also made it too difficult for performers to sue individuals and programs illegally transmitting their performances for compensation and resulted in performers simply not getting the compensation they deserve for infringement of their copyrights (Balaban, 2000). The DMCA was the federal government's attempt to fix the problems DPRSRA did not address, or badly addressed, and make the transition to online music sharing less burdensome both for performers and other music copyright holders and for those involved in the Internet market.

MMA. Although more innovation in music copyright law would be expected as the world jumped into the 21st century, the so-called Digital Age, it was only last year, 20 years after the DMCA was enacted, that a new law was introduced and passed which would amend some of the issues the DMCA has struggled with. The primary purpose of the 2018 Music Modernization Act ("MMA") signed by President Trump last October seems to be to fill in the gaps that previous copyright laws have left unaddressed in regard to royalty distribution and federal protection. Charap, Finkelstein, Moy, and Robinson (2019) outline the new copyright regulations under the MMA, which include pre-1972 recordings finally being awarded federal copyright protection, meaning copyright owners of pre-1972 recordings will be able to receive steady royalties for online streaming of their music as copyright owners of post-1972 recordings have been receiving. Furthermore, the MMA gives a legal backing for sound producers, engineers, and mixers involved in the creation of a sound recording to receive a portion of the royalties that generally all go to performers holding a sound recordings copyright by creating a process via

which they can legally request these royalty payments if they wish to do so (Charap, Finkelstein, Moy, & Robinson, 2019).

In seeking to organize music copyright holder information, the MMA puts into motion the creation of a "central database to identify all of the songs (and the songwriters and publishers of the songs)" (Charap et al., 2019, p. 11). The point of this *central database* is to minimize the instances where music is shared online but information about the copyright holders is not shared along with the music, so no royalties or fees are paid to music copyright owners despite their music being shared (Charap et al., 2019). The central database would rectify this by ensuring that when music is shared, even if copyright ownership information is not shared with it, the information is easily accessible and thus royalties have to be rightfully paid. Finally, the MMA adds a new requirement for determining future royalty rates for online transmissions: that the Copyright Royalty Board "take into account what a 'willing buyer' and 'willing seller' would pay" when setting a new royalty rate (Charap et al., 2019, p. 11).

The additions and changes in the MMA are targeted to benefit songwriters, publishers, and others involved in the creation of music distributed on the Internet, as opposed to the DMCA which was primarily targeted at ISPs. The DMCA being targeted at ISPs made sense at the time because online music transmissions and sharing were rising in popularity. There needed to be limits set on who could be held liable for infringement and who couldn't so ISPs would continue to contribute to the growth of music on the Internet (Balaban, 2000). However, in the years ensuing, the pressing issue became less catering to ISPs than guaranteeing that the rights of artists and publishers are being recognized and proactively protected (Chandler, 2019). The signing of the MMA is an acknowledgement of this new pressing issue and an attempt to resolve it at least partly.

Court Cases Involving Music Piracy

Record Companies v. Music Piracy Programs

Napster. To properly understand how long illegal music sharing on the Internet has been an issue, it is imperative to begin with the notorious *A&M Records, Inc. v. Napster, Inc.* (2000) case. Napster was a music sharing program founded in 1999 by three college students which allowed for users of the service to directly share MP3 files between each other for free through the Internet by connecting users' hard drives by way of Napster's servers, creating a peer-to-peer network (Zepeda, 2002). In December of 1999, different music publishers and companies sued Napster, Inc. for secondary copyright infringement of their copyrighted music.

Napster Inc. attempted to label their program as an ISP and protect it by using the DMCA Safe Harbors (*A&M Records, Inc. v. Napster, Inc.*, 2000). As previously mentioned, ISPs are generally protected from primary copyright infringement, as those charges would have to be brought up against the individual (s) actually illegally sharing the files through the ISPs. Due to the large number of users who use different ISPs, it would be very difficult to find the primary copyright infringers and charge them. Policymakers also generally want to avoid alienating ISPs by making them liable for peoples' illegal activities (Balaban, 2000). To successfully use the DMCA Safe Harbors for protection against copyright infringement, the defendant's program, Napster, would've had to fit under either of two definitions of a service provider. The definitions are as follows:

> [It must be] an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user's choosing, without modification to the content of the material as sent or

> received [or] a provider of online services or network access or the operator of facilities therefore (DMCA Safe Harbors, 1998).

In simpler terms, users using Napster to share music would've had to be connected, and share files, through the centralized Napster server instead of through the Internet, or Napster would've had to serve as an actual ISP, instead of just an avenue for people to illegally share music with one another.

Since Napster did not fit under either of these definitions, it could not qualify for safe harbor protection from the DMCA. Napster Inc. also attempted to utilize the Fair Use Doctrine from the Copyright Act of 1976, but did not qualify for the protection by the four fair use provisions either. Napster's sharing of copyrighted work was not nonprofit/educational, the songs were original, copyrighted compositions shared in whole, and there seemed to be a negative impact on copyright holders as a result of users illegally sharing music with each other on Napster (*A&M Records v. Napster, Inc.*, 2001). Furthermore, Napster Inc. had knowledge about the illegal sharing happening through their program and Napster was not found to have "substantial non-infringing use," meeting the requirements for contributory secondary copyright infringement (*Sony Corporation of America v. Universal City Studios, Inc.*, 1984). Napster Inc. also met the requirements for vicarious secondary copyright infringement because they facilitated such illegal sharing for financial gain. To establish the requirement of financial gain, the U.S Supreme Court drew upon the definitions of financial gain in previous similar cases such as *Fonovisa, Inc. v. Cherry Auction, Inc.* (1996), where the U.S Court of Appeals for the Ninth Circuit stated that it would "impo[se] vicarious liability on the operator of a business where infringing performances enhance the attractiveness of the venue to potential customers." This definition of financial gain does not necessarily require actual monetary gain. Based on a lack of

qualification for the DMCA Safe Harbors and Fair Use Doctrine, as well as the contributory and vicarious copyright infringement claims, Napster was thus legally prohibited from allowing its users to participate in illegal music sharing/distribution, leading to its eventual demise (*A&M Records v. Napster, Inc.*, 2001).

In an explanation for the calculation of damages in *UMG Recordings, Inc. v. MP3.com, Inc.* (2000), a case similar to Napster Inc.'s, the court stated that:

> Some of the evidence in this case strongly suggests that some companies operating in the area of the Internet may have a misconception that, because their technology is somewhat novel, they are somehow immune from the ordinary application of the laws of the United States, including copyright law. They need to understand that the law's domain knows no such limits.

The court's strong words were, at face value, meant to serve as a warning to those seeking to infringe copyright law, subsequently bolstered by the record companies' crowning victory against Napster. However, to say the victory was short-lived would be an understatement. Napster was unusual at the time for the sheer volume of songs being shared between users and the popularity of the program. Richard Nieva (2015) claims that "at its peak, Napster had 70 million users." The rising popularity of music streaming on the Internet was, at once, a cause and effect of Napster, and from its shadow have emerged countless other illegal music sharing and downloading programs.

Grokster. Rod Smolla (2004) in his article, "You say Napster, I say Grokster," labeled Grokster as the "sequel to Napster", capturing in the simplest of terms the essence of the music sharing program and why, like its predecessor, it was ultimately shut down for copyright infringement. Grokster was Napster's twin in every way, but it did not have any servers that

would contribute to users' file sharing. In Napster's case, even if the files did not pass through or were retained in its servers, users still had to use the servers to find songs and connect to other users' hard drives. In Grokster's case, "a user would send a file request directly to other computers; search results were sent back to the requesting computers, and the user could then download the desired file from a peer's computer" (Robertson, 2014). Grokster was completely decentralized and its creators thought this type of system would help them avoid copyright infringement claims. If it was just users connecting with and communicating to users, with Grokster having no part in it except for providing an outlet for communication, how could the program possibly be held responsible?

The U.S Court of Appeals for the Ninth Circuit agreed with Grokster's sentiment and ruled in *MGM Studios, Inc. v. Grokster Ltd.* (2004) that Grokster could not be held liable for copyright infringement because users were not connected in any way through its servers and files were being shared directly from computer to computer. MGM Studios appealed to the United States Supreme Court, whose decision was the exact opposite of the lower court. *In MGM Studios, Inc. v. Grokster Ltd.* (2005), the United States Supreme Court reversed the Circuit Court's decision and determined that Grokster Ltd. was liable for vicarious copyright infringement because, though users did not connect to each other, transfer files, or at all interact with Grokster's servers, Grokster Ltd. *did* have sufficient knowledge that their users were illegally sharing files with each other and benefited from those illegal activities via advertisements on their program. MGM Studios' claim of contributory copyright infringement was not successful because they could not prove that Grokster did not have substantial non-infringing use.

In Grokster's case, plausible deniability was not possible as the United States Supreme Court was also given evidence that "the distributors [Grokster Ltd.] expressly communicated to users the ability of the software to copy works and clearly expressed their intent to target former users of a similar service [Napster] which was being challenged in court for facilitating copyright infringement" (*MGM Studios, Inc. v. Grokster Ltd.*, 2005). Grokster Ltd. not only encouraged its users to partake in the illegal sharing of music files, but was also prepared to solicit possible future users for the same purpose of providing a channel for those seeking to illegally download share and music files with others. Furthermore, Grokster Ltd. profited from the illegal music sharing happening via their program through advertisements, as previously mentioned, and thus could be held accountable even if their servers weren't complicit in the music sharing. Grokster Ltd. believed the decentralization of their software would inhibit copyright holders from suing them and allow them to skillfully skirt around copyright infringement claims, and in the lower courts, that technicality saved them. In the Supreme Court, however, that technicality was seen as irrelevant because Grokster's main defense, its complete decentralization, hinged on the fact that Grokster Ltd. would have had no way of knowing any illegal acts occurring through their software. Evidence shown by the plaintiff in court demonstrated that Grokster Ltd. did have knowledge of illegal acts happening on their software and, in fact, had even encouraged those acts, making Grokster Ltd.'s main defense fall flat.

In the grand scheme of music piracy, Grokster was not wholly significant; it was neither the first nor the last of its kind and was indicted relatively quickly. Grokster's relevance lays in the audacity of software developers and the delayed reactivity of copyright law. Grokster's existence belied the strong position the courts and music copyright holders had taken immediately after Napster. The general hope after Napster had seemed to be that program

developers looking to make profit out of providing a conduit for the illegal sharing of music would get scared and remain inconspicuous for some time. Clearly, that did not happen. If anything, software developers became more frenzied in creating these sorts of programs and users of these programs only continued to proliferate (Robertson, 2014).

Carol Robertson (2014) in her article "The Pirates of the Internet: Metro-Goldwyn-Mayer Studios v. Grokster, Ltd." wrote that "the studios seem to be playing a game of 'whack-a-mole'." Every time a new program like Napster and Grokster pops up, the studios and record companies give it their all to get that program removed, but another one inevitably pops up in their place. There is no proactivity, but rather reactivity, in the actions of the courts, of copyright law, and of studios and record companies. Copyright law is constantly on the defense which is why programs like Grokster get the better of it, at least for a short while. The combination of the vigor of software developers and the lethargic reactivity of copyright law make for a fatal blow to copyright law and copyright holders and allow software like Grokster, and LimeWire, which will be discussed next, to keep flourishing.

LimeWire. If Napster and Grokster were the start of the illegal music sharing frenzy, LimeWire would best be categorized as the peak as well as the downfall. LimeWire was developed in 2000, but did not take off as a program until a few years later, when its major competitors—Napster and Grokster to be precise—were shut down, allowing for LimeWire to become the central program people went to when they were looking to illegally download and share music files (McIntyre, 2018). Unlike with its predecessors, it took record companies and copyright holders several years before they caught a whiff of what LimeWire users were using the software for and to shut down the program, meaning that LimeWire was allowed to blossom into an online pirate behemoth unlike any other. It wasn't until 2010 that Lime Wire LLC was

successfully tried for its software by several record companies, the headliner being Arista Records LLC, and by that time, Daisy Jones (2018) writes, "it had already faded into obscurity alongside Napster." LimeWire was allowed to survive and thrive for so long that by the time the record companies came for the program, users themselves had already moved on. Regardless, record companies experienced a win in *Arista Records LLC v. Lime Group LLC* (2011)[3]. The victory was, at the very least, the obstruction of an active threat; even if, at the time of the court case, LimeWire wasn't being used as heavily as in its peak years, it was still available for use.

The evidence brought against Lime Wire LLC in *Arista Records LLC v. Lime Group LLC* (2011) was solid and incontestable despite Lime Wire LLC's copious motions to exclude documentation and witness testimony from the case. The infringement claims brought successfully against LimeWire were as follows: secondary copyright infringement, inducement of copyright infringement, common law copyright infringement, and unfair competition (*Arista Records LLC v. Lime Group LLC, 2011*). To prove secondary copyright infringement, it first had to be established that LimeWire users were illegally downloading copyrighted material and thus committing direct infringement. The facts that LimeWire users had been illegally sharing music and that Lime Wire LLC had benefited from its users' direct copyright infringement, through advertising and selling of software, was unquestionable at that point in the case, leading to a charge of vicarious copyright infringement (*Arista Records LLC v. Lime Group LLC, 2011*). The claim of contributory copyright infringement failed because Arista Records LLC and the other plaintiffs could not prove that LimeWire had no other substantial non-infringing uses (*Arista Records LLC v. Lime Group LLC, 2011*).

[3] For the purpose of this paper, LimeWire refers to the program used for music piracy. Lime Wire LLC refers to the group that developed the program LimeWire. Lime Group LLC was an investor in LimeWire also sued by Arista Records and the other plaintiffs.

The plaintiffs' claim of inducement of copyright infringement is similar to the plaintiff's claim in *MGM Studios, Inc. v. Grokster Ltd.* (2005). Not only did Lime Wire LLC have knowledge of illegal activities being carried out through their software, but they targeted potential users uniquely interested in illegally sharing music to use their software. Furthermore, Lime Wire LLC made committing copyright infringement through their software easy, spent little to no time nor money on preventing such illegal acts, and made profit out of infringing music copyrights (*Arista Records LLC v. Lime Group LLC*, 2011). Through these facts, the plaintiffs thus provided substantial evidence of their claim of inducement of copyright infringement against Lime Wire LLC and the latter were found guilty of another crime by the court. The claim of common law copyright infringement is because prior to the passing of the MMA in 2018, music copyright policy for music created before 1972 was subject to the common law of the state, in this case New York (*Arista Records LLC v. Lime Group LLC*, 2011). LimeWire infringed music copyrights created prior to 1972 and owned by Arista Records LLC, and thus violated the New York common law on copyright infringement. The last claim made by the plaintiffs was for unfair competition, which the U.S Courts of Appeals for the Second Circuit defines as "the taking and use of the plaintiff's property to compete against the plaintiff's own use of the same property" (*Roy Export Co. Establishment of Vaduz v. CBS*, 1982). By allowing the illegal sharing of copyrighted music through their software, Lime Wire LLC used the plaintiffs' property in competition against the plaintiffs, making profit that presumably would have been the plaintiffs' if users hadn't acquired the music through LimeWire (*Arista Records LLC v. Lime Group LLC*, 2011).

The significance of LimeWire in the history of illegal music sharing through the Internet is three-fold; it was a generational and economic phenomenon unlike any other of its kind, but it

was also the end to an era. The impact LimeWire had on American youths during its years of service has withstood time, as seen by the surge of nostalgic memes and online articles relating to LimeWire that flooded the Internet just a year ago. Gone but not forgotten, LimeWire was thrust back into the limelight, illuminating millennials'—most, if not all, of LimeWire's users belonged to the millennial generation—conflicting relationship with the program. On one hand, it was an online Eden for those who couldn't, or refused to, pay for music; it was an online "treasure chest.…that made your taste yours" (Jones, 2018). On the other hand, LimeWire was rampant with viruses and sexually explicit images and videos; Miles Klee (2018) in his article "Why Millennials Miss LimeWire Enough to Resurrect It as a Meme" went as far as to equate illegally downloading music from LimeWire to unprotected sex. LimeWire was the perfect mix of teenage rebellion and delayed gratification and that, plus the incredible amount of time it remained active, ensured the program a permanent place in the hearts and minds of an entire generation (Klee, 2018).

As fondly as LimeWire is still remembered by millennials, the chagrin record companies and copyright holders experienced due to the program has been equally as memorable for them. LimeWire cost record companies like Arista Records LLC and its musicians millions, maybe even billions, of dollars; Josh Halliday (2010) notes in his article "LimeWire shut down by federal court," that the Recording Industry Association of America ("RIAA") estimated a $6.8 billion-dollar loss in music sales between 1999 and 2009 and that the association attributes that loss to music piracy software, LimeWire being one of the most vicious culprits. However, the death of LimeWire also paralleled the decrease in popularity of peer-to-peer networks and a decrease in the popularity of piracy overall; possible reasons for this phenomena will be addressed shortly.

Record Companies v. Individual Copyright Infringers

So far, the focus has been on analyzing large-scale music piracy with the liability being placed on the software companies who develop the programs to facilitate illegal music sharing, but now it is imperative to shift perspectives and focus on two cases where the liability was placed on users of programs like LimeWire instead. Due to the heavy attention placed on the fight between record companies and software companies, individual users tend to disregard the legal risks involved with illegally downloading and sharing music; either they think they can't get caught or won't suffer substantial penalties for their actions since so many others do it as well. *Capitol Records, Inc. v. Thomas-Rasset* (2011) and *Sony BMG Music Entm't v. Tenenbaum* (2011) prove otherwise, while also shedding light on a possible contributing factor to the end of peer-to-peer network use.

Thomas-Rasset. Jammie Thomas-Rasset was sued by Capital Records, Inc. and other record companies for illegally downloading and sharing 24 copyrighted songs through a program similar to Napster called Kazaa (*Capitol Records, Inc. v. Thomas-Rasset*, 2011). Unlike in the previous cases discussed, Thomas-Rasset was held liable for direct infringement, versus secondary infringement, as she was personally responsible for illegally downloading and sharing the copyrighted music. The defendant's—Jammie Thomas-Rasset—main defense was that as a single user of such a large music sharing community like Kazaa, her contributions to the losses of Capital Records, Inc. were negligible. The defendant claimed that if she hadn't distributed those 24 copyrighted songs, someone else on Kazaa would have and hence she didn't deserve to be singled out and held liable for what others were doing/would have also done (*Capitol Records, Inc. v. Thomas-Rasset*, 2011). However, Thomas-Rasset was demonstrated to be fully

aware that her actions in downloading and sharing songs using Kazaa were illegal, which meant she committed copyright infringement willfully, and even attempted to cover up her crime in court by suggesting that it wasn't her who illegally shared songs, but instead her children and ex-boyfriend (*Capitol Records, Inc. v. Thomas-Rasset*, 2011). The court not only did not believe Thomas-Rasset's attempts to shirk blame, but also disagreed with her conclusion that as a single user of Kazaa, she did not deserve to be held liable, finding her guilty of direct copyright infringement. Even if others on Kazaa and on other illegal music sharing programs were also illegally downloading and sharing music, that doesn't make Thomas-Rasset any less liable for the monetary damage she caused the plaintiffs; frankly, it only makes her unlucky that she was caught.

Tenenbaum. The case of Sony BMG Music Entertainment against Joel Tenenbaum is almost identical to Thomas-Rasset's case. Joel Tenenbaum was a commonplace user of illegal music sharing programs just like Thomas-Rasset, albeit more prolific as he used several different programs over several years, including Napster, LimeWire, and Kazaa. Evidence from court proceedings showed that "at one point in time in 2004 alone, Tenenbaum had 1153 songs on his 'shared-directory' on the Kazaa network;" those songs could have been downloaded by other Kazaa users hundreds, maybe even thousands, of times, resulting in loss of money for copyright holders (*Sony BMG Entertainment v. Tenenbaum*, 2011). According to *Sony BMG Music Entm't v. Tenenbaum* (2011), Tenenbaum was aware that his actions were illegal and received several warnings to stop illegally sharing music from his father, the university he attended, and his Internet service provider, and even from Sony BMG Music Entm't. Tenenbaum heeded none of the warnings; in fact, even after Sony sent him a letter informing him that they were aware of his copyright infringement and would be proceeding with charges against him, Tenenbaum

continued to illegally share music (*Sony BMG Entertainment v. Tenenbaum*, 2011). Tenenbaum's refusal to stop illegally sharing music in the context of all of the warnings given to him was thus a deliberate and willful decision to continue to commit a crime and accept the possible consequences that could come of it. Before the trial, Tenenbaum, like Thomas-Rasset, attempted to shift the blame on others in his household, but ended up admitting during the trial that his previous claims had been lies and it had in fact been him who had used different programs to illegally download and share music (*Sony BMG Entertainment v. Tenenbaum*, 2011).

Thomas-Rasset and Tenenbaum were most likely not the most vicious distributors of copyrighted music; they were just ordinary users of peer-to-peer networks who got caught up in the struggle of music copyright holders to stem the popularity of illegal music sharing. Thomas-Rasset's and Tenenbaum's cases are every illegal music downloader's scary bedtime story; don't illegally share music or you'll get eaten by the big, bad record companies. Every case copyright holders have brought against copyright infringers has been both to get justice for lost profits and royalties and to deter future infringement, but in Thomas-Rasset's and Tenenbaum's cases, the purpose of the lawsuit was more of the latter (Kot, 2010). Music copyright holders were growing desperate; illegal music sharing and downloading programs were increasingly more and more of a threat to profits and also to the intrinsic value of copyrights as a whole (Kot, 2010). If everyone had the right to share and download music without paying, copyrights would be valueless. The idea was that if other illegal music sharers saw regular people just like them being held liable for copyright infringement instead of just large, successful software companies, maybe they would think twice about their actions and refrain from illegally sharing music. It is difficult to say if *Capital Records, Inc. v. Thomas-Rasset* (2011) or *Sony BMG Music Entm't v. Tenenbaum* (2011)

had such an effect. The cases took place during the peak years of illegal music sharing, 2004-2011, and were fully resolved coincidentally when illegal music sharing began to ebb.

Musicians and Record Companies' Positions on Music Piracy

Was the decline in illegal music sharing a result of copyright law scaring copyright infringers into the shadows or simply a result of the passage of time and technological change? If the answer is the former, it would mean a trophy for copyright law in its defense of copyrighted works, but if the answer is the latter, it would mean that time has more of an effect on the decline of copyright crime than copyright law does, which is simply unacceptable. The main question remains: is current copyright law efficient in its protection of copyrighted works or does it require change? The final piece to answering this question is the view of the artists and record companies themselves. Simply put, the copyright holders are the ones who lose out the most when copyright law isn't at its sharpest; whether they feel that their works are being protected properly, or not, is key to determining whether policy change is necessary and what forms this change should take. Moreover, it is important to assess, through copyright holders' concerns, whether copyright infringement is a victimless crime, as many copyright infringers seem to believe, or whether it has a tangible negative impact on copyright holders. This assessment will, in turn, evaluate the importance of copyright policy and of changing it if the current policies are failing to meet reasonable standards.

Musicians in Favor of Music Piracy

Pew Research Center survey. It would be fair to assume that all musicians are staunchly against illegal music sharing. After all, the more people illegally share music, the less they buy songs and the less profits musicians gain from their works. However, the reality of artists' thoughts on illegal music sharing is more complex, with some artists rallying against it and

others, if not outright approving of the act, at least not directly opposing it. The Pew Research Center's Internet & American Life Project, a nonprofit organization that performs research on various different topics related to American interaction with technology, conducted a survey of 4,768 Americans, of which 809 were self-proclaimed artists, 1, 204 were general American citizens, and 2,755 were self-proclaimed musicians, about "their opinions on digital file-sharing and other Internet issues" (Zeller, 2004). Zeller (2004) notes the importance of this survey in providing "the first large-scale snapshot of what the people who actually produce the goods that downloaders seek (and that the industry jealously guards) think about the Internet and file-sharing." As previously mentioned, the focus of the effects of illegal music sharing has largely been on the record companies, the developers of file-sharing programs and to a much smaller extent, individual downloaders and sharers of music files, but not on musicians, which is a grievous gap in research trying to analyze the effects of illegal music sharing.

The survey yielded several surprising results. When asked whether downloading files from a file-sharing program should be legal or illegal, only 48% of musicians answered that it should be illegal, with 33% answering that it should be legal and 19% not answering at all (Zeller, 2004). What was surprising was not just that only 48% of musicians reported that illegally downloading music should be illegal, but that the percentage survey results for that question for the general non-artist population were almost identical to the musicians' response. Musicians didn't care more or less than the general population about individuals illegally downloading and sharing music. When asked if they believed making copies of copyrighted material and selling them for profit should be legal or illegal, however, musicians almost unanimously responded that it should be illegal, again on par with the results of the general population (Zeller, 2004). The disparity between the results of the previous two survey questions

seems to come down to the actual act of selling copyrighted material versus just downloading and sharing it using programs like LimeWire. Even though the actual loss in profit would most likely be equal between a person selling copyrighted music and another sharing it for free on the Internet, the act of attempting to actively profit from the works of musicians, and hence actively steal profits from musicians, is more easily condemnable.

On making more money, 72% of musician respondents said the Internet had some effect—whether big or small—on higher profits, and on being able to reach a wider audience, 88% said the Internet had affected that as well. When it came to the perceived effect of piracy on the Internet as a threat to music, however, only 37% of musicians responded that they believed the Internet had negatively affected their ability to protect their music (Zeller, 2004). What these results overall signify is that many musicians do not perceive illegal music sharing and downloading as a huge threat to music and to profits and still believe in their efficacy to protect their music, or in the effectiveness of music protection as a whole.

Individual musicians' positive views on piracy. To put this view of illegal music sharing as largely unthreatening into perspective, here are several instances in which generally renown musicians talk about music piracy in a positive light. CBS News' Mark Phillips interviewed musician Ed Sheeran in 2010 about his then recently released album Division ("÷") and overall music career. In the interview, when asked about who helped his music career take off first, Sheeran surprisingly answered that he owed the start of his stardom to his fans and file sharing. The singer notes that:

> [He] know[s] that's a bad thing to say because [he's] part of the music industry that doesn't like illegal file sharing, but illegal file sharing was what made [him]. It was students in England going to university sharing [his] songs with each other (Sheeran, 2010).

In an interview with talk-show host Charlie Rose, musician and leader of the group Public Enemy Chuck D (2000) spoke in support of file sharing, saying that he viewed Napster "as just being a version of new radio" giving power over artists back to the people, the fans, rather than the industry being "accountant and lawyer-driven." In an interview with The Times, Radiohead guitarist Ed O'Brien was quoted saying:

> My generation grew up with the point of view that you pay for your music. Every generation has a different method. File sharing is like a sampler, like taping your mate's music. You go, 'I like that, I'll go and buy the album'. Or, 'you know what, I'll go and see them live' (as cited in Foster, 2009).

In that same interview with The Times, Nick Mason, the drummer for Pink Floyd, was also quoted speaking positively about illegal music sharing and how "it's a great thing to have another generation discovering your music and thinking you're rather good. File sharing plays a part in that, because that generation don't do it any other way" (as cited in Foster, 2009). These musicians' favorable views on illegal music sharing, as well as the data from The Pew Research Center's Internet & American Life Project's survey previously presented, are important to discuss because it would be biased and incorrect to only address negative views on illegal music sharing instead of all consequential opinions, but also to note how drastic of a change is needed, if any change at all, in current music copyright policy. In turn, it is time to shift the discussion to the opinions of those who do perceive illegal music sharing as a huge threat, most notably record companies, and examine why they perceive illegal music sharing so.

Record Companies Against Music Piracy

Music record companies have been illegal music sharing's most ardent opposers since the very beginning of illegal file sharing. Every major case battled in the past two decades against

illegal music sharing: *A&M Records, Inc. v. Napster, Inc.* (2000), *MGM Studios, Inc. v. Grokster Ltd.* (2005), and *Arista Records LLC v. Lime Group LLC* (2011), just to name a few, have all been fought by large record companies. It is record companies who lose the most money overall due to music piracy because they manage hundreds of artists, for many of whom their music is being illegally downloaded and shared. The Recording Industry Association of America, or RIAA, is an umbrella corporation housing several music recording companies; according to their website, "nearly 85% of all legitimate recorded music produced and sold in the United States is created, manufactured or distributed by RIAA members" (RIAA, 2019). The RIAA takes a very serious stance against music piracy and encourages people who witness music piracy to report it on their website as "it's important for fans to help look out for illegal activity that damages the creative freedom of the artists you love" (RIAA, 2019). The RIAA evidently does not agree with the view that music piracy can have positive effects for artists; whether their disagreement stems from greed or a genuine desire to protect artists is unclear, but inconsequential because their monetary interests generally align with artists'. The RIAA's concerns over the effects of illegal music sharing on musicians are mirrored by CBM Records' campaign, #ProtectOurFutures. In a Forbes article, a spokesperson for the campaign was quoted saying:

> What many people don't realize is that many up and coming artists are one missed paycheck away from homelessness. It's already difficult for an artist to make a living through recording, performing, and selling their works, especially independently. So how unfair is it that they then have to turn around and worry that their music is being illegally downloaded (as cited in Granados, 2016).

Individual Musicians Against Music Piracy

It's not just record companies, however, who are strictly against illegal music sharing, but musicians as well. Perhaps the most famous case of musicians against file sharing is that of Metallica, who were the first musicians to bring up a case in court against Napster in 2000—in fact, they were the first band to legally address the dangers of illegal music sharing overall—even before A&M Records and the other record companies did. Metallica not only sued Napster Inc. through court, but its drummer, Lars Ulrich, went as far as to actually "[show] up at the headquarters of file-sharing site Napster in May 2000 clutching the names of more than 300,000 people the band accused of illegally downloading its music [and] demanded Napster stop them" (Sandoval, 2008). In that same interview previously mentioned with Chuck D (2000) and Charlie Rose, Lars Ulrich (2000) was the second invitee and he took the opposite side of the argument from Chuck D, stating that:

> It's really about control and about the future [and not about money]. [It's about people on the internet taking] for granted that because [the music] comes through the computer, through the Internet, that they have a right to it. It's a very, very dangerous position to take.

Musician Lily Allen has also been a strong advocate against illegal music sharing, penning an article for The Times in 2009 calling out other musicians, such as Nick Mason and Ed O'Brien, who openly supported file sharing. Allen (2009) notes that while file sharing may have benign effects for established musicians like Pink Floyd and Radiohead, "for new talent…file sharing is a disaster—it makes it harder and harder for new acts to emerge."

Most musicians, however, seem to avoid taking a strong position either against or for illegal file sharing. In an interview with the Wall Street Journal's D: Dive Into Media

Conference, musician Neil Young was quoted saying that “Piracy is the new radio. That’s how music gets around. That’s the real world for kids” (as cited in Smith, 2012). However, in that same article, Young also defended record companies and their efforts to protect artists against illegal music sharing. Musician Rodney Crowell said in a New York Times article:

> In some ways, I think the record companies have it coming, but at the same time, being a writer and therefore in the business of copyright, they're saying it's impacting our business by 30 percent or more, so we have to do something (as cited in Strauss, 2003).

Neil Strauss (2003) in his article “File-Sharing Battle Leaves Musicians Caught in Middle” notes that for many artists who oppose illegal music sharing the issue isn’t loss of royalties/revenue, but rather a loss of control, a sentiment Lars Ulrich had previously expressed. The record companies’ battle is a financial one, which makes it more black-and-white in essence. The musicians’ dilemma, however, seems to be more focused on the creative aspect of music rather than the financial one (Strauss, 2003). While some artists are okay with this loss of control, others aren’t, and it would be unfair to expect all musicians, as well as record companies, to sit back comfortably as money and control is being stolen from them.

A Remaining Need for Change

While it was surprising to see how many artists were ambivalent/uncaring about illegal music sharing, that does not change the fact that many other artists do not feel like their music is being protected properly (Zeller, 2004). The blame could be placed solely on copyright holders for not being as vicious and proactive as they should be in combating illegal music sharing, but it is unrealistic to expect copyright holders to succeed utilizing a flawed law system. Based on the continuous existence of copyright infringing programs and activities, it is clear that copyright law has not managed to keep up with changing technology and that current copyright policies

require change to offer the most efficient protection of music copyrights possible. Both copyright holders and copyright policymakers have to work together to fix the current issues with copyright law and come up with innovative ideas to launch copyrights into the 21st century. Even if illegal music sharing isn't as significant of a problem nowadays, thanks to programs like *YouTube* and *Spotify*, according to a 2019 report by the International Federation of the Phonographic Industry ("IFPI"), 23% of music consumers still obtained music through ways that resulted in music copyright infringement. Continuing to employ reactive approaches against file sharing software will not lower that statistic and neither will attacking individual music consumers after they've engaged in copyright infringement. In the next section, a few methods will be outlined concerning suggestions by experts in music copyright law of how the law can evolve to either accommodate or further reduce music piracy, as well as other methods outside of the law that could be used in conjunction with changes to copyright law.

Combating Music Piracy

Ideas for combating illegal music downloading and sharing vary in their radicality and invasiveness on everyday life. As a disclaimer, there are no guarantees that any of these methods will have a stronger effect than programs like *Spotify* and *YouTube* have already had on decreasing music copyright infringement, but they're an effort to give copyright holders a fighting chance and to fix certain issues that are restricting music copyright law from reaching its most efficient form. The methods that have a strong chance of being effective are reforming the AHRA and the Copyright Act of 1976's Fair Use Doctrine, creating a tax for certain products that facilitate illegal music sharing and downloading, legalizing free music downloading and sharing as long it's not for profit, informing music consumers more accurately about what is legal and what is not legal when it comes to music consumption as well as about the effects of

illegally sharing and downloading music, and implementing blockchain technology into the music industry.

Reforms to AHRA and Fair Use Doctrine. Wagman and Kopp (2006) were the main proponents of reforms to the AHRA and the Fair Use Doctrine. As a reminder, the AHRA introduced royalties for artists and copyright owners for sales of digital audio recording devices and other recording media (U.S Copyright Office, 2016). Wagman and Kopp (2006) proposed revising the AHRA by:

(1) Broadening the definition of “digital audio recording devices" to include all computer and computer-like devices, including any devices which are able to receive or record audio and devices possessing a hard drive;

(2) Increasing the royalty payment imposed on the importation, manufacture and distribution of such devices to two-and-one-half percent (2.5%); and

(3) Eliminating the distinctions between devices that are only partly digital audio recording devices and those which are only digital audio recording devices.

Expanding the definition of digital audio recording devices and increasing the royalty payments for manufacturers and distributors of such devices will vastly increase revenue for copyright holders from royalties, which will help offset the loss of revenue from copyright infringement. Wagman and Kopp (2006) argue that even though a computer’s main purpose is not for use as a digital audio recording device, which is why it was originally not included in the definition for digital audio recording devices under the AHRA, many music consumers end up using computers and computer-like devices for the purpose of illegally downloading and sharing music and just listening to music overall. This, thus, becomes an argument between theory and practice. In theory, a computer’s main purpose would not be to act as a digital audio recording device, but

in practice, it is highly likely that computers would be frequently used for this purpose. Wagman and Kopp (2006) are proposing that the AHRA's definition of digital audio recording devices focus on actual practice rather than theory.

As for modifications to the Fair Use Doctrine, Wagman and Kopp (2006) recommend adding a *Compulsory Fair Use License* ("CFUL") which, without a copyright holder's explicit permission to share or downloaded their copyrighted works, would subject 'fair users' to pay royalties at a reduced price for a certain period of time, after which the 'fair user' is free to use and distribute the material as they wish. The same four factors that have up to this point determined eligibility for being classified as a 'fair user', and receiving the protections of that classification thereof, would still be applied for determining if a user qualifies for a CFUL, but that classification would be established before any court proceedings that might take place, saving time and money for both plaintiffs and defendants in copyright infringement suits, and ensuring that the Fair Use Doctrine can't be abused by copyright infringers of any kind. These new royalty payments, though not as substantial as other royalty payments may be, would still mean more revenue coming in for copyright holders that wouldn't have otherwise come in, as well as less money being hemorrhaged out in court cases to prove/disprove 'fair use' claims.

NUL. In the stratagem of raising more revenue to accommodate for monetary loss due to illegal music sharing and downloading, Neil Netanel proposes creating a *Noncommercial Use Levy* ("NUL") which would be "imposed on the sale of any consumer product or service whose value is substantially enhanced by P2P file sharing" (Netanel, 2003). Netanel (2003) envisions the NUL being applied to not just providers of P2P software, but also to ISPs and sellers/manufacturers of "computer hardware…, and consumer electronic devices… used to copy, store, perform, or transmit digital files." Netanel's (2003) plan goes beyond Wagman and

Kopp's (2006) suggested reforms to the AHRA by also including ISPs, which, to date, have not been expected to pay royalties of any kind.

Legalizing free music downloading and sharing. Jared Welsh (2008) recommends a different approach to battling music piracy: simply making free downloading and sharing completely legal, so long as its for noncommercial uses. Welsh (2008) claims that legalizing noncommercial free downloading and sharing would be beneficial for ordinary users because it would provide a legal and expansive method of accessing music they might've otherwise accessed through illegal methods, effectively preventing them from committing a crime. More controversially, he argues, it would also be beneficial for musicians and record companies. Welsh (2008) argues that musicians would not heavily feel the loss of revenue from sound recording copyrights since most of their revenue comes from concerts and merchandise sales anyway; in fact, musicians might profit from more exposure to their music if their music becomes easily accessible online for free. As for record companies, they would just have to find a way to "compete with free products by providing better access to better products…., plac[ing] the burden of preventing real free-riding on the only entities that suffer from the problem, which are the very ones with sufficient capital to do so" (Welsh, 2008, p. 1533).

Warning and informing music consumers. Better information and warnings to music consumers could potentially further decline illegal music sharing and downloading. Ullman and Silver (2018) conducted an experiment to test the efficacy of different types of warnings related to copyright infringement specifically directed at music consumers. The researchers claim that current anti-piracy warnings are vague, complex, and may not be as effective because they're not individualized to target the different types of piracy, i.e., music piracy, literature piracy, etc. (Ullman & Silver, 2018). Out of all the warnings tested, participants rated the warning including

an image of a computer, a down arrow to symbolize downloading above the computer, a slash across the image of the computer and down arrow to symbolize that the action is illegal, either the words ‘stop’ or ‘important’, and the phrase ‘This is illegal. You may be monitored and you may be fined’ as the most effective out of all the warnings (Ullman & Silver, 2018). Ullman and Silver (2018) also noticed a peculiarity in the response to downloading versus uploading (sharing) warning symbols, where downloading warning symbols were seen as more representative of a warning against copyright infringement than uploading warning symbols. The researchers attributed this peculiarity to lack of knowledge among music consumers that uploading music, aka sharing music, even having acquired it through legal means, without a copyright holder’s consent, is as illegal as downloading music without a copyright holder’s consent. More effective warnings coupled with providing music consumers with more comprehensive information about what is legal and illegal when it comes to music consumption, as well as explaining the impact of such illegal actions on the music industry, may have a very positive impact on decreasing illegal music sharing and downloading. However, more effective warnings and information would best be used as supplements to policy change and/or technological innovations to prevent piracy, rather than as a main, sole deterrent.

Blockchain. Blockchain technology was originally developed to be used with the online cryptocurrency Bitcoin, but the principles and the technology behind it also have a lot of potential in other industries such as the music industry. Blockchain functions as a decentralized peer-to-peer network created to cut out middlemen in transactions and afford users a more secure, streamlined method of participating in transactions, whether they are buying or selling a product or creating a contract (Biscontini, 2019). A blockchain transaction begins when a person requests to start a transaction on a specific blockchain network. The request for the transaction is

then analyzed, to confirm if the transaction is valid and legal, by all other computers on that same specific blockchain network (Botjes, 2017). If the transaction is validated, the other person, the recipient of the transaction, receives whatever was being transacted and the transaction becomes a *block* which is then locked. The block then becomes part of the *blockchain*, of the network, and it is purportedly virtually impossible to erase or modify (Botjes, 2017). Blockchain is often identified as a digital ledger and that description best reveals how it can contribute to the music industry and reduce piracy: by providing complete transparency for artists and protection against the sabotage of transactions (McGrath, 2019).

The music industry can utilize blockchain to reduce piracy by tracking when users illegally upload music. To give an example, Vevue is a music streaming program that runs on blockchain technology. According to Vevue's founder Thomas Olson, with the help of blockchain, "if someone copies content tracked by our technology by any possible means, including videoing or recording a screen, our platform will be able to identify the owner of the device/system where the content was last played" (Olson as cited in Delgado, 2019). Blockchain technology would provide a way to keep track of the surveillance data (Delgado, 2019). This surveillance data would prevent illegal music sharing, therefore preventing illegal music downloading. Another way to track users utilizing blockchain technology is by placing digital watermarks on music purchases as the company CustosTech has done. Through this digital watermark created using blockchain technology, CustosTech can "analyze the watermark for that file to determine who the legal recipient of the file was" if they learn the file has been illegally shared or downloaded (Delgado, 2019). If people knew they could be easily traced for sharing music illegally and have a lawsuit brought against them, it might prevent or further reduce piracy.

Blockchain technology could also be implemented into already existing streaming programs to facilitate royalty distributions via *smart contracts*. Smart contracts are computer protocols within a blockchain network that automatically perform a transaction when the agreements of a contract are met; the individuals involved in the transaction only have to be sure that they meet the terms of the contract (Frankenfield, 2019). In the case of the music industry, smart contracts would benefit musicians the most as they could negotiate royalty contracts through blockchain, ensuring that musicians can receive more profits from royalties than they normally do. According to Bazinet et al. (2018), in 2017, musicians received only 12% of the revenue incurred by the music industry, "with most of the value leakage driven by the costs of running a myriad of distribution platforms—AM/FM radio, satellite radio, Internet distributors—augmented by the costs (and profits) of the record labels" (p. 3). Moreover, there are several problems with the current system of royalty payments that could be ameliorated, if not solved, by the use of smart contracts through blockchain to automate the process of royalty payments (Butler, 2018).

Incorporating blockchain technology into the music industry either through the methods mentioned above or through other innovative ways has the potential to both decrease the current levels of music piracy and accommodate financially for the losses caused by music piracy that continue to persist. Moreover, blockchain could be key in bridging the divide between copyright law and technology in the music industry as a result of constant conflict. Since copyright law would still be essential in controlling and monitoring the use of blockchain technology so the technology isn't adopted for the purpose of illegal practices, adopting blockchain technology could result in harmony and cooperation between the fields of technology and copyright law rather than strife.

Conclusion

Ameliorating the effects of illegal activity because of deficiencies in our copyright law system is certainly possible, through the methods mentioned in this paper or through other measures, but it appears to be too late to return to a world without pirating as record companies and other copyright holders have been wishing. This impossibility does not negate the positive effects of copyright and intellectual property law overall and should not discourage policymakers from coming up with more innovative ways for copyright holders to maintain control over their works, though that control may look very different than it has historically. The fact that change is needed in our current copyright law system as a result of piracy is indisputable, regardless of the different ideas people have about how that change should look. As long as the weapons of choice for battling copyright infringement continue to be vague threats and crackdowns on file sharing and downloading programs after they've already achieved popularity, music copyright infringement will persist.

Policymakers are certainly heading in the right direction with the ratification of the MMA for improving the quality of copyrights, but that policy does not address illegal file downloading and sharing. When change regarding copyright infringement through file sharing and downloading programs comes, it'll be vital that not only record companies and policymakers participate in the conversation about what changes to implement, but also musicians and informed music consumers. The parties most affected by copyrights either directly or indirectly should get a voice and a chance to put forth ideas that would benefit them and others like them. Through this collaboration, music copyright law can evolve to reach a new level of efficiency and success in the protection of copyright holders and their creations and reduce the damaging effects of copyright infringement through file sharing and downloading programs.

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