The Future of Music

Tensions at the Crossroads of Technology and Law

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PPS 191.01
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December 12, 2008

> The appeal of file-sharing music was the crack cocaine of the Internet's growth. It drove demand for access to the Internet more powerfully than any other single application. It was the Internet's killer app- possibly in two senses of that word. It no doubt was the application that drove demand for bandwidth. It may well be the application that drives demand for regulations that in the end kill innovation on the network. (Lessig 2004, 296)

The public wants music, and musicians want to create music, but a disconnect has emerged between consumers and producers. In the last fifteen years, technology and law have pitted the creators of supply against the creators of demand. Historically, technological and legal changes never resulted in such a war; this time there was an impetus that set off the opposing sides. The MP3 was the powder keg and the proliferation of the Internet was the lit fuse. Policymakers scrambled to keep up with the snowballing technologies that seemingly stripped musicians and copyright holders of their rights to compensation and control over their work, but the unstoppable pace of innovation overwhelmed the feasibility of using law to settle the imbalance.

As a result of these changes, a misalignment exists today among the interests of four primary stakeholders: consumers, producers of music (including the music industry as a whole), producers of technology, and authors of copyright law. Tensions between contrasting legal ideals and between divergent industries longstanding, but the recent changes have generated tensions between law and economy. Generally, these tensions are a struggle between the old and the new: the music industry wants to maintain the profitable status quo, while dissatisfied customers want to explore new possibilities for consuming music; technological innovators want to utilize new tools to create products that best serve a frustrated but eager consumer; producers of music fear that if misused or unregulated, these technologies have the potential to invalidate their copyrights; musicians want fair compensation and control over their work, but the public

wants (and arguably needs) the ability to "stand on the shoulders of giants" to continue cultural evolution. These tensions appear in four conflicts:

- Copyright vs. Fair Use
- The Music Industry and the Status Quo vs. The Technology Industry and Change
- Copyright vs. Technology
- Fair Uses of Technology vs. the Music Industry's Perception of Copyright

Policymakers are responsible for balancing current rights and needs while allowing and encouraging future technological and cultural transformations, but the existence of these tensions suggests a failure.

In Pirates of the Digital Millennium, Gantz and Rochester use similar language to describe the tensions. They write:

> Take a moment to carefully consider the monumental dynamic tension that the clash between intellectual property and digital piracy has engendered between: the public's right to access knowledge and art, and the artists' and publishers' right to rewards from the time and money they have invested; the pace of technology and the pace of legislative change; the technology vendors (who make, for instance, DVD or MP3 players) and the media content owners; and the established players and newcomers, whether recording companies or artists. (53)

These tensions appear in several spheres concurrently: business models, policy, and technological innovation as a public good. Consumers have the power to affect change in each sphere: the power of economic force, congressional representation, and innate creativity all provide avenues of influence.

These tensions did not appear overnight; a torrent of technological innovations created immediate, monumental changes, each individually intensified by the overall revolution. Landmark legal cases and policies generally followed the same timeline as major technological and industry changes, to provide guidance for the creators and consumers of the new products, as well as set precedents for future innovations. The complexity of these issues first merits a thorough description of both the relevant technological and legal changes of the last fifteen

years, before analyzing the overlapping interests and emergent tensions, and finally discussing the remaining questions that will shape tomorrow's music landscape.

Music Consumption Technologies

MP3

MP3 (MPEG- 1 Audio Layer 3) is an audio compression format that decreases the size of a digital file by about 90% without noticeably degrading the sound quality (Anestopoulou 2001; Diffen 2008; Fisher 2000). The increased ease of transmission and storage of music for producers and consumers made MP3 the industry standard in 1993 (Fisher 2000). Additionally, individuals can make infinite perfect copies of a digital file at a marginal cost, unlike analog formats, which decrease in quality with each additional generation of copies (Fisher 2000). However, the MP3 format has no embedded security; anyone can take advantage of the improved ease and efficiency of copying, regardless of their authorization to do so (Fisher 2000). The rapid adoption of the MP3 format demonstrated the consumer demand for digital music, and peer-to-peer networks provided access to the digital files for free before copyright holders began selling digital music (Anestopoulou 2001). Therefore, peer-to-peer networks further enabled the easy transmission and proliferation of mostly unauthorized MP3s.

Napster

Napster was the first widespread, centralized peer-to-peer filesharing network. As Maria Anestopoulou explains, "Napster functions as a virtual library of MP3 audio files, where the user can browse, select and download a song from another user," (323-324). Shawn Fanning, a 19-year-old college student and programmer, created Napster in 1999 as software that enabled users to remotely access other online users' music and download files directly from their computers' libraries (Menn 2003). Since Napster's servers matched downloaders and uploaders, the service

was classified as a centralized peer-to-peer (P2P) network (Menn 2003). Napster did not mandate that users (who remained largely anonymous aside from a self-selected username) share their own libraries in order to download from others; this allowance could have led to a free rider problem (users consuming more than they are contributing) since a user must sacrifice some of his bandwidth to upload his library (Silverthorne 2007). In a 2001 paper, Cunningham et al. postulate:

> …If downloading costs increase proportionally for all levels of sharing due to some exogenous shock (for example, the closing of the Napster Music Community), aggregate sharing actually increases as users share more to decrease the increased level of sharing cost. Thus, the strategy by the music recording industry to shut down the Napster Music Community might actually lead to an increase in overall sharing, granted via peer-to-peer file sharing venues other than the Napster Music Community. (Alexander 2002, 159)

The free rider problem could have caused P2P use to implode due to decreased network effects as legal issues surfaced and users realized they could circumvent legal prosecution by the RIAA if they elected not to share their files, but P2P use has only increased ("RIAA v. The People: Five Years Later" 2008). Accordingly, Cunningham's hypothesis was correct as illegal peer-to-peer sharing has only increased since 2001, despite legal substitutes (IFPI 2008).

Other Peer-to-Peer Programs

After Napster emerged and ultimately collapsed after legal persecution, many decentralized P2P programs became popular to fill a void for the millions of users still interested in acquiring free, digital music. Other P2P downloading programs that emerged include AudioGalaxy, Morpheus, Grokster, Kazaa, iMesh and LimeWire, all of which faced legal action ("RIAA v. The People: Five Years Later" 2008). Decentralizing the peer-to-peer program required a change in the architecture of the network; instead of the software providing the servers to match downloaders and uploaders, each user's connection and computer also handles some of

the data flow and connections for other users (Fisher 2004b). Decentralized peer-to-peer networks provide greater challenges for the legal system since there is no individual or juristic person to hold accountable (Fisher 2004b).

As did Napster, most current decentralized peer-to-peer networks give users the option to share their own library (with the exception of BitTorrent), and despite the financial and potential legal costs that would seemingly diminish the effectiveness of peer-to-peer networks, they are thriving. Sean Silverthorne points out, "65 percent of all Internet traffic is content exchanged on p2p networks," (Silverthorne 2007). As of 2004, most filesharers were downloading only a few songs, rather than entire albums, which could be due to a variety of factors; Silverthorne explains, "… illegal downloading may help the industry slightly with another major segment, which Oberholzer and Strumpf call 'samplers'—an older crowd who downloads a song or two and then, if they like what they hear, go out and buy the music," (Silverthorne 2004). If these "samplers" do purchase albums based on the few songs they download, peer-to-peer networks function as a promotion tool much like radio (Silverthorne 2004).

Broadband

Broadband Internet is always connected to a user's Internet Service Provider (ISP), and can transfer data at a minimum of 768 kb per second and up to 5 Mb per second, as compared to dial-up modems, which require a unique connection for each use and are capable of a maximum of 56 kb per second ("Broadband vs. Dialup Internet Connection"). As of 2004, a lack of widespread high-speed Internet connections made filesharing inefficient for a majority of consumers, which may have contributed to the common pattern of downloading only a few songs (Silverthorne 2004). Between 2000 and 2008, global Internet usage has increased by 305.5%, and today 21.9% of the world's population has Internet access ("Internet Usage Statistics: The

Internet Big Picture, World Internet Users and Population Stats" 2008). Internet access and filesharing will only continue to become more common around the world ("RIAA v. The People: Five Years Later" 2008).

CD Burners

CD burners are tools that allow users to copy ("write" or "burn") digital files onto a blank compact disc. The first CD burner designed for personal use entered the market in 1995 at $995, and by 2003 more than 120 million devices had been sold for as little as $40 (Fisher 2004b). Today, most personal computers come with a disc drive capable of playing and burning both CDs and DVDs. CD burners do have practical and legal uses, since compact discs can store significantly more data than previous media storage; however, unauthorized music sharing may have led to their proliferation. A CD burner enables consumers to legally reproduce CDs to backup their libraries, restore a damaged disc, or create additional copies for use in various disc players, but a consumer can also create illegal, perfect copies for others with only his personal computer and its often pre-installed burning software. In 2001, worldwide music sales dropped 5 percent while blank CDs outsold recorded CDs (Menn 2003).

Digital Rights Management

Digital Rights Management (DRM) is the is the umbrella term for encryption tools that allow the distributor of digital media files to control how the consumer may use the file, especially in the context of creating copies or playing the file on a variety of devices. Apple's iTunes store employs a proprietary encryption format that limits playback options. Initially, the oligopoly of major record labels (the "Big Four": Universal, Sony BMG, Warner, and EMI) was hesitant to release their libraries as digital tracks due to concerns about the MP3 format's lack of encrypting, so Apple sells tracks using AAC (Advanced Audio Coding), an open format, in

conjunction with FairPlay, Apple's proprietary encryption code (Fisher 2004a). Apple claims that licensing FairPlay would limit their ability to respond effectively to any leaks of the code, which would result in the production of software to disable the DRM protection (Jobs 2007). Customers can play their purchased music on up to five computers, transfer it to an unlimited number of iPods (Apple's ubiquitous portable MP3 player), and burn the same playlist of purchased music on up to seven discs (Fisher 2004a). Windows also uses a proprietary encryption code, Windows Media Audio (WMA), but has licensed the code's use for many other online stores (Fisher 2004a).

The effectiveness of DRM technologies at limiting piracy remains a contentious issue while consumers can still purchase unencrypted CDs and then upload them to P2P networks as MP3s; in the meantime, DRM may only discourage consumers from purchasing encrypted music (Fisher 2004a; Jobs 2007).

iTunes

Apple, Inc. launched iTunes in 2001 as a Mac application for playing and managing digital music, but became best known for the iTunes store, which opened online in 2003 (Awbrey 2001; Fisher 2004a). As Silverthorne writes, "iTunes provides a unified interface that seamlessly integrates the location, purchase, and consumption of content," (Silverthorne 2007). Since the launch of the iTunes store in 2003, Apple has sold over five billion digital tracks (Neumayr 2008).

Competitors, including Napster 2.0, Rhapsody, Pressplay, RealNetworks, and Dell's MusicMatch, also developed online stores, formats, and portable music players, each designed to work only within their family of products, but iTunes is the dominant force in online music sales. While the iPod and iTunes do not support other DRM-encrypted formats, they do support MP3

files (which consumers can acquire through peer-to-peer networks, uploaded CDs, or the growing number of online stores that sell unencrypted files). Silverthorne explains, "Apple's profit comes from the sale of iPods and related products. It is no secret that a large percentage of music files on iPods have not been purchased on iTunes…A thriving p2p community acts as an engine for iPod sales," (Silverthorne 2007). Apple's ability to restrict interoperability of their products with those of competitors harms consumers and technology producers who are forced to select one of several incompatible families of products (Fisher 2004a).

Peer-to-peer networks and the iTunes store each have advantages and disadvantages for consumers, but for a skilled user with a broadband connection, the benefits of a free file with unlimited, unrestricted playback likely outweigh even the minimal cost of a DRM-encrypted file from iTunes. There may be a broader audience for iTunes among users seeking popular content, high definition video, or exclusive bonus tracks and add-ons from some artists (Silverthorne 2007).

Other Piracy

The music industry continues to focus on combating piracy occurring on peer-to-peer networks and creating an effective DRM format that consumers will tolerate. Meanwhile, however, consumers continue to illegally acquire music through other methods. Individuals swap iPods, burn data discs of unencrypted files, utilize modification software to circumvent encryption, email or instant message files, use closed networks to exchange files privately, or upload friends' CDs to their own music libraries. If CDs become obsolete, the transaction costs of overcoming DRM to pirate music would increase; however, in all likelihood, piracy will always exist to some degree (Fisher 2004a).

Policy and Court Cases

Copyright

The origins of copyright in the U.S. first appear in law more than 200 years ago, when the Founding Fathers established the Copyright Act of 1790 to provide protection for a creator's work for a given amount of time before allowing full public access through the "public domain," (Gantz and Rochester). Originally, the protection lasted 14 years; however, today, a copyright lasts the author's lifetime plus 70 years- significantly longer before the creation passes into the public domain (Gantz and Rochester). The implied purpose of copyright since the 18th century has been to foster creativity by guaranteeing that information or ideas could be considered property- for a *limited* amount of time. By increasing the lifespan of copyright so dramatically, ideas essentially become a commodity, inherently counteracting the original purpose of copyright.

The notions of copyright and fair use have faced serious scrutiny and reevaluation since the proliferation of recent technologies, most visibly in the arena of digital music. Fair use is the public's right to transformation; as Fisher writes, "…generally, another justification for fair use is that it balances the public's interest in accessing and manipulating copyrighted works freely with its interest in ensuring production of creative works. In this vein, fair use can be seen as balancing the First Amendment with copyright's prohibition on using others' speech," (2004a, 68). This is undoubtedly a precarious and delicate balance. Fisher postulates that if consumers purchase less music through both traditional and emerging venues due to the ease of overriding copyrighted works with digital tools, the music industry may respond by reducing their "product" output (Fisher 2000). However, Lessig counters that the increasing variety of music options available to the consumer (whether through peer-to-peer filesharing or the increased catalogue of online music stores able to sell rare and less popular recordings as MP3s) may

instead create more competition in a historically concentrated industry, thus resulting in increased production (Fisher 2004a; Lessig 2002b).

Fair Use

Fair use is the principle that the public is entitled to utilize limited portions of copyrighted material for activities including, "…criticism, comment, news reporting, teaching, scholarship, or research," (Unintended Consequences: Ten Years Under the DMCA 2008, 6). Fair use first appeared in U.S. copyright law in 1976, and included four factors a judge must consider as a whole to evaluate whether a particular creation is infringement or fair use:

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. (Copyright Law: Chapter 1, Limitations on exclusive rights: Fair use)

Humans innately build on the ideas and work of others; if denied the fair use of others' work, innovators will face significant challenges. The principles of fair use have been tested in the marketplace in the last decade; Gantz and Rochester explain, "As the entertainment industry strives to extend the length of copyright ownership and tighten its grip on fair use, the public retaliates by taking back the digital night," (77). Several landmark decisions have demonstrated that consumers are unwilling to give up their rights, but consumers carry more weight in the market than in court.

The Betamax Case

Sony Corp. of America v. Universal City Studios, Inc, more commonly known as "the Betamax case", was brought before the Supreme Court in 1983 to determine both if consumers were infringing on copyright by taping television shows for later viewing as well as the liability

of the producers of the recording technologies (VCRs) (Fisher 2004b). The Supreme Court ruled that "time-shifting", or recording a show for personal viewing at a later time, does not infringe on copyrights, and although the VCR *could* be used to infringe on copyright (for example, by copying shows or videos to sell for profit), the legal uses protected the producers of the technology from secondary liability for the potential for abuse by individual customers (Von Lohmann 2005a). This Supreme Court decision set a precedent of fair use for consumers to enjoy the entertainment they purchase at a convenient time; the notion of "space-shifting" was tested in 1998 when the Recording Industry Association of America (RIAA) requested an injunction against Diamond Multimedia Systems, Inc., the developers of the first portable MP3 player, the Rio (Fisher 2004a).

The Audio Home Recording Act of 1992

The Audio Home Recording Act (AHRA) of 1992 is an amendment to U.S. copyright law that required all digital audio recording devices to include the Serial Copy Management System (an early form of DRM). The AHRA also prohibits the production of devices intended to circumvent copyright protection, and set a specific scheme for royalty payments. Fisher writes, "As compromises go, the Audio Home Recording Act… was not bad. It at least aspired to accommodate both the interests of consumers in getting access to the new technologies and the interests of copyright owners in getting paid," (2004b, 85). However, he points out three flaws in the act: "First, it came too late…Second, the statute was very technology-specific… [Third], when it was adopted, many supporters thought that it had established, finally, that home 'taping' of music was lawful," (2004b, 86-87). Fisher concludes that the AHRA was a step in the right direction of legally balancing the rights of consumers and producers, but rapid technological changes essentially invalidated the act and left consumers unclear as to the legality

of their actions.

The Rio Case

In 1998, the RIAA filed an injunction against Diamond Multimedia, Inc. on the grounds that their portable MP3 player, the Rio, violated the AHRA (Kaplan 1999). The United States Court of Appeals for the Ninth Circuit in California denied the injunction and ruled that the AHRA does not apply to computer peripherals or personal computer hard drives, but only "digital audio recording devices" (Kaplan 1999). Technology advocates have argued that just as the Supreme Court ruled that consumer time-shifting constitutes fair use, consumer "space-shifting" should also constitute a fair use; Kaplan describes the judges' decision:

> Judge Diarmuid F. O'Scannlain, writing for the unanimous panel, said that the cigarette-pack-sized player 'merely makes copies in order to render portable, or 'space-shift,' those files that already reside on a user's hard drive.' Such copying, as with time-shifting, is paradigmatic non-commercial personal use,' which is entirely consistent with the copyright law. (¶5)

Although the district court did suggest that space-shifting would qualify as a fair use, the Register of Copyrights did not concur in her recommendation, "…because it could interfere with copyright holders' creation of download services that limit further redistribution of purchased works," (Fisher 2004a, 73). The same year, the Digital Millennium Copyright Act was enacted and clarified the illegality of most space-shifting.

The Digital Millennium Copyright Act

The Digital Millennium Copyright Act (DMCA) was passed unanimously in the Senate and signed into law by President Bill Clinton in 1998 (Summary: The Digital Millennium Copright Act 1998). The DMCA was implemented two years after the World Intellectual Property Organization (WIPO) developed two treaties and directed member states to incorporate the principles into national laws (Unintended Consequences: Ten Years Under the DMCA

2008). The most significant sections of the DMCA are Chapter 12 and Title II.

Chapter 12 sets regulations prohibiting the circumvention of copyright protections. The U.S. Copyright Office summary of the act explains, "Section 1201 divides technological measures into two categories: measures that prevent unauthorized *access* to a copyrighted work and measures that prevent unauthorized *copying* of a copyrighted work," (Summary: The Digital Millennium Copright Act 1998, 3-4). Fisher explains that while devices and services that to circumvent either unauthorized access or unauthorized copying are illegal, the act of circumventing copyright protections to make unauthorized copies is not specifically prohibited, since policymakers assumed that if the circumvention does not qualify as fair use, it would be copyright infringement (Summary: The Digital Millennium Copright Act 1998; Fisher 2004a). The Copyright Office defines circumvention tools as devices or services that fall in any of three categories: "They are primarily designed or produced to circumvent; they have only limited commercially significant purpose or use other than to circumvent; or they are marketed for use in circumventing," (Summary: The Digital Millennium Copright Act 1998, 4). Chapter 12 also describes both civil and criminal penalties for the violation of these provisions (Digital Millennium Copyright Act 1998).

Title II outlines the liability of Internet service providers (ISPs), which became increasingly important in 2003 when the RIAA began to subpoena ISPs for the names and addresses associated with IP addresses[1] they identified as participating in illegal filesharing (Timeline of recording industry efforts against piracy 2003). Title II outlines the conditions that

[1] WebHostNY defines an IP (internet protocol) address as "The standard way of identifying a computer that is connected to the Internet, much the way a telephone number identifies a telephone on a telephone network. The IP address is four numbers separated by periods, and each number is less than 256, for example, 192.200.44.69." (Available at http://www.webhostny.com/?q=node/37)

limit ISPs' liability for their subscribers' actions, and further includes a stipulation to avoid contradicting earlier privacy law. "Subsection (m) explicitly states that nothing in section 512 requires a service provider to monitor its service or access material in violation of law (such as the Electronic Communications Privacy Act) in order to be eligible for any of the liability limitations," (Summary: The Digital Millennium Copright Act 1998, 9). Title II also limits the liability of ISPs for content hosted on their systems if the provider is unaware of the infringement and promptly removes any infringing material upon notification (Digital Millennium Copyright Act 1998).

Fair Use under the DMCA

Opponents of the DMCA argue that the anti-circumvention statutes in conjunction with the technologies it requires restrict consumer fair use. "The law thus gives industry coders more control over copyrighted material than the Constitution gives Congress," (Lessig 2001, ¶3). In a current analysis of the DMCA, observers caution that for the first time in the history of copyright law, policy is upsetting the balance of rights and damaging the public domain by categorizing artistic (albeit digital) expression as a commodity (Besser 2001; Gantz and Rochester).

In addition to potentially restricting consumer fair use, opponents also demonstrate that the DMCA may hinder technological innovation. Although technology has significantly advanced since 1998, the law remains the same. The anti-circumvention statute is particularly troublesome, as Von Lohmann explains: "Unless the public has the opportunity to experiment with new technologies, courts will not have the opportunity to test them against the fair use doctrine. If innovators and consumers are presumptively barred from experimenting without copyright owner authorization, fair use will become increasingly irrelevant," (2005a, Section

I,B,3, ¶1). The legitimacy of the anti-circumvention statute is contingent upon the legitimacy of the copyright restrictions; if consumers cannot engage in fair uses because of producers' overzealous copyright protections, they are entitled to use technology that restores their rights. Additionally, since proprietary DRM encryption technologies are not interoperable, consumers are limited to products bundled by one company. The majority market share held by the iTunes Store (propelled by the popularity of the iPod) is only likely to grow since the DMCA prevents reverse engineering that would allow other companies to produce players compatible with FairPlay (Fisher 2004a). Without the regulation or standardization of copyright protection, the anti-circumvention statute is preventing lawful activities and competition (Unintended Consequences: Ten Years Under the DMCA 2008).

Finally, the DMCA is limiting fair use and preventing artistic exploration while maximizing financial returns for current copyright holders. Besser laments:

> The area of authorship and creativity will increasingly resemble the world of consumer products — intellectual property will become more bland and corporate controlled. Most individuals will find it more and more difficult to become a creator, and will settle for being merely a consumer. And diverse voices will be more and more marginalized. (2001, Conclusion, ¶6)

It is generally accepted that copyright holders are entitled to fair compensation and recognition for their work, but as Lessig explains, the goal of fair use and copyright is competition and the fair compensation of creators; limiting this privilege would only harm the public (Lessig 2002a).

The Napster Case

On December 6, 1999, only seven months after Shawn Fanning incorporated Napster, A&M Records, Inc. filed suit against Napster, Inc. in the U.S. District Court for the Northern California District of California on the grounds of contributory and vicarious copyright infringement by providing a program and service for users to easily and freely obtain

copyrighted works (Fisher 2004b; Menn 2003). Napster initially sought protection under the ISP safe harbor provisions of the DMCA, which the district judge, Marilyn Patel promptly rejected (Fisher 2004b). Soon thereafter, Judge Patel granted the record companies a preliminary injunction against Napster, which was overturned by the Court of Appeals for the Ninth Circuit two days later in order to evaluate the injunction (Fisher 2004b). Napster cited both *RIAA v. Diamond Multimedia* and *Sony Corp. of America v. Universal City Studios, Inc,* arguing that their users were not guilty of copyright infringement, but rather space-shifting (Anestopoulou 2001).

The Ninth Circuit issued its own opinion on February 12, 2001, upholding many of Judge Patel's orders, but allocating some responsibility to the plaintiffs, which Judge Patel incorporated before issuing a final injunction on March 5 (Fisher 2004b). Anestopoulou explains, "With this ruling, both parties share the burden of ensuring that no copyright infringement occurs within the Napster system. The plaintiffs have to provide to Napster lists with the copyrighted work they own and Napster must impede the unauthorized reproduction and distribution of those songs through 'filtering' technology," (2001, 326). Napster attempted to comply with the injunction by blocking copyrighted works, but ultimately filed for bankruptcy on June 3, 2002 (Fisher 2004b).

The Grokster Case

Although the Napster case seemingly put to rest any questions about the legality of P2P filesharing programs*, MGM Studios, Inc. v. Grokster, Ltd.* is an even more significant case. In 2003, MGM, with the support of both the MPAA and the RIAA, sued Grokster and StreamCast (the makers of Morpheus, a very similar program), but both the District Court for the Central District of California and the Ninth Circuit Court of Appeals dismissed the case based on the precedent set by the Betamax case (Geist 2005). However, the entertainment industries persisted

and the Supreme Court agreed to hear the case in 2005 (Von Lohmann 2006). Geist explains, "When the U.S. Supreme Court agreed to hear the recording industry's case, analysts immediately recognized that the ramifications extended far beyond file sharing. Rather, the future of the principle established in the Sony Betamax case, viewed by many in the technology community as essential to innovation, was at stake," (¶6). While the lower courts held that the defendants were not liable for contributory infringement and vicarious liability, rather than directly reversing those decisions, the Supreme Court introduced the doctrine of "inducement" (Eisgrau 2005).

Inducement is a form of secondary copyright infringement since the defendants were the creators of software that users *could* employ to directly infringe on copyrights (Von Lohmann 2006). In the Grokster case, the Supreme Court decided against the defendants, ruling, "'…one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties.' *MGM v. Grokster*, 545 U.S. 125 S.Ct. 2764 2770 (2005)," (Eisgrau 2005, 3). To effectively prove inducement, the copyright owner must demonstrate that the defendant is guilty of three key elements: direct infringement, affirmative act, and intent (Von Lohmann 2006). Since inducement is a form of secondary liability, the creators of the software did not need to be guilty of direct infringement, but rather that someone using their program had violated copyright. While the Betamax case appeared to protect secondary parties from direct infringement liability, defining affirmative acts and intent set a new standard for technology policy ("Key Quotes from the MGM v. Grokster Supreme Court Decision" 2005). Von Lohmann explains an affirmative act, "The accused inducer has made statements or taken other active steps directed at encouraging infringing uses. Examples of affirmative steps may

include … anything that 'entices or persuades' a user to commit infringement," (2006, 3). Next, he describes the Court's definition of intent:

> Courts generally allow intent to be shown by circumstantial evidence, which means that copyright owners will argue that almost anything could be relevant to establishing what the defendant intended. For example, copyright owners may point to how a company makes money, whether it could have modified its software to reduce infringing uses, and whether it was trying to attract infringers as users. (2006, 3)

The Court also found that defendants guilty of inducement have no protections from the Betamax precedent (Geist 2005; Von Lohmann 2006).

The implications of this case are far reaching, particularly since the Supreme Court did not elaborate on the original allegations of contributory infringement and vicarious liability. In an interview in *BusinessWeek* with Robert Hof, Larry Lessig claimed that a Supreme Court ruling, as opposed to legislation, would chill innovation for ten years. He said, "By making it a process that goes through the courts, you've just increased the legal uncertainty around innovation substantially and created great opportunities to defeat legitimate competition. You've shifted an enormous amount of power to those who oppose new types of competitive technologies," (Hof 2005, ¶11). Without clearly defined liability and the looming potential of devastating statutory damages, the Grokster decision may effectively suppress the technological innovation that flourished after the Betamax decision (Von Lohmann 2005b; Woellert 2004).

RIAA

The RIAA is a trade association representing record labels that are responsible for 90% of sound recordings produced and sold in the United States ("Who We Are"). The RIAA includes more than 1500 members, including the "Big Four" that control more than 70% of the global music catalog ("Who We Are; Jobs 2007). The RIAA became a household name in 1999 as a vociferous opponent of Napster, and had earlier worked to set a favorable precedent in the Rio

case. Anti-piracy tactics are one of the RIAA's chief objectives and although the organization is best known for the deluge of lawsuits brought against individuals and companies, their website explains other methods they employ to deter piracy:

> We also work hard to educate consumers about the law and about the many legal ways to get music online. Because we know the best way to beat piracy is to offer fans a compelling legal alternative, record companies are aggressively licensing music to a great many services – from download and subscription models to Internet radio to legitimate P2P and more. ("For Students Doing Reports" ¶19)

Today, it seems evident to both the RIAA and its opponents that lawsuits are not successful in curtailing P2P activity, but in the last decade, the RIAA has sued tens of thousands of individuals and a handful of companies, using questionable legal methods to gather evidence ("RIAA v. The People: Five Years Later" 2008).

In addition to the Napster and Rio cases, the RIAA has also participated in lawsuits against Scour, Aimster, AudioGalaxy, Morpheus, Grokster, Kazaa, iMesh, and Limewire ("RIAA v. The People: Five Years Later" 2008). However, the design of P2P networks allows anyone, anywhere with a computer and an Internet connection to share files; thus the global nature of the Internet would require international copyright enforcement to prevent "offshore uploading", or individuals from countries in less strict copyright laws sharing copyrighted files ("RIAA v. The People: Five Years Later" 2008; Menn 2003; Silverthorne 2004). Since the RIAA only has methods to target uploaders, users in the U.S. could continue to download these files while electing not to share their own libraries ("leeching") ("RIAA v. The People: Five Years Later" 2008).

Leeching was not a widespread phenomenon before the RIAA began a massive onslaught of lawsuits against individuals allegedly sharing copyrighted files. The lawsuits began on September 8, 2003, when the RIAA identified and sued 261 Americans who were allegedly

engaging in copyright infringement ("RIAA v. The People: Five Years Later" 2008). The RIAA used popular P2P programs to search for their members' copyrighted work and identified the IP addresses of users sharing those files ("RIAA v. The People: Five Years Later" 2008).

In order to identify the individuals responsible for the allegedly infringing IP addresses, the RIAA issued subpoenas to ISPs by calling upon a lesser known provision of the DMCA: "A copyright owner is entitled to issue a subpoena to an ISP seeking the identity of a subscriber accused of copyright infringement. In the view of the recording industry's lawyers, this entitled them to get names and addresses from an ISP with a mere allegation of infringement—no need to file a lawsuit, no requirement of proof, and no oversight by a judge," ("RIAA v. The People: Five Years Later" 2008, Section II, ¶2). The RIAA acquired the information after taking several ISPs (notably Verizon, Charter Communications, and Pacific Bell Internet Services) to district court for refusing to comply with the subpoenas, in *RIAA v. Verizon* ("RIAA v. The People: Five Years Later" 2008). Verizon appealed the ruling with the support of privacy advocates and individuals outraged at the settlements averaging $3000; on December 19, 2003, a federal appeals court overturned the district court's ruling and declared "…the DMCA subpoenas were available only where the allegedly infringing material was stored on the ISPs' own computers, not for situations involving P2P file-sharing where the material was stored on a subscriber's individual computer," ("RIAA v. The People: Five Years Later" 2008, Section II, ¶9). Unfortunately, none of the individuals accused in earlier cases received any money back for their settlements ("RIAA v. The People: Five Years Later" 2008).

The RIAA continues to sue individuals using "John Doe" lawsuits; the plaintiff sues the yet unidentified individual responsible for a targeted IP address and then receives an authorization from the court for a subpoena against the ISP to name the individual ("RIAA v.

The People: Five Years Later" 2008). As of October 2007, news reports claim that the RIAA had sued more than 30,000 individuals ("RIAA v. The People: Five Years Later" 2008).

The questionable legal tactics the RIAA employs in combination with questions about the efficacy of their legal campaign has fueled an overwhelmingly negative public perception of the organization. A representative of the Electronic Frontier Foundation writes, "Tens of millions of Americans continue to use P2P file sharing software and other new technologies to share music, yet the RIAA has randomly singled out only a few for retribution through lawsuits."("RIAA v. The People: Five Years Later" 2008). If the RIAA's goal was to scare the entire P2P community into ceasing their actions by punishing a fraction of its participants, they have not been successful. According to a 2008 report studying music behavior in young people in the UK, conducted by the University of Hertfordshire on behalf of British Music Rights, 63% of survey respondents illegally download music on P2P networks, and nearly 95% of respondents have copied music in some form (Music Experience and Behaviour in Young People: Main Findings and Conclusions 2008). Music sharing is still pervasive, and the RIAA's efficacy at fighting copyright infringement may be compromised by their reputation.

Gizmodo, the second most popular blog on the web according to Technorati (the leading blog search engine and indexing site), declared March of 2007 "Boycott the RIAA Month" (Frucci 2007). In Gizmodo's "Anti-RIAA Manifesto", Frucci proposes that consumers do not purchase albums produced by the RIAA's members for at least a month (Frucci 2007). The author describes a common perception of the RIAA when he explains that he loves music and wants to support the work of musicians, but the RIAA does not actually support musicians. "A fraction of the money from album sales actually makes it to artists, and not a single penny that the RIAA has received from their series of lawsuits has actually made it back to the artists that

had their 'copyrights infringed' in the first place," (2007, ¶4). Frucci also decries the "…harassment, extortion, and privacy invasion that the RIAA commits under the guise of lawsuits," the RIAA's attempt to stifle innovation with law, and their insistence on stringent DRM encryption (2007, ¶8). The RIAA faces an uncertain future as their negative reputation may discourage membership, and current members' shifting business models may no longer require a debatably ineffective trade association.

Digital Rights Management

Before the "Big Four" agreed to license their catalogues for distribution through the iTunes Store, Apple had to design a DRM encryption method that the record companies felt would satisfyingly restrict the probability of unauthorized access and copying (Jobs 2007). DRM encryption technologies must balance the rights of copyright holders and the public's right to fair use, much like copyright law; however, DRM is "self-enforcing", unlike law, since the technology outright prevents unauthorized use (Fisher 2004a). Opponents of DRM contend that it hampers legal fair uses and is ineffective at halting piracy; Jobs argues, "Though the big four music companies require that all their music sold online be protected with DRMs, these same music companies continue to sell billions of CDs a year which contain completely unprotected music," (2007, ¶15). While DRM may reduce the number of filesharers initially uploading music, it is not likely to actually reduce piracy (Fisher 2004a). Most significantly, Fisher describes the possible consequences of eroding fair use: "DRM preempts the careful balancing of interests that every case entails. Fair use is a contextual, evolving doctrine whereas DRM's restrictions are rigid; necessarily, the two can never perfectly align… Whereas fair use is typically a judicial decision, copyright holders and Apple have full discretion with

DRM," (2004a, 73-74). DRM's technological restrictions in combination with the DMCA's legal restrictions may critically curb the fair uses the public has enjoyed since 1976.

Analysis of Tensions

While the pace of technological and legal changes over the last fifteen years is unprecedented, tensions have always existed in each separate sphere. In the technology sphere, the music industry has historically fought to maintain the status quo, while technology producers have fought for innovations of the future. Alexander explains:

> …Radio was 'threatened' by television, television by motion pictures, motion pictures by video cassette players, music recording by tape technology and so on. In each of the examples, predictions of the imminent demise of the industry as a result of a new technology were wrong. In most instances, the new technologies displayed strong complementarities within the existing structure. (2002, 154)

Likewise, an inevitable tension exists between the laws governing copyright and fair use; Besser explains, "The rationale behind copyright is that granting creators temporary monopoly rights over their creations will encourage them to create more. The real goal of copyright is to ensure that new knowledge will be developed and circulated through society" (2001, Copyright Concepts, ¶3). Fair use is an important right because it allows the public to develop new knowledge and utilize individuals' creativity.

In addition to the pace of change, two tangible technological developments contributed to the emergence of further tensions. First, the shift from analog formats (records, cassette tapes) to digital formats (CDs, MP3s) was an epochal change in the music industry (Dowd 2006). Second, the proliferation of the Internet requires judges and policymakers to adapt the boundaries of law to accommodate a new environment, but Lessig contends, "Rather than fit copyright law to new technology, [government] is trying to force technology to fit last century's

view of copyright," (2002a, ¶9). Together, these historic changes accelerated the expeditious technological and legal changes that contributed to today's additional tensions.

As Justice Souter wrote for a unanimous court in the opening of the Supreme Court Syllabus regarding the Grokster case, "The tension between the competing values rights of supporting creativity through copyright protection and promoting technological innovation by limiting infringement liability is the subject of this case," (Syllabus: Metro-Goldwyn-Mayer Studios Inc, et al. v. Grokster, LTD., et al. 2005, 2). As the spheres of technology and law intersected, public involvement exacerbated the aforementioned tensions between the status quo and the future, and between fair use and copyright. Accordingly, new tensions have emerged between copyright and technology, and fair use and the music industry's perception of the status quo.

Fair Use vs. Copyright

The balance between fair use and copyright is dynamic, but in the last fifteen years, an abundance of technologies that broaden the legal gray area has created additional weight on the fulcrum of law. Justice Souter explains, "The more artistic protection is favored, the more technological innovation may be discouraged; the administration of copyright law is an exercise in managing the trade-off," (Syllabus: Metro-Goldwyn-Mayer Studios Inc, et al. v. Grokster, LTD., et al. 2005, 15). Effective management is imperative, because in addition to supporting technological innovation, resolving the tension between fair use and copyright could promote artistic creativity, a "remix culture" where both professionals and amateurs would create as much as they consume (Lessig 2008). Consumers and technological innovators support fair use on both economic and ethical grounds, while producers of music are more concerned about upholding their copyrights. The authors of copyright law are charged with maintaining

equilibrium between the needs and rights of all stakeholders.

The Music Industry and the Status Quo vs. The Technology Industry and Change

Producers of music support the status quo because (up until the bevy of technological and legal transformations) it has been extremely profitable. The oligopoly of record labels essentially ensured control over the distribution of music, and with that control, the catalog available to consumers (Alexander 2002). The firms also had too much direct control over their artists: the limited options of record labels often pressured musicians into contracts including numerous contingencies regarding their compensation. However, this backfired on the recording industry, as consumers claimed the unfair compensation of artists as a justification for illegal filesharing (Testimony of the Future of Music Coalition on "Online Entertainment and Copyright Law: Coming Soon to a Digital Device Near You." 2001).

Consumers were dissatisfied with the status quo, evidenced by the rapid adoption of the MP3 format and the popularity of purchasing songs individually online (Silverthorne 2004). Previously, labels often released albums without the option of purchasing individual songs, ignoring the demand for unbundled compilations since the revenue streams generated by bundling were so great online (Silverthorne 2004).

Independent musicians also support the technological innovation and change in the industry structure driven by the Internet; Fisher explains, “If the music were distributed over the Internet by the artist himself, almost all of costs associated with making and distributing discs could be eliminated. The result: musicians could earn more or consumers could pay less or both,” (2000, Section II, #1). Decreased costs of distributing digital files and the increase in online distribution channels could provide a broader variety of music.

However, if the innovative distribution channels have a financially significant, negative

impact on the recording industry's sales, Fisher cautions that consumers may be left with a sub-optimal music market (Fisher 2000). Indeed, in their annual digital music report, the International Federation of the Phonographic Industry (IFPI) estimates a "…ratio of 20 illegal downloads for every track sold," and asserts that legitimate digital sales have not offset the decline in CD sales, resulting in a global market decline (2008, 18).

Despite the importance of a thriving music industry, Fisher also reiterates the importance of technological innovation, writing, "If the recording industry prevails, it will deprive us of many of the potential social and cultural benefits associated with the Internet distribution of digital music," (2000, Section IV, ¶1). The technology industry has benefited from innovation outside of music-related products, with legitimate uses for peer-to-peer networks and unambiguous economic benefits from the ever-increasing market for digital goods. The tension between the old and the new will not cease until the record labels succeed in both devising a format that balances fair use and copyright as well as convincing consumers to adopt it (Dowd 2006). However, the music industry may already be too late, since the public has effectively institutionalized the MP3 format and P2P filesharing as part of the market (Dowd 2006).

Copyright vs. Technology

Despite a pervasive acceptance of illegally downloading music and evolving conceptions of the related ethics, copyright holders are indubitably entitled to compensation and some degree of control over their creations. The tension arises when technologies do not provide the desired degree of control, whether intentionally or indirectly. Resolving this dispute should begin with policy. "Congress now has an important opportunity—indeed an ongoing responsibility—to examine the balance between copyright law and innovation with an eye toward affirmatively *protecting* and *promoting* the kind of technological innovation in communications that has been

responsible for advancing our society and our economy so dramatically in the Internet Age," (Eisgrau 2005, 2). However, the authors of copyright may not be able to overcome consumer demand for technology.

Fair Uses of Technology vs. the Music Industry's Perception of Copyright

Although "time-shifting" is definitively legal, "space-shifting" legally acquired music among various forms of technology remains questionable in the eyes of the court. However, the public deemed this a fair use, and technology emerged to meet consumer demands, as Von Lohmann explains: "Millions of Americans have a large music library of CDs. Technology companies have an incentive to develop devices that will help the music lover to get more value from the CDs she has already purchased," (2005a, Section I, C, ¶4). DRM encryption is ineffective at halting piracy and clearly inhibits consumers' ability to space-shift, but the music industry insists that this alleged copyright protection is more important. Policymakers may have exacerbated this tension with the DMCA's anti-circumvention clause; "…future fair uses will not be developed for restricted media, because courts will never have the opportunity to rule on them. Fair users will be found liable for 'picking the lock' and thereby violating the DMCA, whatever the merits of their fair use defense," (Unintended Consequences: Ten Years Under the DMCA 2008, 6). Enacting this statute in policy only serves the interests of proponents of the status quo and potentially stifles innovation, damaging society as a whole.

Why Now?

The last fifteen years do not represent the first occurrence of changes meriting industry-wide adaptation; the tensions that exist today are different because of a different legislative response. Von Lohmann explains that historically, "…courts generally have the first opportunity to apply copyright law to [new technologies], with Congress lagging

behind. This spares the public, technologists, and copyright owners from having to apply to Congress for a legislative solution for each new technology," (2005a, Section I, B, ¶3). Conversely, in this time period, Congress passed legislation far before the courts fully evaluated the still-changing technologies. The DMCA requires technology to conform to outdated laws, whereas courts offer innovators the opportunity to demonstrate a reasonable reinterpretation of law. The rapid development and subsequent widespread adoption of new technologies created a unique situation for policymakers and stakeholders alike.

Implications

The significance of the resulting tensions lies in the potential collapse of the music industry and the potential loss of innovation in the technology industry. The current legislative landscape is not effectively addressing these tensions. Researchers and interested parties have suggested a variety of solutions, mainly focused on three areas of potential modifications: technology, copyright law, and business models.

Lessig suggests that technology would be more effective than policy at easing these predominantly digital tensions, and Anestopoulou suggests that the music industry agreed; but clearly DRM encryption has not been effective (Anestopoulou 2001; Lessig 1999). Lessig also recommends a set of amendments to copyright, focused on simplifying the law to clarify outstanding uncertainties and deregulating "the copy" itself in favor of focusing on uses of the work that affect the creator's financial (Lessig 2008). Finally, several researchers at Harvard Business School recommend a restructuring of the music industry's business model. Silverthorne explains, "Moves towards monetizing products not subject to costless replication and distribution, such as live concerts and

merchandising (for music) and product placements (for movies and network shows), will become essential for the financial health of media companies," (2007, ¶34). According to the IFPI, record labels are already diversifying their revenue streams to compensate for sales losses (IFPI 2008). Silverthorne also suggests that record labels consider P2P as a tool for promoting music, like radio, rather than an attack on their profitability (Silverthorne 2004).

Several questions remain regarding the future of music, from the perspective of each of the four groups of stakeholders. How will consumers obtain and enjoy music? How will musicians and the music industry remain profitable in the face of inevitable change? How will producers of technology fare in court under allegations of secondary liability? How will policymakers respond to this constantly shifting field and incorporate the lessons learned of the past 15 years? Finally, when will the next monumental change come? These tensions are too stressed to continue for long; either the government or the economy will give- but when?

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