# THE CELESTIAL JUKEBOX REVISITED: BEST PRACTICES AND COPYRIGHT LAW REVISIONS FOR SUBSCRIPTION-BASED ONLINE MUSIC SERVICES

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# THE CELESTIAL JUKEBOX REVISITED: BEST PRACTICES AND COPYRIGHT LAW REVISIONS FOR SUBSCRIPTION-BASED ONLINE MUSIC SERVICES[1]

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## ABSTRACT

Recently introduced subscription-based online music services are beginning to realize the dream of a celestial jukebox—near-instant access to a near-entirety of recorded music. This thesis examines music industry business models, features of existing online music services, and impacts of copyright law on these services. Under current copyright law, subscription services will likely only benefit the major music labels at the expense of the public and artists. This thesis suggests best practices for subscription services and copyright law changes for a more balanced, beneficial outcome for artists and consumers while ensuring a viable music industry able to support continued creativity.

[1] The title of this thesis is taken from the book Copyright's Highway: From Gutenberg to the Celestial Jukebox by Paul Goldstein, published in 1994.

The ideas presented in this thesis emerged from many conversations with many people, and I cannot possibly thank them all individually—but I will do my best. I am especially grateful for the regular guidance of my thesis advisor Father Eric Zimmer, and my second reader Kathleen Wallman.

A huge round of thank-yous must also go to the many excellent professors I have had during my too-short stay as a student in the Communication, Culture, and Technology program at Georgetown University. A related paper that was the basis of this thesis was written in the Fall of 2003 for an amazing class taught by Gigi Sohn and Jenny Toomey entitled "Music, Technology, Copyright, and Public Policy. I would know nothing of copyright law if not for Julie Cohen's class at Georgetown Law School. Alan Davidson made me realize there are exciting jobs for people interested in technology policy. Jessica Davis re-affirmed my optimism in technology. Fred Wood taught me that technology assessment is an iterative process. Linda Garcia has been a role model from my first day in the CCT program.

Learning continues outside the classroom. I learned much from all of the board members of the Future of Music Coalition and the friends I made volunteering at its annual Future of Music Policy Summits. I also learned much from Adam Thierer and Clyde Wayne Crews, my policy directors during my internship at the Cato Institute, Thomas Pearson, and my fellow interns.

This thesis would never be written without the support of my friends and roommates. They did not complain when I neglected them to work on my thesis and they didn't complain when I spoke of nothing but my thesis when I did hang out with them.

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# Chapter 1. Introduction

The recorded music industry is in the midst of a revolutionary change, moving from traditional physical distribution and free over-the-air broadcasting to online distribution, copy-protected physical distribution, and subscription-based satellite broadcasting. At the heart of this change is a shift from selling copies to renting performances. Copyright law is ill equipped to handle this shift. As the name implies, it is primarily concerned with the manufacture and distribution of copies of works. Although the Constitution set the broad outlines of U.S. copyright law, it was not until the Copyright Act of 1995 that a public performance right for music recordings was recognized, and then only for digital audio-only subscription services (Passman, 2000, pp. 296-297).

This thesis focuses on online subscription-based music services that allow interactive access to specific songs and albums, as these services may eventually replace the sale of recorded music. Although there are numerous Webcasters—services that transmit one or more channels of non-interactive programming—these services are not seen as a competitor to album sales.[2]

Music has been described as "Intellectual Property's Canary in the Digital Coal Mine" because it is the first content industry that has been forced to deal with the distribution possibilities of the Internet (National Research Council, 2000, p. 76). Because the Internet allows perfect serial copying (copies of copies) and decentralized file sharing, it is unlike any previous copying technologies. The current debate about the impact of the Internet on the music industry has been bogged down in issues of fair use versus exclusive rights. In addition to presenting the author's views on this debate, this thesis attempts to go beyond that, describing subscription-based services as a solution to a number of significant problems in the industry.

This thesis compares subscription-based services to two other business models for online music services. One of these, followed by most Webcasters and radio stations, is a free advertiser-supported service[3]. The second of these models is a 'Noncommercial Use Levy' that would be included in the cost of Internet access and would be allocated to copyright holders under the direction of the Copyright Office (Netanel, 2002, p. 2).

There are already numerous free and subscription-based online services. Without changes to copyright law, these services may squeeze the time-honored doctrine of fair use out of existence and effectively block independent artists from access to their listeners and vice-versa. In addition to explaining why the subscription model is best solution for online music distribution, this thesis makes a number of copyright policy suggestions to allow consumers and artists to retain some of the freedoms they have had until now.

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[2] Throughout this thesis, the terms 'subscription-based service' and 'subscription service' refer to services designed primarily for on-demand interactive streaming of music. The term Webcasters refers strictly to non-interactive streaming services.

[3] It should be noted that even these free services are not completely free. Manufacturers charge consumers more for the advertised products to pay for the advertising.

Chapter two gives an introduction to copyright. It explains the theoretical foundations, how copyright interactions with other methods of controlling copying of works, changing definitions of fair use, and recent legislation specific to the music industry. Chapter three provides a quick history of the music industry in terms of the technologies involved and highlights the interactions between changes in technology, copyright law, and business models. Chapter four provides some variables for analyzing the differences between business models. Chapter five documents the technology and policy changes that resulted in the current online music services and presents the idea of a Noncommercial Use Levy. Chapter six lists best practices for online music services. Chapter seven explains why copyright law is still needed and the changes that will rebalance the rights of users and artists.

# Chapter 2. Intellectual Property and the Music Industry

The concept of *intellectual property* is an extension of the concept of property. John Locke started his theory of property with the assumption that an individual owned his body. In the natural state (pre-government), there are individuals and the common environment. When an individual used his physical abilities to change the natural environment, to use the language of the day, he created a property in the environment. For example, if there is a grove of apple trees on land that nobody owns, there is no property. But if someone gathers all the apples, he then has a property in the apples. If he puts a fence around the grove, he has a property in the entire grove. In this sense, property is all about 'sweat of the brow'—an owner has a property in the fruits (so to speak) of his labor.

Intellectual property is different from tangible property because it is nonexclusive (no easy way to prevent people from using a work) and nonrivalrous (one person's use does not affect another person's use). U.S. copyright law is based on a utilitarian calculus of maximizing public benefit by incentivizing authors to create works and then make them available to the public by granting them a limited monopoly and using force of law to prevent others from infringing that monopoly. Copyright is seen as a delicate balance. On the one hand, granting exclusive rights to artists incentivizes them to produce more works. On the other hand, public access to those works is increased by limiting the exclusive rights of authors.

In U.S. copyright law, there is an explicit denial of intellectual property based simply on 'sweat of the brow'.[4] Instead, there is a minimum threshold of creativity that a work must possess to be eligible for copyright. U.S. copyright law also only applies to works 'fixed' "in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration" (Copyright Act, § 101, definition of "fixed"). Ideas themselves cannot be copyrighted. To use the orchard example, the idea of growing an orchard and selling fruit cannot be copyrighted to prevent competition.

## How Copying is Controlled

There are four different methods to control copying of intellectual works: "state-of-the-copying art" limitations, contracts, law, and special-purpose technological protections (Hardy, qtd. in Cohen, Loren, Okediji, O'Rourke, 2002, pp. 8-9).

### "State-of-the-Copying Art" Limitations

Before there were copyright laws, the original form of copy protection was the fact that it used to take someone many hours to hand-copy a book or paint a copy of a painting. Because the state-of-the-art in copying technology was so *un*-advanced, books and paintings were not often

[4] This was decided in the famous case Feist Publications, Inc. v. Rural Telephone Service Co. (1991).

copied. The printing press and then the photocopier made copying easier and made the other methods of protection necessary.

When Sony introduced the VCR in the late 1970s, it was seen as a threat by movie studios and Universal City Studios sued for copyright infringement. The Court ruled that "the sale of copying equipment, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes. Indeed, it need merely be capable of substantial noninfringing uses." After citing numerous non-infringing uses and pointing out that unauthorized recording of television shows did not have a "demonstrable effect upon the potential market for, or the value of" copyrighted works (Sony Corporation of America v. Universal City Studios, Inc., 1984). Economist Stan Liebowitz points out that this is partly because VCR remote controls were not advanced enough to conveniently allow bypassing commercials (2002, p. 24). Today, the videotape rental market is more profitable for movie studios than box-office receipts (2002, p. 8). The lesson learned from this and most other technologies that change the state-of-the-copying art is that content industries are initially fearful but ultimately profit from new technologies.

Unlike previous copying technologies like the VCR and audiocassette, computers allow serial copying with no loss of quality. Serial copying is making a copy of a copy. Computers handle music digitally and so a copy is indistinguishable from the original. Because computers can be used to transmit perfect copies across networks, they are seen as an even more dangerous threat to copyright owners.

## Contracts

The second method of copy protection is contract. Contracts only protect information when the parties involved agree to honor the contract. For this reason, they cannot protect against piracy and are of limited use. Contracts are sometimes used to restrict buyers of intellectual property from uses that may otherwise be legal. The most common example is software licenses that require purchasers to agree to not reverse engineer the software as a condition of purchase.

## Law

The third method of copy protection is copyright law. As the number of printing presses increased, piracy became a problem that contracts could not solve. In 1710, the English Parliament passed the Statute of Anne, the first true copyright act (UK Patent Office, n.d.). The preamble begins as follows:

> Whereas Printers, Booksellers, and other Persons, have of late frequently taken the Liberty of Printing, Reprinting, and Publishing, or causing to be Printed, Reprinted, and Published Books, and other Writings, without the Consent of the Authors or Proprietors of such Books and Writings, to their very great Detriment, and too often to the Ruin of them and their Families: For Preventing therefore such Practices for the future, and for the Encouragement of Learned Men to Compose and Write useful Books... (quoted in Talmo, n.d.)

The act granted exclusive publishing rights to authors for a period of 14 years. This right could be assigned to publishers, but would revert to the author if still alive at the end of the 14 year term, at which time it could be renewed for a second 14-year term. The first U.S. Copyright Act of 1790 was modeled after the Statute of Anne (Cohen et al., 2002, pp. 27-28).

### Special-Purpose Technological Protections

The newest method of copy protection is special-purpose technologies designed to prevent copying or other unlicensed uses of works, commonly called 'digital rights management'--DRM for short. Although not specifically listed as an exclusive right in the copyright law, copyright holders are free to employ such technological means to protect their rights. This practice is also referred to as 'self-help' because it does not need government enforcement as is the case with copyright and contracts.

Music publishers now have the ability to secure their products from unlicensed copying, but these protections limit the usefulness of their products. The two most common examples of this are copy-protected audio CDs that do not play in some devices (usually computers), and copy-protected downloadable music that will only play on a single computer. However, if the uses that owners of CDs have traditionally enjoyed are restricted, they will not be happy about it.

Technological protections last only until someone figures out a way to defeat them. In the case of music, the 'analog hole' allows these protections to be defeated quite easily: Simply connect a tape recorder to your computer, record the music on cassette tape, and then re-record from the cassette tape back to the computer. Although this method involves some loss of quality and a lot more effort, it will likely become common if DRM-protected media and players become the norm. The fact that DRM systems will never allow total control is, from a social point of view, a plus not a minus because it means that there will always be a check on content owners' desires for total control. The best that record companies can hope for is to reverse the 'state-of-the-copying art' and make converting music to a share-able form more difficult.

## Different Rights Associated With Copies and Performances

Congress first granted copyright protection to musical works in 1831, and it was not until 1897 that it granted an exclusive right to copyright holders for for-profit performances (Cohen et al., 2002, p. 410). Non-profit performances were not included in copyright holders' expanding bundle of rights until the passage of the Copyright Act of 1976, which also expanded the categories of works to which the public performance and display rights applied (Cohen et al., 2002, p. 410-411).

While the 1976 Act included performance rights for performances, these rights were only for the underlying musical work. It was not until 1995 that the United States had a public performance right for music recordings. The Copyright Act of 1995 added public performance rights only for digital audio-only subscription services such as the services discussed in this thesis (Passman, 2000, pp. 296-297). Although AM and FM analog radio stations pay performance royalties for the underlying musical works, they do not pay performance royalties

for the recordings. This means that online music services have to pay additional royalties that radio stations do not.

Once it was established that musical works were protected by copyright and public performances were the exclusive right of the copyright holder, the courts determined the bounds of use rights. In one of these cases, the Redd Horne case decided in 1984, the court ruled that "the transmission of a performance to members of the public, even in private settings such as hotel rooms or [viewing rooms in a video shop], constitutes a public performance" (Columbia Pictures Industries v. Redd Horne, Inc.). This blurs the line between a rental of a copy and a performance, but there are important rights specific to each.

## Performance Rights Organizations

It would be time consuming and expensive for a nightclub to locate the copyright holder and secure performing rights for every song performed. Performing rights organizations (PROs) were formed to handle this necessary task. Today, there are three: BMI, ASCAP, and SESAC. The organizations receive license fees from radio stations, bars and restaurants, stores, and other public venues that play copyrighted music (whether pre-recorded or from the radio). Instead of charging per copy, these licenses are based on the size of the venue (in the case of restaurants, night clubs, etc.) or audience (in the case of radio stations) and are typically a year in length. The organizations each have their own methods of auditing their licensees to determine what songs are played so they can pay royalties to the appropriate copyright holders.

## Mechanical Royalties and Compulsory Licenses

When a consumer purchases a CD, they are purchasing a licensed copy of two different sets of works: the recording of performances and the underlying musical works—the words and lyrics that make up the songs. Artists who write and perform their own music license their copyrights for the songs to a music publisher and their copyrights for the recordings to a record label. The Copyright Act of 1909 set a compulsory license fee of 2 cents per copy to be paid to the owner of copyright for musical works. The compulsory license fee for musical works is also called a mechanical royalty (Cohen et al., 2002, p. 430).

Cover songs are songs popularized by one recording artist and then later re-recorded by another recording artist. Because the license is compulsory, the second artist does not need to obtain permission from the original artist. The secondary artist can perform, record, and sell recordings of a copyrighted song as long as records are kept of the copies produced and the mechanical royalty is paid to the owner of the copyright for the original song.

## Fair Use and the Rights of Users

Copyright balances the rights of artists and the rights of consumers by explicitly defining the rights of copyright owners and then giving general guidelines for when these rights can be claimed by consumers. Fair use is the term used for using a copyrighted work in a manner that is normally allowed only with the permission of the copyright holder. Fair use is meant to be a

defense for such uses, not a clear definition of what uses are permitted (Cohen et al., 2002, pp. 492-494).

Section 106 of the Copyright Act states that copyright owners have the exclusive right to do and authorize the creation and distribution of copies, display and perform works in public, and create derivative works. Section 107 defines fair use as a limit on those exclusive rights and lists four factors to be used in determining whether a use is a 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.

Sampling is one example of how recent changes in copyright law have narrowed the boundaries of creativity. Sampling is using a short sample of another artist's song in a new song. Sampling was originally considered a fair use of the original work. As a result of two cases in the early 1990s, sampling is now considered a form of copying and requires licenses from the copyright owner of the original recording (Grand Upright Music Ltd. v. Warner Brothers Records, Inc., 1991; Jarvis v. A&M Records, 1993).

## Quantitization and Enumerated Rights

Many consider fair use a "right," but using the term 'rights' is problematic. The ninth and tenth amendments to the U.S. Constitution clearly state that the rights and powers not specifically delegated to the federal government are retained by the states or the people. But there is no such statement in section 106 of the Copyright Act, which defines the exclusive rights of owners of copyright. If users have a 'right' to listen to a CD on any device they choose, where is that right defined? In contrast, continental European copyright laws clearly define the rights of users. Many European countries include an exemption for private noncommercial use (Cohen et al., 2002, p. 494). When new powers are made possible by technology, who has the right to exercise them?

The most dangerous new power made possible by technology is quantitization: The ability of copyright holders to meter and bill for even the smallest uses of works. Although not necessarily bad, quantitization changes how copyright law is applied. Copyright law was created to govern the making and distribution of copies, but the ubiquity of computer networking muddies the difference between performing works, making copies of works, and distributing copies. If fair use is based solely on the effect of the contested use on the market for the original work, then quantitization will eliminate fair use. Luckily, fair use is based on more than that. But the other three factors defined in Section 107 of the Copyright Act do not seem to fit well with personal use. In a 1995 case involving researchers at a large company making unlicensed photocopies of journal articles for personal archival use, the court found that this practice is not

fair use because of the existence of a service for easily purchasing reproduction rights—the Copyright Clearing Center (American Geophysical Union v. Texaco, Inc., 1995). This is an early example of quantitization because without the Copyright Clearing Center, the court would likely have found the photocopies to be a fair use.

## Digital Performance Right in Sound Recordings

The Digital Performance Right in Sound Recordings Act of 1995 ("DPRA") grants exclusive rights to copyright holders for public performances of sound recordings "by means of a digital audio transmission" (Copyright Act, § 106(6)). This act and the amendments to it contained in the Digital Millennium Copyright Act of 1998 define copyright law for online music distribution. Digital transmissions are categorized into a three-tiered system based on the likelihood of affecting sales of copies of albums (Cohen et al., 2002, p. 444). The first class is for digital radio transmissions by broadcasters licensed by the FCC (both terrestrial AM/FM radio stations and satellite radio services XM and Sirius) and business establishments. With the exception of AM/FM station transmissions received outside of a 150-mile radius from the station's transmitter, these transmissions are completely exempt from the performance royalty. For AM/FM station fans listening to a digital transmission outside of the 150-mile radius, the non-interactive compulsory license defined below applies (Copyright Act, Sec. 114(d)(1)). The second class is for interactive services—a service in which a listener is able to select a particular recording and listen to it at a specific time or within one hour of requesting it (Copyright Act, Sec. 114(d)(3)). For interactive services, the copyright owner is free to license (or not license) works on whatever terms she feels are appropriate.

The third class is for non-interactive digital transmissions, also known as Webcasts. For this class of transmissions, the copyright law defines a number of programming restrictions and compulsory licensing provisions. The "sound recording performance complement" sets limits on the number of songs by a single artist or from a single album that can be played during a 3-hour period (Copyright Act, Sec. 114(j)(13)). Individuals cannot be allowed to rewind and fast-forward thru the program and the services cannot pre-announce songs (Cohen et al., 2002, p. 445). These services must also identify in textual data the following information while the song is playing: song title, artist, and album title (Copyright Act, Sec. 114(d)2(C)(ix)). If all of these guidelines are followed, services can negotiate with copyright holders to determine royalty rates or pay a set "statutory license" rate set by the Librarian of Congress (Cohen et al., 2002, p. 445). The copyright law also specifies that if a copyright holder licenses a non-interactive service in which the copyright holder has a 5 percent or more ownership interest, the copyright holder must license all other similar services under no less favorable terms and conditions (Copyright Act, Sec. 114(h)). The final statutory royalty rates set by the Librarian of Congress created three classifications for Webcasters: a .02-cent per-user/per-performance ($0.0002) fee for non-commercial broadcasters not affiliated with the Corporation for Public Broadcasting, a royalty rate based on gross revenues for eligible small Webcasters, and a .07-cent per-user/per-performance fee for all other Webcasters (whether simulcasts of commercial radio stations or Internet-only Webcasts). To avoid the possibility of non-commercial broadcasters gaining a

competitive advantage, the higher rate is charged for each additional channel of programming after the first three (Copyright Office, 2003; Copyright Office, 2002).

These rates are the result of many months of negotiations between Webcasters, broadcasters, and record labels, further adjustments by the Librarian of Congress, and an amendment passed by Congress that further adjusted the Librarian's adjustments. By the time the rates were finalized, Webcasters had been operating for four years without knowing how much they would have to pay. Because the fees were retroactive, some small Webcasters feared bankruptcy because they would be unable to pay the back royalties (Kaushik, 2002). It remains to be seen whether the current rates will allow advertiser-supported Webcasters to turn a profit.

# Chapter 3. Off-Line Music Distribution Business Models

Music as an industry was created by technology and has continually been advanced by advances in technology. This chapter explains the history of the recording industry in terms of the technologies involved and highlights the interactions between changes in technology, copyright law, and business models. This history starts before the invention of sound recording with the common music publishing industry practice of payola. The technology of the jukebox is introduced as the first commercial success for the phonograph. Subsequent periods are categorized as follows: Standards allow a decentralization of the recording industry, there is a shift to broadcasting, and indirect revenue models are adapted to the phenomenon of home recording. All of the models presented are based on charging somebody for something.

## Retail

If promotion is successful and an album becomes a national hit, the promotional costs are recouped and additional revenue is almost pure profit. A 1994 estimate set the manufacturing cost of CDs at approximately $0.60 per disc. The estimated wholesale price at the time was approximately $8. Once the production and promotion costs are recouped, 93% of the revenue from each disc sold is profit. This allows record labels to subsidize the production of many unsuccessful albums with the profits from successful albums (Rothenbuhler and Streck, 1998, pp. 213-215). This hits-based business works best in vertically and horizontally integrated industries, where synergies can be developed between different media and economies of scale can be realized in production and distribution (Rothenbuhler and Streck, 1998, pp. 210-213).

## Payola and the Hits-Based Music Business

Once the retail model was established, music publishers realized that they needed to get public exposure of their songs if people were to buy the sheet music. They employed “song pluggers” who worked to get song played by vaudeville, theater, and touring orchestras (Rothenbuhler and Streck, 1998, p. 207). Because of the work-for-hire clause of the 1909 Act, publishers could employ songwriters as pluggers and own the copyrights on their songs outright. This provided a steady income to songwriters, but they did not see any additional profits from the best-sellers they wrote (Sanjek, 1996, p. 33).

Although these promotion costs were high, they were considered necessary because of the increase in profits. When radio became popular, the song pluggers began to target the few orchestras that played during primetime on national network programs and the process became more difficult and expensive. This process is now known as payola and, although illegal, is still an important part of the music industry (Rothenbuhler and Streck, 1998, pp. 207-208).

## Standards and System Competition

By design, early wax cylinder phonographs were capable of recording as well as playback and some amateurs did make their own recordings (Koenigsberg, 1999). But from the end of the 19$^{th}$ century until the 1920s, the recording industry shifted to using shellac records

instead of wax cylinders and developed more sophisticated recording technologies that required expensive recording studios. By this time, the recording industry was controlled by the phonograph manufacturers, who guarded their patented recording techniques with lawsuits.

According to the U.S. census, there were 18 record companies in 1914. Of the $27 million in record sales that year, Victor was responsible for $16 million and Edison was responsible for $4 million (Millard, 1995, p. 65). Most of the basic patents expired in 1917, and by 1918 there were 166 record companies doing $158 million in business (p. 72). By 1920 the market was saturated with players, competition had lowered prices, and the only solution was to increase the sale of records. This was accomplished by exploiting ever smaller niche markets (pp. 74-75).

When phonographs were first introduced, the content of recordings was irrelevant in making sales of recordings and players. The sheer novelty of the devices meant that people would buy anything available. By the time of World War I, the content available was an important factor in deciding which brand of phonograph player to purchase. By the 1920s, a manufacturer's stable of talent was key to its success (Millard, 1995, pp. 79). The number of record companies increased again with the introduction of tape recording. One study found that the number of record companies in the United States increased from 11 to nearly 200 within the first five years of tape recording (Kealy (1979), cited in Rothenbuhler & Streck, 1998, 205).

## Broadcasting and Indirect Appropriability

Before World War I, radio was used for two-way communication. In this capacity, it made more sense to charge per message and have vertical ownership of everything from the patents to the factories to the equipment. But the competing companies were unwilling to cross-license patents. When America declared war on April 6, 1917, the 6,000 professional and amateur radio stations were closed down or turned over to the Navy (Sanjek, 1996, p. 76). During the war, public concerts were mostly cancelled and people grew accustomed to staying at home and listening to music on phonographs or trying to tune in news of the war on radio (Millard, 1995, pp. 70-71). After the war, the popularity of radio surged (Sanjek, 1996, p. 76).

On November 2, 1920, the business of broadcasting began with station KDKA in Pittsburgh reporting the presidential election results (Millard, 1995, pp. 30-33). At first, most of the musical programming on the radio was performed by artists themselves as advertising for their sheet music and records (Sanjek, 1996, pp. 77-78). "Direct" advertising was banned by the government (Sanjek, 1996, p. 80). Radio manufacturers operated stations at a loss in the hopes that sales of radios would result in a net profit. This was possible because of the patent trust—all of the major patents related to radio were held by a small number of companies, who agreed to pool their patents and divide up the manufacturing, sales, broadcasting, and two-way communications businesses among themselves (Benkler, 1997, p. 18).

Although the idea of subsidizing stations to increase radio sales was a good one, a Federal Trade Commission inquiry of RCA's practice of suing competing manufacturers led eventually to the Radio Act of 1927 (Benkler, 1997, pp. 22-24). From that point onward, licenses

were more important than patents. Although the companies were basically the same, their wealth came from a different source: advertising.

Advertising-supported radio is a classic two-sided economy. Stations broadcast quality content for free to draw an audience and then charge advertisers for access to that audience. To amass an audience, stations play mostly music. Copyright owners profit by licensing their content to broadcasters. Effective advertisements increase product sales and thus recoup the cost of the advertisements. This two-stage process is called indirect appropriability.

## The Audio Home Recording Act

The indirect appropriability model also works outside of broadcasting. When Congress passed the Audio Home Recording Act (AHRA) in 1992, it implemented a system for copyright holders to receive royalties for home digital copying of music by charging consumers a higher cost for blank media. The legislation was introduced as a response to the new Digital Audio Tape (DAT) format. For every blank DAT distributed in the United States, manufacturers send 2% of the cost to the Register of Copyrights who then distributes the funds to industry groups representing the copyright holders, features artists, and non-featured artists and musicians (Recording Industry Association of America, n.d.). This fee was essentially a tax on consumers to compensate the recording industry for the lost revenue it expected from DAT recordings of copyrighted works. The AHRA exempted computers from the royalty, and this exemption was confirmed by the decision of the 9th Circuit Court in the 1999 case Recording Industry Association of America v. Diamond Multimedia Systems (1999). Although the DAT format never became popular among consumers, new stand-alone music CD recorders may. These devices require special "music CD-R" blank discs that include the AHRA-mandated royalty. In comparison, CD burners designed for computers can make equivalent audio CDs, but can use cheaper "data CD-R" blank discs that do not include the AHRA royalty.

## Jukeboxes

When Thomas Edison invented the phonograph in 1877, he envisioned it being used to dictate business contracts, not music (Karr, 2002). The first man to make a serious profit from recorded music was Louis Glass, who invented the jukebox. Introduced in a saloon in San Francisco in 1889, Glass's machine contained a single recording that was changed every day or so (Athitakis, 1999).

Until 1909, manufacturers of records and player piano rolls did not pay royalties for the underlying musical works because the copyright law had a very narrow definition of fixation that required works to be understandable to a person without the aid of machines. The Copyright Act of 1909 granted owners of copyright in musical works to control the "mechanical reproduction" of their works. Congress, fearing the market power of the dominant piano roll company of the day, instituted a compulsory license that allowed manufacturers to use any musical composition without permission, as long as a 2 cent-per-copy royalty was paid to the copyright holder (Cohen et al., 2002, p. 430).

The 1909 Act contained an exemption for jukeboxes. Although jukebox operators had to purchase legal copies of the recordings used in their jukeboxes, they did not have to pay a public performance royalty. This exemption remained in effect until the Copyright Act of 1976 which set a compulsory license as an annual per-jukebox fee. Originally, the fee was $8 per jukebox. A study conducted by the Copyright Office in 1988 found that two-thirds of all jukeboxes were unlicensed. Because of this and concerns from some that the compulsory license violated the Berne Convention[5], the Berne Convention Implementation Act of 1988 allowed copyright holders and jukebox operators to negotiate license terms (Cohen et al., 2002, p. 443). BMI, ASCAP, and SESAC negotiated with the Amusement & Music Operators Association (AMOA), the largest trade association representing jukebox operators and reached an agreement in 1990. The agreement called for the creation of the Jukebox License Office and a new Jukebox License Agreement that allows jukebox operators to pay one fee to license virtually all copyrighted music (Jukebox License Office [JLO], n.d., History of the JLO). The current rates are $364 for the first jukebox and $83 for each additional jukebox (JLO, 2002). The Jukebox License Agreement specifically excludes any devices that use "transmissions, downloads and streaming of musical works" to or from the device (JLO, n.d., Jukebox License Agreement). This exemption means that the Jukebox Licensing Agreement does not apply to online subscription services.

## Alternative Models

These are not the only business models for the copyright and broadcast industries, but they are the most common and successful. One alternative that can be successful is for artists to ignore their exclusive right to record and distribute copies of their songs and attempt to earn a living from performances alone. The two most well-known bands that follow(ed) this model are The Grateful Dead and Phish.

A 1995 study found that 39 percent of all people working as musicians and composers were doing so as a second job (National Endowment for the Arts, n.d.). Artists who receive their primary income from another source may choose to release their works to the public domain or they may work for tips. Artists with few resources may not have the time or know-how to promote their music. These artists see online services as their best shot at profiting from their music.

[5] The Berne Convention was an international treaty signed in 1886 that defined minimum copyright protection standards. The United States did not join the convention until the Berne Convention Implementation Act took effect in 1989 (Cohen et al., 2002, pp. 51-53).

# Chapter 4. Variables of Analysis

This chapter presents a number of variables of analysis to highlight the differences between business models. The following variables are discussed: interaction, permanence, medium, legality, and substitutability. As this and the following chapter illustrate, subscription-based online services are sufficiently different from previous business models that changes to copyright law are necessary.

## Interaction

Radio is a push distribution medium. A listener can choose the station to listen to, but cannot choose the particular song he wants to hear. The notion that a listener can call in a request is a myth. Listening to CDs, on the other hand, is a pull distribution medium. The listener decides what album, what song, and when to listen. The music can be paused, repeated, or set on random play.

Some online music services have 'channels' equivalent to radio stations, and some services allow users to download specific songs or entire albums. Some services offer both options. Some services have interactive channels. The Rhapsody service, for example, can create a custom channel based on up to ten artists chosen by a user. The playlist includes songs by those and similar artists as identified by the service. While the channel is playing, the listener cannot pause the music but can skip songs he does not want to hear.

## Permanence

When a consumer purchases a CD, he owns it outright. He can listen to it as much as he wants, and can resell it when he gets tired of it. Terrestrial radio and most Internet streaming radio stations are free to the user, but unless the user records the performance, the transmission is ephemeral.[6] When someone pays for a song on a jukebox, they are not buying a copy of the song. In essence, they are renting it for a single performance.

But these distinctions are starting to become fuzzy. Some commercial online music services allow subscribers to download songs and play them from their hard drives but not transfer them to portable devices. With some subscription-based online services, a downloaded song can be played an unlimited number of times but only while the person remains a subscriber. Their computer will check their subscription status at least once a month and make the songs unusable if the subscription is cancelled (pressplay, 2002, Downloads section). This example seems more like rental than ownership. The distinction between a copy and a performance is very important because it determines what rights a user has in relation to the work. If these examples are considered rentals, then the rights are more similar to those associated with performances than those associated with copies owned by users.

[6] By 'free', it is meant that listeners do not pay for the service. As the previous chapter explained, these services are usually advertiser-supported.

## Medium

Until the last year or so, all legal music distribution was either done by moving physical media around or through one of the many broadcasting technologies (radio, television, digital cable radio, or satellite radio). The Internet is a separate case because music distribution is just one feature of this very open system. Although some companies have made special-purpose computers designed to function strictly as 'Internet jukeboxes' or Internet radios, most devices capable of getting music from the Internet are full-featured computers. When wireless broadband Internet access becomes commonly available, portable devices capable of receiving Internet radio stations may become common. At that point, this distinction may no longer be relevant.

## Legality

One might think that live performances by the recording artists themselves are the most legitimate type of music distribution. Not necessarily. Performers are not responsible for paying royalties to the songwriters, the venues are. Most performance venues accomplish this obligation by purchasing a license from one of the PROs. But some small venues just instruct the performers that they are only allowed to perform songs that they themselves wrote; this explains the "No Covers" signs sometimes seen in clubs. If the rule is followed, then no laws are being broken. But this does not always happen.

The satellite and cable-based distribution systems (music television channels, digital cable radio, and satellite radio) have such high access costs that only very large companies can afford to build competing infrastructure. Rather than endanger these investments with illegal actions, virtually all broadcasters pay performing rights organizations license fees for the music they broadcast. The exception to this rule is pirate radio stations which are a target for the FCC as well as copyright holders. Unlicensed Webcasters and low-power pirate radio stations are similar in that the operating costs are low enough that many have decided that broadcasting is worth the risk of legal action.

All physical music distribution media have been used by bootleggers at one time or another, but the invention of the home computer CD-ROM burner made bootlegging quick, easy, and cheap for everyone. The invention of peer-to-peer Internet file sharing made bootlegging quicker, easier, and cheaper still. The Digital Millennium Copyright Act has clear procedures for copyright owners to notify Internet Service Providers of infringing works so the ISPs can remove or block access. While the nature of the Internet makes infringers easier to identify, record labels have been reluctant to prosecute individual infringers. It could be argued that this has contributed to the widespread use of peer-to-peer file sharing services.

## Substitutability

In economic terms, there is a switching cost for a listener to find new artists they like. The switching cost is the time a listener invests in finding new artists they like while lock-in is the term used to describe the tendency of listeners to continue listening to artists already known and liked—thus avoiding switching costs. An example of lock-in is the fact that people regularly

pay extremely high prices for concert tickets for popular bands, when there are numerous less-popular bands performing for lower ticket prices.

A strength of online music services is that they make discovering new music easier for consumers. For many of the artists in Rhapsody's database, there is a list of contemporaries, followers, influences, and related projects (other bands containing members of the current band). Clicking on the name of any of the artists listed links to the Rhapsody home page for that artist. This relational database of artists is something that is just not possible with off-line music technologies. As was explained in the "Interaction" section above, some subscription services also allow users to create custom channels based on multiple artists chosen by the user. These interactive features of subscription services are only possible because of recent technological innovations and may take some time for consumers to appreciate.

# Chapter 5. Online Music

New technologies create new markets. This was true for phonographs, radios, and online music services. But these markets take time to mature. Each market had a technological limiting factor that, once perfected, led to a massive increase in sales. For the phonorecord industry, this gating item was the perfection and standardization of a physical medium that could be mass produced. Once the lateral-cut 78rpm shellac record was perfected, business boomed (Millard, 1995, p. 74).

The technology of radio was perfected before it was marketed as a household item. The gating item that led to radio's success was finding the right business model to overcome the "chicken and egg" problem. People were unwilling to purchase radios unless they were certain there would be a steady supply of programming. Advertisers were unwilling to pay for programming unless there was a steady supply of listeners. Radio manufacturers solved this problem by investing in radio stations themselves.

Online music services required both technological advances and new business models. Before online music could be considered a viable business model, a number of things needed to take place: consumers needed to trust online payment systems, a significant percentage of households and offices needed to have broadband Internet access, royalty structures needed to be agreed upon, the technology needed to be developed, and the music industry needed to know that people were willing to deal with the initial difficulties of online services. This chapter documents those changes, the services that resulted, and one proposed revenue model has not yet been tried.

## Licensing

Although the technology was not yet advanced to allow online music services before 1984, if it was the services would be able to simply purchase CDs at stores and could attempt to classify their services as private rental services. The Record Rental Amendment of 1984 changed copyright law to disallow rental of phonorecords[7] without approval of the owner of copyright. The stated reason was that "the nexus of commercial record rental and duplication may directly and adversely affect the ability of copyright holders to exercise their reproduction and distribution rights under the Copyright Act" (H.R. Rep. 98-987, 98th Cong., 2d Sess. 2 (1984), qtd. in Cohen et al., 2002, p. 340). This act and the Digital Performance Right in Sound Recordings Act of 1995 set the licensing terms for online music services.[8]

[7] The term phonorecord has a specific legal definition in the copyright law: "Phonorecords" are material objects in which sounds, other than those accompanying a motion picture or other audiovisual work, are fixed by any method now known or later developed, and from which the sounds can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term "phonorecords" includes the material object in which the sounds are first fixed. (Copyright Act, § 101)

[8] See Chapter 2 for more details on the DPRA.

## Digitization and Compression

The first step to online music was digitization. The invention of the compact disc as a digital delivery mechanism lead to a quick transition from analog recording and production methods to digital methods. This digitization would soon pose problems for the recording industry. When compact disc technology was standardized as a consumer product the companies involved had no idea that CD burners would be available for less than $100 and blank discs would be available for pennies. Had they envisioned such a future, they likely would have developed a copy protection system before selling products to the public.

Once music was available in digital format, compression would allow file sizes suitable for online delivery. Although the audio Compact Disc was introduced in 1982 and the CD-ROM data format was introduced in 1984, computers did not have the storage capacity to hold "raw" audio tracks. The compact disc audio format stored the digital data in an uncompressed format at a data rate of 10.1 Megabytes per minute of music (Sound Devices, 2003). Over a 56k modem, it would take almost 25 minutes to transfer one minute of music.

The solution to this problem was to compress the raw audio files using an algorithm called a codec. Codecs[9] use mathematical algorithms to compress and decompress data. The most famous audio codec is the Motion Picture Expert Group's Layer 3 audio codec—commonly known as MP3. Codecs allowed music from audio CDs to be compressed down to file sizes small enough to store hundreds or even thousands of songs on average-sized hard drives, and even transfer those files across the Internet.

## Downloadable Samples and Promotional Tracks

Though compression allowed downloads, there was a trade-off between quality and download speed. With a 33.6Kbps modem (the standard until 1997/1998), it would take 11.5 minutes to download a 3 minute song encoded at 128kbit/sec (only slightly lower quality than the original CD). At that speed, few were interested in waiting for entire songs to download. But a 30-second sample at 36kbit/sec (fair audio quality) would take approximately 32 seconds to download.

The first licensed online music offerings were free downloadable song samples available on artist Web sites and online CD stores. These short (30 seconds or less) samples were meant to give the listener an idea of what the artist sounds like. This was very important for online stores such as CDNow and Amazon.com. Artists and record labels with their own Web sites sometimes made complete songs available as a promotion for the album.

## Digital Rights Management

Digital Rights Management (DRM) promises security to copyright owners allow completely new pricing and usage structures. DRM also allows new possibilities in marketing content. Singles from new albums can be released on the Internet in viral marketing campaigns,

[9] The word 'codec' means coder/decoder.

and then simply stop working after 30 days. If a user tries to play the song after it has expired, they will be presented instead with a Web site where they can purchase the album. DRM systems can allow full use of content to licensed users, but limited use to anyone who obtains an unlicensed copy. The limited use (whether playing a 30-second sample of a song or showing a trailer for a movie) would act as an advertisement and provide a link for purchasing the complete song/album/movie.

For many years, the protected and unprotected formats required completely different player software, and thus using a protected format risked alienating potential listeners who would not bother downloading another player software. The situation finally improved when Microsoft and RealNetworks started to incorporate support for both protected and unprotected formats in their popular player applications, Windows Media Player and RealPlayer.

## Diamond Rio and Napster

As software for converting CD tracks to MP3 files became easier to use and broadband Internet access became cheaper and more common, more and more people began sharing MP3 files. The recording industry made its first major offensive in the battle against illegal online music distribution by attempting to block Diamond Multimedia from selling its Diamond Rio portable MP3 player, claiming that the device violated the Audio Home Recording Act because it is a recording device and the company needs to pay a royalty fee (Lemos, 1998). The court found for Diamond, equating the Rio's "space-shifting" with the "time-shifting" ability of VCRs, which was ruled a fair use in the famous Sony v. Universal City Studios case of 1984 (Cohen et al., 2002, p. 439).

The second offensive was the lawsuit against Napster, the first peer-to-peer file sharing service created exclusively for trading MP3 files (A&M Records, Inc. v. Napster, Inc., 2000). Although the major record labels were successful in shutting down the Napster service, the popularity of Napster demonstrated that people were open to new music distribution technologies. The result of these two cases opened a window of opportunity for legitimate online music services.

## Mp3.com and Two-Sided Markets

The oldest and largest online music service is Mp3.com. The site was started in 1997 and now has over 250,000 artists and 1.5 million songs (Mp3.com, 2002). The company was purchased by Vivendi Universal (which also owns Universal Music Group, one of the five major record labels) in August 2001 (Mp3.com, 2001b). Mp3.com is operated as a two-sided market, pairing up independent artists and music fans.

The company has a variety of revenue streams, but only two come from listeners: there is an ad-free version of the Web site available for $1.99 per month, and the company sells CDs for its member artists at prices ranging from $7.98 to 19.99, for which it takes a 50% commission (Mp3.com, n.d., How do I set the price?). The bulk of the music on the site is available in unprotected MP3 format for free without registration.

Mp3.com solved the chicken and egg problem of amassing both content and listeners by providing free hosting to artists and free music to users. From the start of the service in 1997 until January of 2003, artists could host an unlimited number of songs. Now artists must pay $5 per month or $50 per year to host more than 3 songs (Mp3.com, n.d., List of Changes).

In addition to selling CDs and charging artists for hosting songs, Mp3.com has a number of other revenue sources. The Web site also includes a lot of advertising, the company resells music hosting and streaming services to other Web sites, offers an in-store background music service, and operates as a middle-man for special-purpose music licensing (such as using music in films and television) for which it takes a commission. Mp3.com does not meet the author's definition of a subscription-based service because all of the songs available for streaming can just as easily be downloaded with no usage restrictions and for no cost. The only incentive to keep visitors returning to the Mp3.com Web site is the addition of new artists, which may be why the service has not been profitable (Mp3.com, 2001a). Mp3.com demonstrates that providing downloadable music for free is not a viable business.

## Subscription-Based Services

There are four commercial subscription-based music services currently in operation: pressplay, MusicNet, Rhapsody, and MusicNow. Rhapsody, pressplay, and MusicNet were all launched in December of 2001. All five of the major record labels are investors in either pressplay or MusicNet.

- Pressplay is a joint venture between Sony Music Entertainment and Universal Music Group (pressplay).
- MusicNet is 40% owned by RealNetworks (a technology company), with AOL Time Warner, EMI, and Bertelsmann as major shareholders (Washington Internet Daily, 2001).
- Rhapsody was originally financed by venture capitol, including investment funding from all five major record labels (Listen.com, 2000a; Listen.com, 2000b). In April 2003, RealNetworks announced an agreement to acquire Listen.com, the parent company of the Rhapsody service (Listen.com, 2003). The parent company for Rhapsody, Listen.com, has been in existence since June of 1999 as a directory of licensed free music on the Web (Listen.com, 1999).
- MusicNow was started in November 2002 by Charter Communications, Inc. and FullAudio Corp. Charter Communications is a cable television service and FullAudio Corp. is devoted to subscription music technologies (FullAudio, 2002).

Each company has taken slightly different approaches to marketing its service. MusicNet does not sell its service directly to customers. Instead, it licenses the service to other online companies—currently only America Online and RealNetworks. Rhapsody and pressplay are available directly to consumers and through online partners such as ISPs and specialty music Web sites.

From a feature standpoint, the services are more similar than they are different. They all have content licensed from all five major record labels (though the exact numbers and variety of songs varies). All of the services display mini-biographies on artists and mini-album reviews when available and all display album cover art when available. All charge approximately $10 per month for unlimited streaming and on-demand access. Rhapsody and pressplay also allow subscribers to burn songs to CD or transfer them to portable digital music players.

Of the three subscription services, Rhapsody is the most developed. At last count, Rhapsody had 321,951 songs by 11,625 artists (Listen.com, n.d.). For $4.95 per month, the service offers more than 50 pre-programmed stations in a wide variety of genres and users can create custom stations based on up to 10 artists. Users can skip any songs that they don't like while listening to stations.

For $9.95 per month, Rhapsody users also get on-demand access to most of the albums in its database, and the ability to burn some songs to CD for $0.99 per song. The database can be searched by artist name, song title, or album title. To play the songs on a MP3 player, one would have to find their own method of converting the tracks to MP3 files.[10] As MP3 players become increasingly popular, the absence of this feature may push more people to download unlicensed copies from peer-to-peer services instead of bothering with the three-step process that Rhapsody requires. Rhapsody is also working on a version of its service that will run over next-generation cellular phones that will contain a regular stereo headphone jack just like a Walkman.

## Noncommercial Use Levy

Some have suggested imposing a levy on peer-to-peer services and related products. Law professor Neil Netanel suggests a "Noncommercial Use Levy," or "NUL" as a way to shift the cost center from content (which is nonrivalrous and nonexclusive) to hardware (which is rivalrous and exclusive) to ensure that the NUL is paid (2002, p. 16). Netanel sees the NUL as a third alternative compared to massive unauthorized copying on peer-to-peer networks or content owners using DRM to exert total control of users and artists (p. 16).

Legalizing peer-to-peer services by imposing a NUL would likely do more harm than good to both the music and computer industries. Because computers are general-purpose devices capable of many non-infringing uses, there is no easily identifiable device or media on which to impose the levy. No matter what type of levy system is imposed, it would charge some too much and others too little. If sharing music over the Internet is legal, the market for CDs and subscription services will likely evaporate.

[10] No, CDs created by Rhapsody are not copy protected. Users can rip tracks from them as easily as from a store-bought CD.

# Chapter 6. Online Music Best Practices

There are many constituencies affected by changes in the music industry: consumers, artists, radio stations, record labels, PROs, Webcasters, music publishers, retailers, and interactive online services. Each constituency has its own desires for change, and they are mostly in disagreement. This chapter describes what changes subscription-based online music services should make and why these changes are in the best interest of established artists, labels, and the services. Chapter 7 proposes changes to copyright law that will benefit new artists and consumers.

## A Declaration of Indifference

While the suggestion that the subscription-based online music service market should be left to find its own business models may seem unwise, peer-to-peer services do offer a strong check on any oligopolist tendencies on the part of the subscription services. Content industries (books, music, movies, software) each re-learn that people will take the path of least resistance to access the entertainment that they desire. They see it as neither an issue of laws or morals. The best example of this is what is euphemistically called 'the oldest profession': prostitution. Even though it is illegal in most states and countries, prostitution is still common. The same is true of illegal drugs.

For many, peer-to-peer services will not be worth the time and trouble compared to the cost of a subscription-based service. But as subscription fees increase, more people will choose peer-to-peer services. Peer-to-peer services revolutionize the content industry because they offer an alternative to content owners' pricing models even when legitimate competitors do not exist. John Gilmore, referring to the Communications Decency Act, said "The Net interprets censorship as damage and routes around it" (as cited in First nation in cyberspace, 1993). The result of our always-on instant-gratification Internet-speed society is that people increasingly treat laws and contracts as damage and work around them.

## Convenience

The key to competing against free but illegal peer-to-peer services is not stricter enforcement of laws or better DRM. DRM may be good enough to prevent perfect digital copies, but the analog hole can never be closed (Biddle, England, Peinado, and Willman, 2002). This limitation on DRM is a feature not a bug because it means that there will always be a check on content owners desires for total control. The best that can be hoped for is to reverse the 'state-of-the-copying art' and make converting music to a share-able form more difficult.

Not to suggest that pirating music online should be allowed, or that record labels should not try to stop infringers, but the real weapon is convenience. The movie industry has learned there is a price point at which the majority of consumers would rather pay to rent a film than go through the trouble of making an infringing copy (Liebowitz, 2002, p. 8). But part of that equation is video stores having enough copies of the most-desired titles. Blockbuster Video goes a step further by offering a free substitute rental if one of its new releases is not available. This

provides an additional economic incentive for consumers to continue supporting the imperfect system of video rental and Blockbuster Video in particular. This system works very well for movies because they are only shown unedited and commercial free on premium cable and satellite channels. For broadcast television shows, the added convenience of having multiple commercial-free episodes on a single DVD (some with additional bonus footage) allows the rental market to compete against unlicensed VHS recordings. The introduction of personal video recorders that can store tens of hours of video and automatically skip commercials shifts the convenience factor back to unlicensed copying, but video-on-demand services may eventually supplant this new threat.

As technologies advance, there is an 'arms race' of sorts between individual power and corporate or government power. An example of this arms race is the radar detector industry. The same companies that supply radar detectors to consumers also supply radar guns to police departments. There is already a similar arms race between peer-to-peer software designers and copyright owners who are employing outside services to monitor and hamper illegal file sharing. These systems are not necessarily stable, but they achieve a rapid technology development and deployment with a minimum of government intervention. This instability and churn allows what economist Joseph Schumpeter called "creative destruction" (1942/1975).

Once it is understood that total control is not possible, the remaining question is whether users can be convinced to pay for a licensed subscription service. Peer-to-peer services seem like such a huge problem because content owners refused to take advantage of broadband computer networks as a distribution medium until they could be sure DRM would protect their products (Netanel, 2002, p. 3). This is different from how the industry responded to previous technologies, but only in degree. The music industry's delay allowed peer-to-peer services to gain a foothold. To compete against online piracy, the music industry should move to a strictly subscription-based distribution model, increase litigation against peer-to-peer sharers, and offer consumers new features for which they will willingly pay.

As proof that it is possible to compete against free content, witness the popularity of cable and satellite television services. As of June 2002, 85.3% of U.S. television households had some sort of non-broadcast programming service such as cable or satellite (U.S. Federal Communications Commission, 2002, p. 3). If it *is* possible to compete against peer-to-peer services and it *is* possible to bring successful lawsuits against copyright infringers, then the "NUL" would be just another unnecessary government subsidy.

## A New Delicate Balance

The most important aspect of an equitable system for subscription-based online music services is to recognize them as two-sided markets. Economist Davis S. Evans defines a two sided market as follows:

> A market is two-sided if at any point in time there are (a) two distinct groups of customers; (b) the value obtained by one kind of customers increases with the number of the other kind of customers; and (c) an intermediary is necessary for internalizing the externalities created by one group for the other group. (Evans, 2002, p. 34)

According to Evans, in determining whether there are barriers to entry in a two-sided market the important question to ask is whether an incumbent has special advantages that could not be replicated by new entrants (p. 57). Because of the "chicken and egg" problem of "getting both sides on board," subscription-based online services have had to vertically integrate with the major record labels. Evans believes this is to be expected, even after a service matures (pp. 65, 68). Once a few services have matured to the point that they benefit from economies of scale and positive externalities it will be very costly for a new competitor to enter the market. This alone is not evidence of anticompetitive behavior (p. 54). In fact, the social benefit of a few services offering lower prices may be greater than the social cost of forced competition (p. 58).

Once a two-sided market achieves a critical mass of customers on both sides, the focus turns to finding a pricing structure that balances the interests of both sets of customers. In the case of online music services, the two sets of customers are subscribers (listeners) and artists and labels. In the past, labels would promote an artist in the hopes of recouping promotion costs from album sales. In a future where there are no album sales, the licensing agreement between labels and services are based on expectations and will determine the profits for both. Without the constraints of compulsory licensing, services are able to negotiate royalty rates with artists depending on their popularity; less popular artists would receive lower royalties or may even be expected to pay a hosting fee to the subscription service.

## Niche Audiences and Differential Pricing

Price discrimination is the practice of charging different prices to different customers based on their ability and willingness to pay. Because all the costs of online music are for producing the first copy, it is impossible to base price on the cost of producing each copy. The marginal cost of all subsequent copies approaches zero.

Without compulsory licenses and without antitrust prohibitions on price discrimination, subscription-based services will have more freedom to find a workable price structure. The best price structure for listeners seems to be a flat monthly fee and the best price structure for the royalties due to artists seems to be a negotiated per-song/per-performance rate. If services can pay lesser-known artists lower royalties than popular artists, there will be an incentive for services to promote lesser-known artists to subscribers. Similarly, there will be an incentive for services to cater to niche audiences that prefer less-popular artists because they will incur lower royalty costs for the service.

Online services may also find that different users are willing to tolerate different amounts of advertising and privacy. Subscription services could offer a discount to users for allowing advertising on the service. Services should also offer discounts to users willing to complete a demographic profile and allow the service to track their usage.

A more interesting application of differential pricing is for online services to offer site licenses to universities. It has been widely reported that university campuses are hotbeds of peer-to-peer file sharing. Besides being illegal, peer-to-peer services are overloading the bandwidth of university Internet connections. A solution to both problems is for a subscription service to provide a tailored version of its software for university use. The service would install a server on

the campus network and provide a custom version of the client software that would only connect to the campus music server. Users on the campus network would not tie up the campus's Internet connection searching for files and would have little incentive to set up their own share points. The fee for the service could be included in tuition.

## Viral Marketing

Viral marketing "describes any strategy that encourages individuals to pass on a marketing message to others, creating the potential for exponential growth in the message's exposure and influence" (Wilson, 2000). One guide lists six principles for viral marketing:

1. Give away products or services
2. Utilize existing communication networks
3. Take advantage of others' resources
4. Be able to scale easily from small to very large
5. Provide for effortless transfer to others
6. Exploit common motivations and behaviors (Wilson, 2000)

Existing subscription services are only beginning to take advantage of viral marketing techniques. All of the services discussed offer free trials. They all use the existing Internet as a distribution medium. Rhapsody automatically caches songs on users' hard drives the first time they are streamed so they the service can conserve bandwidth on subsequent plays. The bulk of business costs are for negotiating licensing contracts and thus adding subscribers does not greatly increase operating costs. Furthermore, the subscription services (unlike Mp3.com) seem to deal with labels instead of artists directly. This means multiple artists are added with each label contract.

Rhapsody does a good job of providing effortless transfer to others by allowing users to email a custom playlist to a friend. The email reads in part "To listen, just open the attached file and Rhapsody will start playing the playlist automatically. If you do not have Rhapsody yet, you can register and download at http://www.listen.com." This may motivate friends to subscribe to the service, but an even better motivator would be to give a service credit to existing customers that refer a friend. Cellular services have offered such a program, and Mp3.com has a "New Music Army" program that rewards individuals who enlist new bands with a 5% commission on every CD sale (Mp3.com, n.d., New Music Army).

Listening to music is a social activity, especially among teens. A survey done in 2000 of 101 U.S. and U.K. schoolchildren with a mean age of 15.4 years found that 68 percent spend approximately the same amount of time listening to music with friends as they do alone (Hargreaves, North, & Tarrant, 2000). An Australian study done in 1998 found that 85% of teens responded that friends influenced their tastes in music (Ramsay, 1998). Rhapsody's idea of emailing a playlist should be expanded from a user-to-user feature to a community-building feature.

Amazon.com also has a number of community-building features. The service automatically recommends items that others who have purchased the currently viewed item have also purchased. Subscription services that have a separate charge for downloading could implement a similar system. Amazon.com's ListMania feature allows users to create multiple lists of items with a description and share it with other users. When someone displays an item that appears on one or most lists, a list of those ListMania lists is displayed along with the details on the selected item (Amazon.com, n.d.). Subscription-based services could use such a feature to allow individuals to create and regularly update a playlist to share with friends. Individuals could also regularly check the home page for their favorite artist to see what other artists other users group them with. Rhapsody has a team of paid editors that do an excellent job writing descriptions of artists and albums, but community-building features like these will likely give subscribers a sense of belonging that will provide further incentive to recruit friends and make them less likely to switch to a competing service.

## Artist Support

Artists who are already have a fan base should be in favor of subscription services because they will likely pay performance royalties to artists. If artists want to give away their music (to increase their fan base and thus attendance at concerts), they are free to create a Web site of free downloadable MP3 files.

Grammy award-winning songwriter Janis Ian points out that when a record label owns an artist's voice, it can prevent the artist from posting any recordings to the Internet--even recordings not owned by the label. She suggests that artists should be against the court's decision in the Napster case (which ruled that the service was responsible for copyright violations and should be shut down) because it offered free exposure (Ian, 2002). Trying to decrease the amount of piracy does not go against the idea that artists should have the freedom to promote themselves.

To paraphrase Richard Stallman, Ian is thinking in terms of free beer when she should be thinking in terms of free speech (2003). Napster did indeed provide free music, and some of the music downloaded was freely given to the public domain by the songwriters and recording artists who created it. But the popularity of the service was at the expense of artists, publishers, and record labels who did not want to give up their exclusive rights to their work. If an artist retains the copyright on their songs and recordings, they are free to put those songs on the Internet—just as Ian herself has done on her Web site. Napster distributed the hosting costs to all the fans who share an artist's songs instead of an artist or label having to pay the cost of hosting a Web site.

Just as an open-source streaming and micropayment system is bad for copyright holders because it allows anyone to profit from another's work, there is a risk to supporting peer-to-peer services because they work just as well for infringing uses as they do for non-infringing uses. If an artist signed a bad contract with a record label that restricts them from putting MP3 files on their Web site, they should not support a service that shares MP3 files without the record label's permission.

A better option for both artist and label would be to make short-term agreements with subscription services that allows the song(s) to be streamed royalty-free. Instead, the contact

would stipulate that the service provides demographic data to the copyright holder: how many people played each song each week and where the listeners were located. This information could be used to plan a tour or gauge the effectiveness of marketing efforts. Copyright holders may also be able to trade discounts on royalties for premier placement on the service—playing the song more often on the services' virtual radio channels. Copyright holders could negotiate to allow the song to be streamed for free the first 100,000 times to build a fan base and then demand royalties once the artist is established.

Although the copyright law grants artists a performance right for streamed and downloaded music, artists who agree to the Mp3.com submission agreement waive their right to royalties for the songs uploaded to the service (Mp3.com, 2003). Furthermore, artists must pay Mp3.com to host more than three songs. As subscription-based services become more popular, and considering Universal Music now owns Mp3.com, it is quite possible that artists will have to pay to be included in subscription-based services. While this may seem unfair to artists, it allows the possibility for a new subscription-based service with more favorable terms for artists to be started. If the term of the agreement is short enough to allow renegotiation as an artist becomes more popular, the artist should be able to profit as more people listen to their songs. This is one more example of how established subscription services will need to balance the interests of customers and artists.

## The Future Role of Radio

Online music services will not be a threat to broadcast radio for a number of years. In the interim, popular radio programs will likely be simulcast on subscription services. This is already happening with the XM Radio satellite radio subscription service. Eventually, there will be so few radio listeners that the government can consider allocating AM and FM frequencies for other uses just as it is considering re-allocating broadcast television station frequencies after the transition to HDTV is complete.

# Chapter 7. Prescriptions for an Outdated Copyright Policy

Adam Thierer and Clyde Wayne Crews of the Cato Institute divide the realm of intellectual property into three groups: works already in the public domain, works currently protected by copyright, and works yet to be created (2002). The recent Supreme Court decision in the Eldred v. Ashcroft case challenging retroactive copyright term extensions will continue to keep many works protected by copyright. But this does not mean that Congress cannot change the copyright laws that will affect future works. Thierer and Crews suggest that if we allow contracts and DRM to protect future works and leave law as a backup, then over time the number of works protected by current copyright laws will be dwarfed by the number of works in the public domain and future works created under market-defined rules of use. Many of those in support of Eldred are against the basic notion of retroactive copyright law changes, whether those changes extend or reduce the term of protection. It is understood that the suggestions made here will not work retroactively because they redefine many existing licensing arrangements.

## Why Copyright is Still Necessary

Some believe that a combination of contract law and self-help (digital rights management) would protect creative works long enough for the creator to get most of the profit that would come from an endless copyright term (Akerlof et al., 2002, p. 5-7). But heavy lobbying from the content industry has warped copyright law to provide much more protection for copyright holders compared to the other systems discussed in chapter two: contracts and technological protections (Bell, 2001). Copyright protection applies without the need for technological measures or contracts. Copyright protection requires no registration and no notice on the work (though both are needed when filing an infringement case). With the repeated retroactive extensions of the terms of protection, copyright is seemingly everlasting.

Just as some people believe that contract and self-help measures are sufficient and copyright laws are unnecessary, there are also people who believe that copyright protection should be eternal. But both positions eliminate the public good that the copyright system was meant to create. If copyright protection were eternal, works would never enter the public domain. If there were no copyright protection, almost all works would be protected by some sort of DRM. To believe that DRM will be effective means the works will never enter the public domain. To believe that DRM will be ineffective means that works will be circulated to a much smaller audience—only those that the creator feels he can trust not to redistribute the work—or copies will not be sold. Instead, access to works will be restricted by physical means—think of the main reading room of the Library of Congress. Users would be restricted from bringing any materials that could be used to copy a work when they go to read/watch the work.

The only good scenario is one in which DRM protections are eventually defeated, but only after the author receives sufficient revenue to continue creating new works. Because most companies developing DRM systems are designing their systems to protect whole classes of works with a single DRM system, it is unlikely that a consistent cycle of defeating DRM protection will happen. The more likely scenario is that analog holes would be used to make less-

than-pristine copies of works. But there is an alternative to this whole debate—instead of having a copyright system based on distributing copies, what is needed is an experience-based system that sells performances instead of copies.

## Eliminate Compulsory Licenses

Compulsory licenses eliminate price discrimination and push companies to increase profits through more sales. DeLong and Froomkin point out how revenues based on number of viewers rather than intensity of demand helped ensure that broadcasting would be a "vast wasteland" (1999, p. 11). Shapiro and Varian believe that there are only two sustainable market structures for information goods: a single dominant firm that uses economies of scale to keep competitors with identical products at bay, and multiple firms that compete in a differentiated product market (1999, pp. 24-25). If Webcasters pay the same compulsory fee regardless of what music is played, there is no incentive to play music by less-popular artists that the service may have otherwise been able to license for less money. Although there are no compulsory licensing requirements for interactive services, all of the current interactive services also provide Webcasts that comply with the sound recording performance complement (defined in the "Digital Performance Right in Sound Recordings" section of Chapter 2). These compulsory licenses thus also affect subscription services when users play non-interactive programming.

## Shorten Length of Copyright Terms

Some law scholars are concerned that quantitization and DRM are fencing off the 'copyright commons'—the wellspring of human knowledge that new creations spring from. They lament the fact that increasing protections for copyrighted works are stifling creativity. But those who advocate for a copyright commons forget that there already is a copyright commons. It is called the public domain, and all copyrighted works are supposed to enter it when their copyright term expires. The problem is that copyright terms have been retroactively extended 11 times since the first copyright act of 1790. The original act had a term of 14 years plus a 14-year renewal; the term now is the life of the author plus 70 years (Gillmor, 2002).

The Supreme Court had a golden opportunity to change the trend of flagrantly extending copyright terms when it was presented with the Eldred case. Sadly, it chose to take a very narrow view of the questions presented to it and ruled that Congress should interpret what is meant by 'limited terms' as written in the intellectual property clause of the Constitution—even though Constitutional interpretation has always been the domain of the Judiciary branch. A Congressional Research Service report found that of the popular music copyrighted between 1992 and 1941, only 11.3% of the songs were still found on albums available in 1995 (Rappaport, 1998). Extending copyright terms further and further yields smaller and smaller returns for copyright holders, yet exacts higher and higher cultural costs from society as a whole.

The copyright balance has shifted too far to the side of benefiting copyright holders. Shorter terms of copyright would replenish the intellectual property commons and re-invigorate content creators to create new derivative works. This change to copyright law will not leave copyright holders defenseless, but it may push them to use other forms of protection. The term of

copyright for works for hire could be shortened from the current 95 years to 70 years and would still be in parity with European copyright laws (Breyer, 2003, p. 17). If the desire was to protect the few works created in the 1920s and 30s that still have an economic value, Congress should require copyright owners to re-register their claims after a set time. Unregistered, and presumably low-value works, would enter the public domain sooner than currently copyright law dictates, while allowing owners of copyright in high-value works to continue copyright protection for their works (Lessig, 2003).

## Allow Personal Reproduction of Licensed Copies

When there are reasonable methods to purchase rights to reproduce or perform a work, the traditional practice of "format shifting" works—copying a CD to a cassette tape to use in one's car-- will no longer be a fair use. To accommodate for the new reality of subscription services, the copyright law should be changed to explicitly allow personal noncommercial use of legally owned ***copies*** of copyrighted works but not legally purchased performances. This would decriminalize the process of converting an audio CD into MP3 files and transferring those files to a portable MP3 player but would still protect subscription services from hackers attempting to make copies of streamed music. This would incentivize copyright owners to license their works to subscription services, but each owner is free to make their own decision about when to stop production of CDs.

Those artists who are most at risk of illegal copying are probably artists that have a wide appeal to young audiences. The audiences most likely to use peer-to-peer services to distribute illegal copies are also the prime market for the commercial services. Those artists that have a good relationship with their fans, appeal to a less computer-savvy audience, or are not likely to be widely available on peer-to-peer services will likely continue to distribute CDs long after the pop music segment has gone to exclusively subscription-based distribution.

## Narrow Definition of Derivative Works

The term 'derivative work' first became part of U.S. copyright law in 1976. Before that time, copyright extended to "[r]eproductions of a work of art" and to "abridgements, adaptations, arrangements, dramatizations, translations, or other versions" of preexisting works (Pub. L. No. 60-349, 60th Cong., 2d Sess. §§5(h), 6, 35 Stat. 1075, 1077 (1909), cited in Cohen et al., 2002, p. 108). With the passage of the 1976 Copyright Act, copyright protection was extended to all actual and ***potential*** derivative works. This is very different from the equivalent section of the Berne Convention, which defines derivative works much more narrowly as "[t]ranslations, adaptations, arrangements of music and other alterations of a literary or artistic work" (Berne Conv., art. 2(3), cited in Cohen et al., 2002, p. 108). While Congress was very concerned about extending the terms of copyright protection to match those of the European Union, it was not interested in aligning the very different definitions of the scope of copyright protection—even though this had led to sanctions (Ladas & Parry, 2002).

Instead of the current system of derivative works, which grants exclusive rights for derivative works to the original copyright holder, U.S. copyright law should be modeled after the

blocking patents approach defined by U.S. patent law. In this approach, patents for improvements on existing patents can be obtained by anyone. Once secured, the original patentee is prohibited from using the improvement without licensing it from the holder of the improvement patent. This system encourages the two parties to cross-license their patents, and opens the market for improvements to anyone (Cohen et al., 2002, pp. 117-118).

Applied to online subscription-based music services, this would mean that if an artist made a remix of a song, the remix could only be licensed to subscription services that already had a license to the original song. Every time the remix was played, the service would need to pay a royalty to both artists. Without compulsory licenses, the service would be allowed to negotiate a royalty for the remix that would keep the total royalty costs from getting excessive. Although this seems unfair for the artist who created the remix, they would control the rights to subsequent remixes that sound similar to the first. With both artists having something valuable to the other, there is a greater chance that they will be able to come to an agreement on licensing terms fair to both.

## Expand Public Performance Right for Recordings

Whereas online music services have to pay for the bandwidth they use, radio stations are given the bandwidth that they use by the FCC. The fact that online music services are required to pay performance royalties on recordings but radio stations are not gives another competitive advantage to radio stations. To begin to balance the differences between broadcasters and Webcasters, rather than decreasing the potential royalties paid to artists, public performance rights should be expanded to cover broadcast radio stations. The same incentives for subscription services to play less-popular artists would then apply to radio stations.

# Chapter 8. Conclusion

Americans spent an average of $60.57 on recorded music in 2001 (Veronis Suhler Stevenson, 2002, p. 45). At $9.95 per month, a subscription service subscriber pays $119.4—almost double what was spent on recorded music in 2001. At an average price of $14.99 for a CD and an average of 12 songs per CD, the average American purchased about 48 songs in 2001 (Recording Industry Association of America, 2002; Gracenote, n.d.; Copyright Board Canada, 1999, p. 44).[11] In comparison, Rhapsody has 312,635 songs in its database, the majority of which are available for on-demand listening. When the problem of portability is solved by cellular phones with broadband capabilities, subscription services will clearly be a better deal for consumers.

But as great as subscription services may be for listeners, they may be disastrous for independent artists. The maturity of the CD standard means CD players are near-ubiquitous and CD recording technology and blank media is cheap and readily available. This allows independent artists to make their own albums in a format that consumers can play just as easily as albums from major-label artists. Without changes to copyright law, subscription services have little incentive to include independent artists. This will relegate independent artists to using distribution media that is less convenient to consumers, pushing these artists further out of reach.

## Vertical Integration Scenarios

The research presented in this thesis does not allow for a clear determination of how or whether subscription services will vertically integrate with other businesses. Two of the existing subscription services (pressplay and MusicNet) are primarily owned by the major record labels, one (Rhapsody) is owned by a streaming technology company, and one (MusicNow) is primarily owned by a broadband provider. This type of vertical integration is to be expected, and Evans points out how this is not necessarily a bad thing (2002, p. 58).

If compulsory and non-discriminatory licensing is mandatory, it is likely that there will be a few large subscription services. Because the content will be virtually identical, there will be little to distinguish one service from another. It is likely that the services will integrate with network providers to achieve economies of scale and attempt to lock in customers.

If artists and labels are allowed to sign exclusive contracts with subscription services, services will likely use this as a way to differentiate themselves. Customers with broad musical tastes may have subscriptions to multiple services. It is likely that subscription services will integrate with record labels. A third possibility is for traditional physical music retailers to begin offering subscription services. This scenario may keep services from vertically integrating with network providers or record labels. The benefits of this outcome are unclear, as is any indicators

[11] The RIAA 2002 Yearend Statistics report shows manufacturers shipped 803.3 million CD albums with a dollar value of $12,044.1 million. This results in an average per-album price of $14.99. The average of 12 songs per CD is derived by splitting the difference between Gracenote's online database totals of 1.8 million CDs and 20 million songs and the Copyright Board Canada's average number of songs per CD estimate. Assuming 11 songs per album, 44 songs would be purchased. Assuming 13 songs per album, 53 songs would be purchased.

as to which outcome is the most likely. This area warrants further research as the market continues to mature.

## Expectations

> In competing to become the standard, or at least to achieve critical mass, consumer *expectations* are critical. In a very real sense, the product that is *expected* to become the standard *will* become the standard. Self-fulfilling expectations are one manifestation of positive-feedback economics and bandwagon effects. (Shapiro & Varian, 1999, p. 14)

The popularity of Napster was partly due to the gushing reviews it received in most major newspapers and magazines—not just specialty computer magazines, but cover stories in Time and Newsweek (Greenfield, Taylor, & Thigpen, 2000; Levy, 2000). With record labels providing no legal online alternative, the expectation of Napster success became a reality. Subscription services need to manage market expectations to jump-start the same positive-feedback loop. Instead, record labels saw Napster as a threat to their stabilization and copyright in general (Merriden, 2001, p. 31).

## Legislative Action

There were a number of bills introduced in the House of Representatives last year that are a good start at changing copyright law. H.R. 5522 would have repealed the anti-circumvention provisions of the DMCA, but H.R. 5211 would have allowed copyright owners to use technological methods to hamper file trading on peer-to-peer networks. H.R. 5544 would require copy-protected CDs to be clearly labeled as such. House Joint Resolution 116, called the Consumer Technology Bill of Rights defines six rights of consumers in legally acquired works. Although the resolution is problematic because it does not distinguish between copies and performances, the underlying concepts of all of these bills support the assertions made in this thesis. H.R. 5522 was re-introduced as H.R. 1066, Senate Bill 692 is similar to H.R. 5544, and the House Joint Resolution was re-introduced as H.R. 107. H.R. 5211, the bill that would allow copyright owners to take measures to prevent the unlicensed distribution of their works over peer-to-peer networks, has not been re-introduced. It is hoped that some form of some of all of these bills will be enacted into law soon.

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