

Solutions are on Track:

Digital File Sharing Spun in a *Positive Light*

-By Beth A. Thomas*

Many Americans download digital files via the Internet in lieu of purchasing them. This downloading occurs seemingly without concern or guilt by the public.¹ Instead of realizing that downloading digital files takes revenue away from artists, much of the Internet community views illegal file downloading as “sharing” rather than stealing.² But, when “sharing” results in an estimated billions of dollars in losses to the recording and motion picture industries, there is a problem: illegal downloads decrease revenue for the artists and for the everyday people who work in the entertainment industry.³

Illegal digital file sharing is difficult to stop because of the social norm held by the American public that file sharing is acceptable despite the existence of copyright laws.⁴ There is difficulty in convincing the public that illegal downloading is wrong when there is no existing social disapproval to pressure Internet downloaders to stop this behavior.⁵ Further validating the belief that it is not illegal to download copyrighted files is the recent ruling in *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster* that distributors of peer-to-peer network software are not liable for direct or contributory copyright infringement for facilitating the trading of copyrighted files.⁶

Widespread feelings of dislike for the recording industry also increase the acceptability of the flow of files across the web.⁷ Steve Meija, a music file sharer, explains, “I don’t think it is stealing from the recording industry, because they have been stealing from us all this time by charging way too much for compact discs.”⁸ The recording industry did not help to change Meija’s view when, in 2000, the FTC caught five major companies illegally inducing retailers to overcharge for CDs.⁹ The overcharging likely cost U.S. music consumers \$480 million over a three year period.¹⁰ In their distrust of record companies, file sharers seem to ignore the possibility that there are real people working for recording companies whom file sharing harms. Stephanie Lowery, a Milwaukee high school student, exemplified this disregard for recording company employees by saying, “I think there are worse things

going on in the world to worry about right now than if Nelly isn’t making an extra \$2 million because people are trading his songs on the Net.”¹¹

These anti-copyright, pro-file trading feelings are causing an enormous debate over how to stop Internet file sharing from harming artists and the others involved. Solving the problem is difficult because of the viewpoint of entertainment industries such as the recording industry and the motion picture industry. While peer-to-peer network users justify their illegal sharing as acceptable behavior, the entertainment industry is slow to accept possible legal uses of file sharing software. The Recording Industry Association of America (RIAA), the music trade organization that controls ninety percent of U.S. music distribution, has been unyielding in its fight to kill MP3 sharing programs through lawsuits.¹²

The current approach towards counteracting copyright infringement is a movement to privatize the control of digital media.¹³ Through privatizing digital media, the focus of copyright protection shifts towards ways to control the different forms of the art even after the end user has purchased it. The Digital Millennium Copyright Act (DMCA), for instance, has helped shift copyright control towards artists rather than towards the public.¹⁴ While widely supported by the copyright industries, the type of copyright protection enforced by the DMCA is unlikely to yield the necessary results that would make both the copyright industry and the public happy while still decreasing the amount of illegal downloads facilitated by peer-to-peer networks.

This Note discusses the need to solve the copyright problems caused by digital file sharing over peer-to-peer networks and the possible solutions that would be acceptable to both the media industries and the public. While it is likely that the problems caused by file sharing will not decrease significantly by placing post-sales control in the hands of the artists, it is probable that legislative and industry driven technical counter-measures will be able to decrease illegal file sharing in an acceptable way.

Part I outlines copyright in general and how digital technology is pushing at the boundaries of copyright law. Part II evaluates different ways in which illegal file sharing may be stopped and concludes that non-privatization methods of limiting file sharing will likely make a greater impact on stopping illegal downloads than methods which place full control in the hands of the artist. Part III discusses the possible impact of these technologies, and Part IV concludes that there are possible ways to decrease illegal file sharing while still allowing people to trade digital files via peer-to-peer networks.

I. Digital Technology Pushes Beyond the Limits of Copyright Law

Copyright Law

American copyright law has promoted the protection and production of artistic goods since the Framers wrote the Constitution.¹⁵ By recognizing the need for creation of new ideas in society, the United States Constitution opened the door for copyright protection through granting Congress the power to “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”¹⁶ Congress reacted to this clause when it created the Copyright Act in 1909 and subsequently revised it to its modern form in 1976.¹⁷ The Copyright Act gives artists property protection for their unique works.¹⁸ It secures exclusive rights to the work of art for the life of the author plus seventy years.¹⁹ This protection stems from the theory that artists will not create unless society ensures them a financial gain.²⁰ Society, in return, profits from this growth of knowledge and scientific progress.²¹ The Copyright Act balances the financial gain of the author with the profits for public, therefore creating a fair copyright law.²² This theory of balance assumes that the government must prevent “free riders” from copying the artist’s work and subsequently selling copies to the public at a cheaper price.²³ If “free riders” do take the good, copy it, and sell it at a lower price, then the theory assumes that artists will be unable to recover their costs and that they, therefore, will engage in lines of work which do not include the creation of art.²⁴

Some scholars, however, opine that by giving monopoly rights to artists, Congress may be harming the public.²⁵ The artists, with sole control over the sales of their goods, sell their artistic goods at higher than necessary rates.²⁶ These artificially high rates may discourage the purchase of goods or may render members of the public unable to purchase the goods.²⁷ This price hike upsets the delicate balance between public use and artist’s incentives

created by copyright law.²⁸ Congress attempted to right this balance by creating exceptions to the artist’s monopoly over their personal works. The main exceptions are: 1) securing protection for a limited term,²⁹ 2) fair use, 3) the first sale doctrine,³⁰ and 4) the creation of the public domain.³¹

In the debate regarding illegal file sharing across the Internet, fair use is widely utilized in the argument against privatization.³² Fair use provides an affirmative defense to infringement created by the Copyright Act.³³ As codified in § 107 of the Copyright Act of 1976, fair use permits the copying of art for purposes such as criticism, comment, news reporting, teaching, scholarship, and research.³⁴ This flexibility of use decreases the rigidity of the Copyright Act by giving certain members of the public advanced rights in relation to protected works of art.³⁵

In the face of digital file sharing, the amount or type of fair use that should be available to the public is questionable.³⁶ While some see fair use as a right, judicial courts have recently viewed fair use as a privilege.³⁷ This judicial view helps to increase movement towards advanced artistic control over goods after purchase.³⁸

Proliferation of Digital Technology

In the past ten years, the proliferation of digital technology has caused significant changes in the way people listen to music, watch movies, and even read books. Music, movie, and publishing companies now sell digital copies in the form of CDs, DVDs, and eBooks in addition to analog copies of the artwork. The series of binary digits (bits) that make up the content of these digital copies create a near perfect replica of the original art. Once in digital form, individuals with the correct equipment can perfectly replicate these audio or video files. Thus, anyone with a computer and basic computer skills has the ability to copy these discrete bits to make perfect replicas without losing sound or picture quality.

A computer user can make these digitized copies widely available to the general public via the Internet.³⁹ Using networks that link home computers through a local area network or through the Internet, people share their music, movie, and book files in ways that were unavailable with the analog medium.⁴⁰ Through the feeling of anonymity the Internet provides and the characteristics of the digital form, average computer users can make high quality copies and distribute large quantities of protected art seemingly without the risk of detection by the copyright owner.

Digital Millennium Copyright Act

In reaction to file-sharing, Congress passed the DMCA in 1998.⁴¹ By creating the DMCA, Congress meant to extend a broad copyright protection against the new technical threats of replication and distribution of copyrighted works.⁴² In short, the main purpose of the DMCA was to encourage protection of digital copyrighted works through

technology.⁴³ Not surprisingly, the main proponent of the DMCA was the RIAA.⁴⁴

The DMCA creates a restriction on two types of activities dealing with copyright infringement.⁴⁵ The restricted activities are: 1) circumventing copyright protections; and 2) creating devices meant to circumvent copyright protections.⁴⁶ While the DMCA does not give copyright owners absolute control over their works, the DMCA does give them increased control over the use of digital technology to limit the public's use and replication of the art.⁴⁷

Although the DMCA does move copyright law into the mindset of protecting copyright through privatization, the DMCA does not provide much help towards the growing problem of file-sharing.⁴⁸ A large flaw of the DMCA is that it does not suggest a solution to the digital piracy that occurs without the use of copyright circumvention.⁴⁹ At the present time, the public has the ability to buy a CD, copy and make MP3 files of the songs, and trade the MP3s across the Internet without using an anti-circumvention tool.

Digital Copyright Infringement Spins Out of Control

Despite the enactment of the DMCA, digital piracy continues to be a threat to copyright owners.⁵⁰ The proliferation of new types of digital media, such as MP3s and DivX movies, across the Internet is difficult to stop. Decentralized peer-to-peer networks such as Morpheus, KaZaa, and Gnutella spring up frequently as software developers are fighting to create new systems to allow file sharing to continue.⁵¹

The widespread popularity of digital file swapping, with its small costs of replication and distribution, has caused

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an uproar from the copyright industry. The Motion Picture Association of America (MPAA) has estimated that it loses \$3 billion annually to Internet piracy; the RIAA estimates that it loses \$4.2 billion annually to piracy; and the Association of American Publishers estimates that it lost \$500 million to piracy last year.⁵² These industries argue that the Internet is unregulated and that this lack of regulation makes the copyright industry vulnerable to the problems created by digital technology.⁵³

However, there is an equally strong reaction from

media industry outsiders that the copyright industry's fears are unfounded.⁵⁴ Industry outsiders draw a comparison to the introduction of video-cassette recorders (VCRs) into the home. While the MPAA publicly predicted its demise at the hands of the VCR, in the wake of VCR's introduction to the home the MPAA realized and recognized that VCRs created a hugely successful economic market for home movies.⁵⁵ Like the industry growth created by the VCR, digitized file movements over the Internet have the potential to revolutionize the entertainment industry's methods of sales. Unfortunately, before the copyright industries could realize their opportunity for growth, organizations like the RIAA and the MPAA hope their push to amend copyright laws will terminate Internet file trading.

II. A Collection of Possible Solutions

Judicial Decisions

The legal system's first major encounter with online file sharing came in the form of *A&M Records, Inc. v. Napster, Inc.*⁵⁶ In Napster, eighteen music companies sued the popular peer-to-peer network,⁵⁷ which, at the time, facilitated the sharing of digital files between 75 million registered users.⁵⁸ The Ninth Circuit held that the majority of Napster's users shared copyrighted files and those users were thus direct infringers of the plaintiff's copyrights.⁵⁹ Napster itself could be held liable for contributory infringement as a result of its assistance to its users' direct infringement.⁶⁰

Despite this judicial acknowledgement that copyrighted file sharing and the facilitation of copyrighted file sharing is illegal, digitized file sharing continues. The reason for this continued infringement is enforcement, or the lack of it.⁶¹ The reach of peer-to-peer file sharing is enormous, and the attempt to stop millions of people from file sharing through the use of the court has an enormous scope. The RIAA recently has begun to file charges against individual consumers in an attempt to make an impact on file sharing.⁶² One of the first consumers sued by the major recording companies was Joseph Nievelt, a student at Michigan Technological University.⁶³ The case against Nievelt settled with an agreement by Nievelt to pay the recording company \$15,000.⁶⁴ It is likely that cases like Nievelt's may scare some Internet users away from downloading files; yet the fear of being caught may not be enough to stop many file sharers who are used to getting their music for free,⁶⁵ especially because many of these people believe that it is not illegal to

distribute and take copyrighted works. As such, copyright infringement must be resolved in a way that does not depend solely on court enforcement.

Digital Rights Management

One of the common proposals for how to end problems caused by file sharing is to use a technology called digital rights management.⁶⁶ Digital rights management allows entertainment industries to package their products in ways that prevent purchasers, and subsequently third parties, from making undesirable uses of the products.⁶⁷ The advanced technology contained in the product allows the copyright owner to take direct control over how the purchaser handles the property.⁶⁸ In effect, digital rights management privatizes the digital media by permitting the artist to retain control of the product even after the artist sells it to the public. With the use of digital rights management, the artist and, therefore, the recording industry, can legally monitor, meter, and control the end use of the product.⁶⁹ The DMCA protects this technology with its anti-circumvention ban which makes it

limits used to keep the copyright owner's intellectual property within specific boundaries.⁷⁶ Examples of the boundaries created by digital fences are product packaging limits, operating system limits, and limitations created by the actual computer hardware.⁷⁷ In many cases, the purchaser is only able to access the information within these boundaries because the boundaries hold the key to decrypting the file.⁷⁸ When a user tries to access the information outside the bounds of the fence, the information may be scrambled or encrypted.⁷⁹

Although digital fences may succeed in giving content providers a wide variety of options to limit file sharing, a major problem is that the content provider may severely limit the purchaser's legal uses of the product.⁸⁰ For instance, many of the early models of digital rights management technology incorporated mechanisms which caused content to disappear after a certain amount of time or after a certain number of uses.⁸¹ These models sometimes included fencing technology which did not permit the copying of the file into the same or into different formats.⁸² Microsoft incorporated

these types of technologies into its eBook reader, called MS Reader.⁸³ MS Reader is a program that reads digital book files and displays the book's content in a readable form on Windows operating systems. Upon use, MS Reader creates an account that contains a "unique hardware identifier" of the user's computer.⁸⁴ As a result, the user cannot share the

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illegal to manufacture or distribute any kind of tool that disables a form of digital rights management.⁷⁰

There are two different types of digital rights management: digital watermarking and digital fences or containers.⁷¹ Digital watermarking is a method of encoding information such as the author's name, copyright date, and purchaser's name into the purchased copy of the artwork.⁷² When the purchaser subsequently copies and transfers the work, he or she also copies the imbedded information.⁷³ Digital rights management is supposed to limit illegal file trading because the copyright owners are able to use that embedded information to identify the infringed good.⁷⁴ The problem with digital watermarking is that the entertainment industry can use the watermarks only for the purpose of tracking, as watermarks do not have the capability to limit the production of copies for public trading over a device such as a peer-to-peer network.⁷⁵ Digital watermarking, therefore, while beneficial in its ability to identify infringed goods, is not helpful in limiting sharing of copyrighted goods.

Much like the function of actual fences, digital fences, also known as content management systems, are technical

eBook files with another user, or even read the eBook herself from a different machine because of the missing hardware identifier.⁸⁵

An even more extreme example of the restrictions created by digital fencing are the technical limitations embedded in the European version of Celine Dion's "A New Day Has Come" CD.⁸⁶ This CD includes special technology to prevent the purchaser from playing the CD on a computer's CD or DVD player, where there exists the possibility that the purchaser may copy and share it.⁸⁷ Celine Dion's record company terminated the possibility of digital copying through its digital fencing: when placed in a computer, the Celine Dion CD crashes the machine.⁸⁸ Even more troubling are the problems that the CD creates when placed in an Apple iMac. When placed in an iMac, the digital rights programmed CD both crashes the machine and also blocks the CD drive from opening.⁸⁹ The blockage causes structural damage to the machine which results in the need for computer repair.⁹⁰

Although this type of programming may help decrease the problems associated with digital file sharing,

digital rights management infringes on fair use and is too limiting as the solution to digital file sharing.⁹¹ Despite the principle that the public can use the goods if the societal benefits are high, digital fences limit use to certain persons or machines without regard to the purpose of use.⁹² This limitation is extremely detrimental to libraries and schools that want to use the works for educational purposes.⁹³ Digital fencing removes the freedom that was available to the public when goods were in the analog format.

In a more practical sense, digital rights management is not the optimal solution to the file-sharing problem because of these reasons: 1) it is likely that there will always be someone who can hack the protective fence; and 2) it is likely that the public reaction towards the RIAA's strong arm tactics will ultimately harm the industry more than help it. As Jim Taylor, an expert on DVD technology says, "[y]ou can never win with technology. . . because somebody will always work around your technology."⁹⁴ Hackers have shown an impressive ability to hack past digitally protected systems. For instance, hackers have provided a way for the public to work around the regional restrictions coded into DVD players.⁹⁵ The public can now access "loophole" codes that they use to reprogram the player's remote control.⁹⁶ Similar to this hacking of DVD players, it is likely that there will always be someone who finds a way to break through the fence of digital rights management. Jon Johansen, a 16 year old Norwegian boy, broke through a DVD fence in 2000.⁹⁷ Johansen co-authored DECSS, a DVD-decryption program, and placed the code in the public's hands before his subsequent arrest.⁹⁸ The Secure Digital Music Initiative's (SDMI's) failed challenge to computer programmers that programmers could not hack a digital watermark further demonstrates the potential problems with hacking.⁹⁹ In just a few weeks, a professor proved that SDMI's watermark could be hacked.¹⁰⁰ As long as there are computer users like Johansen and the aforementioned professor who are motivated to break through digital fencing and who will provide the public with that information, then it is unlikely that digital rights management will be completely useful in stopping copyrighted file sharing.

Furthermore, the public is vocal in its aversion to digital rights management, and the music industry cannot continue to make money by alienating its own customers. Groups such as the Electronic Frontier Foundation (EFF) are making visible efforts to voice concerns about the harmful effects of digital rights management.¹⁰¹ People are dissatisfied when their CD does not play in their Linux machine, or when they cannot transfer the music they legitimately purchased in CD-form to their MP3 player because of digital rights management. John Erickson, a Hewlett-Packard systems manager, says that people will resist the use of digital rights management because copyright

has become too private.¹⁰² The public needs to retain some sort of control over their artistic purchases.¹⁰³ Hence, the use of digital rights management goes too far in blocking digital file transfers because while it does allow copyright owners to retain considerable control over their works, it blocks too much of the public's use of the art¹⁰⁴ in addition to being a target for hacking.

The Berman Bill

On July 25, 2002, U.S. Representative Howard Berman (D-CA) introduced a bill to Congress entitled "Remedies for Infringement: Use of Technologies to Prevent Infringement of Copyrighted Works on Peer to Peer Computer Networks."¹⁰⁵ Berman created this legislation, H.R. 5211, in reaction to the flourishing illegal trade of digitized files.¹⁰⁶ Representative Berman, along with Representatives Howard Coble, Lamar Smith, and Robert Wexler, recognized that the growing practice of copyright piracy occurring through the use of peer to peer networks has appeared to be unstoppable in the face of other proposed solutions.¹⁰⁷

Berman views solutions such as Digital Rights Management and the shutting down of peer-to-peer networks as not feasible because they are not complete.¹⁰⁸ For instance, Digital Rights Management may be easily cracked and after the digital files reach the peer-to-peer networks, Digital Rights Management can do nothing to stop the trading.¹⁰⁹ Berman is also hesitant to shut down peer-to-peer networks. While the attempted termination of these systems may stop or slow digital piracy, Berman thinks that eliminating a growing Internet resource is not the right solution because it stifles both innovation and legal file sharing.¹¹⁰

H.R. 5211 creates a solution to the file sharing problem by giving copyright owners a "safe harbor" from liability incurred through blocking the transfer of their copyrighted files on public peer-to-peer networks.¹¹¹ The bill permits blocking to occur at the stage where the file trader is online and has allowed other network users to access and download his files.¹¹² When the file trade activation occurs between the two users, the copyright owner blocks the transfer.¹¹³ The bill, however, specifically says that the blocking of the trade cannot "alter, delete, or otherwise impair the integrity of any computer file or data residing on

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Solutions are on Track

the computer of a file trader.”¹¹⁴ Representative Berman likens H.R. 5211 to self-help measures taken by property owners, such as satellite companies.¹¹⁵ As laws allow satellite companies to use electronic signals to stop the pirating of their television signals, this law will allow copyright owners, such as songwriters, to block the trading of music on peer-to-peer networks.¹¹⁶

Under H.R. 5211, the measures that the copyright owners can use to protect their copyrights are extremely limited.¹¹⁷ Before taking any action, the copyright owner must notify the Department of Justice of the specific technologies that he plans to use to block file trading.¹¹⁸ If the Department of Justice consents to the technology, the copyright owner can then block trading.¹¹⁹ If, however, any damage occurs to the file trader, H.R. 5211 preserves all remedies available under current law and gives that file trader the right to sue the copyright owner.¹²⁰

Importantly, H.R. 5211 allows fair use to continue. Unlike digital rights management, H.R. 5211 does not impose limitations on the copying of consumer products. Institutions such as schools and libraries would still have the capability to copy a compact disc for use in the classroom or check out a digital eBook file to a student. Consumers could still freely make copies of their CDs and place the digital files on their MP3 players. They could even email the MP3s to a friend.¹²¹

Despite retaining the necessary copyright balance, much of the public perceives H.R. 5211 as a bill that would allow copyright owners to engage in the unlimited “hacking” and destruction of personal computers.¹²² Industry watchers such as the EFF are convinced the only reason Congress considered this type of copyright protection technology is because of threats made by movie studios.¹²³ Robin Gross, an EFF staff attorney said, “[t]he rights we’ve enjoyed in the analog space are now being taken away from us because we’re entering the digital realm.”¹²⁴ These assumptions are unsupported. A detailed reading of H.R. 5211 clearly indicates

flexibility in how they listen and use the art that they purchase because of the greater ability to transfer digital files to different mediums such as CD-Rs and MP3 players. The only limitation caused by H.R. 5211 is the decreased ability to send a copyrighted file to millions of strangers through a peer-to-peer network. This limitation is reasonable in light of the rights of copyright owners and therefore is a successful solution to the digital file trading problem.¹²⁶

Digital Speed Bumps

Although it is likely that a legislative change, like the one discussed above, would help limit the amount of illegal file sharing while also slowing the privatization of digital media, it is also likely that the widespread use of specific non-legislative measures would play a large role in decreasing the volume of illegal file sharing. Much like speed bumps decrease speeding without the use of traffic police, industry-created counter measures decrease file sharing without the use of legislation. Three promising types of speed bumps designed to slow online file sharing are university-imposed bandwidth limitations, MP3 “spoofing,” and incremental Internet Service Provider (ISP) charges based on bandwidth usage.

Universities nationwide are beginning to limit the bandwidth students have available to use on university systems.¹²⁷ A decrease in bandwidth slows down the speed of Internet file sharing through a peer-to-peer network such as KaZaa.¹²⁸ Universities set these limitations in reaction to the enormous amount of resources that peer-to-peer networks use when file-sharing.¹²⁹ In some cases, file-sharing went so far as to actually hinder legitimate university business because students virtually clogged the university systems with peer-to-peer network use. For instance, at the University of Oregon, peer-to-peer network use took up 95% of network resources.¹³⁰ After installing software that slows Internet connections for users of programs such as Napster, KaZaa, and Edonkey, peer-to-peer network use slowed to consume only about one-half of the University of Oregon’s network.¹³¹

By enacting bandwidth limits to save their own resources, colleges and universities are effectively combating the file sharing problem through the second-hand effects of their regulations. The reduction in bandwidth decreases the transfer speed of files that students obtain across peer-to-peer networks. Since transfers become slower and less convenient, students either download fewer files or else purchase the media

to avoid the hassle of downloading. The University of North Texas reports that the students on their network do not even try to download songs anymore.¹³² Thus, colleges, universities, and ISPs can play an enormous role in the decrease of peer-to-peer network use just by limiting

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that the bill does not allow copyright owners to engage in computer hacking or to cause damage to personal computers.¹²⁵ The exact same rights will remain in the digital world as they had been in the analog world. Moreover, with the passage of H.R. 5211, consumers will have greater

bandwidth.

In addition to the bandwidth limits, “spoofing” may also decrease the popularity of peer-to-peer networks. Spoofing is a method of placing decoy files on peer-to-peer networks in an effort to frustrate the user to the point of stopping file sharing.¹³³ Those who spoof defend themselves by saying, “[y]ou get what you pay for.”¹³⁴ An example of the

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effectiveness of spoofing is the availability of the Linkin Park song “Somewhere I Belong.” Using LimeWire networks, 60% of the available “Somewhere I Belong” files were decoys.¹³⁵ These decoys contained messages from the band discussing the album and the single, along with the release date.¹³⁶

Recently, members of the recording industry have begun turning to spoofing companies like Covenant and Overpeer to deter the file sharing of their client’s music.¹³⁷ Covenant’s business purpose is to assist the music industry in promoting and distributing digital music.¹³⁸ While it works through spoofing, Covenant intends to promote music without alienating users by including promotional material in its decoy files.¹³⁹ A typical Covenant decoy file contains approximately a minute of the real song before an announcement interrupts the music and proclaims, “Earn thousands of dollars just for downloading this track, for more information go to protectedbycovenant.com.”¹⁴⁰ Then the song continues.¹⁴¹ The goal is to include enough music in the decoy so that the users get a sense of the song and, therefore, want to actually purchase it.¹⁴² Covenant also intends to entice users to help distribute the Covenant decoy files themselves though the promise of prizes.¹⁴³

While file spoofing may not stop file sharing, it has the potential to lessen the appeal of file sharing by making it more difficult and time consuming to download quality songs. Susan Kevorkian, a consumer technologies analyst at a leading technology firm, says spoofing “will make people who would otherwise be habitual users think twice about investing their time in the P2P networks. As the quality of the files on the free P2P services go down, it makes the offerings from the legitimate online services, like Pressplay and MusicNet, that much more attractive.”¹⁴⁴

Another possible way to limit illegal file sharing is through ISPs’ charging their customers for Internet services

based on bandwidth usage rather than by a flat rate.¹⁴⁵ By charging based on bandwidth the customers who transfer more data pay more for their Internet service.¹⁴⁶ This payment change would cause customers to owe their ISP provider some sort of fee everytime they downloaded a digital file and everytime that another peer-to-peer user uploaded a song from them.¹⁴⁷ The hope is that those

customers who share files would realize they pay more because of their sharing and subsequently would stop generously sharing their own files over the network.¹⁴⁸

While charging by bandwidth usage would likely decrease file sharing, there are concerns about the charges being overinclusive.¹⁴⁹

Incremental bandwidth rates are overinclusive in that non-infringing file transfers would also contribute to a customer’s payment.¹⁵⁰ If the customer was exchanging digital photographs over email or purchasing MP3 files from an online store, he would be charged despite his legal use of the Internet.¹⁵¹ It would likely be difficult to convince customers to accept this blanket charging of bandwidth, and, therefore, it is unlikely that this method would catch on and be socially acceptable.

IV. How the Solutions Could Play Out

Copyright Infringement Could be Limited Through Technical Means

The passage of H.R. 5211, when used in conjunction with spoofing and bandwidth limitations, would significantly decrease the level of illegal trading of copyrighted works via the Internet. Although the technical solutions are not yet available,¹⁵² H.R. 5211 could successfully limit digital piracy because it allows peer-to-peer file sharing software to remain available to the public, yet it specifically stops the unrestrained file sharing of copyrighted material across networks. While the focus of this Note has been on the illegal activity that peer-to-peer networks facilitate, the industry must acknowledge that peer-to-peer networks have the capability to promote the spread of art that the public may otherwise not have heard. John Mayer, a nationally recognized singer-songwriter, supports the spread of his music on peer-to-peer networks.¹⁵³ He credits the networks as the reason he became successful.¹⁵⁴ The Internet facilitated the spread of his music to locations outside of his home base of Atlanta, Georgia, allowing him to attain a greater audience for his songs.¹⁵⁵ Radiohead guitarist, Ed O’Brien, echoes Mayer as

he says the Internet file sharing of Radiohead's music has contributed to the band's success.¹⁵⁶ O'Brien asserts that peer-to-peer networks helped the band by allowing the public to become comfortable with Radiohead's unique sound when they may not have given it a chance if a CD purchase was necessary.¹⁵⁷

The differing opinions of musicians like Mayer and the notoriously anti-MP3 group Metallica¹⁵⁸ would both be satisfied by the passage of a bill like H.R. 5211 because file sharing, in general, would continue, yet the sharing of copyrighted files could be limited at the discretion of the copyright owner. H.R. 5211 both preserves the presence of peer-to-peer networks and allows artists to have a choice whether they want Internet users to share the copyrighted art. Those artists that support the freedom of sharing may choose to decline to assert their copyright rights and allow free file transfers of their work, while those artists who feel that digital file sharing hurts them may use the technology allowed by H.R. 5211 to block the sharing of their music. Thus, artists will be able to make a personal choice based on their perception of whether Internet file sharing hurts them or helps them, and they will be able to block or not block the trading of their art accordingly.

If passed, H.R. 5211 will likely limit the amount of copyright infringements on the Internet, but it is also likely that a substantial effect on the amount of file trading will take time to occur due to the enormous volume of files that peer-to-peer network users trade daily. For instance, when the peer-to-peer network, Napster, was at its peak, 10,000 MP3s were traded every second.¹⁵⁹ As a result of this scope, it may take time to create technology to handle this volume of trading. It is also questionable when copyright owners will develop the technology that the Department of Justice requires. The software must be able to specifically read files to ensure that the file in question is actually the targeted copyrighted art.¹⁶⁰ The Department of Justice will not tolerate mistakes, such as blocking the wrong file.¹⁶¹ Since it may take time to create programs with the necessary level of specificity, H.R. 5211 may not be able to make substantial effects on the online file trading immediately.

This time delay is where spoofing and bandwidth limitations would play a key role in decreasing illegal file sharing. Spoofing and bandwidth limitations are countermeasures that can be, and are beginning to be, performed immediately to start decreasing the pervasiveness of file sharing. Hopefully, the use of spoofing and bandwidth limitations would begin to turn the public toward a legal method of obtaining artistic goods even before a measure such as H.R. 5211 becomes available.

The Media Industry Must Embrace Change

In order to speed up the transition from primarily swapping illegal files on peer-to-peer networks to using peer-

to-peer networks for legal purposes, the copyright market needs to embrace the digital form and take advantage of the new opportunities for sales the Internet provides. In recent years, the use of the Internet as a means for sales has grown enormously. The Internet now claims 40% of all U.S. economic growth.¹⁶² Online music sales from e-commerce sites, such as Borders and Tower Records, reached \$900 million in 2001.¹⁶³ While total CD sales of \$13 billion overshadowed that online figure, analysts see a trend toward using the digital format.¹⁶⁴ Jupiter Media Matrix, an Internet research firm, estimates that online music sales will reach \$5.5 billion, or one third of the total U.S. music sales in 2006.¹⁶⁵ Furthermore, MP3 players are becoming more and more popular, indicating a continued need for digital music files. It would be unwise for the music industry not to take advantage of this growing market as a result of its fear of copyright infringement.¹⁶⁶

To succeed in the present, the copyright industries need to analyze and grow from how they succeeded in the past.¹⁶⁷ They must learn how to be successful in the sale of digital formats over the Internet, much like the motion picture industry learned how to react to the sales of VCRs.¹⁶⁸ Until recently, the recording industry has resisted incorporating the digital format into its traditional business model.¹⁶⁹ The likely reason for this resistance is the lack of assured security of sales when promoting the digital form.¹⁷⁰ While a loss of profits as a result of digital file sharing may sound plausible, others, such as Jennifer Toomey of Washington's Future of Music Coalition, disagree.¹⁷¹ Toomey states, "[w]e hope that piracy [will] not be used as a code word to cover up the recording industry's slow adoption and licensing of new technologies."¹⁷² If the music industry does not begin to change its business model quickly, it will continue to witness declining sales as a result of its failure to adapt to the changing environment.¹⁷³

While some level of digital piracy will likely always remain, the music industry should take advantage of the millions of Internet users who would prefer to collect their music digitally and who already purchase songs in the digital form. The music industry is attempting to make this change through subscription services for streaming audio.¹⁷⁴ The benefits of these services are excellent sound quality and a large selection of songs.¹⁷⁵ Unfortunately, services like Pressplay and Rhapsody have not yet seen much success.¹⁷⁶ Their lack of success is likely a result of the social norm of acceptance of digital trading -- if you can download a song for free, then why should you pay for it?¹⁷⁷ Apple's iTunes Music Store service, however, has seen more success.¹⁷⁸ iTunes has a catchy interface, and, more importantly, it allows users full ownership of the downloaded songs.¹⁷⁹ At only 99 cents per song, purchasers can play the song on the computer, burn it to disc, or transfer it onto an MP3 player.¹⁸⁰ The only limitation of downloading a song is that iTunes embeds the song with a signal that prevents it from being shared on a

peer-to-peer network.¹⁸¹

In addition to providing options for digital downloads, the entertainment industries should continue to encourage artists to be proactive in educating the public about the realities of file sharing. The artists themselves need to change the social norm that condones file sharing. The music industry has already made attempts to educate the public, most notably by placing radio, television, and newspaper ads with well-known artists explaining how peer-to-peer file sharing directly harms them.¹⁸² The motion picture industry has also begun airing television ads and movie trailers which warn the public about the problems that result from breaking copyright laws.¹⁸³ The combination of educating the public while providing an alternative to this behavior, such as subscription services, will hopefully change the social norm of approval towards file sharing, while resuming the sales typical of the recording industry.

V. Conclusion

The trend toward the privatization of artists' control over digital media through the use of digital rights management has not been, and will not be, a successful solution to the copyright problems caused by the illegal downloading of digital files from the Internet. In addition to not blocking the transfer of copyrighted files across peer-to-peer networks, digital rights management technologies are harmful to society because they take away some public rights to the protected works.¹⁸⁴

While digital rights management systems harm the public, legislation such as H.R. 5211, which limits illegal file sharing specifically across peer-to-peer networks, is an acceptable way to stop this digital copyright problem. The strong point of a bill such as H.R. 5211 is that peer-to-peer networks could remain in existence because the technology allowed by the bill would only block those files that users trade *illegally*. H.R. 5211, when coupled with spoofing, bandwidth limitations, and a change in the recording industry's attitude towards Internet sales, can likely make the difference needed to end the problems created by digital file sharing.

ENDNOTES

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¹ See Lior Jacob Strahilevitz, *Charismatic Code, Social Norms, and the Emergence of Cooperation on the File-Swapping Networks*, 89 VA. L. REV. 505, 543-44 (2003) (citing to polling data from

2002 which indicates that the majority of the American public does not think that downloading music is morally wrong).

² See *id.* at 542-43 (citing to polling data from 2000 which indicates that seventy-eight percent of Americans who downloaded music did not consider it to be stealing).

³ See Motion Picture Association of America, *Anti-Piracy*, at <http://www.mpa.org/anti-piracy/index.htm> (last visited Oct. 12, 2003).

⁴ Strahilevitz, *supra* note 1, at 534-38.

⁵ *Id.* at 544.

⁶ See *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 259 F. Supp. 2d 1029 (C.D. Cal. 2003).

⁷ See Mike Snider, *Napster's Siren Song Entices Loyalty But Even Some Fans See Site as Scene of Crime*, USA TODAY, July 26, 2000, at 3D.

⁸ *Id.*

⁹ Press Release, Federal Trade Commission, Record Companies Settle FTC Charges of Restraining Competition in CD Music Market (May 10, 2000) at <http://www.ftc.gov/opa/2000/05/cdpres.htm> (last visited Oct. 12, 2003).

¹⁰ *Id.*

¹¹ *Music Downloading: Piracy or a Welcome Way to Save Money*, MILWAUKEE J. SENTINEL, Dec. 16, 2002, at 4E.

¹² Cynthia Kurkowski, *MP3 Beats the Odds; Industry Trend or Event*, COMPUTER USER, May 2000, at 18.

¹³ Maureen Ryan, *Cyberspace as Public Space: A Public Trust Paradigm for Copyright in a Digital World*, 79 OR. L. REV. 647, 647 (2000).

¹⁴ See Dan L. Burk and Julie E. Cohen, *Fair Use Infrastructure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41, 54 (2001) (saying that the DMCA is a legal protection which cuts out fair use and takes control of the art away from the public).

¹⁵ See Howard P. Goldberg, *A Proposal for an International Licensing Body to Combat File Sharing and Digital Copyright Infringement*, 8 B.U.J. SCI. & TECH. L. 272, 279 (2002).

¹⁶ Ryan, *supra* note 13, at 650; U.S. CONST. art. I, § 8, cl. 8.

¹⁷ Corey Rayburn, *After Napster*, 6 VA. J.L. & TECH. 16, ¶ 28

Solutions are on Track

(2001).

¹⁸ *Id.*

¹⁹ Patrick H. Haggerty, *Comment: The Constitutionality of the Sonny Bono Copyright Term Extension Act of 1998*, 70 U. CIN. L. REV. 651, 659 (2002). The Sonny Bono Copyright Term Extension Act of 1998 changed the term of copyright protection from fifty years to seventy years. *Id.* The rationale for this increase in protection was the need to match the European Union's copyright term and the ongoing attempt to provide incentives for artists to produce novel works. *Id.*

²⁰ Ryan, *supra* note 13, at 651.

²¹ *Id.* at 650.

²² See *id.* at 650-56.

²³ *Id.* at 652.

²⁴ *Id.*

²⁵ *Id.* at 654-55.

²⁶ *Id.* at 654.

²⁷ *Id.*

²⁸ See *id.* at 653-54.

²⁹ Haggerty, *supra* note 19, at 664. In exchange for creating the art, the Framers guaranteed the US will protect an artist's rights to their art from the public for a limited term. *Id.* In return, the Framers provided the assurance that the public will benefit from an author's work by including the requirement of a limited term in copyright. *Id.* At some point, therefore, the work will enter the public domain. The length of the limited term is at the discretion of Congress. *Id.*

³⁰ As stated in Section 109(a) of the Copyright Act, the lawful owner of a copy of an artist's work may sell that work without the authority of the copyright owner. 17 U.S.C. § 109(a) (2003). In other words, as long as the purchaser acquired the material legally, then he may choose to dispose of it in any way he pleases. Keith Kupferschmid, *Lost in Cyberspace: The Digital Demise of the First-Sale Doctrine*, 16 J. MARSHALL J. COMPUTER & INFO. L. 825, 831 (1998). It is legal for him to resell, give, or loan the item to another entity. *Id.* at 831-32. As a result, used book, CD, and DVD stores are legal. By allowing the public to control their own legitimate use of the copyrighted goods, Congress created a better balance in copyright law. *Id.* at 832.

³¹ The term "public domain" describes elements of the imagination that are not eligible for copyright protection. Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 975 (1990). The public domain contains the non-original ideas and information provided in copyrighted goods. Ryan, *supra* note 13, at 669-70. It also contains works of art whose copyrights have expired. Litman, *supra* note 31, at 975. The public domain does not shield the original artist from having another artist take, use, and profit from the original artist's ideas. *Id.*

³² See Burk & Cohen, *supra* note 14, at 51.

³³ Stacy Berger, *The Use of the Internet to "Share" Copyrighted Material and Its Effect on Copyright Law*, 3 J. LEGAL ADVOC. & PRAC. 92, 98 (2001).

³⁴ 17 U.S.C. § 417 (1994).

³⁵ Gregory K. Jung, *I Intellectual Property: A. Copyright: 4. Fair Use: a) Satire: Dr. Seuss Enterprises v. Penguin Books*, 13 BERKELEY TECH. L.J. 119, 4 (1998) (quoting the Supreme Court in *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577 (1994)).

³⁶ See Cynthia M. Cimino, *Fair Use in the Digital Age: Are We Playing Fair?*, 4 TUL. J. TECH. & INTELL. PROP. 203, 213-14 (explaining that the DMCA has created a controversy by possibly limiting fair use by placing "black boxes" around software).

³⁷ See *id.* at 221.

³⁸ See *id.*

³⁹ Kupferschmid, *supra* note 30, at 828.

⁴⁰ *Id.*

⁴¹ Rayburn, *supra* note 17, ¶ 34.

⁴² Brian Paul Menard, *E-Commerce in the Digital Millennium: The Legal Ramifications of the DMCA and Business Method Patents*, 27 RUTGERS COMPUTER & TECH. L.J. 371, 377 (2001).

⁴³ Ryan, *supra* note 13, at 672.

⁴⁴ Rayburn, *supra* note 17, ¶ 34.

⁴⁵ Stephanie Brauner, *Preparing Your Music Client for Web Distribution*, 22 HASTINGS COMM. & ENT. L.J. 1, 18 (1999).

⁴⁶ *Id.*

⁴⁷ See Ryan, *supra* note 13, at 673.

⁴⁸ Goldberg, *supra* note 15, at 287.

- ⁴⁹ *Id.*
- ⁵⁰ Menard, *supra* note 42, at 380-81.
- ⁵¹ Saul Hansell, *For Music Swappers, New Paths Will Always Seem to Beckon*, INT'L HERALD TRIB., Sept. 16, 2003, at 14, available at <http://www.iht.com/articles/110076.html> (last visited Oct. 12, 2003).
- ⁵² Motion Picture Association of America, *Anti-Piracy*, at <http://www.mpa.org/anti-piracy/> (last visited Oct. 12, 2003); Recording Industry Association of America, *Anti-Piracy*, at <http://www.riaa.com/issues/piracy/default.asp> (last visited Oct. 12, 2003); Association of American Publishers, *Anti-Piracy Program*, at <http://www.publishers.org/antipiracy/index.cfm/> (last visited Oct. 12, 2003). However, these industries did not offer details about how they attributed their losses to piracy rather than other factors such as the economy. The companies would also have to prove that traded files would have translated into actual sales.
- ⁵³ Menard, *supra* note 42, at 387-88.
- ⁵⁴ *Id.* at 388.
- ⁵⁵ *Id.*
- ⁵⁶ *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).
- ⁵⁷ *Id.*
- ⁵⁸ *A&M Records, Inc. v. Napster, Inc.*, 114 F.Supp.2d 896, 902 (N.D. Cal. 2000).
- ⁵⁹ *Napster*, 239 F.3d at 1014-15. The court held the plaintiff satisfied the two requirements for finding direct infringement: 1) ownership of the alleged infringed material, and 2) violation by the infringers of at least one exclusive right granted to the copyright owners by 17 U.S.C. § 106. Since *Napster*, file sharers have moved from centralized servers to true peer-to-peer networks to try to elude authorities.
- ⁶⁰ *Id.* at 1019-20.
- ⁶¹ Goldberg, *supra* note 15, at 296-303. Enforcement is especially difficult because digital file sharing is a world-wide problem. In many countries, digital file sharing over systems like Napster is not illegal.
- ⁶² Alexis Petridis, *Let the Playground Pirates Rule: The Music Industry's Anti-download Scare Tactics Just Won't Wash*, THE GUARDIAN (London), July 5, 2003, at 24. Britain's Phonographic Industry is also planning to begin filing individual suits.
- ⁶³ Nick Wingfield, *Students Settle File-Sharing Suit, Each to Pay Recording Industry*, WALL STREET JOURNAL, May 2, 2003, at B4.
- ⁶⁴ *Id.* Sympathizers have rallied around accused file sharers and are helping to pay their settlements. Through providing donation links on its site, chewplastic.com has helped students such as Daniel Ping, a Princeton University student, raise \$12,000 to cover his RIAA settlement and attorney's fees. See <http://www.chewplastic.com> (last visited Oct. 12, 2003).
- ⁶⁵ Daniel B. Wood, *In Napster-less World, Plenty of Other Opportunities*, CHRISTIAN SCI. MONITOR, Oct. 22, 2001, at 1.
- ⁶⁶ Burk & Cohen, *supra* note 32, at 42.
- ⁶⁷ Ryan, *supra* note 13, at 668.
- ⁶⁸ *Id.*
- ⁶⁹ Burk & Cohen, *supra* note 32, at 48.
- ⁷⁰ *Id.* at 49.
- ⁷¹ Wendy M. Pollack, *Tuning In: The Future of Copyright Protection for Online Music in the Digital Millennium*, 68 FORDHAM L. REV. 2445, 2451 (2000).
- ⁷² *Id.*
- ⁷³ See Rayburn, *supra* note 17, ¶ 21.
- ⁷⁴ Pollack, *supra* note 71, at 2451.
- ⁷⁵ See *id.*
- ⁷⁶ See Ryan, *supra* note 13, at 668.
- ⁷⁷ Electronic Privacy Information Center, *Digital Rights Management and Privacy*, at <http://www.epic.org/privacy/drm> (last visited Aug. 11, 2003).
- ⁷⁸ Ryan, *supra* note 13, at 668.
- ⁷⁹ *Id.*
- ⁸⁰ Miriam Nisbet, *Digital Rights Issues*, American Library Association, at http://www.ala.org/Content/NavigationMenu/Our_Association/Offices/ALA_Washington/Issues2/Copyright1/Digital_Rights_Management/DRMissues2.pdf (last visited Oct. 12, 2003).
- ⁸¹ *Id.*

Solutions are on Track

- ⁸² *Id.*
- ⁸³ Electronic Privacy Information Center, *supra* note 77.
- ⁸⁴ *Id.*
- ⁸⁵ *Id.*
- ⁸⁶ John Schwartz, *Compressed Data; Honest, A Balky CD is not a Pop Star's Fault*, N.Y. TIMES, May 20, 2002, at C3.
- ⁸⁷ *Id.*
- ⁸⁸ *Id.*
- ⁸⁹ *Id.*
- ⁹⁰ *Id.*
- ⁹¹ See Ryan, *supra* note 13, at 668-69.
- ⁹² See *id.*
- ⁹³ Electronic Privacy Information Center, *supra* note 77.
- ⁹⁴ James C. Luh, *Breaking Down DVD Borders*, WASH. POST, June 1, 2001, at E1.
- ⁹⁵ *Id.*
- ⁹⁶ *Id.*
- ⁹⁷ Jeff Chu, *Enemy at the Gates?*, TIME, July 8, 2002, at 46.
- ⁹⁸ *Id.*
- ⁹⁹ Lawrence Iser & James Toma, *Battling Digital Piracy, Recording Industry has Taken a Multipronged Response to Illegally Downloaded Music*, NAT. L.J., Jan. 20, 2003, at C1.
- ¹⁰⁰ *Id.*
- ¹⁰¹ Electronic Frontier Foundation, at <http://www.eff.com> (last visited Oct. 12, 2003). EFF is a group of lawyers and volunteers that, among other things, work to return copyrighted goods to the public. See also Creative Commons, at <http://www.creativecommons.org> (last visited Oct. 12, 2003).
- ¹⁰² Robert Lemos, *Experts: Copyright Law Hinders Technology*, CNET News.com, at <http://zdnet.com.com/2100-1105-990689.html> (March 3, 2003).
- ¹⁰³ *Id.*
- ¹⁰⁴ See Burk & Cohen, *supra* note 14, at 54.
- ¹⁰⁵ To Amend Title 17, United States Code, to Limit the Liability of Copyright Owners for Protecting Their Works on Peer-to-Peer Networks, H.R. 5211, 107th Cong. (2002); *Peer to Peer Piracy Prevention Act Section-by-Section Analysis*, at <http://www.house.gov/berman/p2psection.html> (last visited Oct. 12, 2003).
- ¹⁰⁶ *Berman Introduces Legislation to Foil Peer to Peer Piracy*, at <http://www.politechbot.com/docs/berman.coble.p2p.statement.072502.html> (July 25, 2002) [hereinafter *Berman Introduces Legislation*].
- ¹⁰⁷ *Id.*
- ¹⁰⁸ *Id.*
- ¹⁰⁹ *Id.*
- ¹¹⁰ *Id.*
- ¹¹¹ *Frequently Asked Questions about the P2P Piracy Prevention Act (H.R. 5211)*, at www.house.gov/berman/p2p_faq.html (last visited Sept. 15, 2003) [hereinafter *Frequently Asked Questions*].
- ¹¹² *Id.*
- ¹¹³ See *id.*
- ¹¹⁴ H.R. 5211.
- ¹¹⁵ *Frequently Asked Questions*, *supra* note 111.
- ¹¹⁶ *Id.*
- ¹¹⁷ *Berman Introduces Legislation*, *supra* note 107. "It gives copyright owners a very limited safe harbor from liability when they use technological tools for the narrow purpose of thwarting P2P technology. It does not allow copyright owners to send viruses through P2P networks, destroy files, hack into personal files of P2P users, or indiscriminately block lawful file-trading." *Id.*
- ¹¹⁸ *Peer to Peer Piracy Prevention Act Section-by-Section Analysis*, *supra* note 105.
- ¹¹⁹ *Id.*
- ¹²⁰ H.R. 5211.
- ¹²¹ *Frequently Asked Questions*, *supra* note 111 (H.R. 5211 deals specifically with trading via publicly available, peer-to-peer networks).

¹²² Declan McCullagh, *Could Hollywood Hack Your PC?*, CNET News.com, at http://news.com.com/2102-1023_3-945923.html (July 23, 2002).

¹²³ Sebastian Rupley, *Digital Piracy: Should the Government Handle It?*, PC MAGAZINE, available at <http://www.pcmag.com/article2/0,4149,262059,00.asp> (Mar. 4, 2002).

¹²⁴ McCullagh, *supra* note 122.

¹²⁵ *Frequently Asked Questions*, *supra* note 111.

¹²⁶ Richard Koman, *The End of Innovation?*, O'Reilly Network, at www.openp2p.com/lpt/a/1131 (Aug. 7, 2001) (quoting a discussion with Lawrence Lessig on how to persuade people to obey the law when it comes to digital file trading).

¹²⁷ Stanley A. Miller, *File Sharing Lives, but It's Under Attack*, MILWAUKEE J. SENTINEL, Dec. 17, 2002, at 4E.

¹²⁸ See Adam Klawonn, *Campuses Slapped for Downloading*, ARIZONA REPUBLIC, Mar. 8, 2003, at 1A. Bandwidth is similar to a water pipe. A decrease in bandwidth, like a decrease in a pipe's diameter, decreases the amount of information, or water, that may pass through. *Id.*

¹²⁹ Andrew Black, *U. Oregon Limits Students' Peer-to-Peer File Sharing*, OREGON DAILY EMERALD, Jan. 13, 2003.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² See Toya Lynn Stewart, *Piracy Guards Growing; Schools Try to Lessen Transfer of Copyrighted Music, Video Online*, DALLAS MORNING NEWS, Jan. 27, 2003, at 13A.

¹³³ Lawrence Iser & James Toma, *Battling Digital Piracy*, NAT'L L. J., Jan. 20, 2003, at C1.

¹³⁴ Gil Kaufman, *Digital Decoys are Making Frustrated Pirates Say 'Arrr'*, MTV NEWS, at http://www.mtv.com/news/articles/1470464/20030310/linkin_park.jhtml?headlines=true (Mar. 11, 2003).

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ Covenant Corporation, *What is Covenant?*, at <http://www.covenant-corporation.com/index.php?page=2> (last visited Sept. 15, 2003).

¹³⁹ *Id.*

¹⁴⁰ Kaufman, *supra* note 134.

¹⁴¹ *Id.*

¹⁴² See Covenant Corporation, *supra* note 138.

¹⁴³ Kaufman, *supra* note 134.

¹⁴⁴ James Maguire, *Hitting P2P Users Where it Hurts*, Wired News, at <http://www.wired.com/news/digiwood/0,1412,57112,00.html> (Jan. 13, 2003).

¹⁴⁵ Strahilevitz, *supra* note 1, at 588-89.

¹⁴⁶ See *id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² Audible Magic, a technology company in Los Gatos, CA, is developing software that will likely be able to block the transfer of individual files across a network. The software, while sitting in a router or an Internet gateway, compares the files passing across the network to a database of digital "fingerprints." When there is a match, the software blocks the transfer. John Borland, *Fingerprinting P2P Pirates*, CNET News.com, at http://news.com.com/2100-1023_3-985027.html (last visited Oct. 12, 2003).

¹⁵³ Greg Kot, *Cyberspace; It Continues to be a Bumpy Ride for the Record Industry Series: The Second in an Occasional Series*, CHI. TRIB., Mar. 3, 2002, at C1.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ Peter Jan Honigsberg, *The Evolution and Revolution of Napster*, 36 U.S.F.L. REV. 473, 489-90 (2002). In 2000, Metallica tracked 335,435 Napster users who traded Metallica songs and had these users blocked from logging onto Napster. *Id.* at 490.

Solutions are on Track

Although these people could write to Napster and request reinstatement, the blockage caused most users to switch from Napster to other peer-to-peer networks such as Gnutella and Freenet. *Id.* Therefore, Metallica's tracking and blocking of those only had the effect of creating negative publicity for Metallica. *Id.* The ability for file traders to use other peer-to-peer networks made Metallica's blocking users from Napster insignificant.

¹⁵⁹ Rayburn, *supra* note 17, ¶ 27.

¹⁶⁰ Yochi J. Dreazen, *The White House Fears Software Developers Can't Plug Security Leaks on Their Own*, WALL ST. J., Dec. 9, 2002, at R7. An example of software that is not specific enough is the MediaForce Inc. software used to search computer hard drives for pirated files. Used by Warner Brothers to alert ISPs that their customers were using the Internet illegally, the software targeted a "Harry Potter" file. *Id.* After sending a letter to the ISP, the company realized that the suspicious file was not the Harry Potter movie, instead it was a child's book report. *Id.* Although this was the only mistake out of 33,000 found Harry Potter files, it indicates the need for a very specific file checking mechanism.

¹⁶¹ *Frequently Asked Questions*, *supra* note 111. H.R. 5211 provides a new cause of action for users to file suit against copyright owners who made a mistake in blocking the legal trade of a digital file. *Id.*

¹⁶² Jessica Davis, *Magaziner: Net is Driving Change on Par with Historic Revolutions*, INFO WORLD DAILY NEWS, Aug. 30, 1999, available at 1999 WL 10504733.

¹⁶³ Frank Green, *Digital Piracy Music Industry See Writing on Wall; Record Labels Launch Internet Subscription Services*, SAN DIEGO UNION-TRIB., May 12, 2002, at H1.

¹⁶⁴ *Id.* Sales of writable CDs increased 50 percent from 2000 to 2001. *Id.* In 2001, 1.2 billion writable CDs were sold. 900 million pre-recorded CDs were sold in 2001, a decrease of 6 percent from 2000. *Id.*

¹⁶⁵ CyberAtlas, *Stop the Music*, at http://cyberatlas.internet.com/markets/retailing/article/0,1323,6061_955691,00.html (Jan 15, 2003).

¹⁶⁶ Pollack, *supra* note 71, at 2487 (explaining that the Internet has many possibilities for the music industry and the industry should not fear piracy because legislation will protect it).

¹⁶⁷ Davis, *supra* note 162.

¹⁶⁸ Pollack, *supra* note 71, at 2487.

¹⁶⁹ Rayburn, *supra* note 17, ¶¶ 49-52.

¹⁷⁰ See *id.*

¹⁷¹ Frank Ahrens, *Stars Come Out Against Net Music Piracy in New Ads*, WASH. POST, Sept. 26, 2002, at A22.

¹⁷² *Id.* (quoting Jennifer Toomey, executive director of the Future of Music Coalition).

¹⁷³ Kot, *supra* note 153 (quoting David Loundy, associate director at John Marshall Law School, as saying "the music industry has a big problem, because it can't really stop this file-sharing technology well enough to really make a difference. What they need to do is change their business model before it's too late...").

¹⁷⁴ *What's Holding Back Online Music?*, CNET News.com, July 12, 2003, at http://news.com.com/2102-1069_3-1025006.html (last visited Oct. 12, 2003).

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² Ahrens, *supra* note 171. Over eighty singers and songwriters, including Luciano Pavarotti, Eminem, Brian Wilson, Britney Spears, and Stevie Wonder are backing the RIAA sponsored advertisements.

¹⁸³ See <http://respectcopyrights.org> (last visited Oct. 12, 2003).

¹⁸⁴ See Burk & Cohen, *supra* note 14, at 51-53.