**Title: Copyright in the Digital Age.**

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**Date: 10/11/2004**

# Copyright in the Digital Age

## Executive Summary

The history of copyright law originated with the introduction of the printing press in the fifteenth century. Since then, the copyright law had been transformed and changed to broaden the scope of copyright, and to protect new technologies.

Critiques of copyright generally fall into two camps, one asserting that the concept of copyright has never been a benefit to the society in general, and has simply succeeded to enrich a few by limiting creativity and limiting the very idea of usefulness.

The other side argues that copyright is the most fundamental pillar of capitalism. It's driven by greed of individual people which aims to protect authors, artists, musicians, and technology and business innovators among others to be able to continuously innovate and create new works.

This paper argues that limiting (by restrictions) digital information is virtually impossible. However, this paper does not support the claim that a 'free market' should exist because it would hinder creativity and innovation. For the scope of this paper, we limit our discussion of copyright towards digital content.

The paper is organized as follow: Section 1 introduces a brief history of copyright primarily in the United States. Section 2 introduces the information age and technologies which have led to mass copyright infringements. Section 3 describes how CD/DVD recorders have been used as a tool by consumers to download and exchange copyrighted content. Section 4 introduced P2P networks which have long been used as a network where millions of users download and share copyrighted works and finally Section 5 talks about the future of piracy and provides recommendations. Section 6 concludes the paper arguing that although piracy is a loosing battle for the stakeholders, the copyright holders have to continuously fight piracy in order to limit the revenue loss because of it.

**Section 1: Brief History of Copyright**

The Statute of Anne, published 1710, was the first copyright law which stated [1]:

*"An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned."*

During the course of the seventeenth and eighteenth centuries, copyright became intertwined with politics and censorship. In the United States, the term copyright expanded it's scope to include more and more types of creative works – art, performances, music, photographs, recordings, moving pictures, videos, and, recently, computer programs. The expansion was driven partly by changing technology, but it was promoted by the financial interests that trade in "creative commodities." [2]

In the United States, the Constitution gives Congress the power to enact laws establishing a system of copyright. Congress enacted the first Federal copyright law in May 1790, and the first work was registered within two weeks. Originally, claims were recorded by Clerks of U.S. District Courts. Not until 1870 were copyright functions centralized in the Library of Congress under the direction of the then Librarian of Congress Ainsworth Rand Spofford. The Copyright Office became a separate department of the Library of Congress in 1897, and Thorvald Solberg was appointed the first Register of Copyrights. [3]

Today the Copyright Office is one of the major service units of the Library of Congress. With public offices located at 101 Independence Avenue, S.E., Washington, D.C., the Office occupies portions of the James Madison Memorial Building and employs 500 people. In fiscal year 2001, the Office registered 601,659 claims to copyright and mask works. In calendar year 2000, the Office collected for later distribution to copyright holders over $187,000,000 in cable television, satellite carrier, and Audio Home Recording Act compulsory license funds. As of fiscal year 2001, the Copyright Office had recorded 29,732,771 registrations. [3]

Before we introduce piracy, it is important to outline the basic principles of copyright law: [20]

1) **Copyright as an Exclusive Right:** Copyright is the right to which the creator of a literary, scientific or artistic work is entitled in his or her immaterial, i.e. intangible work; the catalogue of works ranges from text via sounds and images to embrace computer programs and databases. Comparable with a property right in a material object, copyright has been structured by the legislature as a so-called exclusive right. Hence, it is solely for the creator of a work to decide whether – and if then in which manner – he or she wishes to exploit the work and who should be excluded from such exploitation.
2) **Ideal and Material Interests:** Copyright law protects not only the material interests of an author in his or her work, it also protects his or her "intellectual and personal relations to the work," in short, his or her ideal interests.
3) **Authors and Related Rights Holders:** In addition to authors, other natural and legal persons who engage in activities within the culture business also enjoy legal protection.

With these copyright rights awarded to the holder, the U.S. Supreme Court has stipulations or limitations on the rights granted to the copyright holders. Some of them which are most pertinent to this paper are [21]:

1) Copyright is granted for a limited time. When the copyright expires, then it can be copied, and used without authorization from the holder.
2) Consumers can make a copy of the computer program for archival reasons.
3) “First Scale” Doctrine allows the owner of a legally obtained copyright work to "sell or otherwise dispose of the possession of that copy" without the authorization of the copyright owner.
4) “Fair Use” Doctrine which is the most ambiguous of the stipulations. It is simply decided on a case by case basis.

As an example of fair use, the 1984 case of Sony v. Universal Studios in which Universal Studio alleged that customer’s use of videocassette recorders (VCR) to make copies of TV programs would lead to loss of revenues. However, the U.S. Supreme Court ruled in favor of Sony saying that recording television broadcasts available for later viewing constituted fair use.

## Section 2: Information Age

The twentieth century, like no other century, has largely been spent in making the life of the common man better. While previous centuries have been marked with wars and defining boundaries, this was the century where innovation took precedence over wars, ideas were cherished over cultural differences, capitalism won the hearts of millions, and technology promised us that a better life was possible.

As the world moves further into an age of technological advancement, new issues have posed a multitude of problems for copyright. With the advent of the internet in the nineties, a digital file, which is simply a sequence of bytes, can be distributed instantaneously to millions of users and thus has completely undermined the concept of copyright.

### Personal Computer

Nothing in the past, perhaps, could have changed the life of the consumers more with the advent of personal computers. The PC or personal computer became a viable technology after IBM introduced its personal computer model 51510 in September 1981. Soon, companies such as DEC, NEC, Xerox, Epson, AT&T and HP – none of which previously believing that a mainstream consumer market existed – quickly jumped on the PC bandwagon.

However, those early editions of computers required its users to memorize complex commands. It was not until Apple in 1984 developed the Lisa, with a breakthrough technology called the GUI or the Graphical User Interface, which virtually put the PC in the hands of millions of users. Thereafter Microsoft jumped on the bandwagon and developed its own operating system with the GUI functionality.

What followed over the years was advancement in technology which was never thought possible. Moore’s famous 1965 law stated that the chip performance would double every two years. Since the inception of personal computer, Moore’s prediction came true. Speed of microchips increased every two years where today a speed 3.0 GHz is quite common. Other computer technology followed the precept of Moore’s law. Eight-inch floppy discs morphed into 5.25-inch floppy disks to 3.5-inch microfloppies in the late 1980s. 3.5-inch

disks have given way to higher capacity storage such as the CD disks. Those gave way to DVD disks and rewritable CD/DVD disks. Drives in early PCs stored only kilobytes, then megabytes, and now which mini drives that are no bigger than a quarter can store tens and soon hundreds of gigabytes.

With the advent of the internet in the nineties, personal computers were no longer a luxury but rather a necessity. Internet affected the lives of millions of users around the world, revolutionizing information and entertainment delivery, affecting their production and consumption, transforming our social life and behavior, even our political institutions and the role of citizens within them.

With technology advancing at this pace, and computers becoming faster, more powerful and more portable, how do copyright holders disallow consumers from making perfectly infinite copies of their copyrighted works and distribute it over the internet and through other traditional means. This is indeed an issue which has to date been a politically heated debate among the politicians, manufacturers, artists and consumers.

Let's look at technologies which have been used as a medium to infringe copyrighted works. As these technologies become the target of copyrighted holders which allege these tools as infringing on their copyright works, attempts to curb these tools/technologies have either been unsuccessful or have resulted in newer tools and technologies being developed.

**Section 3: CD/DVD Recorders as a tool to facilitate Piracy**

With the arrival of CD (which can store 650 MB of data on a single disc) and DVD (which can store 4.7 GB of data in a single disc) the piracy industry boomed both in the United States and abroad. Music, Video, and Software Data can be copied on these discs and distributed freely (or sold at a fraction of the cost on international grounds) have become a huge area of concern for the RIAA[1], MPAA[2], software makers and virtually anybody who holds copyright over digital content.

[1] See Appendix B
[2] See Appendix B

To understand the seriousness of piracy, consider these numbers taken from the respective industries:

1) MPAA claims that global piracy of DVDs cost it $3.5 billion in revenues during 2003. [19]
2) Watchdog group Business Software Alliance (BSA) quotes global software piracy approached $11.8 billion in 2001.[17]
3) RIAA claimed that total U.S. shipments dropped from 1.08 billion units shipped in 2000 to 968.58 million in 2001–a 10.3 percent decrease. The dollar value of all music product shipments decreased from $14.3 billion in 2000 to $13.7 billion in 2001–a 4.1 percent decrease. [18]

Although these losses can also be blamed on the Internet, specifically file-sharing P2P networks, which has been discussed later, a large part is due to CD and DVD recorders. In the next few subsections we will look CD/DVD recorders which have been used as a tool for mass copyright infringements yet the DMCA or the respective copyright holders have failed to act upon.

**Section 3.1: CD – Music Industry**

The most alarming reason to be worried about piracy for music content realized with the introduction of the MP3 format.

MP3 or MPEG 1--Audio Layer 3 dates back to a 1987 collaboration between Germany's Fraunhofer Institut Integrierte Schaltungen and Dieter Seitzer from the University of Erlangen, whose work yielded a compression/decompression algorithm, or codec, that could shrink sound files to about one-tenth their normal size without sacrificing quality [14]. In 1992 MP3 was approved as a standard by the Moving Picture Experts Group (MPEG), founded by Leonardo Chariglioni in Italy.

With the advent of the internet, and increasing transmission speeds, users began to convert their audio CD’s to MP3’s and posted them on websites for easy and unauthorized downloads by millions of other users. The threat to the music industry becomes real when we consider that back in the 80’s music piracy would involve somebody making a copy of the album through cassettes and then distributing it physically. This was not a issue to the

industry because: It was expensive and time consuming. The threat materialized when each successive copy is identical to the original; there is no loss in fidelity no matter the generation of the copy; distribution of the content is fast and cheap.

The RIAA specially began to take notice to MP3 when Diamond Multimedia Rio introduced a portable MP3 player that allowed mobility for users while storing hundreds of MP3's on a single device. Fearing piracy on a grand scale, the Recording Industry Association of America (RIAA) was quick to bring suit, claiming a violation of the Audio Home Recording Act[3]. Diamond, however, squeezed through a loophole by successfully arguing that the legislation targeted only recording devices and the Rio was a storage device.

Today more than a dozen companies offer these mobile MP3 players, the most successful being Apple's device called ipod which offers a whooping storage space of 40 GB which could essentially store thousands of MP3's on a single portable device. Today, MP3's are the most common downloaded format from P2P networks (See Section: Peer-to-Peer File Sharing Networks).

The RIAA maintains the position that any copying of music to CD is a copyright infringement. They say making a copy, is a violation of the right of reproduction granted to copyright holders by the Copyright Act of 1976. They also recognize, however, that Section 1008 of the Audio Home Recording Act (AHRA) of 1992 gives those who perform such copying immunity from copyright infringement actions, provided that the copying is performed on a digital audio copying device as defined by the AHRA. According to the AHRA, companies have to implement a Serial Copy Management System (SCMS) on each disc recorded, which switches "on" a copy-protect bit on a burned CD copy that prevents users from copying that copy. In return for the right to develop recorders to copy data, these companies will pay royalties to the music copyright holders on each recorder and sick sold.

However, because of the mass copyright violations, the RIAA was unhappy with the royalties it received. When Phillips introduced the CD-Rewritable (CD-RW) home audio recorder,

[3] See Appendix A

RIAA argued that home CD-RW drives would raise fresh concerns not addressed in the AHRA. RIAA further said, "Will add a new dimension to and further aggravate the already very serious problem of CD piracy by facilitating a cottage industry."

In the past couple of years RIAA have teamed up with technological companies to implement various copy protection schemes in their music CD's. The copy-protection system employed on CDs relies on differences in the way tables of contents are created on CD-RWs and on regular CDs. On a regular CD, there is only one table of contents inscribed at the very beginning of the CD. CD-RWs on the other hand contain several tables of contents, as a table is added to the CD each time new information is recorded on it. Therefore, a computer CD drive reads only the last table of contents when it plays the CD. Copy-protected CDs work by including one correct table of contents at the beginning of the CD, and adding several error-filled tables after it. In this way a regular CD player, which only reads the first table, will play the music correctly, but a computer CD-drive will not be able to play the music. Copy-protected CDs not only affect computer CD-drives, but some audio and car CD-players, which also happen to read CDs the same way computer CD-drives do. This means that unfortunately some honest consumers are punished for being unlucky enough to buy the copy-protected CDs. However, CD copy-protections are not difficult to circumvent. In fact, the copy-protection can easily be thwarted by computer designers, who need only make a small modification to the way their drives read CDs to eliminate their effectiveness. [23]

So it's clear that although RIAA has been trying to fight piracy in the music industry by using various copy protection measures, most have been unsuccessful either because its more harmful than useful (in the case where the legitimate customer cannot play the CD in his car or on his computer), or have been circumvented by computer designers, or copy protection 'hacks' that have been made widely available on the Internet.

**Section 3.2: DVD – Movie Industry**

DVD or Digital Versatile Disc when introduced promised to change the way consumers would watch video in their living

rooms. Equipped with the latest audio decoding algorithms and sophisticated data compression techniques which would provide superior data quality.
To deter copyright violations on those DVD discs, the studios implemented a novel copyright protection on those DVD discs called CSS. CSS is an encryption-based security and authentication system that requires use of "appropriately configured hardware," such as a DVD player or a computer DVD drive, to decrypt, unscramble, and play back--but not copy--motion pictures on DVDs. CSS has been licensed to hundreds of DVD player manufacturers and DVD content distributors in the U.S. and around the world.

However, in October 1999, less than three years after the introduction of CSS, a Norwegian teenager allegedly hacked CSS and began offering, via the Internet, a software utility called DeCSS that enables users to break the CSS copy protection system and make copies of DVD movies.

Perhaps the most successful attempt by copyright holders to protect their works has been with their recent win against 321 Studios LLC (“321 Studios”) under the name "DVD X Copy". 321 Studios distributed software which breaks the CSS protection in order for the home users to make perfect *backup* copies of DVD movies. Hollywood studios claimed that DVD X Copy is a violation of Digital Millennium Copyright Act and successfully won the case against 321 Studios. Following the lawsuit, 321 Studious had to stop distribution as of February 2004. This didn’t dishearten 321 Studios, which recently has begun distributing Games X Copy, which as the name applies makes perfect *backup* copies of PC games.

Although 321 Studios has stripped the ability to copy Hollywood DVDs from its popular software, free tools that do the same thing are still widely available online. Among others, most are freely available on-line and anybody willing to make copies of DVD won’t be disheartened. Also, the version of DVD X Copy which is not available via the company’s website can be downloaded freely on P2P networks.

**Section 3.3: Software - Technology Industry**

Software piracy has the software industry alarmed. Over the years, they have implemented newer software protections on the data discs, increased awareness among its users, and

deterred users from using pirated software by litigations but sadly these actions have been largely unsuccessful. As technology rapidly grows, consumers have always been successful to circumvent these anti-piracy measures.

Some of the software copy protections techniques which copyright holders use are [22]:

1) A dongle, a piece of hardware that must be plugged into the computer to run the software. This adds a tremendous inconvenience both in terms of cost and economic reasons, for the user. Because of this, dongles are very rare, only being used in high-end software packages which cost several thousand dollars.

2) A serial number, a number that comes with the software and is required to install it.

3) A phone activation code, which requires the user to call a number and register the product to receive a computer-specific serial number.

4) Internet product activation, which requires the user to connect to the Internet and type in a serial number so the software can "call home" and notify the manufacturer who has installed the software and where, and prevent other users from installing the software if they attempt to use the same serial number.

The two latter methods imply tying the software installation to a specific machine by noting some particular unique feature of the machine. Some machines have a serial number in ROM, others do not, and so some other metric, such as the date and time (to the second) of initialization of the hard disk can be used. On machines with Ethernet cards, the MAC address, which is unique and factory-assigned, is a popular surrogate for a machine serial number (however, this address is programmable on modern cards). The problems with these sorts of schemes are that they can cause problems for a validly licensed user who upgrades to a new machine, or reinstalls the software having reinitialized the disk. Like other software, copy-protection software not infrequently contains bugs, whose effect may be to deny access to validly licensed users. As with all similar schemes, they are often easy to crack, and the resulting cracked software is perceived as being more valuable than the un-cracked version.

## Section 4: Peer-to-Peer File-Sharing Networks

Peer-to-peer (P2P) networks allow individual computers to share files on the Internet. It connects millions of users and facilitates the sharing of information and data between them. While the early P2P networks were centralized, which were files stored on a central server and downloaded and copied by users through this central server.

Recently, those centralized servers transformed into decentralized servers which did not require a central server to function. Users decided which files to share, and thus by connecting millions of users together through a common framework, allowed sharing of millions of files on the network. Consumers used this technology for unauthorized file-sharing which ranged from copyrighted music files, software data, video and images.

Because P2P networks enable unauthorized file-sharing, they are currently a significant source of copyright-infringement concerns. P2P users argues that eventually, P2P technology is expected to make the Internet less vulnerable to disruption and to allow greater efficiency in transferring data and information online--for example, by facilitating collaboration among a company's geographically dispersed workers or by reducing the cost of voice calling. [5]

Over the years, the sizes (in terms of number of users) of P2P networks have grown dramatically. Also, the increasing speed of transmission rates across networks, have many copyrighted holders worried. According to a recent survey, an average of 8 million users were online and sharing 10 million gigabytes of data on those networks at any given time during June 2004 [6]. Movie and software companies (especially computer-game makers) are increasingly worried that technological advances in digital compression, transmission, and file-sharing will further lead to mass piracy of their copyrighted content. According to the Motion Picture Association of America[4] (MPAA), the number of Web sites offering pirated movies increased from 143,000 in 2002 to approximately 200,000 by the end of 2003. In March 2004, video files accounted for 31.9 percent of bytes transmitted over P2P networks, up from 16.4 percent in March 2003. [8]

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[4] See Appendix B

Indeed these advances in piracy have the movie, software and music industry worried. The problem with DMCA[5] was that, it does not take into account P2P networks, where most of the file sharing was through decentralized servers. Because of this the very existence of DMCA has come into question. In some cases, however, DMCA has successfully closed down the Napster server, hugely popular among music swappers, largely because Napster used its own computer servers to direct file requests to available content on individual computers. However newer P2P networks use decentralized servers which is outside the domain of DMCA. For example, in the recent case of MGM Studios v. Grokster, the U.S. District Court for the Central District of California held that because the Grokster file-sharing service had substantial non-infringing uses, it was not liable for contributory copyright infringement. [12]

This was frustrating for RIAA which then started targeting those individual file swappers. Well, it's interesting to wonder if these individual lawsuits have been successful. We know from past, that Napster was closed down but newer technologies (in this case decentralized P2P networks) quickly became pervasive which challenged both the DMCA and RIAA. Although, these lawsuits have been against Kazaa users, a few Manolito P2P (Blubster, Piolet) lawsuits have been issued as well. However with the Manolito network's new encrypted protocol, chances of a successful lawsuit are even slimmer [13].

So what is the future of P2P? By suing individual computer users, the RIAA has been successful to curb file sharing of copyrighted music over these networks. This statement has been confirmed by a recent survey by the Pew Internet & American Life Project. The survey shows that the number of users accessing P2P sites and applications has decreased after the RIAA started filing individual subpoenas. However, the PEW survey shows a download decrease only in the United States, while illegal file sharing among Internet users around the world remains strong. Also, the PEW survey does not take into account customer interest shifting from P2P networks to email, instant messaging, and encrypted P2P networks, to share and distribute copyrighted music content. According to Yankee Group senior analyst Mike Goodman, "it's not as clean or as simple as P2P, but

[5] See Appendix A

people are going to trade music regardless of what the industry does”.

It’s important to consider whether these lawsuits by the RIAA has changed consumer’s opinion about downloading copyrighted music content over P2P networks. According to a survey commissioned by the RIAA, the share of respondents in the United States who consider unauthorized file-sharing illegal rose from 37 percent before the RIAA announced its litigation strategy in June 2003 to 64 percent by December 2003. In contrast, a New York Times-CBS News poll and a Harris Interactive poll, both conducted in September 2003, found that between two-thirds and three-quarters of respondents consider downloading or sharing music files for personal use to be "all right" or "legal." Similarly, the Pew Internet Project's February 2004 survey found that 58 percent of those who download music files said that they did not care about the copyright on those files. However, the same survey also found that 37 percent of music downloader’s said that they did care about whether those music files were copyrighted; up from 27 percent in Pew's spring 2003 survey. [24, 21]

These surveys have conflicting results. Clearly, the lawsuits by the RIAA have consumers worried. Downloaded copyrighted music content over these P2P networks have decreased, although, music downloader’s who did not care about the music being copyrighted increased. Clearly, newer technology which could mask the IP address, encrypt content as to make it non-traceable, or in a nutshell, protect the P2P users from these lawsuits could give birth to a fourth generation of P2P networks, which would be outside the control of the RIAA and other copyright holders. And, as history as shown us, technology has the answer to these questions. The past is a good predictor for the future, and if we consider the shift from centralized servers to decentralized servers, the shift from copyright protections to software and hardware which could bypass them, the shift from CD recorders to DVD recorders which increased the scale of piracy from music and software to movies, copyright has always been on the non-receiving side.

**Section 5: Future of Piracy**

As we have seen, past attempts to curb piracy in the music, movie and software industry is best described as being largely unsuccessful. Clearly, it is not viable to

establish a free market between content producers and consumers as this would hinder creativity and innovation. What then must be done? Clearly, these individual lawsuits are not going to be sustainable for long. The government has to step in and realize that piracy is hurting its economy and needs to take certain steps to curb piracy, especially on international grounds.

First, government needs to develop law and enforcement domestically and in international countries, especially in countries where copyright is still at its inception. Some recommendations are [25]:

(1) Copyright laws in line with international standards
(2) Optical disc regulations to control pirate CD manufacturing, including compulsory use of identifiers such as the SID code
(3) Proactive and efficient enforcement by police and customs
(4) Aggressive prosecution of crimes within judicial systems, including deterrent sentencing

The music, movie and software industry have been taking proactive approaches to combat piracy. Apple for example, has opened a new distribution channel for music, called ITunes, which sells downloaded songs for just 99 cents. The movie industry, which was initially only worried about DVD piracy has to take further steps to combat piracy as transmission speeds and sophisticated data compression techniques allow consumers to share and download theatrical quality movies as plausible as mp3's and other small files. Already they have started scanning the theatres for people who smuggle in high quality camcorders into the theatres to record and later sell them to the public even before the second screening of the movie can begin. And as these portable recorders become cheaper, they will have to beef up their approach to limit revenue loss. The software industry is perhaps the oldest player to realize and take steps to limit revenue loss due to piracy. They have taken measures to reduce piracy; however they have work with the government to limit software piracy abroad, which has resulted in the biggest revenue loss for them.

## Section 6: Conclusion

The piracy industry has put the entire legitimate digital industry in turmoil. Advances in technology have benefited all, needless to say, but these advances in technology have resulted in a revenue loss for the music, software and movie industry. The past is clear predictor of the future and as the transmission and digital compression improves, the industry has to continuously analyze the risks which they have to deal with even before they are struck with it.

Piracy is not something which this world would ever live without. However, it’s important for the stakeholders to continuously fight piracy to a point when it doesn’t challenge the very fabric of their existence.

## Appendix A

### DMCA

The Digital Millennium Copyright Act (DMCA) is a controversial United States copyright law which criminalizes production and dissemination of technology that can circumvent measures taken to protect copyright, not merely infringement of copyright itself, and heightens the penalties for copyright infringement on the Internet. Passed on May 14, 1998 by an unanimous vote in the United States Senate and signed into law by President Bill Clinton on October 28, 1998, the DMCA amended title 17 of the US Code to extend the reach of copyright protection, while limiting the liability of Online Service Providers from copyright infringement by their users.[9]

DMCA can be further classified into two parts:

1) *Anticircumvention Clause and Antitrafficking Provisions*: The DMCA makes it illegal to circumvent a technology that controls access to copyrighted materials--for example, an encryption program that prevents unauthorized viewing of a movie on the Internet.[10]

   However, DMCA does permit a user, for example, copying a computer program for archival purposes as a limitation on the exclusive rights of owners of copyright on computer programs. Hence, if a manufacturer of computer programs applied a copy-control technology to prevent unauthorized copying of its product, a lawful purchaser could legally circumvent that technology to make an archival copy.

2) *Safe-Harbor and Notify-and-Takedown Provisions*: The safe-harbor provision of the DMCA reflects an early attempt to clarify an ISP's potential liability for contributory copyright infringement. It stipulates that ISPs cannot be held liable for copyright infringement for either the transmission or the storage of copyright-infringing materials on their networks or for supplying links to infringing material, provided that the ISP fulfills certain obligations. To benefit from the safe-harbor provision, for example, the ISP must not have had prior knowledge of the copyright infringement.

> Further, in the event that copyright-infringing material "resides" on its network, the ISP must comply with the notify-and-takedown terms of the DMCA.[11]

**Audio Home Recording Act of 1992**

AHRA or Audio Home Recording Act exempts from copyright infringement the making of copies for personal use of music files in digital form, provided that those copies are made with approved equipment.

According to the AHRA, the manufacturers and importers of digital audio recording devices and media must pay a royalty tax to the copyright holders of music that is presumably being copied in order to compensate them for lost royalties due to consumers copying audio recordings at home. [15]

Digital audio recording devices also must include a system that prohibits serial copying. The most common system in use is the Serial Copy Management System (SCMS), which permits first-generation digital-to-digital copies of prerecorded music but prohibits serial copies of those copies. In exchange, the copyright holders waive the right to claim copyright infringement against consumers using audio recording devices in their homes for noncommercial use. The royalty requirements do not apply to computers as they are not considered digital audio recording devices. [15]

## Appendix B

### RIAA

The Recording Industry Association of America (RIAA) is a trade association whose member companies create, manufacture, and/or distribute approximately 90 percent of all legitimate sound recordings produced and sold in the United States. The association's 250 members include such familiar record companies as Warner Brothers Records, Columbia, Motown, RCA, Geffen, and Capitol, as well as many lesser-known record labels. The RIAA was founded in 1952 and among the items in its stated mission is the promotion of strong intellectual property protection and the prevention of music piracy.

Website: http://www.riaa.com

### MPAA

The Motion Picture Association of America (MPAA) is a non-profit trade association formed to advance the interests of movie studios. Its members consist of seven major studios: the Walt Disney Company, Sony Pictures, Metro-Goldwyn-Mayer, Paramount Pictures, Twentieth Century Fox, Universal Studios, and Warner Bros. The organization produces the well-known voluntary film rating system. [16]

Website: http://www.mpaa.com

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