

2000

40 IDEA 427

THE MUSIC INDUSTRY AND ITS DIGITAL FUTURE: INTRODUCING MP3 TECHNOLOGY

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I. INTRODUCTION

Since the invention of the phonograph by Thomas Edison, the recording industry has controlled the music that ends up on your turntable, or in your eight-track, cassette deck, compact disc ("CD") player, and mini-disc player.^{40_IDEA_427)_and_footnotes(n1);FTNT n1} However, who will control your digital music player is anybody's guess. The introduction of a new technology known as "MP3," which stands for Moving Picture Experts Group, or MPEG, Audio Layer 3,^{40_IDEA_427)_and_footnotes(n2);FTNT n2} may have forever changed the way our music is distributed and shaken the very foundation upon which the industry was built.^{40_IDEA_427)_and_footnotes(n3);FTNT n3}

MP3s have been called "a godsend for every struggling independent musician out there."^{40_IDEA_427)_and_footnotes(n4);FTNT n4} They have also been referred to as a simple acronym, the mere utterance of which can make the "richest record company executive cringe . . . in fear."^{40_IDEA_427)_and_footnotes(n5);FTNT n5} Regardless of the description, "MP3" is truly becoming one of the most popular items on the Internet.^{40_IDEA_427)_and_footnotes(n6);FTNT n6}

MP3 technology is altering the way the world consumes music, how artists. release their work, and the way that record companies sell it.^{40_IDEA_427)_and_footnotes(n7);FTNT n7} In response to this shift in music distribution supremacy, war on MP3s has been declared:

The sudden popularity of compressed digital music has stirred up a hornets. nest of intellectual property issues. Suppose you download an MP3 file from the Web and listen

to it on your portable playback device. Or you rip^{40_IDEA_427)_and_footnotes(n8);FTNT n8} a track from an audio CD that you own, save it on a Zip^{40_IDEA_427)_and_footnotes(n9);FTNT n9} disk, and listen to it at work. Are you a copyright-violating des-perado or just a citizen exercising your rights? The answer depends on whom you ask.^{40_IDEA_427)_and_footnotes(n10);FTNT n10}

The MP3 controversy is a typical battle of good versus evil. On one side of the battlefield are the top record labels in the music industry, known as the "Big Five": BMG Entertainment, EMI Recorded Music, Sony Music, Universal Music Group, and Warner Music Group.^{40_IDEA_427)_and_footnotes(n11);FTNT n11} These companies have controlled the tightly-managed methods of recording and distribution since playing music became an industry.^{40_IDEA_427)_and_footnotes(n12);FTNT n12} On the other side, are independent musicians, budding "dot com" companies, and individuals simply wanting a free ride on the Internet music wave -- all of whom are attempting to redefine the parameters of the music industry.

Those who favor a more democratic digital distribution system cite the potential downfall of a dictatorial music industry as a major positive transformation of the industry and as a motivating factor for the evolution of this new distribution technology.^{40_IDEA_427)_and_footnotes(n13);FTNT n13} Further, they argue that this shift will increase the amount of music available to the public and permit greater equity in the distribution of profits.^{40_IDEA_427)_and_footnotes(n14);FTNT n14} Of course, the argument is that this can be accomplished without violation of copyrights or other infringing acts.^{40_IDEA_427)_and_footnotes(n15);FTNT n15}

MP3 opponents, on the other hand, assert that many MP3 distribution sites are purely illegal, as the music has been uploaded for unlimited use and copying by people who have no intention of paying the royalties attached to such music.^{40_IDEA_427)_and_footnotes(n16);FTNT n16} Such opponents characterize the digital distribution of music as the potential destruction of the industry altogether.^{40_IDEA_427)_and_footnotes(n17);FTNT n17} They argue that allowing such technology will undercut the profits of all involved and promote music piracy, which accounts for nearly \$ 300 million in lost record sales each year.^{40_IDEA_427)_and_footnotes(n18);FTNT n18}

A similar argument was raised nearly fifteen years ago by Jack Valenti, president of the Motion Picture Association of America (.MPAA.), regarding the advent of a destructive little machine called the videocassette recorder ("VCR").^{40_IDEA_427)_and_footnotes(n19);FTNT n19} The MPAA touted the VCR as an evil device that would pirate films and pilfer Hollywood's profits.^{40_IDEA_427)_and_footnotes(n20);FTNT n20} But it did not ruin Hollywood, rather, "it spawned a creative new industry of videocassette rentals and sales that generated more revenues for Hollywood than the sales of movie tickets."^{40_IDEA_427)_and_footnotes(n21);FTNT n21}

Like the VCR debate, the MP3 controversy raised the financial stakes for the winner of the battle to an exorbitant level.^{40_IDEA_427)_and_footnotes(n22);FTNT n22} Total revenues for the music industry last year alone exceeded \$ 12

billion.^{40_IDEA_427)_and_footnotes(n23);FTNT n23} With the advent of greater music availability online, these numbers are expected to increase as the new millennium approaches.^{40_IDEA_427)_and_footnotes(n24);FTNT n24} However, the legal consequences of the MP3 battle extend beyond the financial realm. Court decisions affecting music distribution could certainly pave the way for the digital distribution of videos and movies, among other things, once the technology has sufficiently evolved.^{40_IDEA_427)_and_footnotes(n25);FTNT n25}

This paper will examine the history of traditional music channels and the consequences of MP3's introduction to the industry. Second, the author will consider both sides of the MP3 debate and analyze the legal ramifications of digital music distribution, particularly with respect to current and future copyright laws. Additionally, the author will examine the development of new initiatives and Internet technology to stifle MP3 use and misuse. Finally, this paper will consider the impact of new technology and the MP3 battle on the future of Internet distribution with respect to both the music and motion picture industries.

II. ANALYSIS OF THE TRADITIONAL MUSIC INDUSTRY

The traditional means of consuming music involve the purchase of CDs or cassettes from a small group of large record labels that sell directly to retailers and music distributors.^{40_IDEA_427)_and_footnotes(n26);FTNT n26} Under this traditional music model, the recording artist receives a relatively small portion of the revenues earned by an album.^{40_IDEA_427)_and_footnotes(n27);FTNT n27} However, well-known artists, such as Celine Dion or Garth Brooks, may realize greater profits because of their substantial touring proceeds and unique leverage over the record companies.^{40_IDEA_427)_and_footnotes(n28);FTNT n28} Generally, however, for representation in the music business, one must be supported by a record label or create his or her own, independent label.^{40_IDEA_427)_and_footnotes(n29);FTNT n29} The Internet and subsequent introduction of MP3s, however, is breaking this traditional model wide open and creating an entirely new music industry for the twenty-first century.^{40_IDEA_427)_and_footnotes(n30);FTNT n30}

A. Introduction of MP3 Technology to the Industry

In 1993, a group of college students founded IUMA.com,^{40_IDEA_427)_and_footnotes(n31);FTNT n31} the World Wide Web's first high fidelity Internet site.^{40_IDEA_427)_and_footnotes(n32);FTNT n32} Their purpose was to supply artists with a cheaper way to get their music heard and distributed.^{40_IDEA_427)_and_footnotes(n33);FTNT n33} IUMA spawned a unique subindustry of music distribution for artists, which resulted in dissemination of their music to the world, rather than to merely local venues.^{40_IDEA_427)_and_footnotes(n34);FTNT n34} For example, any artist can distribute music through IUMA's Website for a small fee and retain as much as seventy-five percent of the revenue from album or merchandise sales, which is an unprecedented amount with respect to traditional means of music distribution.^{40_IDEA_427)_and_footnotes(n35);FTNT n35}

These electronically-based ("e-based") companies offer more than online sales, however, giving unknown artists a chance to become the Brooks and Dions of the

business.40_IDEA_427)_and_footnotes(n36);.FTNT n36 For example, many sites allow consumers the ability to instantaneously purchase music, but they can also listen to song samples,40_IDEA_427)_and_footnotes(n37);.FTNT n37 obtain information about musicians, view touring schedules, and read comments from other fans.40_IDEA_427)_and_footnotes(n38);.FTNT n38 One method of receiving such music is via the MP3 format.40_IDEA_427)_and_footnotes(n39);.FTNT n39

III. WHAT IS AN MP3?

First invented in 1992 by the Fraunhofer Institute in Germany,40_IDEA_427)_and_footnotes(n40);.FTNT n40 MP3 is heating up the Internet music market, as well as several legal debates about its use.40_IDEA_427)_and_footnotes(n41);.FTNT n41 MP3 is simply a new compression standard for music, which allows music to be condensed into a small file using a program called an MP3 encoder.40_IDEA_427)_and_footnotes(n42);.FTNT n42 This process transforms what used to sound like "a clock radio playing under water,"40_IDEA_427)_and_footnotes(n43);.FTNT n43 into audio that approaches the quality of a musical compact disc.40_IDEA_427)_and_footnotes(n44);.FTNT n44 As a result of the compression, however, various bits of data are irretrievably lost, thereby producing a small amount of noise known as "artifacts" in the signal.40_IDEA_427)_and_footnotes(n45);.FTNT n45 For this reason, MP3 files are titled "near CD quality," though the naked ear cannot detect much difference.40_IDEA_427)_and_footnotes(n46);.FTNT n46 This title is partially responsible for MP3's popularity.40_IDEA_427)_and_footnotes(n47);.FTNT n47 Prior to this technology, "a person wishing to copy an original music recording -- e.g., wishing to make a cassette tape of a record or compact disc -- was limited to analog, rather than digital, recording technology. With analog recording, each successive generation of copies suffers from an increasingly pronounced degradation in sound quality."40_IDEA_427)_and_footnotes(n48);.FTNT n48 Thus, millions of nearly perfect copies of original music can be produced with virtually no degradation in quality.40_IDEA_427)_and_footnotes(n49);.FTNT n49 Also, the compactness of these files makes MP3s great for uploading into the Internet for personal or commercial use, which has only furthered their extreme popularity.40_IDEA_427)_and_footnotes(n50);.FTNT n50

As a result, e-based companies, new artists, and the consuming public are leaping at the opportunities created by digital music distribution. For example, a Website might post free MP3 songs that users can readily download and distribute.40_IDEA_427)_and_footnotes(n51);.FTNT n51 First, young artists are benefitted in that their music gets initial exposure, which is unlimitedly broad due to the structure of the Internet.40_IDEA_427)_and_footnotes(n52);.FTNT n52 Second, established artists have an equally broad opportunity to showcase their new music.40_IDEA_427)_and_footnotes(n53);.FTNT n53 Third, consumers benefit through a "try-before-you-buy" concept that enables them to listen to sample music prior to purchase.40_IDEA_427)_and_footnotes(n54);.FTNT n54 Finally, while free songs are often the hallmark of MP3 sites, artists and Web companies may realize great financial advantage in the long run by charging a fee for additional songs or for songs by artists

who are already "known." Everyone benefits from this new system, except, of course, the record label conglomerates.

Many consumers purchase CDs at an average cost of \$ 16.99,^{40_IDEA_427)_and_footnotes(n55);FTNT n55} although they may only enjoy two or three of the artist's songs. MP3s, on the other hand, are single songs and generally sell for under a dollar.^{40_IDEA_427)_and_footnotes(n56);FTNT n56} This means that a consumer could purchase two or three songs of his or her choice and save fifteen dollars. Of course, record companies would prefer that music remain packaged in CDs and tapes the old-fashioned way and shipped to record stores for the higher price.^{40_IDEA_427)_and_footnotes(n57);FTNT n57} Since MP3 recording artists own their own copyrights, they are free to distribute their music at any cost.^{40_IDEA_427)_and_footnotes(n58);FTNT n58} Under the traditional music distribution method, if you did not have a label, you did not exist.

Because half a dozen massive companies that dominate the music industry require artist contracts with their "label" to distribute music, they selectively represent artists that they believe will sell the most music.^{40_IDEA_427)_and_footnotes(n59);FTNT n59} Consequently, many talented artists go unrepresented. The MP3 file format and ease of distribution via the Internet provide a way for these entertainers to distribute their music in an unprecedented manner -- without a record company.^{40_IDEA_427)_and_footnotes(n60);FTNT n60}

Of course, most consumers do not purchase CDs or tapes to listen to them on their home computer.^{40_IDEA_427)_and_footnotes(n61);FTNT n61} The introduction of MP3 technology has thus led to the creation of portable devices that operate like a CD or cassette player.^{40_IDEA_427)_and_footnotes(n62);FTNT n62} These devices are known as "MP3 players."^{40_IDEA_427)_and_footnotes(n63);FTNT n63} Diamond Multimedia's ("Diamond's") "Rio" was one of the first such players to be marketed in the United States.^{40_IDEA_427)_and_footnotes(n64);FTNT n64} While, originally, MP3 files could only be played on the personal computer, which itself was exciting, now the files can be downloaded onto a portable MP3 player, like the Rio, which can be taken almost anywhere, including in a car.^{40_IDEA_427)_and_footnotes(n65);FTNT n65}

The threat of music piracy is even greater, due to the Internet's omnipresence.^{40_IDEA_427)_and_footnotes(n66);FTNT n66} Many individuals transform copyrighted CD songs into MP3 format and post them on private Internet sites or e-mail them to friends.^{40_IDEA_427)_and_footnotes(n67);FTNT n67} In fact many illegal sites exist that distribute such copyrighted MP3 files.^{40_IDEA_427)_and_footnotes(n68);FTNT n68} It is very difficult to shut these sites down because many are based outside the United States.^{40_IDEA_427)_and_footnotes(n69);FTNT n69} Furthermore, the sheer volume of users downloading and distributing MP3s makes it virtually impossible to apprehend these copyright thieves.^{40_IDEA_427)_and_footnotes(n70);FTNT n70} Therefore, the easier target would seem to be the manufacturers of MP3 players, such as the Rio, that could facilitate copyright infringement. The Rio was the exact target the Industry aimed for in 1998.

IV. THE "RIO" LAWSUIT

The Recording Industry Association of America ("RIAA"), and the Alliance of Artists and Recording Companies ("AARC") filed suit against Diamond in the United States District Court for the Central District of California.^{40_IDEA_427)_and_footnotes(n71);FTNT n71} The plaintiffs sought a preliminary injunction to enjoin Diamond from manufacturing and distributing the Rio, arguing that given the ease with which consumers download and replay digital music, sale of the Rio would lead to widespread music piracy.^{40_IDEA_427)_and_footnotes(n72);FTNT n72} The plaintiffs argued that the Rio constituted a "digital audio recording" device and was thereby subject to the provisions of the Audio Home Recording Act of 1992 ("AHRA"),^{40_IDEA_427)_and_footnotes(n73);FTNT n73} with which it did not comply.^{40_IDEA_427)_and_footnotes(n74);FTNT n74}

Despite the ability for illegal copying of music, the Rio was not designed for that purpose.^{40_IDEA_427)_and_footnotes(n75);FTNT n75} Ken Wirt, Diamond's vice president of corporate marketing, explains, "We understand there is some pirating of music by MP3s, which we do not condone, promote, or endorse."^{40_IDEA_427)_and_footnotes(n76);FTNT n76} Instead, Wirt maintains that the Rio's intended purpose is the legitimate conversion of songs from the Internet or its users. CDs to a new type of music player.^{40_IDEA_427)_and_footnotes(n77);FTNT n77} The response from MP3 opponents has been obviously bitter: "The Rio, to me, is like walking into a head shop and buying a bong, and it says, 'For use with tobacco products only,'" says Jim McDermott, vice president of new media technology at Polygram Group Distribution, "They . . . know it's going to be used for piracy."^{40_IDEA_427)_and_footnotes(n78);FTNT n78}

In response to the allegations in RIAA's Complaint, Diamond accused the plaintiffs of attempting to stifle MP3 music sales over the Internet and counter-claimed for various unfair business practices and antitrust violations.^{40_IDEA_427)_and_footnotes(n79);FTNT n79} The crux of the case centered on whether the manufacture and sale of the Rio violated the AHRA for failure to prevent serial copying.^{40_IDEA_427)_and_footnotes(n80);FTNT n80} The Ninth Circuit Court of Appeals decidedly held that it did not.^{40_IDEA_427)_and_footnotes(n81);FTNT n81}

Diamond argued that its digital music player was not governed by the AHRA and, further, was exempt under § S 1001(5)(B)(ii), which specifically excludes from the definition of "digital music recordings"^{40_IDEA_427)_and_footnotes(n82);FTNT n82} material items "in which one or more computer programs are fixed."^{40_IDEA_427)_and_footnotes(n83);FTNT n83} The assertion is that the Rio receives music from a computer hard drive, which also stores "computer programs" and is therefore not a "digital audio recording device"^{40_IDEA_427)_and_footnotes(n84);FTNT n84} within the meaning of the statute.^{40_IDEA_427)_and_footnotes(n85);FTNT n85} Most significantly, is that the Rio cannot serially copy files stored in its flash memory because it lacks a digital output.^{40_IDEA_427)_and_footnotes(n86);FTNT n86} Essentially, Diamond argued that the Rio is not a recording device at all, but simply a playback appliance.^{40_IDEA_427)_and_footnotes(n87);FTNT n87} Put rather untechnologically,

"without a computer, [Diamond's] device is a doorstop."40_IDEA_427)_and_footnotes(n88);.FTNT n88

In their final brief to the Ninth Circuit, however, RIAA and AARC argued that the above "justification" for Diamond's Rio player is based on a "litany of supposed loopholes and constitutional infirmities in the AHRA designed to prevent the statute from fulfilling its purpose."40_IDEA_427)_and_footnotes(n89);.FTNT n89 This argument addressed the Rio's ability to store files on its memory cards.40_IDEA_427)_and_footnotes(n90);.FTNT n90 In denying the groups' motion for a preliminary injunction, U.S. District Judge Audrey B. Collins found that, while the device is likely to increase illegal music file traffic, the AHRA's royalty provisions were specifically designed for this situation and provide for compensation in money damages should any losses result.40_IDEA_427)_and_footnotes(n91);.FTNT n91

As expressed above, the sole output of the Rio device is an analog audio signal that is sent to the listener via headphones or amplified speakers.40_IDEA_427)_and_footnotes(n92);.FTNT n92 Significantly, then, the Rio cannot duplicate any of the MP3 files it stores nor can it transfer a file to another device, such as a computer or the Internet.40_IDEA_427)_and_footnotes(n93);.FTNT n93 Under the plain meaning of the AHRA then, the Rio is not a "digital audio recording device" because its primary purpose is not to make copied recordings in digital audio format.40_IDEA_427)_and_footnotes(n94);.FTNT n94 In affirming the district court's denial of RIAA's motion for a preliminary injunction, the court held that the Rio's purpose was "entirely consistent" with that of the AHRA -- to allow consumers to make personal copies of music for private, noncommercial use.40_IDEA_427)_and_footnotes(n95);.FTNT n95

A. Why RIAA Is Getting What It Deserves with the Rio Decision

In 1952, over 500 music companies founded The Recording Industry Association of America, with the original objective "to survey music-buying habits, certify records gold and platinum, and restrict copyright infringement."40_IDEA_427)_and_footnotes(n96);.FTNT n96 However, recently, as evidenced by the Rio case, the main purpose has shifted to searching out and destroying MP3 bootleggers40_IDEA_427)_and_footnotes(n97);.FTNT n97 and those who make devices that can play the pirated songs.40_IDEA_427)_and_footnotes(n98);.FTNT n98

An example of RIAA's severe attempts to destroy MP3 music piracy is evidenced by the recent situation at one of the nation's top technical schools, Carnegie Mellon University ("CMU") in Pittsburgh, Pennsylvania.40_IDEA_427)_and_footnotes(n99);.FTNT n99 On October 18, 1999, the university restricted the Internet use of seventy-one students when it performed a random file search and discovered copyrighted MP3 files, some of which were password protected, on those students. archives.40_IDEA_427)_and_footnotes(n100);.FTNT n100 CMU's Associate Dean of Student Affairs admitted that "the decision to conduct the search was partly instigated by the Recording Industry Association of America," as RIAA sent numerous letters to the university, warning it of legal action if the files were not removed.40_IDEA_427)_and_footnotes(n101);.FTNT n101

Some argue that such action merely protects the industry and its profits under copyright law.^{40_IDEA_427)_and_footnotes(n102);FTNT n102} However, "according to the 1998 Digital Millennium Copyright Act [(the Act)], Internet providers [like CMU] are not responsible for illegal content on their site."^{40_IDEA_427)_and_footnotes(n103);FTNT n103} Of course, there is a catch. The Act makes Internet providers responsible in cases where they have been alerted to the problem but fail to take action.^{40_IDEA_427)_and_footnotes(n104);FTNT n104} Therefore, if RIAA sends threatening letters to every college campus or business offering Internet access to its students or employees, the members of the music industry place the burden of copyright enforcement on the colleges and businesses because each could be considered an "Internet provider."^{40_IDEA_427)_and_footnotes(n105);FTNT n105} The music industry will have enlisted the help of the entire country by instilling fear and bullying companies and educational institutions with the threat of legal action. Rather than be copyright police for RIAA and subject themselves to potential contributory infringement suits, many companies and educational institutions will simply disallow MP3 downloads, thus thwarting this sub-industry's efforts to grow, despite its overall legality.

In response to RIAA's recent behavior and its staunch position on MP3 technology, many of its proponents have expressed the following proverbial adage: the information superhighway moves quickly; one ought to lead, follow, or get out of the way.^{40_IDEA_427)_and_footnotes(n106);FTNT n106}

1. The Industry's Failure to Lead

Consider RIAA's inability to lead the industry at the crucial point of MP3 introduction. When MP3 technology arose in the 1980s, the Big Five still controlled the labels, the artists, the music distributors, and the consuming public.^{40_IDEA_427)_and_footnotes(n107);FTNT n107} This control presented RIAA with a golden opportunity to seize the immense financial market that digital distribution offered the music industry. It failed to do so, and now it is paying the price.

There is a strong correlation between being "first in time" to the marketplace and one's ability to dominate consumers regarding business on the Internet.^{40_IDEA_427)_and_footnotes(n108);FTNT n108} In 1992, RIAA had the opportunity to take the real world industry power and control that rested in the hands of its mighty few and transplant it directly into the Internet. It could have created "RIAA.com," an easily navigable Website displaying the trademarked image of each major record label, advertising that the music the purchasing public wanted was just a click away.^{40_IDEA_427)_and_footnotes(n109);FTNT n109} This site would potentially have generated a brave new industry of mini-music, marketed to the Internet consumer, much like VCRs created a new industry of home movie rentals. The consuming public would have generally known that, if they wanted digital music, RIAA.com was the place to find it. RIAA certainly had industry control but had it only the vision to grasp MP3's potential, it could have capitalized on the financial gold mine of this technology. Clearly, RIAA did not address this budding technology and is, therefore, guilty of failure to lead the industry.

2. Follow the MP3 Road

Despite RIAA's failure to enter the market quickly, a second al-most equally lucrative option existed -- follow the companies who originally capitalized on MP3 technology and share in the profits. It could have treated MP3 technology like any new invention, as a unique business opportunity to be explored and exploited. This second option might have resulted in a bit of profit-sharing with the little guys, but not the potential loss of an established recording industry empire. Overall, if RIAA had marketed itself in cyberspace, control would have remained in the hands of a select few. Instead, RIAA treated MP3 technology as sinister contraband to be erased swiftly and certainly.^{40_IDEA_427)_and_footnotes(n110);FTNT n110}

RIAA clearly embraced a defensive stance regarding MP3 technology.^{40_IDEA_427)_and_footnotes(n111);FTNT n111} It focused on lobbying for favorable legislation, informally enforcing its copyrights, such as through cease and desist letters, and litigating directly illegal or unauthorized online activities.^{40_IDEA_427)_and_footnotes(n112);FTNT n112} While these pursuits were important to the maintenance of the Industry's economic and power position, it was similarly important to simultaneously exploit the legal aspects of MP3 music technology.^{40_IDEA_427)_and_footnotes(n113);FTNT n113} Instead, the Industry dedicated significant resources to seek out and shut down unauthorized MP3 sites.^{40_IDEA_427)_and_footnotes(n114);FTNT n114} Had it dedicated similar resources to the exploration of ways this technology could benefit the Industry, the author opines that similar profits could have been realized. Thus, it is clear that the Industry failed to follow common-sense business principles, such as staying ahead of and participating in the only market it is constantly attempting to exploit.

3. It Didn't Lead, It Didn't Follow -- RIAA Ought to Get Out of the Way

"The U.S. Supreme Court has already ruled that new technology cannot be outlawed simply because pirates might use it to infringe on copyrights."^{40_IDEA_427)_and_footnotes(n115);FTNT n115} Even the California federal judges in the Rio case ruled that attempting to stop Diamond from marketing its MP3 player was akin to "locking the barn door after the horse has already escaped."^{40_IDEA_427)_and_footnotes(n116);FTNT n116} Further, MP3 technology is not the only culprit of copyright infringement and such infringement is certainly not new to the industry.^{40_IDEA_427)_and_footnotes(n117);FTNT n117}

Pirated CDs have long been a source of frustration to realized profits of the Big Five recording moguls.^{40_IDEA_427)_and_footnotes(n118);FTNT n118} In Queens, New York, a CD pirating ring was recently apprehended for creating nearly 2000 infringing discs a week.^{40_IDEA_427)_and_footnotes(n119);FTNT n119} Such CD pirating costs nearly \$ 100 million each year, but there is not much that can be done about it.^{40_IDEA_427)_and_footnotes(n120);FTNT n120} Realistically, the technology will only become faster, smarter, and better, making music pirating a simple reality in the real world or the cyber-world.^{40_IDEA_427)_and_footnotes(n121);FTNT n121} Despite such admonitions, the Industry is refusing to go down without a fight.

Just last year, for example, RIAA created the highly controversial Secure Digital Music Initiative (SDMI), a compilation of over 120 companies and organizations from the recording and technology industries whose purported goal is to promote distribution

of music on the Internet in a manner that restricts copying.⁴⁰ IDEA 427) and footnotes(n122); FTNT n122 Many argue that the Industry's underlying purpose with SDMI is to destroy MP3s.⁴⁰ IDEA 427) and footnotes(n123); FTNT n123 However, the music industry needs to focus on making the digital downloading of music easier, not harder.⁴⁰ IDEA 427) and footnotes(n124); FTNT n124 Tara Lemmey, executive director of the Electronic Frontier Foundation and critic of SDMI, explains that combating piracy on the Internet should mean "making it easier for people to pay," not destroying the technology entirely.⁴⁰ IDEA 427) and footnotes(n125); FTNT n125 Lemmey argues that increased SDMI attempts to lock up the digital music industry simply encourages people to steal, since the technology assumes as much.⁴⁰ IDEA 427) and footnotes(n126); FTNT n126

SDMI's basic anti-piracy idea is to create an audio watermark using "screening technology."⁴⁰ IDEA 427) and footnotes(n127); FTNT n127 Essentially, music files will contain a digital watermark whereby those files without it will not be compatible with the current digital audio players.⁴⁰ IDEA 427) and footnotes(n128); FTNT n128 The idea is that this new technology will end copyright infringement via MP3 downloads because illegal songs will not contain the watermark and will therefore be unreadable.⁴⁰ IDEA 427) and footnotes(n129); FTNT n129 However, it is only a matter of time before technology catches up with the watermarking feature and adapts to create false marks or override the technology altogether.⁴⁰ IDEA 427) and footnotes(n130); FTNT n130

Of course, many digital player owners use their "non-secure" Rio players without violating any copyright laws by using legal MP3 downloads. Creation of new players in compliance with SDMI allows the Big Five to enter and exploit a marketplace they originally ignored and chastised. For example, Sony Electronics, one of the top five music superpowers, obviously has an interest in RIAA's fight because of the potential copyright infringement of its various artists' music. However, even Sony has come to recognize a new music market that can be exploited.⁴⁰ IDEA 427) and footnotes(n131); FTNT n131 The company is prepared to introduce a digital walkman, like the Rio, that will retail for \$ 399 upon its release in January 2000.⁴⁰ IDEA 427) and footnotes(n132); FTNT n132 Ron Boire, senior vice president for Sony Electronics, argues that, unlike the Rio, its player is "a secure media for recording music from the Internet," as it is the first MP3 player that is SDMI compliant.⁴⁰ IDEA 427) and footnotes(n133); FTNT n133 Sony's "memory stick" walkman will record eighty minutes of audio in a 64 MB memory piece, which is the size of a stick of bubble gum, but each stick will cost around \$ 200.⁴⁰ IDEA 427) and footnotes(n134); FTNT n134 SDMI and its attempts to destroy current MP3 players could only benefit Sony and the other Big Five by allowing them to enter an already established market by requiring new, SDMI-compliant players to reap the benefits of MP3.

B. The Controversy Creates New Opportunities

This copyright frenzy has spawned many technology companies to explore new ways to encrypt music files and prevent copyright infringement.⁴⁰ IDEA 427) and footnotes(n135); FTNT n135 Because of current

attempts to find secure alternatives to MP3s, some say this new technology may already be on its way out.^{40_IDEA_427)_and_footnotes(n136);FTNT n136} This does not seem to worry the leading dot com companies who initially paved the way for the technology. For example, Michael Robertson, president of one of the most popular digital music sites, MP3.com,^{40_IDEA_427)_and_footnotes(n137);FTNT n137} says that his company is prepared to make the switch to MP4, should it become the standard.^{40_IDEA_427)_and_footnotes(n138);FTNT n138} Similarly, Ken Wirt contends that the Rio is compatible with Liquid Audio, another digital music format, "via an export function in the player's software."^{40_IDEA_427)_and_footnotes(n139);FTNT n139} But before you go creating the next MP4.com site, many label owners say the key to the digital music business is to offer legitimate MP3s immediately.^{40_IDEA_427)_and_footnotes(n140);FTNT n140}

MP3 technology has a clear foothold in the digital marketplace.^{40_IDEA_427)_and_footnotes(n141);FTNT n141} It seems that the creation of this new technology is merely to appease RIAA and its new Secure Digital Music Initiative. Apparently, RIAA wants to wipe the slate clean and eliminate the "dot coms" who have already invested in and profited from MP3 technology. By forcing the current companies out of business, or at least severely outdating them, RIAA will be given a new chance to start over and become the master of the MP4.

V. THE FUTURE OF DIGITAL DISTRIBUTION

MP3 is not the final word in digital music distribution. In fact, there are many ways for consumers to receive music, some as yet, un contemplated.^{40_IDEA_427)_and_footnotes(n142);FTNT n142} Again, the fight involves not only music distribution, but rather, an infant technology whose full potential has yet to be realized and can extend to other areas of distribution, such as digital video.

"The worst fear of movie studios has already been realized" with the recent hacking of Digital Video Disc^{40_IDEA_427)_and_footnotes(n143);FTNT n143} (DVD) encryption technology.^{40_IDEA_427)_and_footnotes(n144);FTNT n144} Technology has evolved to a point that a DVD movie can be transformed to fit on a single CD-ROM disc.^{40_IDEA_427)_and_footnotes(n145);FTNT n145} The transfer problem that is shared with musical CDs is the time it takes to upload and download the files in the original state due to their size.^{40_IDEA_427)_and_footnotes(n146);FTNT n146} The MP3 format remedied this time problem and, as explained earlier in this article, makes compression and transfer incredibly fast.^{40_IDEA_427)_and_footnotes(n147);FTNT n147} Imagine this technology based on the MP3 format^{40_IDEA_427)_and_footnotes(n148);FTNT n148} for DVDs that allows quick compression for upload and transfer of movies through the Web, while maintaining superior video quality.^{40_IDEA_427)_and_footnotes(n149);FTNT n149}

While we are currently experiencing a new generation of music sale and distribution, the future could very well encompass the sale of digital films on-line. Although VHS tapes currently sell for the cost of a musical compact disc,^{40_IDEA_427)_and_footnotes(n150);FTNT n150} online start up companies targeting the digital distribution of movies could sell instant movie downloads for just a few dollars.^{40_IDEA_427)_and_footnotes(n151);FTNT n151} Again, the same

arguments made on behalf of independent musicians for MP3 technology could be asserted for independent film makers who would get a chance to have their movies viewed globally, rather than at a remote selected theater that is generally selected in only the largest metropolitan areas.^{40_IDEA_427)_and_footnotes(n152);FTNT n152}

Of course, DVDs are not yet widely utilized and distributed in the real world, let alone the Internet world.^{40_IDEA_427)_and_footnotes(n153);FTNT n153} In terms of the Internet, the bandwidth must be greatly increased for digital distribution of such movies to be feasible, but such technology is not far off.^{40_IDEA_427)_and_footnotes(n154);FTNT n154} Once the technology has sufficiently evolved, the download of digital video will offer the same opportunities and legal challenges as those posed by the distribution of music online.^{40_IDEA_427)_and_footnotes(n155);FTNT n155} In the next few years, the technology should evolve to the point where viewers may download their favorite movies right into their homes.^{40_IDEA_427)_and_footnotes(n156);FTNT n156} The established arguments for the MP3 debate will undoubtedly be used when digital video distribution emerges, no matter how far, or near, that time may be.

VI. CONCLUSION

Many questions about digital distribution remain unanswered, but one notion is certain: "Things are changing fast in the music industry."^{40_IDEA_427)_and_footnotes(n157);FTNT n157} Shortly into the new millennium, it is anticipated that online music will be part of the "mainstream consumer's entertainment experience."^{40_IDEA_427)_and_footnotes(n158);FTNT n158} Some predict that digital music and portable MP3 players will overwhelm the current music media -- CD players.^{40_IDEA_427)_and_footnotes(n159);FTNT n159}

With the current chaos throughout the industry, mere "brick-and-mortar retailing," cannot continue, nor is it feasible to "throw that all away and distribute online."^{40_IDEA_427)_and_footnotes(n160);FTNT n160} The important point, with the rapidly growing on-line music industry is that those companies that have established themselves as a digital music hub now will be in a position to dominate the Internet music industry when it peaks.^{40_IDEA_427)_and_footnotes(n161);FTNT n161} Additionally, while it is clear that on-line distribution of music has enough momentum to propel it swiftly into the future, it seems "equally certain that the Internet will provide an attractive vehicle for the distribution of video content, assuming the bandwidth issues can be resolved in the not too distant future."^{40_IDEA_427)_and_footnotes(n162);FTNT n162} Hayden Gregory, Chief Counsel of the House Judiciary Subcommittee on Intellectual Property explains that "although digital technology has been commercially available in the United States since 1983, the digital revolution . . . has only just begun."^{40_IDEA_427)_and_footnotes(n163);FTNT n163}

n1 See NBFree Media, The "Controversial" MP3 (visited Sept. 29, 1999) <<http://home.earthlink.net/netbeat/MP3.htm>>.

n2 MP3 Basics (visited Oct. 25, 1999) <<http://www.mvhs.srvusd.k12.ca.us/blehr/facts.html>>.

n3 See id.

n4 MP3: The Controversy (visited Oct. 25, 1999) <<http://www.mvhs.srvusd.k12.ca.us/blehr/controv.html>>.

n5 NBFree Media, supra note 1.

n6 See Cameron Heffernan, You Say You Want a Revolution, PC WORLD, Nov. 1999, at 200. MP3 is currently one of the most widely searched terms in cyberspace, even surpassing "sex." See Jennifer E. Markiewicz, Comment, Seeking Shelter From the MP3 Storm: How Far Does the Digital Millennium Copyright Act Online Service Provider Liability Limitation Reach?, 7 COM. L. CONCEPTUS 423, 425 (1999); See also Christopher Jones and Jennifer Sullivan, More Popular Than Sex, WIRED, Oct. 14, 1999 (visited Nov. 6, 1999) <<http://www.wired.com/news/mp3/0,1285,31834,00.html>>.

n7 See Heffernan, supra note 6, at 200.

n8 For a discussion of "ripping" technology, see infra text accompanying note 67.

n9 "Zip," like MP3, is a commonly used file format which condenses computer files in order to decrease the time it takes to transfer, upload, or download such files. See Markiewicz, supra note 6, at 439.

n10 Heffernan, supra note 6, at 203.

n11 Heffernan, supra note 6, at 206; see Heather D. Rafter et al., Streaming Into the Future: Music and Video on the Internet, in 19TH ANNUAL INSTITUTE ON COMPUTER

LAW 605, 611 (PLI Patents, Copyrights, Trademarks, and Literary Property Handbook Series No. 547, 1999).

n12 See Rafter, supra note 11, at 611. The Big Five control nearly eighty percent of the popular music industry. See id.

n13 Id. at 609.

n14 See id.; see also Richard Raysman & Jill Westmoreland, Fresh Battles Over Digital Music: The Sound and the Fury, 5 INTELL. PROP. STRATEGIST 1 (1999).

n15 See generally MP3.com Getting Started Introduction, (visited Sept. 28, 1999) <<http://www.mp3.com/help/rookie/index.html>>.

n16 See Heffernan, supra note 6, at 200.

n17 See Rafter, supra note 11, at 610.

n18 See Rafter, supra note 11, at 610; see also Anti-Piracy and the Music Industry (visited Sept. 29, 1999) <<http://www.student.richmond.edu/m.r/Projects/ITProj/Itantimusic.html>>; Mike Wendland, MP3 Music Files on Internet Stir Major Controversy (visited Sept. 29, 1999) <[wysiwyg://17/http:// pcmike.com/Special%20Reports/MP3column.html](http://www.pcmike.com/Special%20Reports/MP3column.html)>. Part of the problem is precisely that such music is "digital." Unlike ordinary analog recordings, digital recordings may be repeatedly copied, but maintain the same sound quality as the original. See Christine M. Rigney, The Infamous Diamond Case: What's at Stake?, 5 INTELL. PROP. STRATEGIST 1 (1999). However, recognize that pirating music of a similar quality is not new to the industry,

because it has been battling real-world CD infringers for some time. See Greg Clarkin, Crackdown On Pirate CDs, CNNFN: BIZ BUZZ, Aug. 20, 1999, at 1. Similarly, the concerns should not target individual MP3 users, which they often do, because such users are not "running a business" and thereby making a profit from the illegal sale and distribution of copyrighted music. See *id.* But MP3 proponents also solidly argue that the only profits being undercut are those of the Big Five. See Theta Pavis, Pouncing on MP3's Detractors, WIRED, Jan. 21, 1999 (visited Nov. 19, 1999) <<http://www.wired.com/news/culture/0,1284,176468,00.html>>. Michael Robertson, president of MP3.com explains, "Artists are already losing plenty of their profits -- to the industry." *Id.*

n19 See Di Mari Ricker, "Rio" Raises Copyright Concerns, 14 ENT. L. & FIN. 1 (1998).

n20 See *id.*

n21 *Id.*

n22 See generally Rafter, *supra* note 11, at 610.

n23 See *id.* (citing Jupiter Communications, Music Industry and the Internet: Usage, Retail and Digital Distribution Projections, at 2 (1998)). The music industry is purported to have a worldwide industry revenue of \$ 40 billion resulting in high stakes for digital distributors. See Benny Evangelista, Bay Area Firms Turn Up the Volume with MP3, SAN FRANCISCO CHRON., Jan. 11, 1999, available at <<http://www.sfgate.com>>. Further, while Internet music sales currently account for only 0.03% of the total revenue, sales are expected to reach nearly \$ 1.4 billion or at least 8% of all U.S. music sales. See Jupiter Communications, Music Industry and the Internet: Usage, Retail and Digital Distribution Projections, at 5 (1998)).

n24 See Ricker, *supra* note 19, at 610.

n25 See Rafter, *supra* note 11, at 610-11.

n26 See *id.* at 611.

n27 See *id.* at 612. For example, even if a represented artist has a record deal, he or she might only earn 10% of the profit, assuming that a profit is made. See *id.*; Pavis, *supra* note 18 (evidencing that "artists generally receive about ten cents on a dollar when a regular CD is sold.")

n28 See Rafter, *supra* note 11, at 612.

n29 See generally *id.*

n30 See generally Lindsey Arent, Amazon Steps Into Digital Music, WIRED, Jun. 8, 1999 (visited Sept. 28, 1999) <<http://wired.com/news/news/business/story/20086.html>>.

n31 Internet Underground Music Archive ("IUMA") can be found at www.iuma.com.

n32 See Joan Anderman, Wired for Sound, BOSTON GLOBE, Aug. 21, 1999, at D-1.

n33 See Rafter, *supra* note 11, at 612.

n34 The Internet allows digitized music to "be transmitted across the world in a matter of seconds and 'accessed almost instantaneously by hundreds of thousands of users.'" Andrew S. Muroff, *Some Rights Reserved: Music Copyright; in the Digital Era*, DET. C.L. REV., 1241, 1273 (Winter 1997) (quoting Andrea Sloan Pink, *Copyright Infringement Post Isoquantic Shift: Should Bulletin Board Services be Liable?*, 43 U.C.L.A. L. REV. 587, 595 (1995)).

n35 See Rafter, *supra* note 11, at 612. The subscription costs the artist \$ 240 per year. See *id.*

n36 See, e.g., <<http://www.cdnw.com>>; <<http://www.goodnoise.com>>; <<http://www.musicboulevard.com>>; see also About MP3.com, (visited Sept. 28, 1999) <<http://www.mp3.com/aboutus.html>>. MP3.com offers free "Artist Web Pages," music genre compilations, a comprehensive buy-and-sell program, tour calendars, and exposure to over 200,000 site visitors per day. *Id.*

n37 See Kenneth D. Suzan, *Tapping to the Beat of a Digital Drummer: Fine Tuning U.S. Copyright Law for Music Distribution on the Internet*, 59 ALB. L. REV. 789, 800-05 (1995). Note that song "samples," even by copyrighted artists, are perfectly legal because of their minimal duration -- usually thirty seconds or less. Catherine Deely, *MP3: Tiny Bytes Hard for Music Biz to Swallow* (visited Sept. 29, 1999) <<http://www.wiz.com/issue29/html/article4.html>>.

n38 See Rafter, *supra* note 11, at 613.

n39 There are other formats for music distribution, including streaming media, which is live distribution of audio where no permanent copy is made on a downloader's system. See Rafter, *supra* note 11, at 614. Other methods include "RealAudio," "a2b," and "liquidaudio," however, the greatest interest and attention has been given to the MP3 format. *Id.* For example, a radio station in San Diego, California was recently e-mailed, in MP3 format, an unheard, live version of a song by the famous group, Depeche Mode, and instantly played it for listeners. 91X Radio Broadcast, Oct. 28, 1999, 8:27 p.m. This article does not address methods beyond digital distribution via the MP3 format.

n40 See Heffernan, *supra* note 6, at 200.

n41 See *id.*

n42 Encoders shrink sound files by removing unwanted data from them. See *id.* In other words, an encoder compresses a song in WAV format by removing the portions that are inaudible to the human ear. See *MP3: The Music Industry's Worst Nightmare* (visited Oct. 25, 1999) <[wysiwyg://4/http://www.whatismp3.freesavers.com/](http://www.whatismp3.freesavers.com/)>.

n43 Heffernan, *supra* note 6, at 200.

n44 See *MP3: The Music Industry's Worst Nightmare*, *supra* note 42.

n45 See Heffernan, *supra* note 5, at 201; see also Jim Taylor, *DVD Frequently Asked Questions (with Answers!)* Aug. 19, 1999 (visited Nov. 9, 1999) <<http://www.videodiscovery.com/vdyweb/dvd/dvdfaq.html>> (discussing such "artifacts" in the context of DVD players, which is pertinent to the discussion).

n46 See generally Heffernan, *supra* note 6, at 201. The popularity of MP3s is due to their "near CD quality" title. See generally *Recording Indus. Assoc. of Am. v. Diamond Multimedia Sys.*, 180 F.3d 1072, 1072, 51 U.S.P.Q.2d (BNA) 1115, 1116 (9th Cir. 1999).

n47 See generally *Recording Indus. Assoc. of Am.*, 180 F.3d at 1072, 51 U.S.P.Q.2d at 1116.

n48 *Id.*

n49 See *id.* The problem arises when music bootleggers use MP3 technology to create and distribute these near-perfect recordings without paying for the copyrights. *Id.*

n50 See MP3: *The Music Industry's Worst Nightmare*, *supra* note 42. Where a five-minute song on a compact disc would normally occupy about fifty megabytes of space on a hard drive, the MP3 format can reduce that to five megabytes. See Rigney, *supra* note 18, at 1.

n51 See generally NBFree Media, The "Controversial" MP3 (visited Sept. 29, 1999) <<http://home.earthlink.net/netbeat/MP3.htm>>; see also *Recording Indus. Assoc. of Am.*, 180 F.3d at 1072, 51 U.S.P.Q.2d at 1116; Bruce Francis, Downloading Music w/MP3, CNNFN: DIGITAL JAM, Aug. 27, 1999.

n52 See NBFree Media, *supra* note 1.

n53 It is significant to note the reality of immense opportunity for artists on the Internet. Last year the Artist, formerly known as Prince, sold a five-CD box set exclusively on the Web and, though sales were a modest 250,000 units at fifty dollars a piece, 1998 proved to be the Artist's most profitable year. See NBFree Media, *supra* note 1.

n54 For example, consumers can download a free song, in MP3 format, by an artist who is not readily known to the industry. If the artist eventually becomes quasi-famous, the Website may charge a fee for other songs he or she produces.

n55 See generally NBFree Media, *supra* note 1.

n56 See *id.*

n57 See *id.*

n58 See *id.*

n59 See MP3: *The Music Industry's Worst Nightmare*, *supra* note 42; Pavis, *supra* note 18.

n60 See *id.*

n61 See Christopher Jones, MP3s Anywhere You Are, WIRED, Oct. 28, 1999 (visited Nov. 6, 1999) <<http://www.wired.com/news/mp3/0,1285,32109,00.html>>.

n62 See *id.*

n63 Kim Komando, MP3s All Over, COMPUTER EDGE, Oct. 8, 1999, at 30. Note, however, that "MP3 player" also refers to the software that allows users to download and play MP3s on their computers. See Francis, *supra* note 51. One of the most popular MP3

players for personal computers is WinAmp, which can easily be downloaded and run from Windows 98. See id.

n64 See MP3: *The Music Industry's Worst Nightmare*, supra note 4. Today, listeners can choose from a wide array of portable devices that play compressed music files, which has greatly reduced their cost and increased their sales. See Heffernan, supra note 6, at 200. The players generally range in price from approximately \$ 180 to \$ 1100, depending on the number of hours of music one desires to store. See Heffernan, supra note 6, at 202.

n65 See Komando, supra note 63, at 30; *Recording Indus. Assoc. of Am. v. Diamond Multimedia Sys.*, 180 F.3d 1072, 1072, 51 U.S.P.Q.2d (BNA) 1115, 1116 (9th Cir. 1999). Various products spawned by MP3 technology allow users to "get MP3s into . . . off-line devices, such as cars, boom-boxes, and home stereos." Jones, supra note 61.

n66 See MP3: *The Music Industry's Worst Nightmare*, supra note 42; see also *Recording Indus. Assoc. of Am.*, 180 F.3d at 1072, 51 U.S.P.Q.2d at 1116.

n67 See MP3: *The Music Industry's Worst Nightmare*, supra note 42. It is very easy to convert CD tracks into MP3 files. First, a CD ripper program is used to convert a track into a WAV file. A CD ripper is a program that removes a track from a CD and saves it in WAV format. Once the track is in WAV format, an MP3 encoder is used to compress the file into MP3 format. See id. Of course, a song in MP3 format is not illegal unless the song's copyright holder did not grant permission to transfer the song. See MP3.com Getting Started -- Introduction, supra note 15.

n68 See MP3: *The Music Industry's Worst Nightmare*, supra note 42; see *Recording Indus. Assoc. of Am.*, 180 F.3d at 1072, 51 U.S.P.Q.2d at 1116; Deely, supra note 37, at 2; Francis, supra note 51.

n69 See MP3: *The Music Industry's Worst Nightmare*, supra note 42. The Recording Industry Association of America estimates that there are over 200,000 songs illegally available for download on the Internet. See id.

n70 See Deely, supra note 36, at 2.

n71 See generally *Recording Indus. Assoc. of Am., Inc. v. Diamond Multimedia Sys.*, 29 F. Supp. 2d 624, 49 U.S.P.Q.2d (BNA) 1024 (C.D. Cal. 1998).

n72 See id.; Rafter, supra note 11, at 617.

n73 17 U.S.C. § 1001. The Audio Home Recording Act was enacted in 1994 after significant, active lobbying by the RIAA. See Kent D. Stuckley, Congress and the Music Industry Respond to Internet Opportunities, 5 MULTIMEDIA STRATEGIST 7 (May 1999). The statute "requires registration of digital recording devices, the payment of royalties based on the sale of digital recording devices, and the incorporation of a serial copyright management system." Id.

n74 See Rafter, supra note 11, at 617.

n75 See id. at 616.

n76 Id.

n77 See id.

n78 Id. at 616-17.

n79 See id.; Stuckey, supra note 73, at 7.

n80 See Rafter, supra note 11, at 622. "The RIAA contends that the Rio player enables users to make serial copies of CDs by making a first generation copy on their hard drive and then a second generation to their Rio player," which may stem from illicit serial copies. Id. at 622-23. The AHRA prohibits persons from importing, manufacturing, or distributing any digital audio recording device "that does not conform to the Serial Copy Management System or a system that has the same functional characteristics." 17 U.S.C. § 1002(a)(1), (2) (1994).

n81 See Michael D. Scott, A Busy Summer Ahead, 4 CYBERSPACE L. 1, 31 (1999).

n82 "Digital musical recordings" are defined as material objects "(i) in which are fixed, in a digital recording format, only sounds, and material, statements, or instructions incidental to those fixed sounds, if any, and . . . (ii) from which the sounds and material can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device." 17 U.S.C. § 1001(5)(A) (1994).

n83 Rafter, supra note 11, at 623; 17 U.S.C. § 1001(5)(B)(ii) (1994).

n84 A "digital audio recording device" is defined in the AHRA as

Any machine or device of a type commonly distributed to individuals for use by individuals, whether or not included with or as part of some other machine or device, the digital recording function of which is designed or marketed for the primary purpose of, and that is capable of, making a digital audio copied recording for private use.

17 U.S.C. § 1001(3)(A) (1996).

n85 See Rafter, supra note 11, at 623.

n86 See id.

n87 See Ricker, supra note 19, at 3.

n88 Id.

n89 RIAA: Diamond Uses "Technicalities" to Justify Rio, 13 ANDREWS INTELL. PROP. LITIG.

REP. 7 (Fed. 10, 1999).

n90 See id.

n91 See id.

n92 See *Appelle's Reply Brief at 3, Recording Indus. Assoc. of Am. v. Diamond Multimedia Sys.*, 180 F.3d 1072, 51 U.S.P.Q.2d (BNA) 1115 (9th Cir. 1999) (No. 98-56727).

n93 See id.

n94 Id. at 5.

n95 Id. at 6; Raysman, *supra* note 14, at 1.

n96 MP3: The Controversy (visited Oct. 25, 1999) <<http://www.mvhs.srvusd.k12.ca.us/blehr/controv.html>>.

n97 See, e.g., Kristen Philipkoski, *The Student Jukebox Sting*, WIRED, Nov. 9, 1999 (visited Nov. 9, 1999) <<http://www.wired.com/news/culture/0,1284,32444,00.html>>.

n98 See MP3: The Controversy, *supra* note 96.

n99 See Philipkoski, *supra* note 97.

n100 See *id.*

n101 *Id.*

n102 See *id.*

n103 *Id.*

n104 See *id.*

n105 See generally *id.* RIAA also recently "contacted the University of South Carolina Spartanburg about a student who had turned his PC into a jukebox and was selling pirated MP3s." Kristen Philipkoski, *University Snoops for MP3s*, WIRED, Nov. 13, 1999 (visited Nov. 19, 1999) <<http://www.wired.com/news/technology/0,1282,32478,00.html>>. "Since the music was copyrighted, . . . RIAA was reportedly ready to take the student and the university to court." As a result, the "university is now monitoring its network using software that can search for music downloads." *Id.* Loran Technologies, the developer of the software called Kinetics Network System, is currently prepared to install it in numerous universities across the country. See *id.*

n106 Michael Stroud, *MP3: It's Only Just Begun*, WIRED, Nov. 17, 1999 (visited Nov. 19, 1999) <<http://www.wired.com/news/culture/0,1284,32588,00.html>>.

n107 See *Appelle's Reply Brief*, *supra* note 92, at 2 (evidencing that RIAA controls roughly ninety percent of the music distribution in the United States.).

n108 An example of this is Amazon.com, the leading online bookstore. Siamak Farah, President of InfoStreet, Inc. opines that, in the real world, most consumers have a favorite bookstore, such as Borders or Barnes and Noble. However, on the Internet, the consumer's first thought is not to visit that online bookstore, but a name completely unrelated to books at all -- Amazon. Why? First in time. Amazon.com was the first company to market books online. As such, it is the name most known to the cyber-community. See Siamak Farah, *Address at Whittier Law School Internet Law Course* (Jun. 7, 1999).

n109 In other words, those artists represented by the Big Five would list their music under the supporting label and sell individual MP3 songs or an entirely downloadable CD in MP3 format for a newly-created industry standard price, while still retaining the bulk of the global profits. An individual search engine for each major record label could provide easy consumer access to its various artists.

n110 See discussion *supra* Part IV. In fact, RIAA still fails to see the benefits of MP3 technology. See Stuckey, *supra* note 73. Earlier in the year, RIAA threatened to sue the

famous search engine, Lycos.com, for contributory infringement via its directory and portal services. See *id.*

n111 See *id.*

n112 See *id.*; see also Christopher Jones, *Attack on MP3 Piracy Escalates*, WIRED, Oct. 30, 1999 (visited Nov. 6, 1999) <<http://www.wired.com/news/mp3/0,1285,32203,00.html>>. RIAA's lobbying pursuits resulted in successful enactment of such laws as the Audio Home Recording Act, discussed *supra* note 73, the Digital Performance Right In Sound Recordings Act of 1995, the No Electronic Theft Act, and the Digital Millennium Copyright Act. See Stuckey, *supra* note 108, at 7.

n113 See, e.g., Interview by Bruce Francis with Steve Young, Sr. VP, Sony Electronics, CNNFN: DIGITAL JAM (Sept. 27, 1999), available at *1999 WL 18249517*.

n114 See Stuckey, *supra* note 73, at 7.

n115 Cyrus Afzali, *Lawsuit Extends Controversy Over MP3 Format*, Internet News.com, Mar. 30, 1999 (visited Sept. 29, 1999) <<http://www.internetnews.com/busnews/print/0,1089,389021,00.html>>.

n116 Wendland, *supra* note 18.

n117 See Clarkin, *supra* note 18.

n118 See *id.*

n119 See *id.* The pirates operated out of a small, two bedroom apartment where a twentysix-tray Pentium-based computer system allowed them to record copyrighted music onto blank CDs twenty-four hours a day. See *id.*

n120 See *id.*

n121 See *id.* See also SDMI, *Secure Digital Music Initiative (SDMI) Fact Sheet* (visited Oct. 26, 1999) <<http://www.sdmi.org/publicdoc/FinalFactSheet.htm>>.

n122 See *MP3: The Controversy*, *supra* note 95. See also SDMI, *SDMI Announces Portable Device Technology Will Be Available* (visited Oct. 26, 1999) <<http://www.sdmi.org/dscgi/ds.py/Get/File-646/nyc-99-09-24-press-release.htm>>.

SDMI's mission statement reads:

The Secure Digital Music Initiative brings together the worldwide recording industry and technology companies to develop an open, interoperable architecture and specification for digital music security. The specification will answer consumer demand for convenient accessibility to quality digital music, enable copyright protection for artists' work, and enable technology and music companies to build successful businesses.

SDMI, *What is SDMI?* (visited Oct. 26, 1999) <<http://www.sdmi.org/>>.

n123 See Beth Lipton Krigel, *The Man Behind the Music*, CNET, Mar. 9, 1999 (visited Oct. 26, 1999) <<http://www.wired.com/news/mp3/0,1285,21645,00.html>>.

n124 See Andrew Rice, *EFF: Piracy Not the Problem*, WIRED, Sept. 8, 1999 (visited Nov. 8, 1999) <<http://www.wired.com/news/mp3/0,1285,21645,00.html>>.

n125 Id.

n126 See id.

n127 SDMI, SDMI Identifies Audio Watermark Technology for Next Generation Portable Devices for Digital Music (visited Oct. 26, 1999) <<http://www.sdmi.org/dscgi/ds.py/Get/File611/sdmiAug9.htm>>; See Matt Richtel, Standards Are Set for Thwarting Music Pirates, NY TIMES ON THE WEB, Jul. 14, 1999 (visited Nov. 6, 1999) <<http://www.nytimes.com/library/tech/99/07/biztech/articles/14standard.html>>.

n128 See Clarkin, supra note 18. In addition, SDMI proposes technology that would allow a user to only make four copies of the digital music. See Chris Oakes, SDMI Spec Restricts CD Copying, WIRED, Jul. 14, 1999 (visited Nov. 6, 1999) <<http://www.wired.com/news/news/technology/story/20716.html>>.

n129 See Clarkin, supra note 18.

n130 See generally id.

n131 See Interview by Bruce Francis with Steve Young, Sr. VP, Sony Electronics, CNNFN: DIGITAL JAM, Sept. 27, 1999, available in 1999 WL 18249517.

n132 See id.

n133 Id. Note that, while Sony's new digital player will accept MP3s, it is designed to play music from a new system called Act Track 3, which Sony feels is sonically superior to MP3. See id.

n134 Id. In other words, not only is Sony's player twice as expensive as the non-SDMI compliant Rio, a consumer must continuously purchase additional memory sticks at \$ 200 a piece if they want more than eighty minutes of music. See id.

n135 See Steve Knopper, The Great MP3 Wars, YAHOO! ZDWIRE, Apr. 1, 1999 (visited Sept. 29, 1999) <<http://web3.westlaw.com/shared/tex.Method%2Cquery%2C&rs=WLW3.0&vr=2>>. In fact, one Southern California-based company, Globalmusic.com, has been so diligent in creating new MPEG technology that it has developed and launched a new, more secure format called MP4. See id. Similarly, the NatWest Group has launched a secure system for online sales which includes a control mechanism for MP3 technology whereby a user can pay for the music copyrights and download the song, but simultaneously receives a file that limits reproduction and replay. See Amy K. Larsen, Piracy Protection, INFO. WK. 58, May 31, 1999, available in 1999 WL 2105721. Even without creating a new digital music format, however, companies are fervently creating technology to protect the current MP3 format, such as the screening technology previously mentioned. See Richtel, supra note 127. Creation of such technology and its subsequent adaptation by SDMI would mean large licensing fees to the technology's creator. Such profitability has caused intensely specific focus on the digital music industry, as the Big Five record companies will only embrace the "most effective technology." Id.

n136 See Knopper, supra note 135.

n137 See Francis, supra note 51. Robertson's site popularity is astonishing. As of March 1999, there were 8,682 artists on the MP3.com site and an astonishing 36,710

songs, with 100 new artists signing up each day. See MP3: The Controversy, *supra* note 97.

n138 See Knopper, *supra* note 135.

n139 *Id.*

n140 See, e.g., *id.* at 3; see also Jones & Sullivan, *supra* note 6.

n141 See, e.g., Arent, *supra* note 30.

n142 Interview by Bruce Francis with Steve Young, Sr. VP, Sony Electronics, CNNFN: DIGITAL JAM, Sept. 27, 1999 available in *1999 WL 18249517*.

n143 For an excellent and comprehensive discussion of DVD technology, see generally Taylor, *supra* note 45.

n144 Andy Patrizio, DVD Piracy: It Can Be Done, *WIRED*, Nov. 1, 1999 (visited Nov. 9, 1999) <<http://www.wired.com/news/technology/0,1282,32249,00.html>>. "A utility called DeCSS is currently floating around on the Net that will read a DVD movie disc and save the file on a hard disk, minus the encryption." *Id.* Obtaining the encryption code is not a difficult process and has, therefore, opened an entire world of illegal DVD trading via the Internet. See *id.*

n145 See *id.*

n146 See generally Taylor, *supra* note 45, at section 1.2.

n147 See discussion *supra* Part III.

n148 See generally Andy Patrizio, The DVD Hack: What Next?, *WIRED*, Nov. 4, 1999 (visited Nov. 8, 1999) <<http://www.wired.com/news/mp3/0,1285,32265,00.html>>.

Note that DVD technology "aims to encompass home entertainment, computers, and business information with a single digital format, eventually replacing audio CD, videotape, laserdisc, CD-ROM, and perhaps even video game cartridges." Taylor, *supra* note 45, at section 1.1. In other words, DVD encompasses far more technology than the mere reproduction of movies, including music. See *id.* Such technology is important to consider when debating MP3 issues because DVD could be the next major distribution technology. See generally *id.* However, such considerations are beyond the scope of this paper and it will, therefore, remain focused on DVD as a movie-recording technology.

n149 See generally Taylor, *supra* note 45 (discussing DVD's "capability to produce nearstudio-quality video").

n150 See Blockbuster (visited Feb. 18, 2000) <<http://www.blockbuster.com>>.

n151 In fact, this could be accomplished on a Website as DVD video is usually encoded via a format called MPEG-2. See Taylor, *supra* note 45, at section 1.3.

n152 See discussion *supra* Part II.A.

n153 See Taylor, *supra* note 45. This is due in large part to the many disadvantages of DVD technology such as the inability of DVD players to record, poorly compressed audio or video, and disc player incompatibilities. See *id.* at section 1.4. But already DVD

players are being distributed by manufacturers from Aiwa to Zenith, and there are predictions of over 80 million DVD players sold by 2005. See *id.* at sections 1.5, 1.9.

n154 See Rafter, *supra* note 11, at 610; Joanna Glasner, Fast Connections Get Faster, *WIRED*, Nov. 8, 1999 (visited Nov. 9, 1999) <<http://www.wired.com/news/technology/0,1282,32416,00.html>> (discussing recent improvements in bandwidth technology allowing wireless access at speeds as great as "100 times faster than a standard dial-up modem").

n155 See Rafter, *supra* note 11, at 611.

n156 See *id.*

n157 Taylor, *supra* note 45. Virgin Megastores, a leading music retailer, recently "launched a plan to blast selected Internet music into its many branches. Shoppers will be able to pick and choose from a selection of tunes they hear at a listening kiosk, and walk out with a CD full of Net tracks." *Id.*

n158 Stroud, *supra* note 106, at 2.

n159 See *id.* "The frenzy will be powered by dropping prices, the ability to customize a device's play list, and the lack of moving parts in digital audio devices." MIT Media lab researcher Eric Sheirer says the future includes car stereos that "will be wirelessly linked to the Internet, and will have interactive capabilities. You will be able to impulse buy by pressing a button," which downloads music directly to your stereo. Further, the technology will develop such that one's account can be automatically billed and, for just pennies a song, businesses will search the Internet to fit your music taste and have the song "on your favorite download device by morning." Some argue that an important caveat to keep in mind is that "all of these developments depend upon the big record labels developing a more sophisticated stance on copyright protection There is a real danger that if not enough SDMI devices are sold, content owners will hold back on legitimate content," which will encourage people to commit piracy. However, the Industry must accept "that a small percentage of bootlegged product is [simply part of] the cost of doing business." *Id.*

n160 Knopper, *supra* note 135, at 3.

n161 See Jones, *supra* note 6. "A recent report from Jupiter Communications forecasts that by 2003, [nearly thirty-three] million users will purchase music on-line, compared with only six million in 1998." *Id.*

n162 Rafter, *supra* note 11, at 262.

n163 N. Jansen Calamita, Coming to Terms with the Celestial Jukebox: Keeping the Sound Recording Copyright Viable In the Digital Age, *74 B.U. L. REV.* 505, 515 (1994).