

**THE SONG HEARD 'ROUND THE WORLD:
THE COPYRIGHT IMPLICATIONS OF MP3S AND THE
FUTURE OF DIGITAL MUSIC**

*Brendan M. Schulman**

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I. INTRODUCTION

A. *Technological Revolution*

For the first time in the history of the music industry, the advancement of technology is threatening to alter radically the channels through which music is distributed. When phonographic records were replaced by magnetic 8-track tapes and later by cassettes, the same companies developed and distributed the new tape media.¹ And the same companies stood behind the marketing of the compact disc ("CD") as it became the new industry standard.² Today there are only five major record companies, who control 90% of the music market.³ It is a testament to how entrenched these companies are that people still refer to them as "record" companies even though most of them have not produced a phonograph record in years.⁴

1. See ANDRE MILLARD, AMERICA ON RECORD 320 (1995) ("Record companies were issuing their product on both [vinyl] disc and cassette.").

2. See *id.* at 331-45 (describing the history and development of the media conglomerates who control the music industry today); see also *id.* at 346-66 (describing the development and marketing of the compact disc).

3. See Michael Logan, *A Record Company on a Mission of Mercy*, PITT. POST-GAZETTE, Dec. 27, 1998, at NW-1, available in 1998 WL 14518531.

4. See PEKKA GRONOW & ILPO SAUNIO, AN INTERNATIONAL HISTORY OF THE RECORDING INDUSTRY (Christopher Moseley trans., 1998) ("[T]he manufacturing of vinyl records has, for all practical purposes, ceased."); see also MILLARD, *supra* note 1, at 320 (even as early as the 1980s, "some [record companies] were getting uncomfortable with the term *record* to describe their business.").

This traditional music distribution network is facing a new threat. The emerging new standard for music distribution is Motion Picture Experts Group Audio Layer 3, also known as MPEG-1 Audio Layer-3, or popularly as "MP3."⁵ MP3 is not made of a physical medium such as magnetic tape or a foil laser-etched disc; rather, it is a medium-neutral digital file format. The MP3 standard was developed by the Motion Picture Experts Group⁶ in an attempt to compress digital music⁷ data while retaining high sound quality.⁸ To achieve high sound quality, high data density is necessary. High resolution, in turn, creates large digital data files, which eventually limits the amount of music that can be recorded on a fixed digital medium, such as a CD.⁹ Music on a CD consists of sound samples at 1.41 million bits per second.¹⁰ The result of such a high resolution of sound data is excellent sound quality.¹¹

In order to achieve high rates of data compression while maintaining sound quality, MP3 uses "perceptual audio coding methods."¹² These coding methods take advantage of the way in which the human ear perceives sound.¹³ Extraneous data that is included in normal CD

5. See *Frequently Asked Questions about MPEG Audio Layer-3* (visited June 12, 1999) <<http://iis.fhg.de/amm/techinf/layer3/layer3faq/index.html>>.

6. The Motion Picture Experts Group works under the joint direction of the International Standards Organization and the International Electro-Technical Commission. See *id.*

7. MP3 may also be used to deliver audio materials other than music, see Matt Richel, *From Poetry to Newspapers, MP3 Fare for the Literary Set*, N.Y. TIMES, March 11, 1999, at G3, and similar technology is being used to develop video image compression, see KEN C. POHLMANN, PRINCIPLES OF DIGITAL AUDIO 408 (3rd ed. 1995). See also Anita Hamilton, *Next on the Net: Pirated Movies*, TIME, Mar. 15, 1999, at 73 ("Already several sites, including *AtomFilms.com*, *Broadcast.com* and *iFilm.net* post legitimate copies of mostly independent films that can be viewed for free."). This Note will focus on the implications of digital compression technology to the music industry, but some of the legal and technological issues are applicable to other digital intellectual property.

8. The MP3 format was finalized in November, 1992. See POHLMANN, *supra* note 7, at 381. Its use has become popular mostly since 1998.

9. The capacity of a CD is around 74 minutes of music. See *id.* at 265.

10. See *id.*

11. "Music CDs delivers [sic] high fidelity sound with outstanding performance specifications. With 16-bit quantization sampled at 44.1 kHz, players typically exhibit a frequency response of 5 Hz to 20 kHz with a deviation of ± 0.2 dB. Dynamic range exceeds 100 dB, signal-to-noise ratio exceeds 100 dB, and channel separation exceeds 100 dB at 1 kHz. Harmonic distortion at 1 kHz is less than 0.002%." *Id.* at 266.

12. *MPEG Audio Layer-3* (visited Mar. 11, 1999) <<http://iis.fhg.de/amm/techinf/layer3/index.html>>.

13. See *Basics about MPEG Perceptual Audio Coding* (visited July 11, 1999) <<http://iis.fhg.de/amm/techinf/basics.html>> ("Highest coding efficiency is achieved with algorithms exploiting signal redundancies and irrelevancies in the frequency domain

samples is removed, leaving only the digital information that the human ear needs in order to perceive a particular sound.¹⁴ The results are stunning. MP3 typically achieves a data compression ratio of 12:1 while maintaining CD-quality sound.¹⁵ While this breakthrough may be beneficial to record companies, who can now place twelve times as much music on a CD as before, it also means that each standard-length song is a much more digestible file size. Files of this size can easily be stored on removable computer media,¹⁶ distributed on the Internet,¹⁷ or e-mailed across the world. The CD, which can hold around 650 megabytes,¹⁸ is no longer necessarily the medium of choice.¹⁹ By providing high quality in a relatively small package, MP3 enables music to break free of a fixed medium and to exist as freely moving digital sound files. Coupled with the explosive growth rate²⁰ and the increasing speeds of the Internet,²¹ Internet-based transmission of MP3 files promises to become the standard of choice for many music consumers.

based on a model of the human auditory system.").

14. *See id.*

15. *See MPEG Audio Layer-3, supra* note 12; *see also MP3 and the Pirates of the Undernet*, INSIDE MULTIMEDIA, June 9, 1997, available in 1997 WL 11269376 ("ex-Decca sound engineers at Ablex were forced to admit that they were unable to tell the difference" between MP3 and CD music). *See generally* POHLMANN, *supra* note 7 at 354-415 (describing the technical aspects of perceptual coding).

16. One example of a popular removable media system is the Iomega Zip drive. *See Iomega* (visited Apr. 28, 1999) <www.iomega.com>.

17. The MP3 format is not required to transfer CD-quality music over the Internet. Indeed, it is possible to send data directly from a CD across the Internet. However, such a transfer would take far too much time to be practical. The MP3 format can be seen as an evolutionary change to increase data transfer throughput. An increase in the Internet's file transfer speed by an order of 12 would have the same practical effect on regular CD recordings, if considerations of data storage space were excluded.

18. *See* Jon Pareles, *Records and CD's? How Quaint; Digital Distribution of Music is Spreading*, N.Y. TIMES, July 16, 1998, at E1.

19. *But see* John Barker, *Can the CD ROM Survive?*, INSIDE MULTIMEDIA, Feb. 15, 1999, available in 1999 WL 9909954 ("The CD-ROM will survive because it is ubiquitous, a lowest common denominator.").

20. *See* Richard C. Notebaert, *A Convergence of Companies, and of Futures*, N.Y. TIMES, May 17, 1998, § 3, at 14 ("Four years ago, there were only a few million people connected to the Internet. Now, the number is more than 100 million and growing."); *see also* Renee Radcliff, *Writing Telecom Legislation to Benefit the Entire State*, SEATTLE TIMES, Feb. 24, 1999, at B5 ("Looking back over the past century, history tells us that no other technology has grown at such a phenomenal rate. . . . Even more astounding, traffic on the Internet is doubling every 100 days.").

21. Digital Subscriber Line and Integrated Services Digital Network are among the high-speed connection methods that can bring fast Internet service to the home. *See* Paul Taylor, *Online Rules Will Be Rewritten as Speed Rises Dramatically*, FIN. TIMES, Apr. 7, 1999, at 4.

B. MP3: A Preferred Medium

Granted, the MP3 format does little more than take existing digital music and compress it into a smaller size. Technology may emerge in the near future that will achieve better compression ratios or improved sound quality.²² However, this reduction in size has already resulted in the critical mass needed to begin a revolution in music distribution.²³ Since the widespread introduction of MP3 online, innumerable websites have emerged offering free²⁴ MP3 files, usually without the permission of the artist or recording company.²⁵ MP3 has also emerged as a strong *legitimate* vehicle for music distribution. Many websites are now devoted to the distribution of free MP3 audio files that artists themselves have released to the public.²⁶ This has enabled new, independent, or

22. See, e.g., *Welcome to QDesign* (last modified Apr. 26, 1999) <<http://www.qdesign.com>>; *Liquid Audio* (visited June 12, 1999) <<http://www.liquidaudio.com/>>; Doug Reece, *Exclusive: Microsoft Prepares Breakthrough MS Audio 4.0*, MP3.COM (Mar. 11, 1999) <<http://www.mp3.com/news/197.html>> (describing a compression mechanism which would result in files half the size of MP3s and improved sound quality); *a2b music Technology* (visited June 12, 1999) <<http://www.a2bmusic.com/technology.asp>> (describing a technology that offers a 20:1 compression ratio and an encryption mechanism). See generally Larry Lange, *MP3 Compression Opens Recording Industry's Coffers to Hackers*, ELECTRONIC ENGINEERING TIMES, July 21, 1997, at 1.

23. Often it is the first breakthrough standard, not the best, that becomes the mainstay. For example, Sony's Betamax lost the videocassette recorder format war to VHS despite being technically superior. See Peter Passell, *Why the Best Doesn't Always Win*, N.Y. TIMES, May 5, 1996, B 6, at 60. Path dependency might assist MP3 in becoming the new audio standard, although it would seem easy to create future computer programs to recognize *both* MP3 files and whatever superior format later emerges. But see S.J. Liebowitz & Stephen E. Margolis, *Should Technology Choice Be a Concern of Antitrust Policy?*, 9 HARV. J.L. & TECH. 283, 314 (arguing that path dependence is rarely a major economic factor, and specifically criticizing its use to explain the dominance of VHS).

24. Of course, downloading is not completely free if one factors in the costs of the equipment, Internet access and disk space. The cost of disk space is around 10 cents per megabyte, see Rick Cook, *Hard Disk Megabytes for Microbucks: Can it Really Happen?*, in *Mass Storage Quarterly*, VARBUSINESS, July 20, 1998, at 5, available in 1998 WL 2361395, but is decreasing by up to 50% per year, see *Out of the Blue*, UNIX & NT NEWS, Aug. 1, 1998, at 17, available in 1998 WL 14672078. In terms only of storage costs, an average MP3 song therefore costs less than 60 cents to store on the hard drive of a personal computer, but it is not completely free, and computer users will at some point need to upgrade their hard drives if they become filled with MP3s. By way of comparison, CD-based music is purchased with its own permanent storage space of 650 megabytes.

25. See *infra* Part I.E.

26. See, e.g., *MP3.com* (visited June 12, 1999) <<http://www.mp3.com>>. MP3.com

unknown musicians to promote their music at no cost by distributing it free of charge directly to music fans.²⁷ The results of this form of promotion have been so successful that there are now even regularly updated "Top 40" lists online for the most popular free MP3-release songs,²⁸ mimicking the "Top 40" lists of popular hit music, and an annual MP3 Music Awards event for artists who have used the MP3 format.²⁹

In addition to allowing flexibility by the music consumer,³⁰ the MP3 format could be very lucrative for music artists who can bypass the costly publication and distribution systems established by the music industry. All of the packaging, marketing, and distribution costs borne by the record companies can become profit for the musician or savings for the consumer.³¹ So, too, could the profit retained by the record companies for their publishing and distribution services. Of course, digital files that can be downloaded do not necessarily come with attractive packaging, lyrics, photographs, and artwork, which some consumers value.³²

claims to have 21 million songs available for legitimate, free downloading. *See id.*

27. *See* Michael Robertson, *Why Would an Artist Give Away Free Music? To Make Money!* (visited June 12, 1999) <<http://www.mp3.com/news/029.html>>.

28. *See* MP3.com - Weekly Top 40 (visited June 12, 1999) <<http://www.mp3.com/charts/topchart.html>>.

29. *See* Adam Creed, *MP3 Music Gets its Own Awards Ceremony*, NEWSBYTES NEWS NETWORK, Feb. 18, 1999, available in 1999 WL 5119271.

30. One of the key advantages is that there would no longer be a need to buy entire albums with filler songs just to get the one or two that a listener wants. *See* John C. Dvorak, *MP3 Spells Disaster*, PC MAG., Mar. 9, 1999, at 87 ("Nowadays, a person usually has to shell out \$16.95 for an entire CD, which seldom contains more than two decent songs.").

31. One source, mjuice.com, sells music legally for one dollar per song. *See* Brenda Sandburg, *Lawyer Legalizes MP3 Downloads* (Mar. 15, 1999) <<http://www.lawnewsnetwork.com/practice/techlaw/news/mar/e031599a.html>>. Mjuice.com estimates that artists receive five times the royalties that they would receive under a normal agreement with a record company. *See id.* Another website called Goodnoise sells songs for 99 cents each. *See Goodnoise* (visited Mar. 20, 1999) <<http://www.goodnoise.com>>. Internet music distributor Nordic Entertainment claims that artists receive eight percent of retail CD sales but 50 to 75 percent of Internet sales. *See Company History* (visited June 12, 1999) <<http://www.nordicentertainment.com/about/COHISTORY.HTML>>; *see infra* Part III.D.5.

32. Although MP3 does not integrate lyrics or graphics into its files, its competitors are responding to that shortcoming. "Music downloaded from the a2b music Store, in addition to containing CD-quality compressed audio, also contains text and art which enable the a2b music player to deliver a rich musical experience on your home or office PC." *About the Player* (visited June 12, 1999) <http://www.a2bmusic.com/player_how2.asp>.

Using the Internet, musicians are also able to reach target audiences in remote areas where retail stores do not carry niche genres.³³ The record companies, if they can retain control of electronic distribution, may also benefit from the efficiencies of on-demand compressed digital delivery.³⁴ The result of an MP3 revolution is greater exposure for unknown musicians, cheaper distribution for known musicians, and greater choice and flexibility for consumers. These are all benefits, but many of them will be realized primarily at the expense of the record labels and retail outlets, whose revenues rely on being in control of the physical media upon which music is delivered. No prior change in format in the music industry has been as threatening to record companies, because the advent of magnetic tapes and CDS still allowed record companies to control the physical delivery of music. Record companies currently have so much control over distribution that some industry observers believe the industry took advantage of the release of the CD format, when it was new, to raise its prices drastically.³⁵ It is believed that CDS are still significantly overpriced today, relative to their cost of production.³⁶ It is no surprise, therefore, that the music industry is terrified of losing this lucrative distribution control, which is threatened by MP3, and has fought fiercely to restrain its development.³⁷ When examining the legal copyright issues surrounding this new form of digital music, it is crucial to keep in mind that the staunchest

33. See Marc Ferranti, *Recording Industry Braces for Internet's Impact* (June 24, 1997) <http://www.pcworld.com/cgi-bin/database/body.pl?ID=970624125930&doc_id=23669>.

34. In addition to being able to fit more music on each physical compact disc or other delivery medium, an on-demand delivery system using MP3 would involve no waste due to overproduction of a CD and no shortage due to underproduction. See Doug Reece, *Beyond MP3*, MP3.COM (visited June 12, 1999) <<http://www.mp3.com/news/173.html>> ("If 1 million [albums] is too many, then they will have to eat returns which cut into profits. If that is too few, then they may leave money on the table."); *PCs Get Wired for Audio with MP3*, COMPUTER SHOPPER, Feb. 1, 1999, at 130(1), available in 1999 WL 7236706 ("Internet distribution is said to do away with the waste inherent in retail distribution. . . . Net distribution does away with packaging and all the attendant production costs of making physical receptacles.").

35. See GRONOW & SAUNIO, *supra* note 4, at 192 ("The manufacture of a CD originally cost slightly more than that of an LP record. For volume production, however, the difference is negligible. In 1995, only one per cent of world record sales consisted of LPs, yet in the record shops compact discs originally cost nearly twice as much as LP discs. The new technology offered the industry a marvellous opportunity to raise prices, which had fallen below the limit of profitability.")

36. See Dvorak, *supra* note 30 ("[T]he industry is overcharging for CDs, which should have been selling for less than \$10 for at least the last five years.").

37. See *MP3*, RECORDING INDUS. ASS'N. OF AM. (visited June 12, 1999) <http://www.riaa.com/tech/tech_mp3.htm>.

opponents of MP3 technology have a vested interest in the status quo. On the other hand, music artists and music consumers have generally embraced the benefits of MP3, though often at the expense of copyright interests. This Note will examine the copyright implications of this new music format, while attempting to address the interests of all the players in the music industry.

C. MP3: Beyond Present Limitations

Not every music fan has a computer. And of those who do, not every one is connected to the Internet. Of those people who have computers, most have slow telephone-based dial-up connections that are not well suited for downloading MP3s.³⁸ For these reasons, some observers believe that the MP3 phenomenon is limited to computer-savvy college students with high-speed Internet connections.³⁹ However, the imminent implementation of cable modems and other high-speed services promises to spread broadband access to many Internet users.⁴⁰

Nor is there any reason to believe that MP3 will remain a purely Internet-based phenomenon. MP3 is being slowly integrated into standard audio devices.⁴¹ At the end of 1998, a device called the "Rio"

38. "[D]ownloading music from Web sites is impractical for most home users. It can take 20 to 30 minutes to download a song using a 56Kbps V.90 modem." John R. Quain, *Diamond's Rio PMP300 Rocks the Music Boat with MP3 Files*, COMPUTER SHOPPER, Mar. 1, 1999, available in 1999 WL 12875044. However, that figure represents the lower end of Internet transfer rates. Using a T1 line, such as can be found at universities, it is possible to download an entire CD of music in 12 minutes. See *PCs Get Wired for Audio with MP3*, COMPUTER SHOPPER, Feb. 1, 1999, at 130(1), available in 1999 WL 7236706.

39. See Elissa D. Hecker, *"Free"dom of Music in Cyberspace*, N.Y. L.J. Sep. 12, 1997, at 7 ("Currently, only those individuals with access to knowledge of computer, software and the Internet are able to profit from copied and distributed music on-line."). Even if MP3 files are presently a medium of the young, college-aged consumers make up an important segment of the industry's sales. See Michael Robertson, *Major Label Breaks Rank and Supports Previously Taboo MP3* (visited June 12, 1999) <<http://www.mp3.com/news/072.html>> ("[T]he 15-25 year old age segment most often associated with [distribution of copyrighted materials] is also the most active music buying segment of the population"); see also M. WILLIAM KRASILOVSKY & SIDNEY SHELLEY, *THIS BUSINESS OF MUSIC* xxv (7th ed. 1995).

40. See Taylor, *supra* note 21.

41. For example, a company called ReQuest offers a home stereo system that plays both CDs and MP3 files. The AudioReQuest unit can turn any CD or other audio input into an MP3 file which can then be stored and organized for later playback. See *AudioReQuest* (visited June 12, 1999) <<http://www.audiorequest.com/aboutAudioReQuest.html>>. Another device soon to be released, called the Empeg stereo, is the first commercial MP3 player designed for a car. It stores up to 35 hours of MP3

was developed by Diamond Multimedia to allow people to transfer MP3 files from any computer to a portable player the size of a deck of cards.⁴² One advantage of the Rio, which has no moving parts, over existing portable CD or tape devices is that it does not skip when a user is running or jogging.⁴³ The Rio, if successful, may eventually replace portable cassette and CD players. Although currently tied to computer systems that obtain MP3 files from the Internet, devices like the Rio could in the future obtain music directly from music stores or other outlets containing an electronic server of popular music.⁴⁴ This might be similar, in some ways, to recent commercial attempts to offer custom-made CDs of songs selected by the consumer.⁴⁵ The MP3 standard is thus capable of growing in popularity on both the Internet and through standard retail outlets, using a wide range of consumer audio platforms.

music, downloaded from the Internet or converted directly from CDs. See Matt Richtel, *News Watch: New Car Stereo Packs Plenty of Road Music*, N.Y. TIMES, Mar. 11, 1999, at G3.

42. See discussion *infra* Part III.D.1.a. Other competing portable MP3 devices have emerged, but Rio remains the most popular. See, e.g., Martyn Williams, *Samsung Announces Three New MP3 Players*, NEWSBYTES NEWS NETWORK, Jan. 10, 1999, available in 1999 WL 5117381.

43. See Lawrence J. Magid, *PC's Notable Steps as Music Source*, L.A. TIMES, Jan. 4, 1999, at C3.

44. Record stores are the most popular source of recorded music. In 1993, record stores comprised 59.1 percent of sales and other stores made up another 24.2%. The balance were sold by record and tape clubs or mail order. See KRASILOVSKY & SHEMEL, *supra* note 39, at xxii.

45. Custom-made compact discs are already available from vending machines and via the Internet. At MyCD.com, users can choose to record about 70 minutes of music, chosen from a catalog of 165,000 songs, for about twenty dollars. See *MyCD.com* (visited June 12, 1999) <<http://www.mycd.com>>; see also *Vending Machine Makes Custom Music Cds*, CNN.COM (Mar. 19, 1999) <<http://www.cnn.com/TECH/ptech/9903/19/music.vending.machine/>>; Howard Siegel, *Digital Distribution of Music: How Current Trends Affect Industry*, MULTIMEDIA & WEB STRATEGIST, Oct. 1998, at 1 ("Companies such as Custom Revolutions Inc. and CDNow provide their customers with personally tailored CD compilations, which can be selected, ordered, pressed and delivered to the user within 24 hours."). Such services have met with strong opposition from the recording industry. See Lessley Anderson, *Burn-Your-Own-CD Revolutionaries Fight Recording Industry*, CNN.COM (Sept. 25, 1998) <<http://www.cnn.com/TECH/computing/9809/25/cd.idg/index.html>>; David Pescovitz, *Make Custom CDs Online, While the Record Companies Still Let You*, CNN.COM (May 27, 1998) <<http://cnn.com/TECH/computing/9805/26/internet.music.idg/index.html>>.

D. *Impact on the Music Industry*

The benefits of MP3 format have not gone unnoticed, and even in the short time since its introduction, there are signs that it, or some derivative of it, is here to stay. Venture capital funding has been flowing into MP3 projects.⁴⁶ Several independent record labels have embraced the MP3 format.⁴⁷ The latest version of Microsoft's Internet Explorer⁴⁸ browser incorporates a (non-MP3) "radio" feature,⁴⁹ signaling the future of on-demand music on the Internet.

Even several well-known artists have released selected music to the Internet in the MP3 format.⁵⁰ In one notable instance, the band Public Enemy made some of its songs available in the MP3 format last year, only to receive threats of legal action from its recording label at the time, Polygram.⁵¹ Public Enemy's contract with Polygram has since expired,

46. See Rob Guth, *MP3.com Gets \$11 Million Venture Financing*, INDUSTRY STANDARD (Jan. 21, 1999) <<http://www.thestandard.net/articles/display/0,1449,3230,00.html?related.1449>>; see also Press Release, *Goodnoise Completes \$31 Million Equity Financing From Premier Financial and Strategic Investors*, (Mar. 24, 1999) <<http://www.goodnoise.com/about/pr/pr32.html>>.

47. Rykodisc, a record company that produces Frank Zappa, Bruce Cockburn, and Morphine, signed an MP3 distribution agreement with the Goodnoise online music distributor. See Rob Guth, *Market Trials Can't Stop MP3 Blitz*, CNN.COM (Feb. 10, 1999) <<http://www.cnn.com/TECH/computing/9902/10/mp3blitz.idg/index.html>>. See also Lessley Anderson, *MP3 Fashion Craze -- Who's Wearing What*, INDUSTRY STANDARD (Feb. 8, 1999) <<http://www.thestandard.net/articles/display/0,1449,3386,00.html>> (describing how two independent labels, Spin Art and Platinum, have started using MP3); Rob Guth, *Digital Grunge? MP3.com Adds Sub Pop to Roster*, INDUSTRY STANDARD (Feb. 24, 1999) <<http://www.thestandard.net/articles/display/0,1449,3613,00.html>> ("Online music seller MP3.com said Tuesday it will offer music from select artists represented by Seattle-based independent record label Sub Pop Records."). Online Music Company has teamed up with over 60 small record companies from around the world to offer digital music in MP3 and other formats. See Rob Guth, *New Web Site to Ease MP3 Licensing*, CNN.COM (Feb. 12, 1999) <<http://www.cnn.com/TECH/computing/9902/12/ezmp3.idg/index.html>>.

48. See generally Internet Explorer, MICROSOFT.COM (visited May 10, 1999) <<http://www.microsoft.com/catalog/display.asp?site=808&subsid=22>>.

49. See Peter H. Lewis, *State of the Art; Listen to This Browser*, N.Y. TIMES, Mar. 18, 1999, at G1; see also Michael Stroh, *Emerging from the Fog/Plain-Speaking Explorer 5.0 Clears up the Net for Novices*, BALT. SUN, Apr. 14, 1999, at C03.

50. Tom Petty recently made a new song available on the mp3.com site in return for the e-mail addresses of the fans who downloaded his music. See Jon Pareles, *Musicians Want a Revolution Waged on the Internet*, N.Y. TIMES, Mar. 8, 1999, at E1. Other popular artists and groups who have released free MP3 versions of their songs include Taylor Dayne, Kansas, Peter Cetera, Dionne Warwick, Willie Nelson and the Beach Boys, and Blues Brothers. See Michael Robertson, *Top Tier Artists Do MP3*, MP3.COM (visited June 12, 1999) <<http://www.mp3.com/news/139.html>>.

51. See *id.*

and the band is planning to release its next album in digital form on the Internet before it appears as a CD.⁵² Billy Idol and the Beastie Boys have also offered MP3 versions of their music but were pressured into removing the files by Capitol, their recording label.⁵³ The response to these distributions from music fans has been quite receptive.⁵⁴

E. Industry Structure and Pending Change

Worldwide, the music industry sells approximately 3.8 billion units, worth an estimated \$40 billion.⁵⁵ The United States accounts for over \$12 billion of those sales.⁵⁶ The industry is currently enjoying a healthy market for music and projects continued success.⁵⁷ Of the revenue generated through sales, recording artists typically receive between eleven and fifteen percent as royalties.⁵⁸ However, that small percentage may be calculated based on discounted retail values, resulting in an effectively smaller royalty.⁵⁹ Artists are sometimes given a significant advance when an album is turned over to the record company for production, but that advance is usually deducted from future royalties once the music starts generating a profit.⁶⁰ The vast majority of revenue

52. *See id.*

53. *See* Lessley Anderson, *MP3 is Web's Newest Craze*, CNN.COM (Feb. 10, 1999) <<http://www.cnn.com/TECH/computing/9902/10/mp3craze.idg/index.html>>.

54. *See id.*

55. *See* GRONOW & SAUNIO, *supra* note 4, at 193. The figures are based on a 1995 release by the International Federation of the Phonographic Industry.

56. *See* Jason Chervokas, *Internet CD Copying Tests Music Industry*, N.Y. TIMES, Apr. 6, 1998, at D3; *see also* Chuck Philips, *'93 Sales Break Sound Barrier*, L.A. TIMES, Feb. 25, 1994, at F1 ("Annual record and music video sales broke the \$10-billion barrier for the first time ever in 1993.").

57. *See* Philips, *supra* note 56, at F1 (describing an 11.3% sales gain over the previous year, and in particular, a 22% leap in CD sales).

58. *See* Jay L. Cooper, *Anatomy of a Record Deal* 4 (Apr. 10, 1996) (unpublished manuscript, on file with author) [hereinafter Cooper, *Anatomy*]. These figures are for a new artist, and include a 2-4% producer's fee. *See also* Jay L. Cooper, *Current Trends in Recording Contract Negotiation*, in LEGAL AND BUSINESS ASPECTS OF THE MUSIC INDUSTRY 49, 60 (PLI Patents, Copyrights, Trademarks and Literary Property Course Handbook Series No. 120, 1980) [hereinafter Cooper, *Current Trends*] (5-8% royalty for new artists as of 1978); KRASILOVSKY & SHEMEL, *supra* note 39, at 4 (royalty may be 7-12% for a new artist, but may be 13% or higher for "superstars").

59. *See* Cooper, *Current Trends*, *supra* note 58, at 61; KRASILOVSKY & SHEMEL, *supra* note 39, at 4 (royalties are frequently based on 90% of records sold to account for returned and broken records, and the list price is subject to reduction for the portion of the price allocated to the packaging costs of the album).

60. *See* Cooper, *Current Trends*, *supra* note 58, at 53; Cooper, *Anatomy*, *supra* note 58, at 5. One company, DreamWorks Records, released an free online MP3 version of a single from the new band Buckcherry. Highlighting the economics involved in

generated through music sales, therefore, goes either to defray production, distribution, and promotion costs, or becomes profit for the record companies.⁶¹ The economic imbalance between record companies and music artists generates much support for MP3 from both musicians and music fans.⁶² At the same time, it causes much concern for the record companies, who may lose control over their lucrative product.

Despite these diverging interests with respect to the MP3 format, both music artists and record companies face a common threat that may leave them fighting for a mere fraction of the revenue they now enjoy: the threat of widespread copyright piracy posed by MP3s and other forms of digital music. Piracy is not a new problem for the music industry.⁶³ It is estimated that in 1993, the annual value of pirated, counterfeit, and bootleg music in North America alone was over \$350 million, and home taping resulted in another \$1.5 billion in annual lost sales.⁶⁴ The Recording Industry Association of America ("RIAA") now places the loss to the industry at \$5 billion per year.⁶⁵ Piracy became an especially serious concern with the advent of digital music, which allows exact copies to be made without limit or deterioration in sound quality.⁶⁶

distributing a single song, one industry executive said, "If they had gone the brick and mortar route, it would have cost them around \$2.50 to put the single in the store, and more often than not, that money would be charged back to the artist." Doug Reece, *DreamWorks Enters the MP3 Fray*, MP3.COM (visited June 12, 1999) <<http://www.mp3.com/news/165.html>>.

61. For example, in the United Kingdom, for a CD that sells for £15.27 after tax (£13 before tax), the artist, writer, and publisher share £2.61, the retailer receives £3, and the record company gets £7.39, of which £4.66 is spent on manufacturing and distribution. See *Wither the Music Industry?*, INSIDE MULTIMEDIA, June 23, 1997, available in 1997 WL 11269391.

62. It is estimated that as of February 1999, there are more than 10 million users of MP3 players. See Rob Guth, *Market Trials Can't Stop MP3 Blitz*, CNN.COM (Feb. 10, 1999) <<http://www.cnn.com/TECH/computing/9902/10/mp3blitz.idg/index.html>>. Lycos, an Internet search engine, has indicated that "MP3" is the second-most requested search term after the word "sex." See *MP3 Support Snowballs -- Bandwagon or Revolution?*, COMPUTERGRAM INT'L, Feb. 8, 1999, available in 1999 WL 8109302.

63. "Piracy has always been an insidious backdrop to the daily exercise of a music copyright owners [sic] rights." AL KOHN & BOB KOHN, KOHN ON MUSIC LICENSING 27 (2d ed. 1996); see also Amy Borrus et al., *Counterfeit Disks, Suspect Enforcement*, BUS. WK., Sept. 18, 1995, at 29.

64. See KRASILOVSKY & SHEMEL, *supra* note 39, at xxiv.

65. See, *Frequently Asked Questions*, RECORDING INDUS. ASS'N. OF AM. (visited June 12, 1999) <<http://www.riaa.com/piracy/pirans.htm>>.

66. See OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, COPYRIGHT AND HOME COPYING: TECHNOLOGY CHALLENGES THE LAW, OTA-CIT-422 at 45 (1989), available at <http://www.wws.princeton.edu/~ota/ns20/alpha_f.html> ("Multigenerational digital copies (i.e. 'clones') could be produced with no loss of

Despite the growth of legitimate low-cost MP3 distribution sites and free music promotions,⁶⁷ some experts believe that 95 percent of MP3 downloads on the Internet are illegal.⁶⁸ Because of the anonymous and amorphous nature of the Internet, it is difficult to determine exactly how much unauthorized downloading is taking place.⁶⁹ However, the Internet is almost certainly increasing the penetration of bootleg materials, which are available now to anyone from an Internet connection instead of from the trunks of cars in parking lots at concerts.⁷⁰ MP3 is poised to greatly exacerbate the piracy problem.⁷¹

II. THE LEGAL FRAMEWORK FOR DIGITAL MUSIC

In order to appreciate the legal challenges posed by MP3 music, some background in music copyright law is helpful. The origin of copyright law is found in the United States Constitution. Article I, Section 8 provides Congress with the power "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and

quality."); *see also* Christine M. Rigney, *The Infamous Diamond Case: What is at Stake?*, INTELL. PROP. STRATEGIST, Jan. 1999, at 1 ("Unlike ordinary analog recordings, digital recordings may be copied time and again and each copy has the same digital fidelity as the original.").

67. *See* discussion *supra* note 26 and accompanying text.

68. *See* *MP3 Revolution Splitting Music Industry Along Cyber Lines*, CNN.COM (Dec. 16, 1998) <<http://cnn.com/SHOWBIZ/Music/9812/16/digital.music/index.html>> (quoting Hilary Rosen of the RIAA).

69. "Currently, we have only anecdotal information about the damage caused by online piracy based on evidence uncovered in the discovery phase of our past litigation against illegal music archives using MP3 technology." *Online Piracy*, RECORDING INDUS. ASS'N OF AM. (visited June 12, 1999) <<http://www.riaa.com/piracy/pirop.htm>>.

70. In the first half of 1998 RIAA's legal actions against alleged music pirates increased nearly 400% over 1997, "mostly because of Internet cases." *Piracy Strategies*, RECORDING INDUS. ASS'N OF AM. (visited June 12, 1999) <http://www.riaa.com/piracy/pir_ps.htm>.

71. *See, e.g.*, John C. Dvorak, *MP3 Spells Disaster*, PC MAG., Mar. 9, 1999, at 87 ("The MP3 format and the trading of music on the Internet will destroy the music industry within the next two years."); Larry Lange, *MP3 Compression Opens Recording Industry's Coffers to Hackers*, ELECTRONIC ENGINEERING TIMES, July 21, 1997, at 1 ("We're in the middle of the new piracy revolution."); Howard Siegel, *Digital Distribution of Music: How Current Trends Affect Industry*, in *Speedbumps on the Information Superhighway*, 5 MULTIMEDIA & WEB STRATEGIST, Oct. 1998, at 1 ("[T]he music industry has found itself immensely threatened -- and, indeed, already injured to some degree -- by these technological advances."); Mo Krochmal, *Music Industry Unprepared for MP3*, CMP TECHWEB, July 16, 1998, available in 1998 WL 9297092.

Discoveries."⁷² The original Copyright Act of 1790⁷³ and its early amendments arose from this Constitutional grant of authority.⁷⁴ The 1831 revision of the Act granted music compositions copyright protection.⁷⁵ However, that protection applied only to the musical composition itself, not to any particular physical recording of that music as performed. The result of this framework was that the sheet music of a composer's song was protected, but a recorded performance of that composer's music had no protection.⁷⁶ It was not until 1972 that Congress protected sound recordings with the passage of the Sound Recording Act.⁷⁷ Those protections were integrated into the Copyright Act of 1976 ("1976 Act").⁷⁸ The protection afforded sound recordings fell somewhat short of the various rights that a composer of a written musical work enjoyed. While a composer before the enforcement of the 1976 Act would have enjoyed the five general rights granted under 17 U.S.C. § 1,⁷⁹ the creator of a sound recording would be entitled only (1) to duplicate the sound recording in the form of phonorecords that directly or indirectly recapture the actual sounds fixed in the recording, and (2) to prepare derivative works in which the actual sounds fixed in the sound recording are rearranged or remixed.⁸⁰ Notably, the right of public performance was absent.⁸¹

72. U.S. CONST. art. I, § 8, cl. 8.

73. Ch. 15, 1 Stat. 124 (1790) (repealed 1831). The original Copyright Act protected authors of maps, charts and books from unauthorized reproduction.

74. Congress added protection for the engraving, designing, and etching of historical prints in 1802. *See* Copyright Act, ch. 36, 2 Stat. 171 (1802) (repealed 1831). Congress conferred jurisdiction over copyright matters to the federal courts in 1819. *See* Copyright Act, ch. 19, 3 Stat. 481 (1819).

75. *See* Copyright Act, ch. 16, 4 Stat. 436 (1831) (uncodified; but basic elements incorporated in 17 U.S.C. § 1-1010 (1994)).

76. State law copyright, which was not federally preempted until 1976, may have provided protection for sound recordings. *See, e.g.,* Goldstein v. California, 412 U.S. 546 (1976) (recognizing copyright protection under state statute).

77. Pub. L. No. 92-140, 85 Stat. 391 (1971) (codified as amended at 17 U.S.C. § 102) (1994 & Supp. III 1997).

78. Pub. L. No. 94-553, 90 Stat. 2541 (1976) (codified as amended at 17 U.S.C. § 102 (1994 & Supp. III 1997)) (renumbered Chapter 17; enforced starting in 1978).

79. These rights are the right to reproduce the copyrighted work, the right to prepare derivative works, the right to distribute copies, the right to perform publicly, and the right to display the work. *See* 17 U.S.C. § 1 (1976) (renumbered by Copyright Act of 1976; now found in 17 U.S.C. § 106 (Supp. I 1995)).

80. *See* 17 U.S.C. § 114(b) (1982); *see also* Andrew S. Muroff, *Some Rights Reserved: Music Copyright in the Digital Era*, 1997 DET. C.L. REV. 1241, 1267.

81. For analysis of the new digital performance right in sound recordings legislation *see infra* Part IV.A.

Unfortunately, this left the owners of sound recordings with no legal recourse if they encountered a copyright infringement of their works. Therefore, each time a song was broadcast on the radio, the owner of the musical composition received royalty payments while the owner of the actual sound recording had no right to receive any financial compensation.⁸²

This differential treatment has resulted in a patchwork of legislation aimed at increasing copyright protection for sound recordings, particularly in response to digital technologies, which increase the risk of piracy. Since the 1976 Act went into effect, Congress repeatedly considered granting a performance right in sound recordings, but until 1995 none of those efforts was successful, perhaps due to the recording industry's economic success in the absence of such a right.⁸³ However, as audio technology advanced and threats to the industry became foreseeable, Congress did step in with legislation. In 1992, the Audio Home Recording Act⁸⁴ took effect, aiming to protect the industry from at-home serial copying of digital music recordings. Soon after, the Digital Performance Right in Sound Recordings Act of 1995⁸⁵ introduced a limited performance right for digital audio sound recordings. Most recently, the Digital Millennium Copyright Act of 1998⁸⁶ attempted to strike a balanced form of protection for works transmitted over the Internet.⁸⁷

Although these developments in the past decade have secured important rights for artists and music publishers, the resulting legal framework is scattered and incomplete. These three statutes may be interpreted to protect certain aspects of Internet music distribution. However, the application to emerging music technology is haphazard and subject to interpretation difficulties as new technologies emerge. In light of the approaching convergence of media and intellectual property propelled by computers and Internet distribution, Congress must begin

82. June Chung, *The Digital Performance Right in Sound Recordings Act and its Failure to Address the Issue of Digital Music's New Form of Distribution*, 39 ARIZ. L. REV. 1361, 1363 (1997).

83. *See id.* ("The industry lobby had no persuasive ammunition since the lack of a performance right in sound recordings had not created any economic difficulties.")

84. Pub. L. No. 102-563, 106 Stat. 4237 (1992).

85. Pub. L. No. 104-39, 109 Stat. 336 (1995).

86. Pub. L. No. 105-304, 112 Stat. 2860 (1998).

87. For an analysis of these laws with respect to the MP3 format, see discussion *infra* Parts III.D, IV.

a comprehensive revision of the Copyright laws to vest in media creators rights which protect their creations in the next century.

III. THE AUDIO HOME RECORDING ACT

A. *Origins*: Sony Corp. of America v. Universal City Studios, Inc.

The origins of the Audio Home Recording Act ("AHRA") can be traced to the 1984 case of *Sony Corp. of America v. Universal City Studios, Inc.*⁸⁸ The *Sony* case concerned the Betamax videocassette recorder, a device which allowed the video taping of television broadcasts.⁸⁹ At-home recording of audio works had been of concern to the music industry for some time prior to the introduction of a video recorder,⁹⁰ but the growing popularity of the Betamax since its introduction in 1975 brought a new player into the at-home copyright debate -- the motion picture industry. Indeed, "many interested parties looked to the [Betamax] litigation as a potential beacon of certainty along the 'invisible boundary' between technological advances and intellectual property protection."⁹¹

Unfortunately, the *Sony* case did not answer some of the lingering questions posed by copyright infringement in the home.⁹² In the underlying action, Universal Studios alleged that the Betamax machine sold by Sony would cause a dramatic increase in the pirating of movies and television programs. In particular, Universal Studios alleged that Sony's marketing of the Betamax caused users of the Betamax machine to record copyrighted works, constituting copyright infringement.⁹³

88. 464 U.S. 417 (1984).

89. See Edward A. Jeffords, *Home Audio Recording After Betamax: Taking a Fresh Look*, 36 BAYLOR L. REV. 855, 857 (1984).

90. See *id.* at 856. In 1988, the Office of Technology Assessment found that 40 percent of a nationally representative group of people aged 10 and over had taped recorded music in the past year from broadcasts, records, tapes or compact discs -- a result similar to an earlier study done in 1982. See OFFICE OF TECH. ASSESSMENT, COPYRIGHT AND HOME COPYING: TECHNOLOGY CHALLENGES THE LAW 145-46 (1989).

91. Jeffords, *supra* note 89, at 857.

92. "The 'Betamax' decision is limited as precedent. It does not answer all of the questions posed by private copying. For example, it does not deal with copying for the purpose of building a videotape library or off-air taping of cable and pay television programming." *Audio Recording Act of 1991: Hearing on S. 1623 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary*, 102d Cong. 13 (1991) (statement of Ralph Oman, Register of Copyrights, Library of Congress).

93. See *Sony*, 464 U.S. at 420.

The Supreme Court focused its analysis on the fair use doctrine.⁹⁴ In particular, the Supreme Court relied on the district court's extensive findings that Betamax recorders were used primarily for "time-shifting" purposes.⁹⁵ "According to plaintiffs' survey, 75.4% of the [Betamax] owners use their machines to record for time-shifting purposes half or most of the time. Defendants' survey showed that 96% of Betamax owners had used the machine to record programs they otherwise would have missed."⁹⁶ Only a few users had collected taped programs to create a library of works.⁹⁷

Sony was a 5-4 decision that relied extensively on the district court's finding that use of the Betamax machine did not constitute a commercial harm to television programming.⁹⁸ The Court was admittedly reluctant to extend copyright principles beyond those clearly articulated by Congress.⁹⁹ Thus, in the end, the *Sony* decision stands as a poor precedent for the future of copyright law; decided early in the history of home reproduction and using the balancing inherent in a fair use analysis, its application to contemporary technology is limited.

B. Home Copying Revisited: Digital Audio Tape

It is no surprise that soon after the *Sony* case, a new home-copying threat emerged, with features quite distinguishable from the Betamax. This time, the music industry was at risk. In the late 1980s, manufacturers developed Digital Audio Tape machines ("DAT").¹⁰⁰ DAT allows users to make perfect digital reproductions of compact discs

94. See 17 U.S.C. § 107 (1994); see also 464 U.S. at 447-55.

95. 464 U.S. at 442.

96. *Id.* at 424 n.4 (quoting *Universal City Studios, Inc. v. Sony Corp. of Am.*, 480 F. Supp. 429, 438 (C.D. Cal. 1979)).

97. See *id.*

98. The Court wrote:

In summary, the record and finding of the District Court lead us to two conclusions. First, Sony demonstrated a significant likelihood that substantial numbers of copyright holders who license their works for broadcast on free television would not object to having their broadcasts time-shifted by private viewers. And second, respondents failed to demonstrate that time-shifting would cause any likelihood of nonminimal harm to the potential market for, of the value of, their copyrighted works.

Id. at 456.

99. "In a case like this, in which Congress has not plainly marked our course, we must be circumspect in construing the scope of rights created by a legislative enactment which never contemplated such a calculus of interests." *Id.* at 431.

100. See Muroff, *supra* note 80, at 1271.

and other recording media.¹⁰¹ Once copied onto a DAT tape, subsequent reproductions are indistinguishable from the original.¹⁰² Such quality of reproduction had not been possible with the Betamax machine. A 1988 study by the Office of Technology Assessment found that most people who copied music at home did so for "place-shifting" purposes.¹⁰³ For example, people who purchased records for home use often made cassette copies for use in their cars. This finding suggests an analogy between the possible uses of DAT and the fair use exemption in the *Sony* case, but only insofar as the music has already been purchased by the consumer in another format. Furthermore, the content copied by DATs would be music, works typically collected in personal libraries and listened to time and again, unlike television programs, which are typically viewed only once. "Whereas videotaping did not supplant the demand for 'factory TV shows' (i.e., home receptors of broadcasts), DAT taping threatened to decimate factory sales of record products."¹⁰⁴ With this threat looming, the recording industry found a suitable plaintiff and commenced suit once again against Sony.¹⁰⁵ Both sides, and several third parties, had strong interests in coming to a negotiated settlement.¹⁰⁶ Eventually, the negotiations among the parties resulted in the framework for a bill to be presented to Congress, later to be known as the Audio Home Recording Act of 1992, and the lawsuit was settled in expectation of the pending legislation.¹⁰⁷ "Most hailed the Act as an historic

101. See Ron Gasbarro, *What's DAT? Yet Another Audio Innovation*, BALTIMORE SUN, Nov. 11, 1990, at 1E.

102. See *id.*

103. See OFFICE OF TECH. ASSESSMENT, *supra* note 90, at 146.

104. 2 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 8B.01[B], at 8B-7 (1998).

105. See *Cahn v. Sony Corp.*, No. 90-4537 (S.D.N.Y. filed July 9, 1990).

106. See 2 NIMMER, *supra* note 104.

The plaintiff side had the incentive to settle for less than full control over the uses to which DAT machines could be put, lest history repeat itself and Sony triumph again. Sony and its fellow manufacturers, for their part, also had the incentive to offer concessions, to free their marketing plans from the specter of injunctions and damages.

Id. at 8B-7.

107. "S.1623 is the result of give and take among all parties concerned in crafting a solution to the thorny problem of digital home taping." *Audio Recording Act of 1991: Hearing on S. 1623 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary*, 102d Cong. 78 (1991) (statement of Linda F. Golodner, Executive Director, National Consumers League).

compromise, and predicted that great benefits to both the public and to industry would flow from it."¹⁰⁸

C. *The Audio Home Recording Act of 1992*

When Congress set about considering the legislation proposed by the parties to the DAT case, its goal was to resolve the threat of noncommercial audio home taping of digital works.¹⁰⁹ Unlike much of the rest of traditional copyright law, which grants absolute rights to the creator of artistic works, the additions and modifications brought by the AHRA reflect a financial and technological compromise aimed at limiting and compensating digital home copying that might impact record sales. The provisions of the AHRA, codified at 17 U.S.C. §§ 1001-1010, replace the default systems of copyright infringement and contributory infringement¹¹⁰ with a system of serial copy protection and blanket royalty payments on digital copying equipment.

1. Devices and Media Covered

The AHRA applies to digital audio recording devices, digital interface devices,¹¹¹ digital recording media, and digital musical recordings.¹¹² Rather than covering all the devices that consumers might use to copy audio works in their homes (such as analog cassette recorders), the AHRA reflects a compromise at the DAT negotiations and specifically addresses the enhanced threat of copying posed by digital formats.¹¹³ Included in the statute's purview is

108. Gary S. Lutzker, *DAT's All Folks: Cahn v. Sony and the Audio Home Recording Act of 1991 -- Merrie Melodies or Looney Tunes?*, 11 CARDOZO ARTS & ENT. L.J. 145, 186 (1992).

109. *See id.* at 145.

110. For an analysis of contributory copyright infringement, see generally 3 NIMMER, *supra* note 104, § 12.04[A][2]. *See also* Sega Enterprises Ltd. v. Maphia, 857 F. Supp. 679, 686-87 (N.D. Cal. 1994) (holding that even though defendants did not know exactly when copyrighted games would be uploaded to or downloaded from their bulletin board, their role in the copying, including provision of facilities, direction, knowledge, and encouragement, amounted to contributory copyright infringement); Lutzker, *supra* note 108, at 159-61.

111. A digital interface device is defined as "any machine or device that is designed specifically to communicate digital audio information and related interface data to a digital audio recording device through a nonprofessional interface." 17 U.S.C. § 1001(2) (1994).

112. *See* 17 U.S.C. § 1001.

113. "[The AHRA] does not overreach. It does not cramp the taping habits of teenage America, who still use the analog format." *Audio Recording Act of 1991: Hearing on S.*

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 purposes of, and that is capable of, making a digital audio copied recording for private use¹¹⁴

Exempted from coverage are professional devices, dictation machines, and other recording devices whose primary purpose is the recording of non-musical sounds.¹¹⁵

2. Technological Safeguard: The Serial Copy Management System

The most serious concern posed by digital recording technology is the ability to make limitless copies of copies, with little or no degradation of sound. Because a twentieth-generation copy sounds as good as the original, digital copying, unlike analog copying, allows for exponential unauthorized copying. Thus, far greater and widespread high-quality piracy is possible from a single digital original. In an attempt to mitigate this danger, the AHRA requires all manufacturers or importers of digital recording devices that come under its purview to implement a Serial Copy Management System ("SCMS") in each device.¹¹⁶ However, the AHRA does not explain what the SCMS is. The text of a Technical Reference Document, which had defined the SCMS in previous versions of the bill, was removed from the final version.¹¹⁷ To determine what is meant by SCMS, it is necessary to examine the legislative history, particularly the parameters of the Technical Reference Document before it was excluded from the bill.

The SCMS model of protection rests on one basic requirement: being able to distinguish an "original" recording from a copy made therefrom. An audio recording device with SCMS allows a user to make unlimited copies of the *original* recording. However, no copies can be made from any *copies* of the original.

1623 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 102d Cong. 7 (1991) (statement of Ralph Oman, Register of Copyrights, Library of Congress).

114. 17 U.S.C. § 1001(3).

115. See *id.*

116. See *id.* § 1002(a).

117. See 138 CONG. REC. H9029-01 at 9043 (daily ed. Sept. 22, 1992); see also 2 NIMMER, *supra* note 104, § 8B.03[B][1], at 8B-46 n. 29.

SCMS is intended to prohibit [digital audio recording] devices from recording 'second-generation' digital copies from 'first-generation' digital copies containing audio material over which copyright has been asserted via SCMS. It does not generally restrict the ability of such devices to make 'first-generation' digital copies from 'original' digital sources such as prerecorded commercially available compact discs, digital transmissions or digital tapes.¹¹⁸

This is generally achieved through a simple two-bit encoding system in place on original recordings and recorded onto subsequent copies.¹¹⁹ This system cuts off the ability to make copies from anything but the originally purchased recording. Naturally, there is no limit to the number of copies that can be made directly from the original recording. It was hoped, however, that precluding the possibility of third-generation and further copies effectively would balance the danger of widespread piracy with the consumer interest in being able to make copies for archival, portability, or other noncommercial purposes.¹²⁰

The SCMS can be amended as appropriate in the future by the Secretary of Commerce, and any manufacturer can implement an alternative copy control system that has "the same functional characteristics as the Serial Copy Management system and requires that copyright and generation status information be accurately sent, received, and acted upon" between the alternative system and standard SCMS machines.¹²¹ This leaves open the possibility that SCMS can be modified to function with MP3 or other standards.¹²²

118. 138 CONG. REC. H9029-01 at 9043 (daily ed. Sept. 22, 1992).

119. "This goal is achieved by encoding various 'channel status data' in the inaudible portion of each recording. Two 'flags' -- specified bits that may be set at 0 or 1 -- within such data are of particular relevance. One flag indicates that the subject work is protected by copyright The other flag must indicate that the recording is an original . . . or a copy" 2 NIMMER, *supra* note 104, § 8B.03[B], at 8B-48. The text of the unimplemented Technical Reference Document lays out the requirements in various situations. See Appendix for full text.

120. See H.R. REP. NO. 102-873, pt. 1, at 24 (1992), *reprinted in* 1992 U.S.C.C.A.N. 3578, 3600.

121. 17 U.S.C. § 1002(a)(2).

122. The MP3 standard currently has no form of serial copy protection or copyright status information.

3. Financial Protection: Blanket Royalty Provisions

SCMS does not protect against all unauthorized copying. Anyone who is determined to distribute pirated works can make unlimited copies from one original, and in some cases, it may be possible to disable or circumvent the SCMS protection.¹²³ For this and other reasons, the AHRA establishes a blanket royalty system applied to sales of certain digital recording equipment and blank digital recording media. These royalties are collected in two funds, the proceeds of which are distributed to musicians, vocalists, artists, publishers, writers, and the owners of sound recordings.¹²⁴ The goal of the royalty system is to compensate these rights holders for the losses they are expected to incur due to proliferation of the new digital copying technology.¹²⁵

The calculations of the royalties are intended to be minimal.¹²⁶ The royalty payment for each digital audio recording device imported into or manufactured in the United States is two percent of the transfer price,¹²⁷ with a minimum payment of one dollar and a maximum of eight dollars per unit.¹²⁸ Digital audio recording media manufactured in or imported into the United States is also subject to a royalty, at a rate of three percent of the transfer price.¹²⁹

123. The AHRA explicitly prohibits the circumvention of an SCMS or similar system. See 17 U.S.C. § 1002(c).

124. For a breakdown of the allocations of these royalty funds, see 2 NIMMER, *supra* note 104, § 8B.05[A].

125. "Enactment of H.R. 3204/S. 1623 will ensure that all affected rights owners and beneficiaries will be compensated for the copying of their works on digital audio recording media . . ." H.R. REP. NO. 102-780, pt. 1, at 56 (1992).

126. "[R]oyalties are both modest and capped." *Audio Recording Act of 1991: Hearing on S. 1623 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary*, 102d Cong. 80 (1991) (statement of Linda F. Golodner, Executive Director, National Consumers League).

127. See 17 U.S.C. § 1004(a)(1). Only the first person to manufacture or import such a device is required to pay the royalty. See *id.* Reduced calculations are provided for combination units that include a digital audio recording device. See 17 U.S.C. § 1004(a)(2).

128. See *id.* § 1004(a)(3). The Librarian of Congress is authorized to increase the royalty maximum, with the goal of having no more than 10 percent of payments at the new maximum and with regard to the percentage increase of the Consumer Price Index. See *id.*

129. See *id.* § 1004(b). As with the recording devices, only the first person to manufacture or import the device is required to pay the royalty. See *id.*

4. Legal Certainty: Immunity from Infringement

In return for the implementation of the SCMS and the payment of blanket royalties, the AHRA provides broad immunity from civil actions alleging copyright infringement:

No action may be brought under this title alleging infringement of copyright based on the manufacture, importation, or distribution of a digital audio device, a digital audio recording medium, an analog recording device, or an analog recording medium, or based on the noncommercial use by a consumer of such a device or medium for making digital musical recordings or analog musical recordings.¹³⁰

This language effectively immunizes manufacturers or importers of devices which fall under the AHRA from any direct or contributory infringement claims under any copyright provision outside the AHRA. It also protects consumers from liability for home recording. Instead, violations of the AHRA are actionable under § 1009, where a party injured by violations of the SCMS or royalty provisions can sue for temporary and permanent injunctions,¹³¹ royalty damages,¹³² or limited actual damages.¹³³

Congress in 1992 thus took a dramatic step at broadening the differences between digital music works and almost any other copyrightable work. AHRA's conception of digital audio protection is the beginning of a new paradigm for protecting copyright interest, a shift away from a liability regime to a royalty-based regulatory system.

D. MP3 and the AHRA

130. *Id.* § 1008.

131. *See id.* § 1009(c)(1).

132. *See id.* § 1009(d)(1)(A)(ii). In addition to awarding the royalty payments that should have been paid, the court may award an additional amount not exceeding 50 percent of the actual damages. *See id.*

133. *See id.* § 1009(d)(1)(B). Damages are limited to \$2500 per device lacking or defeating the SCMS, *see id.* § 1009(d)(1)(B)(i), and \$25 per digital musical recording, *see id.* § 1009(d)(1)(B)(ii). Damages may also be reduced to as little as \$250 for unknowing violations of the SCMS, *see id.* § 1009(d)(3), and may be doubled for repeated violations, *see id.* § 1009(d)(2).

The AHRA applies to digital audio recording devices, interface devices, and digital audio recording media.¹³⁴ The AHRA framework, however, may be extended to MP3 music files, either as in dedicated MP3 devices or as MP3 files that are stored on the hard drive of a computer.

1. Stand-Alone MP3 Devices

Devices that record, play, store, or manipulate MP3 files are still at an early stage, and many new devices are expected to be developed in the coming months. Already, however, there is some guidance for understanding how such devices would fit into the legal framework of the AHRA. Although these devices have some difficulty meshing with the definitions and requirements of the AHRA, there are strong reasons to include them in the AHRA scheme.

a. *RIAA v. Diamond Multimedia*

At the end of 1998, Diamond Multimedia Systems ("Diamond") planned to release a device called the Rio PMP 300 ("Rio").¹³⁵ The Rio is a compact portable unit, which had a suggested retail price of \$200, designed to store up to sixty minutes of MP3 music (transferred from any home computer).¹³⁶ The recording industry immediately reacted to what it perceived as a new vehicle and incentive for music piracy and filed suit through its representative, the Recording Industry Association of America ("RIAA")¹³⁷ and the Alliance of Artists and Recording Companies ("AARC"). The suit was filed in the Central District of California¹³⁸ and alleged violations of the AHRA.¹³⁹ In particular,

134. See *supra* notes 111-12 and accompanying text.

135. See Michel Marriott, *Portable Music Player Uses No Tape or Disk -- Just RAM*, N.Y. TIMES, Sept. 24, 1998, at G3.

136. See *id.*

137. RIAA represents over 90% of the prerecorded music that is produced, manufactured, and distributed in the United States. See REGISTER OF COPYRIGHTS, REPORT ON COPYRIGHT IMPLICATIONS OF DIGITAL AUDIO TRANSMISSION SERVICES 5 (1991).

138. See *Diamond's Rio May Face Legal Roadblock*, MULTIMEDIA WK., Oct. 19, 1998, at 2, available in 1998 WL 8036501.

139. See *Complaint for Violation of the Audio Home Recording Act at 2-5*, Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc., 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247) [hereinafter *Complaint for Violation of the Audio Home Recording Act*], available at <http://www.riaa.com/piracy/pir_pr.htm>.

RIAA¹⁴⁰ claimed that the Rio was not equipped with SCMS and that Diamond was not planning to pay royalties on sales of the Rio units.¹⁴¹ A temporary injunction was granted pending a further hearing.¹⁴²

b. Is the Rio Covered by the AHRA?

A critical preliminary question posed by *RIAA v. Diamond Multimedia* is whether a stand-alone MP3 device such as the Rio is covered under the AHRA. The AHRA applies to digital audio recording devices, "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"¹⁴³ Devices such as the Rio, or the Empeg, which is designed to play MP3 files in automobiles,¹⁴⁴ do not at first glance seem to fit within the definition. Although an MP3 player may make a copy of the MP3 file from a computer or other source in order to play it, it does not produce a digital audio "copied recording" in the sense that there is a new tangible copy of the audio work that can be used in another device. Even so, duplication is technically achieved: the Rio was advertised as including software called MusicMatch, which would allow users to convert their CD music into MP3 format and subsequently upload it to the Rio device.¹⁴⁵ Copying software into the RAM of a computer has been held to constitute a "copy" for the purposes of infringement.¹⁴⁶ However, the AHRA specifically preempts liability

140. For simplicity, and since it is generally the more recognized party, RIAA will be used throughout this Note to indicate the plaintiffs, even though ARCC was a named plaintiff as well.

141. See Complaint for Violation of the Audio Home Recording Act, *supra* note 139, at 2.

142. See Laurie J. Flynn, *Maker of Music Player Awaits Judge's Decision*, N.Y. TIMES, Oct. 26, 1998, at C4.

143. 17 U.S.C. § 1001(3) (1994).

144. See *supra* note 41.

145. See Application for Temporary Restraining Order and Order to Show Cause Re Preliminary Injunction Pursuant to the Copyright Act; Memorandum of Points and Authorities in Support Thereof at 7, *Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247), available at <http://www.riaa.com/piracy/pir_pr.htm>.

146. See *MAI Sys. Corp. v. Peak Computer, Inc.*, 991 F.2d 511, 519 (9th Cir. 1993); see also *NLFC, Inc. v. Devcom Mid-America, Inc.*, 45 F.3d 231, 235 (7th Cir. 1995) ("loading software into a computer constitutes the creation of a copy under the Copyright Act"); *Vault Corp. v. Quaid Software Ltd.*, 847 F.2d 255, 260 (5th Cir. 1988) ("the act of loading a program from a medium of storage into a computer's memory creates a copy of the program"); *Advanced Computer Servs. v. MAI Sys. Corp.*, 845 F. Supp. 356, 363 (E.D. Va. 1994) (where "a copyrighted program is loaded into RAM and maintained there for minutes or longer, the RAM representation of the program is sufficiently 'fixed' to

under infringement provisions, so it is questionable whether the contemporary legal definition of "copy" with respect to computer files sheds any light on whether the Rio's transfer functions fall within the AHRA. Such a definition would be circular, as one would determine whether a device is subject to AHRA immunity from copyright liability by deciding whether it produces any "copies" which would constitute *infringement*.

A more intuitive solution, and one chosen by Diamond in its responses to RIAA's complaint, is to analyze the functionality of the Rio to see whether it satisfies the "primary purpose test" in the AHRA's definition.¹⁴⁷ The Rio does not perform the recording function, that is, the function of the personal computer which writes the files to the Rio's memory. The Rio merely stores the files and plays them back.¹⁴⁸ However, the language of the statute is poorly worded, for there is evidence that the "primary purpose" test was intended not to refer to the functionality of the machine in terms of its ability to produce copies, but to its primary use as an *audio* device instead of video.¹⁴⁹ On the other hand, the legislative history of the AHRA supports the proposition that the AHRA is concerned with regulation of devices which make distribution-ready copies that potentially facilitate a chain of piracy.¹⁵⁰

constitute a 'copy' under the Act"); *Triad Sys. Corp. v. Southeastern Express Co.*, No. C 92 1539-FMS, 1994 WL 446049, at *4 (N.D. Cal. Mar. 18, 1994), *aff'd in pertinent part*, 64 F.3d 1330 (9th Cir. 1995), *cert. denied*, 516 U.S. 1145 (1996) (loading the operating system software into a computer's RAM "necessarily creates a 'copy' in the computer's internal memory").

147. See Diamond's Memorandum of Points and Authorities in Opposition to Preliminary Injunction, *Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247), *available at* <<http://www.diamondmm.com/products/misc/rio-press.html>>.

148. *See id.*

149. In using the phrase "primary purpose," the committee contemplates a purpose that exceeds 50 percent of all purposes. If the "primary purpose" of the recording function is to make objects other than digital audio copied recordings, then the machine or device is not a "digital audio recording device," even if the machine or device is technically capable of making such recordings. Thus, a digital videocassette recorder -- though capable of making digital audio copied recordings -- would not qualify as a "digital audio recording device" because the primary purpose of the recording function of the device is not to make "digital audio copied recordings" but rather to make digital video recordings.

S. REP. NO. 102-294, at 47-48 (1992). The test thus does not seem to contemplate the question of whether the device makes *copies*, but whether its medium is primarily audio or video.

150. "The genesis of the legislation was concern by copyright owners that the fidelity

The Rio, as a device which downloads the MP3 file from the computer to allow portable listening, is not in the same threatening position that the DAT was in at the time of the pre-AHRA industry negotiations. While Congress may have been attempting to limit the nature of the devices classified in the AHRA definition to those dedicated to audio media, it may or may not have intended to include devices which copy digital audio files for the purpose of playback and not of subsequent regeneration.

This basis of a functional analysis, however, threatens to hinder the development of MP3 technology due to fear of legal liability. Inevitably, successor devices to the Rio will include features that perform a copying function, perhaps by making MP3 files compatible with CD players by writing to CD-Recordable discs which can be read by other devices. For example, Sony is currently developing a "Memory Stick" music player which will use storage sticks that resemble sticks of chewing gum.¹⁵¹ These sticks may be used to store up to two hours of music and can be swapped for use in other compatible devices.¹⁵² An MP3 player that incorporates an output capacity will fall under the AHRA while one that merely plays the MP3 file will not. The parameters of output capacity are unclear. Certainly a device which records CDs would be included, but whether it covers emerging technologies such as the Sony memory stick or even the Rio's removable memory units remains unclear. This creates significant legal uncertainty for manufacturers about whether they will be subject only to the limited liabilities imposed by the AHRA¹⁵³ or to extensive liability under non-AHRA copyright law.¹⁵⁴

In denying a preliminary injunction to RIAA, Judge Collins took notice of the fact that the Rio's functionality was limited. "Notably, the Rio has no digital audio *output* capability, and therefore is incapable of passing on digital musical files to other Rio devices, or to other

of digital reproductions of recorded music would lead to massive unauthorized copying, significantly displacing sales." H.R. REP. NO. 102-873, pt. 1, at 18 (1992), *reprinted in* 1992 U.S.C.C.A.N. 3578, 3588.

151. See Rob Guth, *Sony Building Digital Walkman*, CNN.COM (Apr. 8, 1999) <<http://www.cnn.com/TECH/computing/9904/08/netman.idg>>.

152. See *id.* At an expected price of \$66 for the 16 megabyte model, the Memory Stick is expected to be prohibitively expensive as a piracy medium. See *id.* Recordable CDs may therefore retain the advantage when it comes to music storage, even using the MP3 format.

153. See discussion *supra* Part III.C.4.

154. To address the uncertainty issue, the AHRA provides for certification of compliance with SCMS by the Secretary of Commerce. See 17 U.S.C. § 1002(a)(3) (1994).

manufacturers' devices."¹⁵⁵ However, despite that limited capability, the court found that RIAA was able to establish a probability that the Rio was a digital audio recording device subject to the AHRA.¹⁵⁶ "[T]he legislative history establishes that the phrase 'recording function' was included to ensure that the 'primary purpose' test was only applied to the *audio* recording function of a device that could record audio, video and multimedia."¹⁵⁷ The court was not persuaded by Diamond's argument that in order to fit into the AHRA the digital audio recording devices must be independently capable of making recordings.¹⁵⁸ "[N]othing in the legislative history even remotely suggests that lack of a completely independent recording function removes a device from the purview of the AHRA."¹⁵⁹

Whether Congress intended a device such as the Rio to fall into the AHRA cannot be ascertained simply by saying that there is no legislative history to indicate exclusion. The unique history of the AHRA as a derivative of an industry in the midst of litigation suggests that the threat the industry was trying to mitigate was one particular impact of digital recording technology: the threat of piracy. That threat emerges from the ability to make *multigenerational* copies of identical quality. There are several reasons why it is evident that the negotiators were never concerned with the possibility of a single generational copy made from an original digital file. First, the industry did nothing to police analog tape copying, which produced acceptable sound quality results and surely detracted from sales. It was the threat of *multigenerational* high-quality reproduction in particular that prompted the DAT litigation and the creation of AHRA. Second, the parties negotiated and accepted proposed legislation which *inherently allows* the creation of one digital copy of a digital musical work.¹⁶⁰ That first-generation copy is possible because the SCMS only protects against *copies made from copies*. Although the royalty provisions are intended to make up for the piracy that will inevitably occur by first-generation copying, the intent of the AHRA's SCMS provisions is to solve the problem of high-quality voluminous distribution of digital works, a task the Rio is not capable of

155. Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc., 29 F. Supp. 2d 624, 625 (C.D. Cal. 1998).

156. *See id.* at 632.

157. *Id.* at 631.

158. *See id.*

159. *Id.* Part of the court's framework for reaching this conclusion rests on the suggestion that computers themselves may be subject to the AHRA, a topic of key importance to this Note and which will be analyzed *infra* Part III.D.2.

160. *See supra* text accompanying note 118.

doing and for which the Rio was neither designed nor primarily marketed.¹⁶¹

Of course, computers can make perfect copies from copies of digital works, thus posing the same threat to digital music as the DAT machines did prior to the AHRA. Therefore, a complete analysis of whether future MP3 devices may fall under AHRA depends on determining whether the computers themselves would fall into AHRA regulation. If computers carrying MP3 software are subject to AHRA regulation, then independent MP3 devices that come close to computer functionality might also fall under the AHRA, even if the Rio may not.

2. Computers and the AHRA

Computers, which use data transmitted across the Internet, are at the center of the MP3 controversy. Although MP3 devices such as the Rio are being developed, the largest use of MP3 files continues to be by conducted by personal computer users who obtain MP3 files from websites on the Internet.¹⁶² Thus, any legal framework which addresses the dangers of MP3 music piracy must seek to regulate the copyright framework of computer digital music data. Although the Rio itself may seem to evade coverage by the AHRA, when a computer is used to manipulate and copy the digital sound files, the Rio-computer package as a whole is arguably subject to the AHRA.

There is significant evidence that the AHRA was not intended to regulate music data stored on computer systems. The definition of "digital musical recording," as provided in 17 U.S.C. § 1001(5)(A), determines who is entitled to receive royalty payments,¹⁶³ what activities are exempted from normal copyright treatment under Title 17,¹⁶⁴ and the amount of damages to which a party may be entitled for violations of the AHRA.¹⁶⁵ The statute exempts from the definition of "digital musical recording" any material object:

in which one or more computer programs are fixed, except that a digital musical recording may contain statements or instructions constituting the fixed sounds and incidental material, and statements or instructions

161. See generally 17 U.S.C. § 1001(3) (1994).

162. See *supra* notes 67-71 and accompanying text.

163. See 17 U.S.C. § 1006 (1994 & Supp. IV 1998).

164. See 17 U.S.C. § 1008 (1994).

165. See *id.* § 1009(d)(B)(ii).

to be used directly or indirectly in order to bring about the perception, reproduction, or communication of the fixed sounds and incidental material.¹⁶⁶

This language exempts from AHRA coverage objects, such as CD-ROMs, that contain both digital music and computer programs in one package. But it also might exempt completely computer equipment (in particular, hard drives) from coverage, because the statutory text makes no distinction between objects that contain computer programs *integrated* with digital music and objects that contain computer programs *incidental* to and wholly independent from any digital music files contained therein. Music files on such a system would not be considered "digital music recordings." Indeed, the plain language of the statute implies that even a customized computer dedicated to Internet digital audio reproduction would still be exempt because the music recordings would all be contained on the hard disk that also contains basic operating system programs.

Diamond used 17 U.S.C. § 1001(5)(A) as a defense, claiming that "[a] computer hard drive containing both music files and other computer programs qualifies for the exception contained in § 1001(5)(b)(ii) An MP3 file fixed on a hard drive containing other computer programs is simply not covered by the Act's definition."¹⁶⁷ Thus, a device, such as the Rio, which downloads the MP3 file from the computer's hard drive, is not making a copy of a "digital musical recording"; it makes a copy of a computer file. Diamond also argued that a computer server which happens to supply or distribute MP3 files is not primarily marketed for the purpose of making digital audio recordings.¹⁶⁸

Although this seems like a large loophole, legislative history does indeed provide some support for the blanket exclusion of computers from AHRA coverage.

The reported legislation would not cover multimedia products or general purpose computer programs.¹⁶⁹

The legislation does not cover professional model

166. *Id.* § 1001(5)(B)(ii).

167. Diamond's Memorandum of Points and Authorities in Opposition to Preliminary Injunction at 15-16, *Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247), *available at* <<http://www.diamondmm.com/products/misc/rio-press.html>>.

168. *See id.*

169. H.R. REP. 102-780, pt. 1, at 19 (1992).

devices or audio recording equipment designed and marketed primarily for the creation of recording resulting from the fixation of nonmusical sounds, such as dictation machines and answering machines. Also, it does not cover general purpose computers.

. . . .

With respect to recording media, the legislation is only intended to cover those media products primarily marketed or most commonly used by consumers in making digital audio recordings. The legislation would not cover any media products primarily marketed and most commonly used by consumers in making copies of other digitally stored material, including general purpose computer programs.

Also, the legislation does not cover products primarily marketed by the computer industry or most commonly used by its consumers to make copies of computer programs and data or products primarily marketed or most commonly used by consumers to make things other than digital audio copied recordings, such as recording media used to make copies of motion pictures or other audio-visual works or used in telecommunications systems.

Finally, the reported legislation would not cover multimedia products or general purpose computer programs.¹⁷⁰

I am keenly aware of the concerns of computer users that due to the prevalence of digital media, they may have to pay a royalty for blank computer tapes. This will not happen. The bill excludes computer programs from the coverage of the legislation and through the definition of digital audio recording medium, it carefully requires royalties only for tapes and the like that are primarily marketed or most commonly used by consumers for the purpose of making copies of digitally formatted music by digital audio recording devices.¹⁷¹

170. 138 CONG. REC. H9036 (daily ed. Sept. 22, 1992) (statement of Rep. Collins).

171. 138 CONG. REC. H9034 (daily ed. Sept. 22, 1992) (statement of Rep. Hughes).

The Senate debates contain some indications of similar intentions:

[C]ertain members of the computer industry have expressed concerns that the language of S. 1623 does not make sufficiently clear that material objects containing general purpose computer programs are not included within the definition of "audiogram" [which later became "digital music recording."] In order to further clarify this point, the definition of the term "audiogram" has been amended to expressly exclude material objects in which one or more computer programs are fixed, except for certain specialized statements or instructions that may be contained in CD's, digital audio tapes, and similar objects covered by the legislation.¹⁷²

In supporting H.R. 3204, John V. Roach, Chairman of the Board of Tandy Corporation, emphasized that the legislation did not cover computers generally:

I would like to emphasize that this legislation is carefully circumscribed in its provisions and effects. The legislation covers only consumer model "digital audio recording devices" designed or marketed for the primary purpose of making copies of audio recordings. The legislation does *not* encompass: Personal computers, videocassette recorders, or multimedia devices¹⁷³

Despite this legislative history suggesting broad exemption intentions for the computer industry, the *RIAA* court ultimately determined, for the purposes of the temporary injunction, that computers may be subject to the AHRA and, by implication, so might a device such as the Rio, which works in tandem with a computer to copy and play back digital music.¹⁷⁴

172. 138 CONG. REC. S8422 (daily ed. June 17, 1992) (statement of Sen. Deconcini).

173. *Second Session on H.R. 3204 Before the Subcomm. on Intellectual Property and Judicial Admin. of the House Comm. on the Judiciary*, 102d Cong. 154 (1992) (statement of John V. Roach, Chairman of the Board, Tandy Corporation).

174. See *Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998).

Much of the legislative history has been written generally and thus blurs the distinction between two separate components of the AHRA legislation: the recording device and the recording itself. The β 1001(5)(B)(2) exception for computer programs applies to *musical recordings* and governs later definitions and frameworks for royalty payments, liability, and the no-information requirement in β 1002 as appropriate to digital *recordings*. This exception is separate and distinct from the definition of what constitutes a "digital audio recording device" or a "digital audio interface device" in β 1001. The definitions for these devices *do not* explicitly create an exception for computer equipment except to the extent that such computer equipment can fit into the "primary purpose" exception discussed above. Section 1001(5)(B)(2) should only be used to analyze the applicability of the AHRA to MP3 *files* themselves and to the physical medium in which they are carried (typically the hard drive). However, there is a relationship among the definitions: the computer system as a whole does not enjoy a specified exemption from being a digital audio recording device, but it may be exempted, by implication, to the extent that in order to qualify as a digital audio recording device, a computer must be capable of making a reproduction of a digital musical recording. Once a digital music recording is loaded onto a computer, it arguably falls under β 1001(5)(B)(2). If so, why then did Congress not explicitly exempt computers from the definition of recording device, a much more direct and clear way of providing the computer industry with protection? The absence of such an exemption suggests that computers may qualify for AHRA coverage.

The *RIAA* court analyzed these provisions, separating them on the basis of congressional intent and purpose. As the court in *RIAA* wrote, reading into β 1001(5)(B)(2) an explicit exception for computer equipment would allow any manufacturer to evade the AHRA by using a computer system to manage the function of a recording device.¹⁷⁵ "Any recording device could evade AHRA regulation simply by passing the music through a computer and ensuring that the MP3 file resided momentarily on the hard drive."¹⁷⁶ Such a conclusion would not comport with the intentions of the AHRA in trying to craft an effective solution to audio piracy. Although the court recognized a possible computer exception on the basis of the "primary purpose" test, it viewed the β 1001(5)(B)(2) exception for recordings as reflective of "a legislative intent to avoid immunizing the illegitimate copying of computer

175. *See id.* at 630.

176. *Id.*

programs from liability for copyright infringement."¹⁷⁷ In other words, Congress was careful not to allow software programs to fall into the special AHRA limited liability framework just because they happen to have digital audio embedded in them, but Congress made no express effort to generally exclude computer-based digital music from AHRA coverage. Thus, the exemption under § 1001(5)(B)(2) thus is more appropriately viewed as an exemption for works, such as video games, which *combine* computer software with digital music, rather than as a blanket exemption for computers. Under this interpretation, computers are captured for regulation under the AHRA so long as they pass the "primary purpose test." More importantly, independent MP3 files or MP3 player software may be regulated by the AHRA, even though they reside on a computer hard drive, because they are not part of a non-musical computer software unit.

The *RIAA* case at this time has only concerned itself with a motion for a preliminary injunction, not a trial of these issues. Although the court suggested that computers may fall under the AHRA, the issue was not determinative in the *RIAA* case. Indeed, the parties agreed that general purpose computers were excluded from coverage of the AHRA, a questionable strategy for RIAA to have pursued in light of the ambiguity in the statute.¹⁷⁸ Furthermore, computer manufacturers were not involved in the litigation. In light of the several assumptions that were expressed in the legislative history that computers would not fall under the AHRA, the court's conclusion is debatable and the issue remains unresolved. Considering the purposes of the AHRA, a likely

177. *Id.* By way of example, Judge Collins quoted the House Report:
A definition of 'digital musical recording' has been added, with revisions reflecting exemptions for talking books and computer programs.

...
As with 'talking books,' the bill specifically excludes computer programs (which generally are classified under the Copyright Act as literary works). In addition to containing an express exclusion of computer programs in the definition of 'digital musical recording,' the Committee expressly includes the technical embodiment of statements of instructions incidental to the playback or reproduction of music by referencing such statements or instructions in both sections 1001(5)(A)(i) and (B)(ii).

Id. at 630 (quoting 102 H.R. REP. NO. 102-873, pt. 1, at 13, 17 (1992)).

178. See Diamond's Memorandum of Points and Authorities in Opposition to Preliminary Injunction at 13, *Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247), available at <<http://www.diamondmm.com/products/misc/rio-press.html>>.

response to the increasing reproduction of digital music on computer platforms is to attempt to fit them into the AHRA.

3. SCMS and MP3

a. The Futility of SCMS

In their Complaint, RIAA and AARC alleged that Diamond was in violation of the AHRA because, among other reasons, "[the] defendant has failed to incorporate a serial copy management system or the functional equivalent, as required by the AHRA."¹⁷⁹ This was the main basis for requesting a preliminary injunction, for it was claimed that if the Rio were released without SCMS, MP3 piracy would proliferate.¹⁸⁰

However, as previously mentioned, the Rio does not have an output or independent recording capacity.¹⁸¹ It is capable only of downloading and playing MP3 files already located on the user's computer system. Diamond argued that the lack of an output capability effectively acted as an SCMS system in compliance with § 1002. Judge Collins reached a similar result by explaining that it would be functionally useless to require the Rio to implement an SCMS system when it was already functionally incapable of making independent copies of musical recordings.¹⁸² "Because a Rio with SCMS would not violate Section 1002, and because a Rio without SCMS is functionally equivalent to a Rio with SCMS, the Court is convinced that . . . Rio adequately 'prohibit[s] unauthorized serial copying.'"¹⁸³

This interpretation once again rests the legal framework on the basis of the functionality of the device. Presumably, if the next version of Rio were to have an output or transfer capability, the device would technically fall into the AHRA and be subject to the SCMS requirements.

179. *Id.*

180. "Indeed, as currently designed, the Rio device will make copies of copyrighted digital sound recordings without limit." Application for Temporary Restraining Order and Order to Show Cause Re Preliminary Injunction to the Copyright Act; Memorandum of Points and Authorities in Support Thereof at 3, Recording Indus. Ass'n of Am., Inc. v. Diamond Multimedia Sys., Inc., 29 F. Supp. 2d 624 (C.D. Cal. 1998) (No. 98-8247), available at <http://www.riaa.com/piracy/pir_pr.htm>.

181. *See supra* text accompanying note 155.

182. *See RIAA*, 29 F. Supp. 2d at 632.

183. *Id.* at 632 (alternation in original) (footnote omitted).

b. MP3 Implementation of SCMS

One of the great difficulties with trying to fit the Rio into the SCMS provisions is that the MP3 files it uses are not created with any identifying data to indicate whether the music is an original or a copy.¹⁸⁴ Nor could a manufacturer of an MP3 player be required to add copyright information, because the AHRA specifically states that "nothing in this chapter requires any person engaged in the importation or manufacture of digital musical recordings to encode any such digital musical recording with respect to its copyright status."¹⁸⁵ Presumably, that information is created by the music producer when the music is first released. However, MP3 files may be created by anyone with an original music CD, and there is no control over what information an encoder of an MP3 file must provide because it is an open music format.¹⁸⁶ The *RIAA* court was, therefore, just slightly off the mark. While it is true that the Rio maintains the same functionality with or without the SCMS, because it cannot produce independent serial copies, it is also true that a *future* MP3 device which *can* produce such serial copies will never be able to provide an effective SCMS scheme, because the music files themselves are not encoded with copyright information. The result is an awkward legal conundrum: if the device does not produce independent MP3 copies, it cannot be liable for failing to implement SCMS. If it is capable of producing MP3 copies, it is *strictly liable* for failure to provide an effective SCMS scheme, because such a scheme is impossible. The legal liability potential of a device relies greatly on the nature of the digital format it is designed to handle.

4. Future Copy Protection Implementation and Feasibility

Despite the favorable language of the preliminary injunction decision, Diamond eventually shipped the Rio device with SCMS implemented.¹⁸⁷ As noted, SCMS in the Rio will have no impact on the playing of MP3 files because they do not contain encoded copyright

184. See *id.* ("MP3 files on the computer's hard drive do not contain this information.").

185. Pub. L. No. 102-563, 106 Stat. 4237 (1992) (codified at 17 U.S.C. B 1002(d)(2) (1994)). However, encoding inaccurate information on a musical recording is prohibited. See 17 U.S.C. B 1002(d)(1) (1994).

186. See *Making MP3s -- Ripping, Encoding, Converting and Burning*, MP3.COM (visited July 11, 1999) <<http://www.mp3.com/faq/making.html>>

187. See Dickerson M. Downing & Brendan P. McFeely, *MP3 Gets Music Industry's Ear*, N.Y. L.J., Feb. 16, 1999, at S3.

information. Additionally, MP3 files on computers are not controlled by embedded copyright information. For these reasons, the music industry has responded to the absence of copyright protection in MP3 files with its own project to develop a format of digital music files with copyright information and protection embedded in the data. Termed the "Secure Digital Music Initiative" ("SDMI"), the project plans to develop and release a unified standard for the secure distribution of digital music.¹⁸⁸ "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."¹⁸⁹ At least 110 companies are involved in the effort.¹⁹⁰ The SDMI plan involves the use of some combination of copyright generation information, digital watermarking, or cryptology technology to prevent the unauthorized copy of digital music files or at least to enable authorities to recognize pirated digital music files. The SDMI initiative, which was undertaken in December 1998, is expected to produce an agreed-upon standard by June 30, 1999.¹⁹¹

There are several concerns which threaten to undermine the success of any secure music initiative.¹⁹² The standard must be incorporated into computer-based software and music files. Computers, however, are especially vulnerable to piracy because of the ease and flexibility by which someone experienced in programming can evade the copy protection.¹⁹³ Such evasion has always been a problem for the software industry, which has found its latest copy protection, ironically, in the currently mammoth size of its software, which must be placed on read-

188. See *The Secure Digital Music Initiative Website* (visited June 12, 1999) <<http://www.sdmi.org>>; *SDMI*, RECORDING INDUS. ASS'N. OF AM. (visited June 12, 1999) <http://www.riaa.com/tech/tech_sd.htm>; see also Scott Smith & Michael Yosowitz, *Some Advice to the Builders of SDMI*, MP3.COM, (Feb. 25, 1999) <<http://www.mp3.com/news/183.html>>. The leaders of the SDMI project have high expectations. "By 'unified,' we mean a standard that will insure copyright and anti-piracy protection for every copy sold, irrespective of the delivery method or the medium (CD, DVD, Flash, and hard drive) whether existing now or created in the future." *Id.*

189. SDMI, *Secure Digital Music Initiative Continues Fast Path Toward Expanding Digital Music Marketplace* (Mar. 13, 1999) <<https://www.sdmi.org/dscgi/ds.py/View/Collection-50>>.

190. See *id.*

191. See *id.*

192. See generally Andre Lucas, *Copyright Law and Technical Protection Devices*, 21 COLUM.-VLA J.L. & ARTS 225 (1997) (evaluating the effect of technical protection devices on copyright law).

193. See generally S.J. Ross, *Hack Attack: While the Rest of Us Sleep, a Subculture of Hackers, Phreakers, Thiefs, Pirates and Pranksters Goes About its Business in Cyberspace*, TORONTO STAR, Jan. 15, 1998, at J1.

only CD-ROMs. Current software protection relies on the user having the CD-ROM in the disk drive of the computer. Thus, there is a physical tie holding the protection together. CD-ROMs were considered largely uncopyable, or prohibitively expensive to copy, until recently,¹⁹⁴ so this physical protection worked quite well, and much better than copy protection based on magnetic floppy disks. However, the whole point of MP3 and related technologies is to break away from a fixed tangible medium and to make the music files smaller, and completely portable. In so doing, MP3 technology makes copy protection much more difficult, because software is ultimately manipulable by hackers and pirates. Thus, the protection of music will encounter the same difficulties of software copyright protection. Yet software copy protection is largely unpopular and unsuccessful.¹⁹⁵ Even hardware-based protections¹⁹⁶ are not infallible, as shown by the serious pirate who can successfully bypass the SCMS in DAT machines by using expertise to craft hardware to override the protection.¹⁹⁷ Thus, there are difficulties in trying to implement secure distribution methods for digital music. With billions of dollars in music revenue at risk, one can be sure that the SDMI group is going to try its best, but it is a fair conclusion that any protection scheme short of a hardware dongle will suffer widespread defeat. And once defeated, the protection-averting software will spread quickly across the world via the Internet. Any solution to the dilemma that will allow the free flow of media technology will have to provide for more than copy protection, because piracy seems inevitable.

194. Recordable CD-ROM drives are allowing software pirates to copy software. See Benny Evangelista, *Pirates Cost Software-Makers Plenty*, S.F. CHRON., Mar. 17, 1999, at B1.

195. See Michael J. Meurer, *Focus on Cyberlaw: Price Discrimination, Personal Use and Piracy: Copyright Protection of Digital Works*, 45 BUFF. L. REV. 845, 886 (1997). "The problem with preventing copying of the physical media was twofold. First, users found the copy protection annoying. . . . A second reason copy protection on physical media was largely abandoned was the fact that the copy protection was often easily circumvented." *Id.* "Consumers may also reject bulky, supersecure systems. The beauty of MP3 is that it's extremely simple to use. Some suggest that no matter what the labels come up with, freely traded MP3 files are still going to be everywhere." Lessley Anderson, *Music Giants Fight a Corporate War Online*, CNN.COM (Apr. 14, 1999) <<http://www.cnn.com/TECH/computing/9904/14/musicwar.idg>>.

196. See Meurer, *supra* note 195, at 887-88.

197. See Stuart Talley, *Performance Rights in Sound Recordings*, 28 BEVERLY HILLS B. ASS'N. J. 79, 82 (1994) ("It has also been suggested by some that SCMS devices are easily disabled or by-passed by consumers.").

5. The Royalty Scheme Solution

Should the SDMI succeed in developing a reliable system of copy protection, there is reason to believe it will follow the SCMS system and allow first-generation copies. In addition, it is possible, as noted above, that copy protection will be defeated, leading to multigenerational copying. The AHRA addressed this gap in copyright enforcement by providing a blanket royalty payment scheme for digital audio recording equipment and media. A similar alternative compensation system may be useful in ameliorating the effects of digital technology.¹⁹⁸

Many computer users cry foul when thoughts of a "bit tax" or other per-use payment schemes are proposed for Internet usage.¹⁹⁹ Indeed, Congress has imposed a moratorium on special taxes of Internet use or communications.²⁰⁰ However, Internet usage trends show how logical a flat royalty system would be. Internet users want data, and they expect it to be delivered quickly and without regard to the legal implications of the works transmitted. Whether requesting a streamed movie, a high-resolution image, or a high quality sound clip, every Internet user has an interest in transmission standards that deliver the data most effectively and at the highest quality/speed ratio. The failure of the DAT as a consumer device²⁰¹ teaches us a valuable lesson: as technology threatens to make copyright piracy easy, the industry with a vested interest fights the technology, seeking to control it or contain it in a legal framework. Ultimately, that reaction is not in the interest of either the industries or the consumers. Rather, the better strategy is to let the technology grow

198. See generally REGISTER OF COPYRIGHTS, REPORT ON COPYRIGHT IMPLICATIONS OF DIGITAL AUDIO TRANSMISSION SERVICES 82-94 (1991) (describing various alternative compensation schemes).

199. See Matthew G. McLaughlin, *The Internet Tax Freedom Act: Congress Takes a Byte out of the Net*, 48 CATH. U. L. REV. 209 (1998); Sandi Owen, *State Sales & Use Tax on Internet Transactions*, 51 FED. COMM. L.J. 245 (1998).

200. See Internet Tax Freedom Act, H.R. 4105, 105th Cong. § 2(a) (1998) (noting that the bill places temporary moratorium on "taxes on Internet access, 'bit taxes,' or special taxes on electronic commerce."); see also John H. Minan, *Should Internet Transactions Be Taxed?*, SAN DIEGO UNION-TRIB., Mar. 17, 1999, at B-9 ("The federal Internet Tax Freedom Act became law in October 1998. It did two things: It placed a three-year moratorium on Internet taxation so the matter could be studied. Next, it established a 19-member commission to examine the issue.").

201. See Ian G. Masters, *Let's Get Digital: The Audio World Is Rapidly Becoming An Exclusively Digital Club*, TORONTO STAR, Oct. 9, 1997, at J1 ("[T]he hardware manufacturers became embroiled in a legal wrangle with the big record companies in the United States, who wanted to ensure there was some way to protect their copyright property, and they were able to delay the introduction of DAT long enough effectively to kill it.").

while mitigating the interim damages to intellectual property interests. Some observers argue that as information becomes more free and more quickly distributed, creativity and evolution of the art proceeds exponentially until a later point in time at which the developments in the art are several times more advanced than would be possible under a slower, channeled form of distribution.²⁰² Already, undiscovered music artists are enjoying the benefits of widespread inexpensive distribution of their work in MP3 format, and the benefits are only likely to grow as the technology is allowed to develop.

All this free information comes at a price to those who produce it. Some industry observers believe that artists may continue to produce work simply for the love of making it, for profits obtained through advertising, or as a promotional system for the sale of other products.²⁰³ The profit margin for an artist who distributes over the Internet can be remarkably low and still be lucrative, because in the traditional CD marketing format, an artist is only receiving a small fraction of the sales revenue anyway. Traditional copyright law, however, is concerned with protecting and rewarding authors by giving them the exclusive rights to their works, which rights can be turned into monetary gain on the market.²⁰⁴ Although remuneration may not be necessary to encourage the production of art and music, if there is inadequate copyright protection, we will not be able to know until it is too late whether the intellectual property safeguards are necessary to promote artistic endeavors. This is why a royalty system to offset digital piracy is a good interim protection for artist creativity.

The progression of a blanket royalty system must, of course, find its way to the computer. The computer, through various formats, has become the standard tool of production and distribution for many artists, and is poised to grow in utility as Internet distribution becomes better and more popular. At the same time that intellectual property has shifted

202. See Ram Samudrala, *The Future of Music*, MP3.COM (Dec. 5, 1998) <<http://www.mp3.com/news/142.html>>. Samudrala describes the philosophical dichotomy between "bazaar" and "cathedral" models of music development, based on an article by Eric S. Raymond about computer software development. Freedom in a creative system "enables a work under scrutiny to evolve, following a non-deterministic exponential trajectory, i.e., in a chaotic manner." *Id.* In the music industry, many people have already viewed MP3 as a way for original artists to gain access to an audience, apart from what is viewed by some as a highly commercialized, profit-motivated, and conformity-driven music industry.

203. See *supra* note 27 and accompanying text.

204. See RONALD V. BETTIG, *THE IMPACT OF NEW COMMUNICATIONS TECHNOLOGY ON FILMED-ENTERTAINMENT COPYRIGHTS* 25-54 (1989) (describing the history and philosophy of copyright law).

into digital media, the prices of computer and other digital technology have fallen dramatically.²⁰⁵ A minimal blanket royalty fee, either on computer equipment or on Internet connection fees, is unlikely to deter or affect consumer purchasing of those devices or services. However, such a royalty would generate a modest fund that would compensate for some of the loss due to piracy. Currently, the AHRA funds distinguish among artists who sell more music than others, and compensate them appropriately, and such apportionment would be appropriate in order to reward artists who produce the most popular music. On the other hand, the royalty scheme will need to be quite broad to cover lesser-known artists whose works are now available thanks to the Internet.

IV. MP3 CONTROL AT THE SOURCE: HOW CAN LAW REACH THE SOFTWARE DISTRIBUTORS?

The sources of MP3-based music, illegal or legal, are Internet websites. One way to address the issues is to examine legislation which implicates the transmission of that data, rather than target the devices, such as computers or the Rio, which download or play that data. Two recent pieces of legislation, the Digital Performance Right in Sound Recordings Act of 1995²⁰⁶ and the Digital Millennium Copyright Act of 1998,²⁰⁷ provide some assistance in analyzing the elusive nature of digital files. Together, they provide a piecemeal framework which begins to address the special concerns of online intellectual property. They also reflect a trend, started by the AHRA, that replaces infringement claims with a more regulatory system involving technological protection and blanket compensation.

A. The Digital Performance Right in Sound Recordings Act

1. Introduction

The Digital Performance Right in Sound Recordings Act of 1995 ("DPRSRA") was introduced to protect against another variation of the threat posed by digital sound transmission. Prior to this legislation, rights granted by the 1976 enactment of the Copyright Act excluded

205. See David Hoye, *No Time Like the Present to Buy PC*, ARIZ. REPUBLIC, Apr. 19, 1999, at E1 (describing computer systems available for as little as \$299).

206. Pub. L. No. 104-39, 109 Stat. 336 (1995).

207. Pub. L. No. 105-304, 112 Stat. 2860 (1998).

performance rights in sound recordings.²⁰⁸ Congress had been considering for many years how to add performance rights to sound recording works²⁰⁹ but stopped short of coverage of all sound recording works. Instead, the DPRSRA covers only sound recordings performed by means of a "digital audio transmission."²¹⁰ Furthermore, the legislation is filled with complex requirements and exceptions for coverage. Unlike other protected works, sound recordings have been given a highly specific and limited performance right. In particular, Congress targeted digital transmission technology and interactive services due to the great threat that they could pose to music sales.²¹¹

The performance rights conveyed by the DPRSRA come with important limitations, delineated by precise congressional language. The Act applies to sound recordings performed by "digital transmission,"²¹² which is defined as "a transmission in whole or in part in a digital or other non-analog format."²¹³ Audiovisual transmissions are specifically excluded.²¹⁴ The term "transmission" is not defined in the original act, although the word "transmit" existed in the Copyright Act prior to DPRSRA and was defined as "to communicate it by any device or process whereby images or sounds are received beyond the place from which they are sent."²¹⁵ Since the definition requires transmission beyond the place from which they are sent, the rights granted by the DPRSRA do not actually apply to what many people would think of as "performances": the playing of music in a theater, store, stadium, etc. Rather, the new legislation seems to be aimed at the narrow range of digital performances involved in broadcast and transmission services.

Furthermore, there are several exemptions built into the statute so that certain transmission activities are deemed not to be covered by the new performance right. The statute considers separately three categories of digital transmission: interactive digital services, subscription digital services, and nonsubscription digital services.²¹⁶ Nonsubscription digital services, such as a public digital broadcast offered free to the public at

208. See 17 U.S.C. § 106(4) (1994).

209. See 2 NIMMER *supra* note 104, § 8.21[B].

210. 17 U.S.C. § 106(6) (Supp. I 1995).

211. See 2 NIMMER, *supra* note 104, § 8.21[B].

212. 17 U.S.C. § 106(6) (Supp. I 1995).

213. 17 U.S.C. § 101 (Supp. IV 1998). Pub. L. No. 104-39, 111 Stat. 1116 § 5(a) added the definition of "digital transmission."

214. See 17 U.S.C. § 101.

215. *Id.*

216. See 17 U.S.C. § 114(j)(7)-(9) (Supp. IV 1998); see also *infra* text accompanying note 227.

large, are exempt from paying royalties.²¹⁷ Subscription services, where only a certain paying audience receives a signal over which they have no selective content control, are subject to a statutory licensing scheme if they meet certain conditions.²¹⁸ The licensing scheme provides for royalties and also *requires* copyright owners to license its sound recordings to anyone who wants to broadcast them in this manner. Interactive digital services, which come the closest to replacing album sales by allowing users to select their content, are not eligible for the mandatory licensing scheme but are instead subject to voluntary licensing with a statutory duration limitation.²¹⁹ The Act also regulates retransmissions. "[I]f an initial transmission is made to the public at large, it is non-infringing to retransmit it even on a subscription basis."²²⁰

In the case of "subscription transmissions," the DPRSRA mandates a licensing scheme so long as the subscription service is not interactive, does not inform subscribers in advance as to the selections it will transmit, preserves copyright status information as provided by the AHRA, and does not perform albums in their entirety (or a substantial portion of an album over a short period of time).²²¹ These requirements essentially ensure that the subscription service is non-interactive and that subscribers are captive to the programming decisions of the transmitting entity, in the same way that radio listeners have no individualized control over the selection of songs. By protecting against the threat to record sales of on-demand music transmissions, the DPRSRA avoids damaging album sales. However, it diversifies the distribution chains of music by virtue of a mandatory licensing arrangement. The arrangement requires payment of fees to the owner of the sound recording.

If the service is interactive in nature,²²² Congress has responded to the high threat of lost sales by providing digital sound recording owners the freedom to set their own licensing terms.²²³ Interactive services are not eligible for the mandatory licensing scheme. Instead, the statute provides the framework for voluntary licensing by limiting the duration of any exclusive license of interactive rights to either twelve or twenty-

217. *See* 17 U.S.C. § 114(d)(1) (Supp. I 1995).

218. These conditions include not providing users with a schedule of what is to be played and a requirement that significant blocks of music from an album or artist are not transmitted in a short period of time. *See id.* § 114(d)(2). This is known as a "sound recording performance complement." *Id.*

219. *See id.* § 114(d)(3)(A).

220. 2 NIMMER, *supra* note 104, § 8.21[B].

221. *See* 17 U.S.C. § 114(d)(2).

222. "Interactive" is not well-defined. *See infra* text accompanying note 227.

223. *See* 17 U.S.C. § 114(d)(2)(A) (Supp. I 1995).

four months.²²⁴ The point of these restrictions is to prevent a limited number of companies from assuming undue control over the distribution of musical works.²²⁵ Some observers believe this new legislation will open up the music industry to a variety of new distributors.²²⁶

As noted previously, the definition of "interactive service" is unclear but almost certainly applies to many kinds of Internet services:

An "interactive service" is one that enables a member of the public to receive a transmission of a program specially created for the recipient, or on request, a transmission of a particular sound recording, whether or not as part of a program, which is selected by or on behalf of the recipient. The ability of individuals to request that particular sound recordings be performed for reception by the public at large, or in the case of a subscription service, by all subscribers of the service, does not make a service interactive, if the programming on each channel of the service does not substantially consist of sound recordings that are performed within 1 hour of the request or at a time designated by either the transmitting entity or the individual making such request. If an entity offers both interactive and noninteractive services (either concurrently or at different times), the noninteractive component shall not be treated as part of an interactive service.²²⁷

This definition seems to be a framework entirely suited for the Internet. In fact, the Internet has been included in the list of possible delivery mechanisms that could make up a *subscription* transmission,²²⁸ so presumably the Internet can be used as a carrier for interactive

224. The statute limits exclusive licenses of interactive transmissions to a 12 month period of time, unless the licensor holds the copyright to 1,000 or fewer recordings, in which case the limit is 24 months. *See id.* § 114(d)(3)(A). Furthermore, 13 months must elapse between the renewal of such licenses. *See id.*

225. *See* H.R. REP. NO. 104-274, at 21 (1995) ("Limits have been based on licenses granted to interactive services in response to concerns that sound recording copyright owners might become 'gatekeepers' to the performances of musical works.")

226. *See* A. Dustin Mets, *Did Congress Protect the Recording Industry into Competition? The Irony of the Digital Performance Right in Sound Recording Act*, 22 U. DAYTON L. REV. 371, 381-87 (1997).

227. 17 U.S.C. § 114(j)(7) (Supp. IV 1998).

228. *See id.* § 114(j)(14).

services as well. The downloading of MP3 files from a site, such as Goodnoise,²²⁹ is literally a transmission of a sound recording, sent to a place different from where it originated, and specially requested by an Internet user.

The statute also creates a new right in digital sound performance, allowing record producers to pursue litigation against websites that infringe this new right. Artists can still pursue action against an infringing website for performance of their music, but it has always been very difficult for individual artists to enforce their rights.²³⁰ The new legislation also allows the powerful record companies to pursue litigation on the basis of digital sound performances and transmissions. Such litigation can take place where an allegedly offending broadcaster does not fall into the mandatory licensing provisions (in which case the infringement lawsuit would be replaced by statutory provisions for violations).

Indeed, a threat of such litigation formed the basis of a 1996 "cease and desist" letter from RIAA to AudioNet, a website that was offering a selection of songs for downloading.²³¹ Since the new publicity right is based on transmission or communication, it does not seem to target the downloaders of the music itself, just as a normal performance right would not entail a right to sue people who watched an unlicensed dramatic performance. Rather, the DPRSRA recognizes that the Internet audience, even more so than a theater audience, is almost impossible to track down, and the solution to piracy is to target the sources of the media, not the consumers.²³² This fact represents an important shift away from a copyright regime that has been concerned with the rights of the copy itself and toward a structure which attempts to police transactions. By imposing licensing requirements on digital transmission services, the status of the copy at the consumer's end is no longer the key issue. Similar to its framework in the AHRA, Congress has moved away from itemized liability and toward a royalty and licensing compensation scheme.

229. See *supra* note 31.

230. See Andrew Hartman, *Don't Worry, Be Happy! Music Performance and Distribution on the Internet is Protected After the Digital Performance Rights in Sound Recordings Act of 1995*, 7 DEPAUL-LCA J. ART & ENT. L. 37, 66 (1996).

231. See Nancy A. Bloom, *Protecting Copyright Owners or Digital Music -- No More Free Access to Cyber Tunes*, 45 J. COPYRIGHT SOC'Y U.S.A. 179, 201 (1997).

232. See Hartman, *supra* note 230, at 62. ("There appears to be no provision in the Act which either explicitly or by interpretation places liability on those who download music from an interactive network.").

2. An Imperfect Dichotomy: Transmissions and Copies

Despite these promising signs, there are underlying problems with trying to use the DPRSRA to regulate Internet traffic in MP3s. Trying to fit MP3 technology into a digital "transmission" scheme is problematic because the activity involved resembles both transmission and copying.²³³ When a user downloads a copy of music in MP3 format, a copy of that file has been made. Generally, it is necessary to make that copy in order later to listen to the music. The DPRSRA is not designed to determine the line between acts of transmission and acts of copying. When it comes to interactive services in which a user can select music on demand, copying no longer becomes an issue because the user selects the music he wants to hear, when he wants to hear it. Essentially, the user has no need of copies because the transmission is always available. One commentator remarks, "[T]his process is no different than changing the channel on the television or scanning through radio broadcasts to find a jazz station. The act of making music available via the Internet should be considered a public performance of that musical work."²³⁴ However, such a scheme should take into consideration the difference that may persist between streamed music and downloaded music. Any music which is limited to only being streamed is indeed like a radio station (and thus more like a subscription service), but a download-based system provides the user with a file that can be replayed, just like a CD. An effective analysis should involve examining the technology to see if it is replacing album sales. MP3 sites offer individual songs, sorted by title, artist or genre. They allow downloading directly to a hard drive, where the file is kept indefinitely. Thus, the MP3 format fits squarely into the "interactive service" portion of the legislation. Its application to other formats may not be as straightforward.

It is questionable whether a digital transmission should be treated the same under the law regardless of whether it is downloaded to be saved or streamed without capture to the user, simply because the mechanism by which it is chosen is "interactive."²³⁵ Perhaps the greatest distinction

233. See Talley, *supra* note 197, at 96 ("[T]he ability of digital broadcasters to conduct pay-per-listen events and eventually to become completely consumer interactive, may blur the line between the public performance of a recording and the distribution of that recording.").

234. Hartman, *supra* note 230, at 60-61.

235. A streamed MP3 transmission is currently available, although the file may also be saved to disk at the same time, so that the difference is academic. See *MP3.com Makes Streaming MP3s Easier*, MP3.COM (Apr. 15, 1999) <<http://www.mp3.com/news/226.html>>.

is that a downloaded and saved MP3 file can be played again and again, immediately, and free of charge, just like a purchased CD, but a streamed file (without capture) is subject to the transmission speed of the Internet every time it is requested and any access charges that might apply. This distinction may indicate that MP3s will displace CD sales more than streaming files do. However, that distinction will continue to erode in the future, leaving the DPRSRA's framework somewhat imperfect as we progress toward more numerous and different kinds of interactive media services.

The DPRSRA, thus, provides a limited performance right in sound recordings, bridging the distinction created by the 1972 addition of sound recordings to the list of protected works.²³⁶ "[P]roponents believe that a major gap in the copyright law has been filled by granting to the owners of sound recordings the same rights which have always been enjoyed by copyright holders of motion pictures, musical compositions and other performance rights."²³⁷ What remains to be seen is whether new forms of computer distribution fall into the elaborate scheme by virtue of being a "subscription service" or whether the interactive nature of the Internet means that all future music transmission over the Internet can expect to fall under the category of voluntary licensing. The nature and definition of future "interactive" services will dictate whether the transmissions fall into the mandatory licensing scheme or whether they are subject to infringement actions. Is a service interactive if it allows a user to establish a profile of music genre from which it will pick music selections? Or is complete selection down to the album or song title necessary to invoke the provisions related to "interactive" services? Equally troubling is the term "subscription," which is likely to be inadequate as Internet sites adopt new and flexible ways of providing digital media to users. At one extreme, RIAA argues that Internet services might not even need to collect fees to be considered a subscription service for DPRSRA purposes.²³⁸ While that is a very broad reading of the statute, it is important not to allow websites to avoid the statute with technicalities (for example, a service that provides digital sound which is funded only by advertising).

236. See *supra* text accompanying note 85.

237. Lisa E. Davis & Rhonda Adams Medina, *The Piper Must Be Paid: New Law Grant [sic] Performance Rights For Digital Age*, N.Y. L.J., Apr. 8, 1996, at S1; see also Hartman, *supra* note 230.

238. See Davis & Medina, *supra* note 237. RIAA argues that commercial gain by anyone, such as an Internet Service Provider, would trigger the statutory provisions.

Congress recently clarified one relevant aspect of the DPRSRA recently in the Digital Millennium Copyright Act of 1998.²³⁹ Section 405(a)(2) of the Digital Millennium Copyright Act provides that transmissions of sound recordings over the Internet using streaming audio technology is now classified as an "eligible nonsubscription transmission."²⁴⁰ This allows streaming services to enjoy the benefits of mandatory licensing provisions and other benefits of the act, but only insofar as they are noninteractive. The question of semi-interactive streaming remains open.

Congress also has provided for the Librarian of Congress to determine, after negotiation, the proper royalty structure for eligible nonsubscription services. "Such rates and terms shall distinguish among the different types of eligible nonsubscription transmission services and new subscription services then in operation and shall include a minimum fee for each such type of service."²⁴¹ Thus, Congress has added flexibility to the DPRSRA, but at the expense of a more elaborate administrative royalty system.

The DPRSRA thus applies to MP3 and related formats in the narrow field of transmissions that are provided on an interactive basis or

239. Pub. L. No. 105-304, 112 Stat. 2860 (1998). The statute is discussed in detail, *infra* Part IV.B.

240. This category applies so long as a recording of the music is not made from the transmission:

[T]he transmitting entity takes no affirmative steps to cause or induce the making of a phonorecord by the transmission recipient, and if the technology used by the transmitting entity enables the transmitting entity to limit the making by the transmission recipient of phonorecords of the transmission directly in a digital format, the transmitting entity sets such technology to limit such making of phonorecords to the extent permitted by such technology.

17 U.S.C. § 114(d)(2)(C)(vi) (Supp. I 1995). Thus streaming Internet transmissions that prevent listener recording are included in the category. *See also* 17 U.S.C. § 114(j)(6) (Supp. IV 1998); Pub. L. 105-304, 112 Stat. 2860 (1998); H.R. REP. 105-796, at 35-36 (1992).

An 'eligible nonsubscription transmission' is a noninteractive nonsubscription digital audio transmission not exempt under subsection (d)(1) that is made as part of a service that provides audio programming consisting, in whole or in part, of performances of sound recordings, including retransmissions of broadcast transmissions, if the primary purpose of the service is to provide to the public such audio or other entertainment programming, and the primary purpose of the service is not to sell, advertise, or promote particular products or services other than sound recordings, live concerts, or other music-related events.

17 U.S.C. § 114(j)(6) (Supp. IV 1998).

241. 17 U.S.C. 114(f)(2)(A) (Supp. IV 1998).

subscription basis. Congress has enabled the recording industry to pursue infringement actions in certain circumstances, but otherwise has imposed a mandatory licensing provision to encourage dissemination of digital audio works while seeking diversity in the channels of distribution. Once the definition issues have been resolved, the DPRSRA will allow for protected, legitimate new forms of distribution of music from a wide range of sources.

B. The Digital Millennium Copyright Act

The DPRSRA is a step forward toward a legislative system of protecting intellectual property in the digital information age. Congress's most recent effort, the Digital Millennium Copyright Act of 1998 ("DMCA"),²⁴² implements two World Intellectual Property Organization ("WIPO") treaties and addresses other related issues.²⁴³ "[The DMCA] is designed to facilitate the robust development and world-wide expansion of electronic commerce, communications, research, development, and education in the digital age."²⁴⁴

A large part of the DMCA is dedicated to harmonization of U.S. copyright law with the rest of the world.²⁴⁵ Of particular interest is section 103 of the DMCA²⁴⁶, which is codified as 17 U.S.C. § 1201.²⁴⁷ Section 1201 distinguishes between two ways to evade technological measures used by copyright owners to protect their works (such as SCMS): unauthorized *access* and unauthorized *copying*.²⁴⁸ Under the Act, it is prohibited to make or sell devices or methods for circumventing either access or copying protections, but fair use copying is exempt from the prohibition.²⁴⁹ Devices which are primarily designed to circumvent

242. Pub. L. No. 105-304, 112 Stat. 2860 (1998).

243. See Jonathan Band, *The Digital Millennium Copyright Act*, HOME RECORDING RTS. COALITION (visited July 11, 1999) <<http://www.hrrc.org/JPB-Memo.html>>.

244. S. REP. NO. 105-190, at 1-2 (1998).

245. See U.S. COPYRIGHT OFFICE, THE DIGITAL MILLENNIUM COPYRIGHT ACT SUMMARY (1998), available at <<http://lcweb.loc.gov/copyright/>>.

246. Pub. L. 105-304, 112 Stat. 2860 (1998)

247. 17 U.S.C. § 1201 (Supp. IV 1998).

248. See *id.*

249. These two categories have differing applications in an infringement situation.

The two sections are not interchangeable, and many devices will be subject to challenge only under one of the subsections. For example, if an effective technological protection measure does nothing to prevent access to the plain text of the work, but is designed to prevent that work from being copied, then a potential cause of action against the manufacturer of a device designed to circumvent the measure lies under subsection 1201(b), but not under

technological protection or which are marketed for such purposes are prohibited. This addresses the problem, previously noted,²⁵⁰ that SDMI and similar systems may be especially easy to defeat if they are located in computer software. Prior to the enactment of the DMCA, it was already unlawful to circumvent the SCMS.²⁵¹ The DMCA broadens the prohibition to any future technological protection, such as digital watermarking, so long as such technology is created to protect copyright interests. Even a device that defeats password systems would fall into this category:

For example, if unauthorized access to a copyrighted work is effectively prevented through use of a password, it would be a violation of this section to defeat or bypass the password and to make the means to do so, as long as the primary purpose of the means was to perform this kind of act.²⁵²

There is no mandate for manufacturers to design their products to respond proactively to any particular technological mechanism,²⁵³ so the SCMS provision of the AHRA remains limited to the digital audio recording environment. Similarly, the new β 1202 protects against false copyright management information ("CMI")²⁵⁴ or the removal or alteration of such information.²⁵⁵ Presumably this would include protection for any SCMS or SDMI system for MP3 files.

The teeth of this legislation is in the remedies. Injured parties may seek civil remedies under β 1203, and willful violation of $\beta\beta$ 1201 or 1202 can result in criminal penalties under β 1204.²⁵⁶ Thus, Congress

subsection 1201(a)(2). Conversely, if an effective technological protection measure limits access to the plain text of a work only to those with authorized access, but provides no additional protection against copying, displaying, performing or distributing the work, then a potential cause of action against the manufacturer of a device designed to circumvent the measure lies under subsection 1201(a)(2), but not under subsection 1201(b).

S. REP. NO. 105-190 at 12 (1998).

250. See *supra* note 195 and accompanying text.

251. See 17 U.S.C. β 1002(c) (1994).

252. S. REP. NO. 105-190, at 11 (1998).

253. See 17 U.S.C. β 1201 (c)(3) (Supp. IV 1998).

254. CMI is any identifying information about the title, author, copyright owner, etc. See S. REP. NO. 105-190, at 11 (1998).

255. See 17 U.S.C. β 1202 (b) (Supp. IV 1998).

256. Penalties range up to \$500,000 or five years imprisonment for a first offense, and up to \$1,000,000 or 10 years imprisonment for any subsequent offense.

has provided serious legal consequences for people who try to circumvent electronic copyright safeguards, such as SCMS or the emerging SDMI standards. This legislation is necessary if SDMI is ever to be successful, and judging from the time frame set by the music industry,²⁵⁷ it is none too soon.

The DMCA adds liability for circumvention of technological copyright protection with one hand, but it also takes away liability with the other. The new 17 U.S.C. § 12 creates four limitations on liability for copyright infringement by online "service providers" ("OSPs"). The statute defines "service providers" two different ways. As used with respect to transitory communications, "the term 'service provider' means an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user's choosing, without modification to the content of the material as sent or received."²⁵⁸ As used with respect to the other provisions of the statute, "the term 'service provider means a provider of online services or network access, or the operator of facilities therefor."²⁵⁹ These definitions appear sufficiently broad to cover most Internet service provider arrangements.²⁶⁰ The DMCA insulates OSPs from monetary liability via transitory communications, system caching, storage of information at the discretion of users, and information location tools.²⁶¹ To be eligible for these limitations, the OSP must adopt and implement a policy of terminating the accounts of repeat offenders, and it must not interfere with technical measures that copyright owners use to identify or protect copyrighted work.²⁶² However, immunity is not absolute because injunctive relief may still be available.²⁶³

The statute essentially turns OSPs into information conduits that are exempt from monetary liability for the information that passes through their systems without their knowing of copyright violations. This is a source of relief to OSPs whose liability for direct or contributory

257. *See supra* text accompanying note 191.

258. 17 U.S.C. § 512(k)(1)(A) (Supp. IV 1998).

259. *Id.* § 512(k)(1)(B).

260. The Internet is at the heart of the legislation's purpose, so one would expect broad coverage sufficient to include all Internet operations. "[DMCA] will also make available via the Internet the movies, music, software, and literary works that are the fruit of American creative genius." S. REP. NO. 105-190, at 2 (1998).

261. *See* 17 U.S.C. § 512 (Supp. IV 1998).

262. *See id.* § 512(I).

263. *See id.* §§ 512(a), (b)(1), (c)(1), (d).

copyright infringement on the basis of user activity previously had been far from clear.²⁶⁴

The limitations on liability for transitory communications and for system caching are straightforward codifications of a sensible rule that information merely passing through a system (and thereby "copied") for efficiency purposes should not trigger copyright liability. The other two limitations are of particular relevance to the MP3 world.

First, the Act limits the liability of Internet sites that provide information location services.²⁶⁵ This provision covers search engines and Internet directories that carry links to infringing sites. Holding information providers liable seems unfair because it would be practically impossible for a search engine to monitor all of its links to ensure copyright legitimacy. However, it is obvious that such information actually assists in the furtherance of infringement. For example, the Lycos search engine has a dedicated MP3 search engine at <<http://mp3.lycos.com>>. The existence of this search engine has caused some concern, because it does not discriminate between legitimate and illegitimate MP3 files.²⁶⁶ The DMCA insulates Lycos from damages for infringement, provided Lycos does not have actual knowledge that the links it provides lead to infringing material (or is not aware of facts or circumstances from which infringing activity is apparent), does not receive a financial benefit directly attributable to the infringing activity, and, upon notification that the links lead to infringing material, responds expeditiously to disable or remove access to the allegedly infringing material.²⁶⁷ The other three exemptions for OSPs carry similar conditions. To the extent that any website links to material that it knows

264. See Mara Gross, Recent Case, *Sega Enterprises v. MAPHIA*, 13 BERKELEY TECH. L.J. 101, 101 (1998) ("Copyright law presently provides no clear answers as to the extent of liability for Internet service providers (ISPs) and electronic bulletin board services (BBSs) when users infringe copyrights."). This uncertainty has tangible effects on the Internet's development. "[W]ithout clarification of their liability, service providers may hesitate to make the necessary investment in the expansion In the ordinary course of their operations service providers must engage in all kinds of acts that expose them to potential copyright infringement liability." S. REP. NO. 105-190, at 8 (1998).

265. See 17 U.S.C. § 512(d) (Supp. IV 1998).

266. See Doug Reece, *Lycos in MP3 Boiling Water*, MP3.COM (Mar. 24, 1999) <<http://www.mp3.com/news/209.html>> ("According to a Reuters report, IFPI believes the Lycos/FAST MP3 engine violates a portion of copyright law known as 'contributory infringement.'"); Michael Robertson, *Lycos Gets into MP3 Hot Water*, MP3.COM (Feb. 3, 1999) <<http://www.mp3.com/news/164.html>>; Michael Robertson, *RIAA Statement on the Lycos MP3 Search Engine*, MP3.COM (Feb. 1, 1999) <<http://www.mp3.com/news/163.html>>.

267. See 17 U.S.C. § 512(d)(3) (Supp. IV 1998).

is infringing or is aware of facts or circumstances from which infringing activity is apparent, it can be held liable for damages.

Second, the Act provides for limited liability for information residing on the OSP system at the direction of users.²⁶⁸ Generally, this includes Web page hosting found at sites such as Geocities. In addition to the knowledge, financial benefit, and notification-and-removal requirements found in all four limitations discussed above, the DMCA imposes an obligation on OSPs to indicate a designated agent to receive notifications of claimed infringements.²⁶⁹ The DMCA is yet another step in moving away from a liability system for Internet copyright problems. It shifts the legal attention away from those who might be in possession of infringing material to those who are the sources of the transmissions themselves. It insulates information providers in anticipation of being able to detect and prosecute users who thwart technological copyright protections. In order to effectuate technological solutions and a rapid-response system to detected infringing material, the DMCA provides legal protection for SDMI technologies and establishes a network of agents who are charged with responding to reports of infringement. Here, too, as in the DPRSRA, we see a shift to a more administrative form of copyright law, away from the traditional infringement liability that governs the non-electronic world.

V. CONCLUSION

MP3 technology and the Internet technology that drives distribution are subject to certain portions of the AHRA, DPRSRA and DMCA. However, the fit between these statutes and emerging Internet technology is less than certain. A clear trend in the digital audio copyright area is a move by all three statutes to substitute traditional infringement actions with mandatory royalties and licensing for certain forms of digital sound distribution. This dramatic shift toward a regulatory system responds to the technological and administrative concerns inherent in a computerized information-based society. However, the legislation is piecemeal, implemented largely with respect to audio transmissions, even though efficient Internet video transmission is just around the corner. The laws are riddled with conditions and

268. *See id.* B 512(c).

269. *See* 17 U.S.C. B 512(c)(2) (Supp. IV 1998). *See Designation by Service Provider of Agent for Notification of Claims of Infringement* (last modified May 12, 1999) <<http://www.loc.gov/copyright/onlinesp/>> (for suggested formats for designating an agent, and a directory of current agents).

exceptions, leaving Internet users who may not understand the law with difficulties in knowing what their rights and responsibilities are.

The future of copyright law appears to lie in complex regulation of royalty, technology and information service categories. If so, the best approach would be immediately to revise copyright law, creating a uniform and comprehensive copyright management system for all digital and electronic technologies. MP3 is but the first of many emerging technologies that will not fit neatly into existing frameworks. As we approach the new millennium, Congress should undertake a comprehensive revision of copyright law to provide a converged, integrated legal framework for handling copyright issues in digital environments. By supporting technological protection methods developed by the industry, and initiating royalty schemes to compensate for losses, Congress can develop the field to protect intellectual property, while diversifying the methods and sources of media distribution. Through reasonable legislation that recognizes the computer as a simultaneously powerful and dangerous bearer of artistic works, Congress can support and nurture the explosive development and convergence of electronic media distribution, providing us with a new world of interactive sights and sounds.

APPENDIX: TECHNICAL REFERENCE DOCUMENT¹

GENERAL PRINCIPLES FOR SCMS IMPLEMENTATION IN DAR DEVICES. --
To implement the functional characteristics of SCMS in DAR devices, whether presently known or developed in the future, the following conditions must be observed:

- (1) A digital audio recording medium shall be capable of storing an indication of --
 - (a) whether or not copyright protection is being asserted over the audio material being sent via the interface and stored on the DAR medium; and
 - (b) whether or not the generation status of the audio material being sent via the interface and stored on the DAR medium is original.
- (2) If the digital audio interface format being sent to and read by a DAR device has discrete modes for professional as well as nonprofessional purposes, the DAR device shall distinguish accurately the professional or nonprofessional status of the interface signal.
- (3) If the interface format has a discrete mode for sending data other than audio material, the DAR device shall distinguish accurately whether or not the interface signal contains audio material.
- (4) A DAR device capable of receiving and recording digital audio signals shall observe the following rules:
 - (a) Audio material over which copyright is asserted via SCMS and whose generation status is original is permitted to be recorded. An indication that copyright is asserted over the audio material contained in the signal and that the generation status of the recording is first generation shall be recorded on the media.
 - (b) Audio material over which copyright is not asserted via SCMS may be recorded, without regard to generation status. An indication that copyright is not asserted shall be recorded on the media.
 - (c) Audio material over which copyright is asserted via SCMS and whose generation status is not original shall not be recorded.
- (5) DAR media shall store the copyright and generation status information as described herein during recording in a manner that the information can be accurately read.

1. The Appendix quotes from 138 CONG. REC. 26,869 (1992) (Part II(A)).

- (6) Devices that are capable of reading original recordings and/or DAR media, and that are capable of sending digital audio signals that can be recorded by a DAR device, shall accurately read the copyright and generation status information from the media and accurately send the information.
- (7) DAR devices shall not be capable of recording digital audio signals transmitted in a professional digital audio interface format.
- (8) DAR devices having a nonprofessional digital audio interface shall receive and accurately send the copyright and generation status information.
- (9) Professional devices that are capable of sending audio information in a nonprofessional digital audio interface format shall send SCMS information as implemented for that format. However, nothing shall prevent professional devices and/or recording professionals engaged in a lawful business from setting SCMS information according to the needs of recording professionals.
- (10) Digital audio signals that are capable of being recorded by a DAR device but that have no information concerning copyright and/or generation status shall be recorded by the DAR device so that the digital copy is copyright asserted and original generation status.
- (11) If the signal is capable of being recorded by a DAR device and the interface format requires an indication of the type of device sending the signal via the interface, then the device shall send the most accurate and specific designation applicable to that device; for example, "Category Codes" as set forth in part I with reference to the IEC 958 nonprofessional interface.
- (12) Except as may be provided pursuant to section 1022(b)(4) of subchapter C of the Act, a DAR device that is capable of converting analog input signals to be recorded in digital format shall indicate that the digital copy is copyright asserted and original generation status.
- (13)
 - (a) If the digital audio portion of an interface signal format is recordable by a "preexisting" type of DAR device, that is, one that was distributed prior to the distribution of the interface signal format, then the signal format shall implement the rules of SCMS so that the preexisting DAR device will act upon the rules of SCMS applicable to that DAR device.

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- (b) If a type of DAR device is capable of recording the digital audio portion of signals sent by a preexisting digital audio interface device, then the DAR device shall implement the rules of SCMS so that the DAR device will act upon the rules of SCMS applicable to the format of that preexisting digital audio interface device.
- (c) If a digital audio interface device is capable of translating a signal from one interface format to another, then the device also shall accurately translate and send the SCMS information.