

Finding a Winning Strategy Against the MP3 Invasion: Supplemental Measures the Recording Industry Must Take to Curb Online Piracy

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“For in much wisdom is much grief: and he that increaseth knowledge increaseth sorrow.”—Ecclesiastes 1:18

I. INTRODUCTION

To most scholars of intellectual property law, its fundamental purpose reads like a sacred oath: “to create the most efficient and productive balance between protection (incentive) and dissemination of information, to promote learning, culture and development.”¹ Historically, the United States has achieved this goal by allowing owners of intellectual property to control access to their work for a limited time before releasing it into the public domain.² Ironically, the very technology this law has sought to encourage and “protect” may prove to be its undoing. Over the last decade, the computer file format known as “MP3” has posed a significant threat to the music industry, violating copyright owners’ legally pro-

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¹ Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

² U.S. CONST. art. I, § 8, cl. 8.

scribed rights, and transforming anyone with a standard computer into a potential grand-scale pirate.

The industry will not survive this new trend by relying exclusively on the law, nor will it recover simply by implementing anti-piracy technology. By themselves, these measures will only amount to a huge waste of resources. Instead, it makes much more sense for record companies to manipulate the basic economics of the problem by offering consumers a more attractive alternative to MP3. Part II of this article will discuss how technology like MP3 has led to new trends in music piracy, and Part III will delineate the statutes and decisions that have responded to the problem. Part IV will analyze the most publicized measures taken by the recording industry to curb piracy, and Part V will present supplemental strategies—online sales, negative advertising, and exploitation of new digital storage media—that may solve the problem more effectively.

II. BACKGROUND: TECHNOLOGY LEADS TO NEW TRENDS IN MUSIC PIRACY

A. *The First Digital Recording Threat*

Fifteen years ago, if a typical consumer wished to own a copy of a popular song, she had two options: she could either spend five to fifteen dollars to purchase the song on vinyl, cassette, or compact disc (“CD”), or duplicate a friend’s copy on a double-deck analog cassette recorder. The former option was the legal way, obviously preferred by composers, musicians, retailers, and record labels. The Copyright Act of 1976 had granted the owner(s) of the song’s copyright the exclusive right “to reproduce the... work in copies or phonorecords” or to authorize others to do so.³ Selling retail phonorecords of the song had developed into a lucrative way to exploit this right.

The latter option—home duplication—was technically illegal at the time, but was not considered much of a threat. Such duplication techniques led to degradation in quality strongly noticeable when compared to the pristine digital sound of the recently introduced CD. Moreover, with each generation of analog duplication, the copy lost

³ 17 U.S.C. § 106(1).

even more sound quality, leaving only a muffled mutant of the original. In short, our consumer may have initially dubbed a tape to preview the music she liked, but if she were a true audiophile she would eventually lay down the cash for a high quality copy at the record store.

The complacency of the recording industry was soon replaced by a chilly fear when in 1986 Japanese manufacturers introduced digital audio tape ("DAT").⁴ This new technology allowed consumers to create a flawless reproduction of the crystal clear sound contained on a CD, with no quality lost from generation to generation. Fearing that business would be stunted by home engineers who no longer had the incentive to pay for music, the industry stalled U.S. marketing of DAT machines and lobbied Congress to regulate the potential piracy problem.⁵ The result was passage of the Audio Home Recording Act ("AHRA") in October of 1992.⁶

The AHRA modified the law in three major ways: first, it legalized the "noncommercial use by a consumer of a device or medium for making digital musical recordings or analog musical recordings."⁷ Second, it established a system by which copyright holders would receive royalty payments from the sale of digital recording devices such as DAT machines.⁸ Third, it authorized a "Serial Copy Management System" ("SCMS") to prevent copied digital audio recordings from being duplicated beyond one generation, and imposed penalties on any party that circumvents SCMS.⁹ With passage of this act, Congress recognized that technology had outpaced the law, that it would be futile to sue or prosecute every consumer who made use of the new digital recording technology. Instead, it pursued a more practical solution by regulating the devices' distribution and allowing for anti-piracy technology.

Fortunately for the recording industry, the DAT did not go over well with consumers, settling only into a small niche among professional mu-

⁴ Alex Ben Block, *Digital Dream, Digital Nightmare*, FORBES, Nov. 3, 1986, at 204.

⁵ Dennis McDougal, *Way Cleared to Import Digital Audio Tapes*, LA TIMES, Mar. 2, 1988, at 1.

⁶ See 17 U.S.C. § 1001-1010.

⁷ *Id.* § 1008.

⁸ *Id.* § 1003(a).

⁹ *Id.* § 1002(c), § 1002(a).

sicians and sound engineers.¹⁰ Two years later, Sony's marketing campaign for a new recordable digital "mini disc" similarly flopped, showing that consumers were not quite ready to overhaul their music collections again with yet another format.¹¹ It seemed that the angel of music piracy had passed over the music industry, leaving business undisturbed. In truth, it had yet to arrive.

B. *Music Goes Online: The Internet and MP3*

Around the time the AHRA was being tempered in Washington, the world was getting acquainted with the Internet, "a giant network which interconnects innumerable smaller groups of linked computer networks."¹² An experimental project spearheaded by the Advanced Research Project Agency ("ARPA") in 1969,¹³ the Internet saw only esoteric use for roughly twenty years until Internet Service Providers ("ISPs") such as Prodigy, CompuServe, and America Online made it more accessible to consumers.¹⁴

By 1994, users could easily manipulate Internet interfaces such as e-mail, the World Wide Web ("WWW" or "web"), electronic Bulletin Board Systems ("BBS"), and Internet Relay Chat ("IRC") "rooms" to send digital files to one another.¹⁵ Of course, it did not take them long to start illegally exchanging intellectual property, baiting copyright holders into litigation. In *Playboy Enterprises, Inc. v. Frena*, plaintiff sued the operator of a small BBS for facilitating the digital exchange of protected photographs,¹⁶ while in *Religious Technology Center v. Netcom On-line Communications Services, Inc.*, plaintiff sued an ISP for allowing a user to post portions of copyrighted scripture online¹⁷ (legal ramifications of

¹⁰ Tom Krehbiel, *Turn It Up: Amplifier Technology Sizzling in Summer's Hazy Days*, BUFFALO NEWS, July 15, 1994, at G24.

¹¹ Barry Fox, *Big screen to little disc*, LONDON TIMES, Aug. 19, 1994, 1994 WL 9169217.

¹² ACLU v. Reno, 929 F. Supp. 824, 830 (E.D. Pa. 1996).

¹³ *Id.* at 831.

¹⁴ See Mick O'Leary, *CompuServe at the Crossroads*, LINK-UP, Nov. 1, 1990, at 22. See also Ric Ford and Rick LePage, *Prodigy vs. Quantum: An On-line Contrast*, MACWEEK, Dec. 5, 1989, at 50.

¹⁵ See Phil Patton, *Life on the Net*, ESQUIRE, Dec. 1, 1994, at 131.

¹⁶ *Playboy Enterprises, Inc. v. Frena*, 839 F. Supp. 1552, 1554 (M.D. Fla. 1993).

¹⁷ *Religious Technology Center v. Netcom On-Line Communications Services*,

Netcom are discussed in Section III).

While such cases illustrated how easily the Internet could be used to pirate text and graphics, musical copyright holders could still rest easily. By late 1995,¹⁸ the fastest modem available to most consumers ran at 33.6 Kbps.¹⁹ While typical text files and digital pictures range from 1 to 500 KB in size,²⁰ a pop-song-length digital sound file taken off of a standard CD in WAV or AIF²¹ format is enormous,²² ranging from 26 to 40 MB in size.²³ Transmission of a four-minute WAV file over a 33.6 Kbps modem could take hours, an inconvenience to even the most patient of infringers. For the time being, music piracy remained thwarted—not by the law, but by the steep time cost of downloading data.

In their struggle for more efficient song swapping, online audiophiles soon disinterred a long-lost treasure. In 1988, representatives from several international corporate and academic organizations had founded the Moving Picture Experts Group (“MPEG”) to develop standards for the “coded representation of moving pictures, audio and their combination.”²⁴ The group had introduced two formats which are now commonly used to store and send media files: “MPG” and “MP2.”²⁵ Concentrating

Inc., 907 F. Supp. 1361, 1365-1366 (N.D. Cal. 1995).

¹⁸ Joanna Pearlstein, *After Modems Peak, What's Next?*, MACWEEK, Nov. 6, 1995, 1995 WL 13800027.

¹⁹ “Kbps” is the standard nomenclature for “kilobits per second.” “Bit” is short for “binary digit,” the smallest possible unit of computer data. One kilobit equals 1,000 bits. These units are generally used to measure data transfer rates. *PC Webopedia - Data Transfer Rates category page* (last visited Apr. 30, 2000), at http://webopedia.internet.com/networks/data_transfer_rates/.

²⁰ “KB” is the standard nomenclature for “kilobyte.” There are eight bits in one byte of information, and 1,024 bytes in one KB. Thus, 1 KB equals 8,192 bits. These terms are generally used to measure data storage volume. *PC Webopedia - Data Sizes category page* (last visited Apr. 30, 2000), at http://webopedia.internet.com/data/data_transfer_rates/.

²¹ WAV and AIF are two uncompressed digital audio formats

²² Red Symons, *Tarnished Metallica*, TIME OUT, Jul. 2, 2000, at 21.

²³ “MB” is the standard nomenclature for “megabyte.” There are 1,024 KB in one MB. *Id.* A CD holds 650 MB of data, or 74 minutes worth of music. *What to look for in a CD-R or CD-RW*, DALLAS MORNING NEWS, Mar. 9, 2000, 8F.

²⁴ *MP3 Glossary*, DALLAS MORNING NEWS, Dec. 16, 1999, at 6F.

²⁵ *Plugged In*, NEWSDAY, Oct. 13, 1999, at C05.

on audio files, the German engineering firm Farunhofer Schaltungen then developed the most advanced format in the series: MPEG 1, Audio Layer 3—more notoriously known as MP3. By eliminating “noise” supposedly imperceptible by the human ear, MP3 is able to compress a WAV file at a 10:1 ratio. The result is near CD-quality sound at one tenth its original size.

The rediscovery of MP3 in the late nineties coincided with a widespread increase in Internet connection speed. Home users moved from 33.6 Kbps modems to 56 Kbps modems, DSL, and cable,²⁶ while businesses, libraries, and universities adopted lightning-speed ISDN, T1, and T3 lines.²⁷ All of a sudden, a song that once took hours to download could take a wired college student less than a minute to grab from the web. Two such college students recently added the finishing touches to the MP3 revolution by easing the playback and exchange of sound files. In 1997, former University of Utah student Justin Frankel created Winamp, a program whose interface resembles a jukebox with a home stereo console.²⁸ Two years later, Northeastern University student Shawn Fanning created Napster, a “peer-to-peer” service allowing online subscribers to search each other’s hard drives for MP3 files, eliminating the hassle of trying to find them on ephemeral web sites²⁹ (the implications of Napster are discussed in Part IV). In March of 2000, Frankel and Nullsoft’s Tom Pepper raised the stakes yet again with the creation of Gnutella, software that facilitates the peer-to-peer exchange of not just MP3s, but all computer files.³⁰

Exciting technological advances have thus emerged from clandestine government agencies, foreign laboratories, and university dorm rooms. But with them has come a heated controversy. To many consumers, the ability to build extensive archives of free music is a tremendous boon. But to artists and producers, who depend on copyright protection to profit

²⁶ Gregg Keizer, *The Best and Worst ISPs*, PC WORLD, Nov. 1, 2000, at 148.

²⁷ T1 lines are capable of carrying 1.544 Mbps, or 1,544 Kbps. T3 lines are capable of carrying 43 Mbps, or 43,000 Kbps. *PC Webopedia – Internet Access category page* (last visited Apr. 30, 2000), at http://webopedia.internet.com/communications/internet_access/.

²⁸ Karl Taro Greenfeld, *Disabling the System*, TIME, Sep. 6, 1999, at 26.

²⁹ G. Beato, *Trading Spaces*, SPIN, May 2000, at 118, 120.

³⁰ Jane Paradiso, *Hungry for Freedom? Try Gnutella*, EMPLOYEE BENEFIT NEWS, Sep. 1, 2000, 2000 WL 10182759.

from their work, this new power is a threat. When revenue dries up, the incentive to create theoretically dries up with it, leaving consumers with less art and music to enjoy. By this rationale, MP3 piracy is a potential nightmare for all parties involved, and the record industry is justified in battling it. Unfortunately, their current strategies are far from promising.

III. THE LAW RESPONDS TO CLAIMS OF PIRACY

A. *Direct Infringement and its Consequences*

Under the U.S. Copyright Act 17 U.S.C. § 106, one who holds a valid copyright in a particular work may exclusively reproduce³¹ and distribute that work,³² or authorize others to do so. If a defendant is found to have directly violated these or any other rights granted by §106, she may be subject to an injunction,³³ or liable for actual or statutory damages.³⁴ She faces criminal penalties if she has willfully infringed “for purposes of commercial advantage or private financial gain.”³⁵

As discussed in Section II, the AHRA prevents actions from being brought against those who use digital recording devices to reproduce copyrighted works for noncommercial purposes. However, as it does not address the use of multipurpose computers and computer components, cyberspace copycats remain vulnerable.³⁶ In addition, the No Electronic Theft (“NET”) Act of 1997 amended the Copyright Act in three major ways to broaden the circumstances under which one could be held criminally culpable.³⁷ First, “financial gain” is now defined to include “receipt, or expectation of receipt, of anything of value, including the receipt of other copyrighted works.”³⁸ Second, the NET Act specifies that crimi-

³¹ 17 U.S.C. § 106(1).

³² *Id.* § 106(3).

³³ *Id.* § 502.

³⁴ *Id.* § 504.

³⁵ *Id.* § 506.

³⁶ Cameron Heffernan, *You Say You Want a Revolution: Music on the Web*, PC WORLD ONLINE, Nov. 1999, 1999 WL 28599096.

³⁷ See *The No Electronic Theft (“NET”) Act: Summary of Changes to the Criminal Copyright and Trademark Laws* (last modified Feb. 18, 1998), at <http://www.usdoj.gov/criminal/cybercrime/netsum.htm>.

³⁸ 17 U.S.C. § 101 (1997).

nal culpability could result from reproducing or distributing over \$1,000 worth of copyrighted works “by electronic means” as well as tangible.³⁹ Third, the NET Act drastically increases penalties for subsequent offenses.

As a result of this legislation, our consumer could still legally use a digital recording device to duplicate a song onto an analog tape, CD, or DAT for non-commercial purposes. But if she tried to trade that copied song for “anything of value,” or post over \$1,000 worth of music on the Internet, she could be looking at fines and/or jail time.⁴⁰ This is exactly what happened to University of Oregon student Jeffrey Levy in the fall of 1999.⁴¹ The first person to be convicted under the NET Act, Levy had operated a web site on which he had posted thousands of unauthorized copyrighted works, including MP3 files, worth at least \$70,000. Levy avoided up to three years in jail and \$250,000 in fines by pleading guilty, and was instead sentenced to two years’ probation with limited Internet access. Though Levy is so far the only defendant to have been convicted for MP3 piracy, he presents the likely profile of future defendants to be sued or prosecuted for direct infringement: a college student with high speed Internet access and pitifully few assets to seize.

B. Contributory Infringement and Vicarious Liability

Though not specifically mentioned in the Copyright Act of 1976, two other judicial theories of liability have arisen to expand the class of defendants in infringement cases: vicarious liability and contributory infringement.⁴² A permutation of a common tort law doctrine, vicarious liability is imposed upon a defendant who had the right and ability to control a third party’s infringing activity, failed to stop it, and received a direct financial benefit from it.⁴³ Under the theory of contributory infringement, a defendant is liable if she had known of a third party’s in-

³⁹ *Id.* § 506(a)(2) (1997).

⁴⁰ 18 U.S.C. § 2319 (1997).

⁴¹ Fred Goodman, *The First MP3 Bust*, ROLLING STONE, Oct. 14, 1999, at 129.

⁴² *Sony Corporation of America v. Universal City Studios, Inc.*, 464 U.S. 417, 435 (1984).

⁴³ *Netcom Online Communications Services*, 907 F. Supp. 1361, 1368 (N.D. Cal. 1995).

fringing activity and materially contributed to it.⁴⁴ Both of these theories have proven more appealing to copyright holders where direct infringers are anonymous and too numerous to sue effectively. Instead, plaintiffs attack the root of the problem: “deep pocket” companies that manufacture recording equipment or provide consumers with online access. However, litigation has led to mixed results.

1. Case Law Treatment of Contributory Infringement and Vicarious Liability

In *Sony Corporation of America v. Universal City Studios, Inc.*, the Supreme Court addressed the doctrines of vicarious liability and contributory infringement in great detail. Respondents had sued appellant for manufacturing video tape recorders (“VTRs”), which they claimed enabled consumers to make unauthorized copies of copyrighted television programs. In rejecting respondents’ claim for vicarious liability, the Court concentrated on the relationship of the appellant to infringing consumers:

...in other situations in which the imposition of vicarious liability is manifestly just, the “contributory” infringer was in a position to control the use of copyrighted works by others and had authorized use without permission from the copyright owner. This case, however, plainly does not fall in that category. The only contact between Sony and the users of the Betamax that is disclosed by this record occurred at the moment of sale.⁴⁵

Such minimal contact did not constitute the kind of relationship by which appellant would be able to control a direct infringer’s activity, thus the theory of vicarious liability did not apply.

Next, the Court used patent law as a framework for developing an important limitation on the theory of contributory copyright infringement.⁴⁶ Under the Patent Code, the seller of a product “suitable for substantial noninfringing use” is not liable for contributory infringement.⁴⁷ Arguing that this limitation strikes a reasonable balance between the interests of copyright holders and those engaged in “substantially unrelated areas of commerce,” the Court applied it to the case at bar:

⁴⁴ *Sega Enterprises v. MAPHIA*, 857 F. Supp. 679, 686 (N.D. Cal. 1994).

⁴⁵ *Sony*, 464 U.S. at 786.

⁴⁶ *Id.* at 787.

⁴⁷ 31 U.S.C. § 271(c).

Accordingly, the sale of copying equipment, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes. Indeed, it need merely be capable of substantial noninfringing uses.⁴⁸

Liability for contributory infringement thus turned on the VTR's capability for "commercially significant noninfringing uses."⁴⁹ This test was satisfied when the Court moved on to find the recording of television programming—whether authorized or unauthorized—a fair use. In doing so, it was spared from having to clarify the term "commercially significant" or quantify the term "substantial." In the case of a machine or service capable of both legitimate and illegitimate uses, the Court declined to establish a precise test for third party liability.

The majority in *Sony* emphasized that it could only work within the parameters of existing copyright statutes, and could not "apply laws that have not yet been written."⁵⁰ As discussed in Section I, the AHRA significantly altered those statutes less than a decade later in the context of copyrighted audio. There was now no question as to whether the non-commercial use of audio equipment to record copyrighted material was a fair use. However, manufacturers of digital audio recording devices were still required to jump through a few hoops to release themselves from liability: the price of the devices had to include a royalty paid to copyright holders, and the equipment itself had to conform to the aforementioned SCMS anti-piracy technology.

In what had become by then a tiresomely familiar attempt to fight the tide of technology, the Recording Industry Association of America ("RIAA") tried to use the AHRA to win an injunction against Diamond Multimedia Systems ("Diamond") in 1998.⁵¹ Diamond was on the verge of releasing the Rio, a portable, battery-operated device that can download up to 64 MB worth of MP3 files from a personal computer for easy, frictionless playback. Consumers now had a quick, painless way of freeing MP3 files from their personal computers and taking them on the run.

⁴⁸ *Sony*, 464 U.S. at 788.

⁴⁹ *Id.* at 789.

⁵⁰ *Id.* at 796.

⁵¹ "The RIAA is a trade organization representing the creators, manufacturers, and distributors of over ninety percent of all legitimate sound recordings." Recording Industry Association of America, Inc. v. Diamond Multimedia Systems, Inc., 29 F. Supp. 2d 624, 625 (C.D. Cal. 1998).

Fearing that the Rio would “dramatically stimul[at]e the traffic in illegal MP3 files,” the RIAA employed a tactic similar to Universal’s, attacking the manufacturer of the device rather than its end-users.⁵²

The RIAA claimed that Diamond violated the AHRA by failing to incorporate SCMS technology into the Rio. Though Federal District Judge Audrey B. Collins defined the Rio as a digital audio recording device for purposes of the AHRA, she nonetheless denied the injunction.⁵³ Because the Rio is incapable of uploading data to another machine, it would be an “exercise in futility” to require its downloads to include the copyright and generation status information required by SCMS.⁵⁴ Ultimately, the RIAA “failed to demonstrate a sufficient causal relationship between this ‘wrongful conduct’ and [its] alleged injuries.”⁵⁵ Indeed, a trial on the merits would likely reveal that the Rio is not the source of the piracy problem at all. Its inability to upload actually accomplishes the primary goal of SCMS by preventing further serial copying. In light of this discouraging opinion, the RIAA was left to settle its lawsuit against Diamond and target other parties in its crusade to prevent contributory infringement.⁵⁶

2. ISP Exemption Under the Digital Millennium Copyright Act

To employ the doctrines elucidated by *Sony*, the RIAA had to find a defendant who had either profited from infringing activity that it could have controlled, or who materially contributed to activity that it knew was in violation of copyright law. Few parties meet these criteria better than ISPs. By offering Internet access, ISPs provide their users with the tools necessary to locate, reproduce, and distribute copyrighted material online. Many profit from their services by selling subscriptions or advertising space. Many also have the ability to revoke the accounts of users

⁵² *Id.* at 633.

⁵³ *Id.* at 632.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ The suit was settled on undisclosed terms. *Technology – MP3 Sends Music Industry Back to School* (last visited Apr. 30, 2000), at <http://cnn.com/2000/TECH/computing/03/01/mp3.back.to.harvard.idg/index.html>. See also Stephen M. Kamarsky, *Managing Copyright in Digital Marketplace: System may be Redefined by Music Distribution War*, NEW YORK LAW JOURNAL, Oct. 18, 1999, at S4.

who violate their policies. Thus, it seems they were wide open to both vicarious liability and suits for contributory infringement. However, a mere two days after the court delivered its opinion in *RIAA*, ISPs were conditionally shielded by yet another piece of federal legislation.

In ratifying treaties recently drafted by the World Intellectual Property Organization,⁵⁷ the Digital Millennium Copyright Act ("DMCA") introduced several provisions tailored for cyberspace activity. Among them is a new statute which limits the liability of ISPs,⁵⁸ broadly defined as "provider[s] of online services or network access, or the operator[s] of facilities therefor," for coordinating online transmissions.⁵⁹ To qualify for protection, a provider must first (a) implement a policy terminating the accounts of users who repeatedly infringe, and (b) cooperate with copyright holders that implement anti-piracy technology.⁶⁰ Then, the provider must meet several specific conditions depending on the type of online service it provides. For example, if it has inadvertently stored infringing material on its system as on a web site,⁶¹ or referred users to infringing material as through a search engine,⁶² it must expeditiously block access to the material upon notice of infringement. If it acts as an automatic conduit in the exchange of infringing material (e.g. by offering an e-mail service), it must have exercised no direct control over the exchange.⁶³

This section of the DMCA essentially codifies the decision reached three years before in *Netcom*, in which the court released a BBS operator from liability under the same basic conditions for unknowingly posting infringing material.⁶⁴ It is the latest attempt to address an issue that has reared its ugly head constantly, from *Sony* through passage of the AHRA: when a product or service facilitates both legitimate and infringing activity, to what extent should the law limit its use? Should its manufacturer or operator be held liable for the potential abuse of what is otherwise an innovation with tremendous societal benefits? Should the same legalized

⁵⁷ See Carolyn Andrepont, *Digital Millennium Copyright Act: Copyright Protections for the Digital Age*, DEPAUL-LCA J. ART & ENT. L. 397, 398.

⁵⁸ See 17 U.S.C. § 512.

⁵⁹ *Id.* § 512(k).

⁶⁰ *Id.* § 512(i).

⁶¹ *Id.* § 512(c).

⁶² *Id.* § 512(d).

⁶³ *Id.* § 512(a).

⁶⁴ *Netcom*, 907 F. Supp. 1361, 1366 (N.D. Cal. 1995).

monopoly that is meant to advance one kind of intellectual property be used to hinder the progress of another? The answer, as collected from these landmark decisions and legislative acts, is a qualified “no” that grows stronger with each dispute and technological leap.

IV. COUNTERMEASURES TAKEN BY THE MUSIC INDUSTRY, AND THEIR DRAWBACKS

A. *Taking Legal Action*

1. Chasing Direct Infringers

The MP3 piracy epidemic of course begins with the pirate herself: the direct infringer. After she has popped a copyrighted CD into her computer’s CD-ROM drive, used “ripping” software to copy one of its songs into MP3 format, and logged onto the Internet, violation of §106 becomes quick and easy via e-mail, chat rooms, web sites, or BBS. The RIAA has employed a team of investigators to comb the Internet on a daily basis looking for such violations.⁶⁵ Before the DMCA took effect, they regularly sent out thousands of cease-and-desist letters to the operators of pirate web sites, suing those that refused to comply.⁶⁶ Though this tactic led to the removal of hundreds of sites, it proved to be ridiculously futile. Most of the sites shut down were on university servers, suggesting that the most useful remedy available was an injunction against a near insolvent college student. Meanwhile, in the time it took to locate a site with MP3 files, determine which ones were illegal, send a letter, receive a response, serve notice, set a court date, and reach either settlement or decision, countless other webmasters had set up pirate sites. Thus, the vicious cycle would begin again.

2. Targeting ISPs such as Napster

Passage of the DMCA has since made this tactic a bit more manage-

⁶⁵ Doug Bedell, *The Box that Roared: MP3 Format Expected to Proliferate Even as Music Industry Tries to Safeguard Recordings*, DALLAS MORNING NEWS, Dec. 16, 1999 at 6F.

⁶⁶ Janelle Brown, *Heat Turned Up on Digital Music Pirates* (last visited Apr. 30, 2000), at <http://www.wired.com/news/culture/0,1284,10234,00.html>.

able. Instead of hopelessly chasing direct infringers around cyberspace, the RIAA and other copyright holders may now simply notify ISPs of user misconduct. If an ISP wishes to maintain its statutory immunity, it must quickly pull the plug on offensive sites and transfers. Otherwise, it may have its deep pockets picked in a contributory infringement suit. However, investigators still face the formidable task of actually locating infringing material. Wary of the RIAA's "search and destroy" campaign, many traders have developed creative ways to keep themselves anonymous and undetected. Some have started communicating in code to avoid the scrutiny of chat room hosts, and privately exchanging files via e-mail instead of web sites.⁶⁷ Thus, while the DMCA has more clearly defined the parameters of infringement suits, traders' skilled use of technology may leave plaintiffs with little basis even for a complaint.

Another shortcoming of anti-piracy statutes like the AHRA and DMCA is the legal myopia their drafters inevitably suffer when trying to tame new trends in technology. No matter how comprehensive the act is intended to be or how broad its definitions are, it is only a matter of time before some new program or service finds a loophole to squeeze through; it is only a matter of time. Diamond's Rio provides a perfect example of a threatening new machine that fits the description of a digital audio recording device, yet circumvents the AHRA in a way Congress could not have anticipated in 1992. Similarly, the ISP known as Napster has recently armed its subscribers with the easiest known way to distribute copyrighted MP3 files, yet it seemingly qualifies for immunity under the DMCA.

A unique hybrid of chat room and search engine, Napster has made the most publicized use of peer-to-peer technology, a revolutionary new form of online networking. With software downloaded from the Napster web site, a subscriber logs onto a separate server that connects her with thousands of other subscribers currently online.⁶⁸ The program then takes inventory of the MP3 files on her hard drive and makes them accessible to every other subscriber. Thus, the more subscribers there are online, the more MP3 files there are to download. By entering the names of desired

⁶⁷ Doug Bedell, *The Box that Roared: MP3 Format Expected to Proliferate Even as Music Industry Tries to Safeguard Recordings*, DALLAS MORNING NEWS, Dec. 16, 1999 at 6F.

⁶⁸ G. Beato, *Trading Spaces*, SPIN, May 2000, at 118.

songs into Napster's search engine, our audiophile can assess the precise quality of the recordings before downloading several at a time from other subscribers' hard drives.

The Orwellian eeriness of allowing strangers to snoop into their personal files apparently has not kept hundreds of thousands of college students from regularly logging onto Napster. As a result, many university computer networks have been so overwhelmed by traffic that they have been forced to ban its use.⁶⁹ The new sensation has also brought out the RIAA once again with guns blazing. On December 6, 1999, it filed suit in the U.S. District Court in San Francisco, accusing Napster of contributory infringement and vicarious liability.⁷⁰ Relying heavily on the DMCA, the RIAA has sought to close what it calls a "haven for music piracy on an unprecedented scale."⁷¹ It is right about that much, but it may find to its dismay that the DMCA actually works against it.

As mentioned in section III, the DMCA groups the activity of ISPs into four categories: (1) transmission and routing, (2) system caching, (3) system storage, and (4) information location.⁷² The court will most likely find that Napster is engaged in transmission and routing, as it primarily acts as a conduit for material exchanged between its subscribers. For an ISP to be exempt from liability for this activity, the DMCA requires: (1) that another entity initiate the transmission of infringing material, (2) that the transmission be carried out through an automatic technical process, (3) that the ISP not select recipients of transmitted material, (4) that the material not be cached for any longer than necessary, nor copied for anyone but the recipient, and (5) that the ISP not modify the material during transmission.⁷³ Napster clearly meets all of these criteria. The company itself does not initiate transmission of MP3 files; its subscribers do. Napster's activity is automatic; it selects neither the files to be transmitted nor their recipients. Finally, the files are neither cached nor modified as they travel from one subscriber to another. Thus, at least one of the DMCA's

⁶⁹ *Id.* at 120.

⁷⁰ *Ground Zero: The Future of Digital Music* (last visited Apr. 30, 2000), at www.napster.com/groundzero.

⁷¹ Bill Holland, *RIAA Sues MP3 Search Site*, BILLBOARD, Dec. 18, 1999, at 9.

⁷² 17 U.S.C. § 512. See also Jonathan Band, *Short Analysis of the DMCA* (last visited Apr. 30, 2000), at <http://www.dfc.org/issues/graphic/2281/JB-Index/jb-index.html>.

⁷³ 17 U.S.C. § 512(a).

tests seems to release Napster from liability.

Because Napster also incorporates a search engine into its program, the RIAA may claim that it is engaged in “information location.” To avoid liability for this activity, an ISP must satisfy a test that draws heavily from the theories of vicarious liability and contributory infringement. It cannot receive any financial benefit directly attributable to the material it locates, and cannot exercise control over its access.⁷⁴ Furthermore, it must have neither actual knowledge nor notice that the located material infringes copyright law. If it acquires such notice, it must comply with DMCA procedure and expeditiously remove the offensive material.

Though Napster indeed has the right and ability to control its subscribers’ activities, it was still offering beta software⁷⁵ and subscriptions for free at the time of printing.⁷⁶ And though it may have some difficulty denying the general notion that its service is a “haven for music piracy,” Napster is still protected from liability until it receives notice of infringement. For example, if an RIAA investigator were to run a search on a Napster subscriber and discover that she was illegally posting an extensive archive of copyrighted songs, the investigator would have to notify Napster of her infringing activity. Napster then would be obligated to audit the subscriber’s activity the next time she logged on, and terminate her account if the RIAA’s claim were verified. This is the somewhat painstaking procedure dictated by the DMCA, but it is one that the court will likely require the RIAA to follow before it entertains some blanket infringement suit against Napster. Napster is also confident in this reading of the DMCA, as evident from the “MP3 Copyright Policy” located on its web site:

In accordance with the Digital Millennium Copyright Act of 1998... Napster will respond expeditiously to claims of copyright infringement committed using the Napster service that are reported to Napster’s “Designated Copyright Agent”... If you are a copyright owner, or authorized to act on behalf of an owner of the copyright or of any exclusive right under the copyright, please report your notice of infringement by completing [a] notice form and delivering it to the Designated Copy-

⁷⁴ *Id.* § 512(d).

⁷⁵ The “beta” version of a product or software is the version users test for defects before a final commercial release

⁷⁶ *Napster.com* | *Download* (last visited Nov. 10, 2000), at <http://www.napster.com/download>.

right Agent.⁷⁷

The statement reads almost as a taunting challenge to the RIAA and any other litigious copyright holders. Perhaps it was too cavalier: In July of 2000, U.S. District Judge Marilyn Hall Patel enjoined Napster from continuing its file-sharing service pending a trial on the merits.⁷⁸ Two days later, the 9th U.S. Circuit Court of Appeals granted Napster a stay of the injunction, prolonging the litigation for months on end. Fearing Napster's potential demise, Internet audiophiles have been busy learning to use other file-sharing software such as Gnutella and Freenet, whose near-anarchic peer-to-peer architecture allows transfers to go virtually undetected through cyberspace.⁷⁹

So far, two more plaintiffs have joined the fray. In April of 2000, recording artists Metallica and Dr. Dre filed their own infringement suits against Napster and several of the universities that still offer access to the service.⁸⁰ Both plaintiffs have faced the same legal issues outlined above, but must also deal with unexpected backlash from thousands of their fans. In May of 2000, Metallica forced Napster to audit and terminate the accounts of 317,000 individual subscribers accused of illegally copying its songs.⁸¹ The move has recently been named one of the "sleaziest moments in rock," transforming Metallica's image from that of rebellious icons to a group of parsimonious corporate sell-outs.⁸²

Even if the DMCA is applied more in these plaintiffs' favor than in Napster's, Justice Stevens' cryptic comments in *Sony* may serve to defuse their claims. It is easy to forget that the reproduction and distribution of MP3 files are not illegal per se. Many unsigned musicians have in fact encouraged the free exchange of their songs, hoping for exposure and publicity.⁸³ Also, an MP3 file could just as easily be a recording of sound

⁷⁷ *Napster Copyright Policy* (last visited Apr. 30, 2000), at <http://www.napster.com/dmca.html>.

⁷⁸ Don Waller, *Napster CEO Wants to Settle Fight 'Privately'*, VARIETY, July 31, 2000.

⁷⁹ Greg Milner, *Anarchy From the U.K.*, SPIN, September 2000, at 164.

⁸⁰ *Dr. Dre files suit against Net music firm, Napster* (last visited Apr. 30, 2000), at http://dailynews.yahoo.com/h/nm/20000426/en/music-napster_4.html.

⁸¹ Don Waller, *Napster Ousts 317,000 Users*, DAILY VARIETY, May 11, 2000.

⁸² See Greg Milner, *Kill Them All*, SPIN, October 2000, at 116.

⁸³ Thousands of these "free" files are posted at www.mp3.com as part of the company's primary business model. Coincidentally, the RIAA recently sued

in the public domain. In light of this, at least some of the activity that Napster facilitates is perfectly legal, which may lead the court to question whether it is capable of “commercially significant noninfringing uses.” Though Justice Stevens declined to define this term, and though his opinion was concerned with recording equipment rather than an online transmission and routing service, the rule and dicta in *Sony* may arm Napster with another sound defense.

The events described above illustrate the folly in relying on the law to counter MP3 piracy. Locating direct infringers to sue is expensive and time-consuming, seldom leads to adequate compensation, and hardly deters future infringers. Targeting ISPs for contributory infringement and vicarious liability is equally fruitless, as the DMCA’s tedious procedures must be followed before either party sets foot in court. Finally, lobbying Congress for further revision of the Copyright Act is also a wasteful enterprise, since technology tends to transform faster than

Congress can define its transformations. By itself, the law is as effective a weapon against piracy as outdated medicine is against the ever-mutating AIDS virus. To maintain its property—and dignity—the music industry must look elsewhere for answers.

B. *Implementing Anti-Piracy Technology*

1. Digital Watermarking and Encryption

Because music pirates have gained such an advantage over the recording industry by riding the wave of rapidly changing technology, it makes more sense for the industry to adopt a strategy that beats them at their own game. Having reluctantly acknowledged this, it has begun research in two technological fields that promise to prevent infringement before music even leaves the studio: steganography and cryptography. Steganography, or the science of “covered writing,” concerns the hiding of information within a larger document and its subsequent extraction.⁸⁴

mp3.com on an unrelated copyright infringement claim and won on April 28, 2000. See *Biz Sees MP3.com Ruling as Victory for Copyrights*, DAILY VARIETY, May 1, 2000, at 1.

⁸⁴ See Rosemarie F. Jones, Comment, *Wet Footprints? Digital Watermarks: A*

Advances in steganography have led to the use of “digital watermarks,” which are embedded imperceptibly in files, and designed to withstand conversion and duplication.⁸⁵ Just as traditional paper watermarks convey proof of authenticity, digital watermarks may carry copyright notice, security codes, or even a recording’s duplication history.⁸⁶ This would allow copyright holders to identify the chain of potential defendants more easily in an infringement suit. Furthermore, any attempt to remove a digital watermark from a recording would result in a noticeable degradation in quality, making counterfeits more conspicuous and reducing the incentive to copy in the first place.⁸⁷

Cryptography governs the process by which digital information is rendered unintelligible by a mathematical algorithm until the correct program or password “unscrambles” it.⁸⁸ The encryption of recordings provides copyright holders with an additional way to protect their works, allowing only authorized users to access them. A more advanced form of encryption allows files to be copied for a limited number of times before scrambling them beyond recognition. Together with digital watermarks, these encryption techniques form just the kind of serial copy management system envisioned by the AHRA.

2. The Secure Digital Music Initiative

The mass implementation of digital watermarks and encryption technology is one of the central schemes behind the Secure Digital Music Initiative (“SDMI”), an extensive pan-industrial anti-piracy measure started in December of 1998.⁸⁹ The SDMI is a forum through which information technology firms, consumer electronics companies, and members of the recording industry have begun to develop “open technology specifications for protected digital music distribution.”⁹⁰ Ironically, Dr.

Trail to the Copyright Infringer on the Internet, 26 PEPP L. REV. 559, 568 (1999).

⁸⁵ *Id.* at 569.

⁸⁶ *Id.* at 570.

⁸⁷ *Id.* at 569.

⁸⁸ *Id.* at 572.

⁸⁹ *Secure Digital Music Initiative (SDMI) Fact Sheet* (last visited Apr. 30, 2000), at http://www.riaa.com/sdmi/sdmi_fact_sheet.htm.

⁹⁰ *SDMI FAQ* (visited Apr. 30, 2000), at

Leonardo Chiariglione, a key figure in the development of the notorious MPEG standards, has been named its Executive Director.⁹¹ The SDMI has sought to establish a digital watermarking system by which member companies must abide in order to remain "SDMI compliant." Digital music players produced by member companies would then be designed to accommodate all SDMI-compliant file formats. Then, as Stephen M. Kamarsky speculates, "[b]ecause 90 percent of the music sold in the US is handled by members of the SDMI consortium, it is likely that most commercially distributed music will soon carry the SDMI watermark and be playable only on SDMI compliant devices."⁹² Thus, software companies and electronics manufacturers have two distinct incentives to comply with the SDMI: first, their products would attract consumers by incorporating a convenient, nearly universal platform. Second, they would avoid the risk of selling music players that become obsolete as record companies begin watermarking their music catalogues.

However, even this master plan has its drawbacks. As with the United Nations, one cannot expect to round up organizations with such divergent interests and expect them to agree on everything. Software companies and hardware manufacturers have obstinately opposed the recording industry's demand that their players only accommodate SDMI-compliant, watermarked files, as it would force them to abandon the MP3 enthusiasts in their consumer base. As a result, the recording industry has conceded: the SDMI standard has now been revised to include even non-SDMI-compliant formats such as MP3. Though the issue may be rendered moot if record companies begin exclusively releasing pirate-proof music, such debates have caused the forum to stall. In the last fifteen months, the world has seen MP3.com go public and watched Napster wreak havoc. Meanwhile, the SDMI has yet to implement even the first phase of its plan effectively. Consultants have so far hacked at least two of the five

http://www.riaa.com/sdmi/sdmi_faq.htm.

⁹¹ *Worldwide Recording Industry and Technology Companies Kick Off Work of Secure Digital Music Initiative* (last visited Apr. 30, 2000), at http://sdmi.org/pr/LA_Feb_26_1999_PR.htm.

⁹² Stephen M. Kamarsky, *Managing Copyright In Digital Marketplace: System May Be Redefined by Music Distribution War*, NEW YORK LAW JOURNAL, Oct. 18, 1999, at S4.

security technologies proposed for the protection of online music.⁹³ Perhaps this “new world order” is not the most efficient way to combat piracy either.

V. MORE EFFECTIVE STRATEGIES AGAINST MP3 PIRACY

By exclusively relying on the law, pan-industrial cooperation, and anti-infringement technology, record companies are losing the war against MP3 piracy. While these strategies may serve to slow down the epidemic, they are too expensive and time-consuming to stop it effectively. Thus, the industry would do well to keep these “defensive” measures in place, but direct more of their resources toward a more “offensive” economic plan: competition.

A. *Launching Anti-MP3 Marketing Campaigns*

As SDMI members begin the arduous task of developing a more secure alternative for digital music delivery, they need not sit idly by and watch MP3 grow in popularity. In all of the hype, few journalists have bothered to comment on the true sound quality of an MP3 file, or ask exactly what “near CD quality” means. In truth, the MP3 compression process permanently sloughs off some of the data from a sound file in order to reduce it to one tenth its original size.⁹⁴ The process also introduces pockets of noise called “artifacts” into the sound signal that become noticeable during lulls in a song. These quality modifications make it extremely difficult for MP3 files to convey the delicate sounds of a clarinet, violin, or human voice in a pleasing way. The result led reviewer Cameron Heffernan recently to conclude that a “highbrow audiophile may deplore the damage MP3 does to tone and phrasing. But if you prefer the Ramones Fan Club to the Musical Heritage Society, chances are compressed audio will serve you nicely.”⁹⁵

Indeed, most MP3 enthusiasts, sitting in their dorm rooms, are of the latter class of aesthetes. But the hassles brought on by MP3 do not end

⁹³ Ann Donahue, *Hackers Beat Music Labels' Encryption*, VARIETY, Nov. 10, 2000, at 5.

⁹⁴ Cameron Heffernan, *You Say You Want a Revolution: Music on the Web*, PC WORLD ONLINE, November 1999 (last visited Dec. 16, 2000), at <http://www.pcworld.com/news/article.asp?aid=12980>.

⁹⁵ *Id.*

with sound quality. The old adage that “you get what you pay for” often applies very well to free downloaded bootlegs. The pirate who initially ripped and posted an MP3 file may have encoded it at a low frequency or sub-par “bit rate.” She may have taken the song from a cheaply burned CD-R—a bootleg from a bootleg—which some critics have claimed leads to degradation.⁹⁶ She may have erroneously named the file, leading to the download of an undesired song. Finally, the file may contain mysterious skips and pops that simply cannot be explained.

The numerous drawbacks of MP3 technology present record companies with a tremendous advertising opportunity that they have so far curiously ignored. As the CD is a product empirically superior to the mystery bootlegs floating around cyberspace, perhaps consumers need only be reminded by commercials that trumpet slogans such as “Compact discs: Why settle for less?” or “Are the best things in life really free?” Print ads may feature images of pasty-faced, bleary-eyed kids staring at error messages on their computer screen. Radio spots may amplify the cacophony of artifacts lurking in a typical MP3 file. If the dirty truth about MP3 becomes more widely reported, and if record companies attack its Achilles’ Heel with an aggressive advertising campaign, they may begin to see their old customers wandering home again. Of course, what those customers find and where they find it will also be crucial.

B. *Moving Online*

Barak D. Jolish of the law firm Hancock Rothert & Bunshoft recently presented his own comprehensive solution to the MP3 piracy problem.⁹⁷ He suggested that record companies themselves begin to distribute their music digitally online, while continuing to use the RIAA as their legal strong arm. By offering downloadable songs at prices well below their retail price on CD, record companies may begin to convert the pirates back into consumers. The RIAA’s otherwise ridiculous “cat-and-mouse game” against direct infringers may not effectively stop the illicit exchange of MP3s, but it may present consumers with enough of a hassle to start looking for a convenient alternative. Jolish explains:

⁹⁶ See Paul Tatara, *Hewlett-Packard CD-Writer Music* (Review), AUDIO, January 2000, at 83.

⁹⁷ Barak D. Jolish, *Scuttling the Music Pirate: Protecting Recordings in the Age of the Internet*, 17 ENT. & SPORTS LAW. 9, 12 (1999).

Consumers who know that, for instance, they legally can obtain the single they want for 50 cents may not bother searching through unreliable pirate sites for the same music. In other words, consumers may be willing to forgo the marginal savings of pirate sites in exchange for the industry site's superior convenience and service.⁹⁸

This point can even be applied to the fearsome Napster juggernaut. As Napster begins terminating individual accounts in response to the RIAA's threats, subscribers will be left: (a) to openly infringe again, risking more severe penalties under the NET Act, (b) to develop elaborate codes in order to continue trading in chat rooms, or (c) just to go to the label's site and download a song for less than a cup of coffee. Given such economic factors as risk and opportunity cost, the most rational option is of course (c).

To their credit, the five major companies in the music industry (Warner, EMI, Universal, Sony, and BMG) have caught on to this strategy, announcing immediate plans for online digital music distribution by the end of 2000.⁹⁹ Taking one step further in this direction, BMG parent Bertelsmann surprised the entertainment industry in October of 2000 by announcing a partnership with Napster and backing out of the RIAA's lawsuit.¹⁰⁰ The two companies seek to develop a payment structure for the service that will satisfy copyright holders and song swappers alike. These recent developments show that the brightest future of the music industry will emerge through cooperation and competition, not litigation.

C. *DVD-A, DSD, and Other Potential In-Store Attractions*

Jolish admits that record companies will inevitably suffer a loss in revenue for offering downloadable music at low prices.¹⁰¹ Though the loss will be offset somewhat by reduced overhead and distribution costs (online transfers require no pressing, packaging, shipping, etc.), the major companies may find themselves spending more money to compete with online startup labels. Meanwhile, what happens to their brick-and-mortar operations? The dawn of the digital download has led Ryan Henriquez of

⁹⁸ *Id.*

⁹⁹ Justin Oppelaar, *BMG Joins the Band*, DAILY VARIETY, Oct. 10, 2000.

¹⁰⁰ Justin Oppelaar, *BMG, Napster in Duet*, DAILY VARIETY, Nov. 1, 2000, at 1.

¹⁰¹ Barak D. Jolish, *Scuttling the Music Pirate: Protecting Recordings in the Age of the Internet*, 17 ENT. & SPORTS LAW. 9, 12 (1999).

the law firm Hughes Hubbard & Reed to the extreme position that “record stores, record contracts, record companies, and physical records themselves (including the descendant CD) all face extinction in their current forms . . .”¹⁰² Again, even if there is any truth to this bleak prediction, the industry need not helplessly wait for it to materialize.

Electronics manufacturers have announced the impending release of two new audio disc formats: Digital Versatile Disc Audio (“DVD-A”) and Super Audio Compact Disc (“SACD”).¹⁰³ Both will use the same physical surface, the same DVD-formatted disc from which many consumers now prefer to view movies and video. The same size as standard CDs, these discs are capable of storing over seven times more information, or 4.7 GB.¹⁰⁴ DVD-A and SACD use this enormous amount of space to increase sound quality far beyond that of any CD. DVD-A promises to add surround sound to its listening experience, while SACD offers compatibility with CD players currently on the market. Further fears of incompatibility have been largely dispelled by the announcement of universal players that will accommodate DVD-A, SACD, and DVD video. On top of it all, the discs will employ sophisticated digital watermarking and encryption technology to arm them against piracy.

If marketed properly, DVD-A, SACD, and DVD could be the ultimate solution to record industry’s MP3 headache. Here are sound files that are too large to pipe through current broadband lines conveniently, that employ ironclad anti-piracy technology, that must be sold or transferred tangibly, and that sound fathoms better than CDs, let alone MP3s. Compatibility with current machinery means that the formats may be phased in gradually, rather than forced upon unwilling consumers all at once. And even if increased sound quality is not the factor that draws consumers back to record stores, record companies can use DVD discs to store interactive multimedia, pristine photographs, artwork, text-based biographies, rare concert video footage, etc. The possibilities are endless.

¹⁰² Ryan S. Henriquez, *Facing the Music on the Internet: Identifying Divergent Strategies for Different Segments of the Music Industry in Approaching Digital Distribution*, 7 UCLA ENT. L. REV. 57, 131 (1999).

¹⁰³ Steven Harris, *Universal Player Spans DVD-A, SACD*, ELECTRONIC ENGINEERING TIMES, Dec. 6, 1999, at 73.

¹⁰⁴ “GB” is the standard nomenclature for “gigabyte.” There are 1,024 MB in one GB. *PC Webopedia - Data Sizes category page* (last visited Apr. 30, 2000), at http://webopedia.internet.com/data/data_sizes/gigabyte.html.

VI. CONCLUSION

For decades, the only things copyright holders really needed to defend their rights were good lawyers and lobbyists. With exponential jumps in technology, this is simply no longer the case. Even if an alternative, pirate-proof digital audio format existed, it would be in danger of failure if consumers had no reason to abandon their free and easy MP3 files. Failure is more imminent in a committee that requires pan-industrial cooperation. Furthermore, ill-conceived attempts to combat piracy often backfire, raising the ire of consumers as Metallica so woefully discovered.

These sluggish efforts will be effective in the long run only if the music industry acts quickly to supplement them with more aggressive countermeasures. By pouring more resources into economically “offensive” strategies, it will see the MP3 craze finally subside. If record companies rapidly continue to compete with pirates online, expose the inherent weaknesses of MP3, and hasten the release of DVD-A and SACD technology, MP3 is sure to go the way of the eight-track tape. Only then may an increase in wisdom and knowledge mean an end to their sorrow.

