

**Texas Intellectual Property Law Journal**  
Winter 2003

Notes

**DIGITAL MILLENNIUM? TECHNOLOGICAL PROTECTIONS FOR COPYRIGHT ON THE INTERNET**

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### **\*418 I. Introduction<sup>1</sup>**

Is Leslie Valdasz, the vice president of Intel, brave or crazy? When Senator Fritz Hollings, a Democrat from South Carolina, held hearings on the Security Systems Standards and Certification Act (SSSCA), Mr. Valdasz spoke out against the bill<sup>2</sup> to require hardware copyright protection in all “digital media device[s],” a term which is defined very broadly.<sup>3</sup> Executives from the television and movie studios, as well as congressmen, vilified him for being so presumptuous as to disagree with them.<sup>4</sup> However, like many issues that face governmental bodies, the most reasonable answer to the question of Internet copyright piracy must balance the interests of consumers, big businesses,<sup>5</sup> and small businesses<sup>6</sup>.

For better or worse, the Internet has quickly revolutionized the entertainment industry. In a period of five short years, we have seen the rise and fall of Napster,<sup>7</sup> several major congressional statutes<sup>8</sup> that will alter the music scene, and enough litigation<sup>9</sup> to make more than a few law firm partners very happy. The Internet is a valuable resource for musicians and music purchasers. In fact, almost half of the people that have downloaded music from the Internet say that they have purchased a particular compact disk (CD) from a musician based solely on something they read or listened to on the Internet.<sup>10</sup> One billion dollars was spent for online music \*419 in 2001, and by 2006 that figure is expected to jump to over six billion dollars.<sup>11</sup> In sum, the Internet can be a superb source for marketing independent record labels and musicians.

While the preservation of stable copyright protection is a justifiable legislative purpose, the free flow of data is also important to fulfill the grand dreams of the Internet’s counterculture pioneers.<sup>12</sup> Copyright law that hinders this free flow of ideas, music, and art does not serve the purposes of copyright’s social contract.<sup>13</sup> However, copyright’s restrictions on the First Amendment are justified by the utilitarian purpose of providing incentive for the author or artist to contribute to the public.<sup>14</sup> The goal of American copyright law should be to allow the dissemination of artistic works to as many people who can afford to pay a reasonable royalty.

Current law, both U.S. and international, offers no suitable system that provides reasonable royalties while allowing easy and wide dissemination through the Internet. European copyright, focusing on a moral rights theory,<sup>15</sup> may require modifications in a scheme for Internet music files that doesn’t grant the artist much control. American law has been more amenable to federally mandated licensing schemes in the past and should continue to be in the future.<sup>16</sup>

Part II. will discuss the current state of technology and some current legislation that would affect it. Part III. looks at some past copyright legislation that provides a model for a proposal going forward. Part IV. proposes a solution to the problem of Internet music piracy to satisfy both the copyright owner and Internet users. Finally, Part V. summarizes the argument.

### **\*420 II. The Current State of Affairs**

#### **A. Development of the Internet Music Trade**

By inventing the CD, James T. Russell<sup>17</sup> spurred the evolution of Internet music piracy. The digital audio that was stored on

CDs allowed nearly perfect copies to be made for the first time.<sup>18</sup> A normal CD holds 650 megabytes (MB) of digital audio data, which is equivalent to seventy-four minutes of audio.<sup>19</sup> The size of these uncompressed digital music files made it virtually impossible to send music files over the Internet.<sup>20</sup>

Two developments in technology enabled the expansion of Internet music sharing. First, compression of the audio data through MP3 format allowed storage in much smaller files. MP3, which stands for MPEG<sup>21</sup> Audio Layer-3, is an audio compression format that allows compression by a factor of ten to twelve.<sup>22</sup> This compression allowed for the reasonable transfer of files, taking approximately twenty minutes to transfer the average song.<sup>23</sup> Second, the growth in the number of broadband Internet connections were a major factor in the development of Internet music. Year-end statistics for 2001 estimate that 13.3 million cable modem, DSL, satellite and fixed wireless home subscribers live in North America alone, with an estimated 6.4 million new subscribers in 2001.<sup>24</sup> With a market \*421 penetration of ten percent,<sup>25</sup> broadband now enables a significant portion of Internet users to download whole albums in about fifteen minutes.<sup>26</sup>

All of the above would be possible even if Napster had never come along, but Napster and other peer-to-peer (P2P) services made trading music easy. P2P enables users to share files directly and more reliably among themselves.<sup>27</sup> Users search a database of listings and are then able to download the files directly from the other users.<sup>28</sup> However, the major record companies, through their industry organization, the Recording Industry Association of America (RIAA), filed litigation, forced Napster to end its file sharing services,<sup>29</sup> and eventually succeeded in completely shutting Napster's doors.<sup>30</sup> When Napster was threatened by the RIAA, programmers began to build networks immune to legal attacks. Compared to Napster, the current generation of P2P services, including Morpheus, Kazaa, and Gnutella, have no central database for any company to control.<sup>31</sup> Central databases are stored on a single server, located in one place, and usually owned by the software producer like Napster.<sup>32</sup> Programs such as Kazaa and Morpheus have no central database to easily shut down. In other words, when programs with no central database are released to the public, they can never be pulled back and cannot be controlled by the original programmers.

## **B. From the SSSCA to the CBDTPA**

Faced with a situation that offers copyright owners little control over their own materials, Senator Fritz Hollings<sup>33</sup> introduced the SSSCA. On March 21, 2002, SSSCA became an official bill under a new name, "Consumer Broadband and Digital Television Promotion Act" (hereinafter CBDTPA).<sup>34</sup> The record \*422 companies have sought this legislation for a long time and consider it the only way to prevent the "Napsterization of their businesses."<sup>35</sup> Without the CBDTPA, RIAA's former chairman Hilary Rosen says that "online piracy will continue to proliferate and spin further out of control."<sup>36</sup> The goals of the bill are "[t]o regulate interstate commerce in certain devices by providing for private sector development of technological protection measures to be implemented and enforced by Federal regulations to protect digital content and promote broadband."<sup>37</sup> Among other provisions, the bill gives the FCC, in consultation with the Copyright Office, power to regulate the standards for hardware copyright protection.<sup>38</sup>

### **1. The Capture Problem**

While the CBDTPA would certainly limit online piracy, it has several flaws. First, the rulemaking process gives significant power to the entertainment industry to determine what standards will become law.<sup>39</sup> Essentially, the bill requires that a consensus between financially interested parties be built on how to block the transfer of copyrighted files.<sup>40</sup> The process gives little leeway to the technology industry to disagree with the entertainment industry; the consensus will be built in order to avoid lawsuits, rather than to protect the best interest of consumers.<sup>41</sup> Also, the content-producing industry would then be able to force additional concessions from the technology community under section 3h, if the content-providers determine that "technological improvements warrant upgrading the technology in use."<sup>42</sup> This nebulous standard gives content providers an upper hand if they choose to pursue negotiations.

Even if the entertainment industry is unable to extract desired concessions from the technology industry, the bill presents a backup means to obtain the desired protection of copyright. If the FCC determines that no agreement can be reached by the flexible deadline provided by section 3a, it must propose a rule with input from entertainment and technology industry leaders.<sup>43</sup> The lobbying power of the entertainment industry appears almost determinative here; both capture theory and public choice theory posit that administrative agencies are vulnerable to capture by \*423 small groups that have high per capita stakes in the administrative decisions.<sup>44</sup> Capture of a government body leads to troubling results. Professor Lemley notes that "there is no guarantee that a government standard-setting body will act in the public interest, even if it is possible

for them to discern what in fact that interest is.<sup>44</sup> In the realm of copyright protection on the Internet, this is also a major problem. The FCC will see one point of view, the record labels'; independent musicians and consumers do not have the resources to compete with a concentrated interest group like the RIAA.<sup>46</sup>

## 2. The Protected Use Problem

The bill's potential to limit useful technology,<sup>47</sup> such as format-shifting and unrestricted format players, is another problem.<sup>48</sup> If entertainment leaders decide, in some sort of consensus with technology industry leaders, that these features threaten copyright owners, they can limit or abolish such features.<sup>49</sup> Some features that might be lost include format-shifting, such as making mix CDs from legally purchased music, and some hard drive features, such as optimization and de-fragmentation processes.<sup>50</sup> These are useful features that need to be protected from the onslaught of the entertainment industry.

## 3. The Innovation Problem

Finally, and perhaps most importantly, the CBDTPA would discourage innovation among the technology community. The technology community has relied on the standard of "substantial non-infringing uses" of *Sony Corp. of America v. Universal City Studios, Inc.*<sup>51</sup> in order to design useful products. In *Sony*, the Court said that "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."<sup>52</sup> The entertainment \*424 industry makes several arguments to distinguish Internet music sharing from the *Sony* case. The chief argument is that digital copies do not degrade between iterations.<sup>53</sup> Indeed, the CBDTPA finds this also to be true.<sup>54</sup> Unlike Betamax copies in *Sony*, a user can make a copy of a copy and experience no loss of quality, thus enabling limitless sharing of files.<sup>55</sup> However, like the Betamax video tape recorder, MP3 devices and other digital devices have substantial non-infringing uses. For example, hundreds of artists make available MP3 files of their original work.<sup>56</sup> The bill, as proposed, could eliminate the *Sony* standard. If future technology companies want to develop new technology, they would have to meet the copyright standards established by the FCC and Hollywood<sup>57</sup> or face litigation from powerful industry groups, like the RIAA. Many startup companies do not have the resources to face a fight like this; it adds one more step to the already complicated process of developing new technology. Congress should not create roadblocks to technological innovation, the traditional engine of the modern American economy.

### C. The ©-Chip, a Complying Technology, or, the Copyright Misuse Problem

A complying technology can best illustrate the problems of the CBDTPA. The best known and most obvious is some sort of copyright chip. In *The Internet Edge*,<sup>58</sup> Mark Stefik, a scientist at the Xerox Palo Alto Research Center, argues for a technological system of digital rights management that would allow the copyright owners to control the use of the copyrighted material.<sup>59</sup> One example of this technology is the ©-chip, a hardware device that blocks the use of unauthorized copyrighted materials.<sup>60</sup>

\*425 Combined with "clickwrap" licenses,<sup>61</sup> digital rights management would allow for the copyright owner to entirely determine how the user uses the file.<sup>62</sup> Technology restrictions would swallow fair use by blocking legal uses of the file.<sup>63</sup> The government would cease to function as the main regulators of copyright's use; instead, "code" written by politically unaccountable actors would govern copyright's future.<sup>64</sup> This would allow copyright owners to extend the scope of control of a copyright and to gain exclusive rights not granted by copyright law. This surely implicates copyright misuse, a defense explicitly recognized by the Fourth Circuit in *Lasercomb America, Inc. v. Reynolds*.<sup>65</sup> Adopting a passage describing patent misuse from *Morton Salt Co. v. G.S. Suppiger Co.*,<sup>66</sup> the Fourth Circuit lays out copyright misuse in the following:

The grant to the [author] of the special privilege of a [copyright] carries out a public policy adopted by the Constitution and laws of the United States, "to promote the Progress of Science and useful Arts, by securing for limited Times to [Authors] . . . the exclusive Right . . ." to their ["original" works]. United States Constitution, Art. I, § 8, cl. 8, [17 U.S.C.A. § 102]. But the public policy which includes [original works] within the granted monopoly excludes from it all that is not embraced in the [original expression]. It equally forbids the use of the [copyright] to secure an exclusive right or limited monopoly not granted by the [Copyright] Office and which it is contrary to public policy to grant.<sup>67</sup>

While the doctrine of copyright misuse does receive its share of criticism, it is a powerful protection of copyright's public policy motivation.<sup>68</sup> Other circuits have adopted the doctrine,<sup>69</sup> and most commentators consider the doctrine to be broader than antitrust law.<sup>70</sup> Professor Nimmer says that the ©-chip "is an end run around copyright. It provides a mechanism to put a

stranglehold on information, \*426 and that in itself is a bad idea.”<sup>71</sup> Using the definition laid out in *Lasercomb America*, this kind of extension should fit within the doctrine of copyright misuse.<sup>72</sup>

The doctrine of copyright misuse is based upon public policy motivations, not the Constitution.<sup>73</sup> In turn, Congress has the power to overrule the doctrine. However, if Senator Hollings intends to overrule the doctrine of copyright misuse, he should clearly state that goal. If he does not intend to overrule the doctrine, the CBDTPA should include an affirmative statement disclaiming any extension of scope of the copyright monopoly.

#### **D. The Folly of Pressplay, or, What Hasn’t Worked**

The major record labels have attempted several strategies to recoup the money lost through piracy. First, they attempted through litigation to shut down file-sharing services<sup>74</sup> and format-shifting services.<sup>75</sup> While this worked for limited periods of time, eventually either users found other services, such as the current generation of file-sharing services,<sup>76</sup> or record labels granted licenses to ensure the continuation of services, as in the case of MP3.com.<sup>77</sup> Although the litigation did net the major record labels millions of dollars,<sup>78</sup> it did not end online music piracy.

Currently, major activity by the record labels has resulted in competing music-streaming services. The major record labels have started several such services. The two largest are Pressplay, owned by Sony Music and Vivendi Universal, and MusicNet, owned by AOL Time Warner, Bertelsmann, \*427 RealNetworks, and EMI.<sup>79</sup> The services offer a limited number of “streams,” which are one-time only plays of a song, “downloads,” and “burns,” which allow the user to burn the track to a CD.<sup>80</sup> Pressplay also contains several limitations. For example, it does not allow the user to transfer the downloaded files to MP3 players.<sup>81</sup> Quite significantly, none of these services offers a complete selection of top artists.<sup>82</sup> While these services face the same problems many new ventures face, they also must convince millions of users, accustomed to free downloading of unsecured music for free, that they should pay for a more limited service. This request for fees will prove to be a more challenging goal than the companies envisioned. A recent survey reported that “over four-fifths (84%) of those who have downloaded music without paying report they would not be likely to pay for streaming or downloading music off of the Internet, even if there was no free music available.”<sup>83</sup>

Obviously, this survey is troubling for the recently launched music services, which must convince users there is added value added by subscribing to law-abiding services. They have failed to learn what people desire out of their online music services. They desire unlimited use, MP3-type files which can be transferred to their mobile devices, and a vast library, like those provided by the services that allow illegal distribution of copyrighted material. Pressplay and its brethren services, in their current incarnations, stand a small chance of succeeding.<sup>84</sup> While recent projections envision a broad market in the future, these projections hinge on a lifting of the limitations that the current music services force upon the user.<sup>85</sup>

Another major problem with the current services is that they depend on client-side digital rights management, giving users easier access to the security measures. Internet “hackers,” when presented with protection schemes, especially client-side schemes, will attempt to circumvent them. And, for the most part, they will be successful. Two major examples of successful hacking exist. First, a Norwegian teenager, Jon Johansen, cracked the DVD protection scheme known as Content \*428 Scrambling System (CSS).<sup>86</sup> Despite laws against such digital rights management circumvention under the Berne Convention,<sup>87</sup> including the United States’ Digital Millennium Copyright Act (DMCA),<sup>88</sup> these programs are distributed through underground Internet channels and end up becoming available internationally.<sup>89</sup> Even after the prosecution of Johansen, the DeCSS program is still available.<sup>90</sup> The hacker community takes every new digital rights management scheme as a challenge.

Second, in the other significant hacker case, several major record labels, through the Secure Digital Music Initiative (SDMI), challenged hackers to break their technology.<sup>91</sup> Many took them up on this challenge, and several researchers succeeded.<sup>92</sup> One successful researcher, Edward Felten, a professor in Princeton’s computer science department, was threatened with litigation by the RIAA when he planned to give a lecture regarding his research.<sup>93</sup> He proceeded with litigation against the RIAA even after he gave the lecture; the case ended when both the government and the RIAA gave statements that scientists studying the access control technology were not subject to the DMCA.<sup>94</sup> Hackers will attack; Pressplay only invites attacks by putting such restrictive controls over the music it offers.

#### **E. Is Copyright Worth It?**

At the time that the Constitution was written, few doubted the value of copyright.<sup>95</sup> Madison said, in Federalist No. 43, “The utility of the [copyright] power will scarcely be questioned. The copyright of authors has been solemnly \*429 adjudged, in Great Britain, to be a right of common law. . . . The public good fully coincides . . . with the claims of individuals.”<sup>96</sup> Copyright has recently come under fire from all sides. Internet counterculture leaders have attacked recent legislation as serving no purpose for the Internet other than to protect the publishing industry.<sup>97</sup> Others argue that instead of seeing copyright as a law of restriction, it could someday be seen as a law of access.<sup>98</sup> Still others believe that copyright law is not strong enough and that Congress should enable the market to design stricter control.<sup>99</sup>

As John Perry Barlow argues, no reason exists, other than political realities, to protect the stake of the publishing industry.<sup>100</sup> Business leaders should expect technology and innovation to change the economic landscape; for example, look no further than your desktop computer’s Graphic User Interface (GUI), which altered the landscape of personal computing and created two empires, Apple and Microsoft.<sup>101</sup> If technology changes, major business changes should occur as well. Rather than mourn the loss of revenues for the publishing industry, what should be mourned is the loss of creative freedom in a system that encourages rent-seeking.<sup>102</sup>

Copyright is designed to “promote the Progress of Science.”<sup>103</sup> It is not designed to promote the publishing industry or any other non-creative commercial interests.<sup>104</sup> Professor Lessig says that “the protection that the law allows is just enough to create an incentive to produce, and is not so much as to produce a choke \*430 on future production.”<sup>105</sup> The Framers of the Constitution believed copyright to be a protection of individual property rights, not corporate rights.<sup>106</sup>

Congress should strive to bring copyright law back to its roots of individualistic property rights.<sup>107</sup> Legislation aimed at the problem of Internet music piracy needs to recognize this goal. Copyright law could encourage authors and artists to produce work through a system of direct royalties. Considering that the goal of copyright is to “promote . . . the useful Arts,”<sup>108</sup> this could be the most favorable development copyright law has seen in some time.

### **III. A Historical View of Copyright Legislation**

A look into past legislation would be valuable to help solve the problem of Internet music piracy. Several recent modifications in copyright law are relevant and will contribute to the proposed solution in Part V.

#### **A. The Compulsory Licensing Scheme of the Copyright Act<sup>109</sup>**

When the copyright law was overhauled in 1976, serious debate occurred over whether to continue the compulsory licensing of phonorecords.<sup>110</sup> Compulsory licensing, first introduced into copyright law with the Copyright Act of 1909,<sup>111</sup> operates through a highly legislated process. Any record legally made available to the public on a phonorecord is eligible to be licensed through section 115 compulsory licensing.<sup>112</sup> When an individual wants to obtain a compulsory license, he need only serve notice upon the original publisher, or its agent, and go through a possible negotiation process to iron out details.<sup>113</sup>

However, it is far from clear if the compulsory licensing scheme of section 115 applies to Internet transfers. In *Rodgers & Hammerstein Org. v. UMG Recordings, Inc.*,<sup>114</sup> the court decided the case based on the fairly narrow finding that the mechanical license issued to the defendant did not cover Internet \*431 streaming.<sup>115</sup> In *Rodgers*, Judge Martin, a federal judge in the Southern District of New York, questioned whether a person or an entity engaged only in “streaming” the songs to a user really was “distributing.”<sup>116</sup> If streaming is not “distributing” then this class of Internet activity would not even come within the law’s grasp.<sup>117</sup> In what ends up being dicta, he also opines that section 115 is strictly limited to “phonorecords to be distributed to the public.”<sup>118</sup>

However, even if the compulsory licensing procedure applies to Internet music files, this licensing process as applied to Internet files would have serious practical problems. Most music files posted on the Internet are posted by individuals<sup>119</sup> who have no interest in obtaining compulsory licenses. P2P users usually make the files available to encourage others to make their files available. Unless seriously expedited, probably to an instantaneous process, the compulsory licensing scheme will not solve the problem of Internet music piracy.

#### **B. The Audio Home Recording Act of 1992 (AHRA)**

Faced with a new technology, Digital Audio Tape (DAT),<sup>120</sup> that threatened to become a new means of music piracy, the entertainment industry pushed for the law that became the AHRA.<sup>121</sup> Its main goals are to “implement a royalty system for digital audio recording [and] to prohibit certain copyright infringement actions.”<sup>122</sup> The statute aims for a balance between copyright owners and manufacturers of the recording equipment in question.<sup>123</sup> It offers indemnity from copyright infringement suits to equipment manufacturers and distributors,<sup>124</sup> which \*432 would lower the costs of the equipment and thereby provide incentive to consumers to purchase DAT equipment.<sup>125</sup> The tradeoff for these corporations is that they must contribute to a royalty fund for each piece of equipment sold in the United States.<sup>126</sup> The royalty fund is then distributed to copyright owners through a complicated process outlined in the statute based on their status in the music industry.<sup>127</sup>

The AHRA was relatively unimportant and unsuccessful for several reasons. The most significant of those reasons was that the target technology, DAT, was never significantly adopted by the market and is essentially a non-factor in the consumer electronics marketplace.<sup>128</sup> It appears that Congress rushed to regulate a field that was not ripe for regulation. Also, the AHRA’s royalty disbursement process is neither reliable nor accurate in tracking the songs recorded.<sup>129</sup> While this process attempts to mirror the market’s distribution of sales,<sup>130</sup> it could never completely and accurately disperse the funds without going into the homes of DAT equipment owners and watching them record every song. Obviously, this type of regulation is not practical. On the other hand, it offers important lessons for the regulation of copying music on the Internet.

In *Recording Indus. Ass’n of Am., Inc., v. Diamond Multimedia Sys.*,<sup>131</sup> the RIAA claimed that Diamond’s Rio MP3 player violated the AHRA.<sup>132</sup> The Rio is a small, freestanding consumer electronic device that plays MP3-formatted files wherever the user takes the device.<sup>133</sup> The district court found in favor of Diamond, based upon the Sony “substantial non-infringing uses” doctrine<sup>134</sup> and a favorable interpretation of the AHRA.<sup>135</sup> The RIAA attempted to get a preliminary injunction because the Rio did not incorporate the copyright protection standards required under the AHRA. Judge Collins, however, reasoned that because the Rio could not actually be used to copy music, it did not fall within the classification of \*433 devices covered by the AHRA.<sup>136</sup> On appeal of denial of the preliminary injunction, the Ninth Circuit pointed out or—depending on one’s viewpoint—created a loophole that made the AHRA inapplicable to the Internet.<sup>137</sup> The AHRA defines a digital audio recording device:

A ‘digital audio recording device’ is any machine or device of a type commonly distributed to individuals for use by individuals, whether or not included with or as part of some other machine or device, the digital recording function of which is designed or marketed for the primary purpose of, and that is capable of, making a digital audio copied recording for private use . . . .<sup>138</sup>

The Ninth Circuit used the “primary purpose”<sup>139</sup> language to say that computers, in general, do not fall within the AHRA because a computer’s primary purpose is not to make digital audio copies.<sup>140</sup> This case clearly illustrates that the AHRA was not designed with the flexibility that is required for the regulation of modern technology.

### C. Historical Conclusions

A few points are fairly clear in light of copyright’s recent history. First, any regulations designed by Congress need to be flexible, especially in terms of technology. As shown by the history of the AHRA, Congress should be sure that the field is ripe for regulation. While the Internet, in general, is permanent, specific facets of Internet technology will come and go. Modern Internet technology has an incredible ability to adapt to changes in market conditions; for examples, one can look at broadband,<sup>141</sup> the MP3 file format,<sup>142</sup> or the current generation of file-sharing services.<sup>143</sup> The regulations designed to solve the problem of Internet music piracy should address these types of changes in technology.

Second, any scheme that aims to succeed on the Internet needs to be quick and easy for the end-user. A compulsory license requiring notice will take too long in “Internet time”<sup>144</sup> and will, therefore, not be successful. The interactivity of the \*434 Internet has taught users to expect instant access to information. The licensing procedures should be done instantaneously through technological measures that require little input from users.

Also, in order to make a plan fairer and to give it a sense of legitimacy, a scheme to regulate copyright should be made independently of the entertainment industry. Users on the Internet already believe that the entertainment industry is sneaking around furtively in the background of the CBDTPA, the Sonny Bono Copyright Term Extension Act,<sup>145</sup> and other laws affecting copyrights.<sup>146</sup> Congress needs to act rationally, thoughtfully, and independently to assure the public that their wishes are being met and that congressional legislative priorities are coming from somewhere other than their constituents’

pocketbooks.

#### IV. A Proposed Solution

While an entirely new plan could be slow to implement, it would also create many benefits for copyright holders, musicians, and consumers. It is important to note that this plan is by no means limited to music files; it could easily be extended, with some modification, to any file that is copyrighted, such as photographs, works of art, or moving pictures. The plan is based on a trade-off: in exchange for getting payment on every copyrighted file transferred on the Internet, the content-producing industry will accept some limited infringing uses. In addition, there is little possibility of capture by either the technology or entertainment industries since the free market plays a central role in its regulation.

This program is not necessarily exclusive. If the record labels or anybody else would like to continue offering the limited services, such as Pressplay and MusicNet, there is no reason to stop them. However, as has been shown in the current marketplace, if users are given the opportunity to download unrestricted files from unrestricted libraries, they will choose to do so.<sup>147</sup> While P2P services are preferred because they are free, their incompatibility with the new generation of MP3 players has caused people to resist the services provided by Pressplay and its brethren.<sup>148</sup>

##### \*435 A. The Basic Technology Plan

The basic principle of the proposed plan is to have every ISP collect a mandatory licensing fee whenever a copyrighted file is downloaded. Every copyrighted file will carry both a secure digital “watermark” that will identify its owner and a price. When any file with a digital watermark comes through the ISP’s system, the amount consistent with the price on the digital watermark will be transferred instantaneously from a user’s royalty account that is set up with the ISP to the copyright owner’s royalty account. The user will end up with an unencumbered file that will play on his computer that can be “burned” onto a CD or that can be transferred onto a portable MP3 player, such as the Rio involved in Diamond Multimedia Systems.<sup>149</sup> A model of the process can be seen in Figure 1.

TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

Figure 1

##### B. Technical Details

More details about the technical issues of this plan will increase the understanding of this somewhat novel proposal.

###### 1. Digital Watermark and Licensing Limitations

Although digital watermark technology is still in its infancy, it holds much promise for applications such as this proposal. Like a real watermark, a digital watermark is a tag of ownership.<sup>150</sup> Even though it has been used before, including by the SDMI whose watermarks were hacked,<sup>151</sup> this technology, like other Internet technology, is improving rapidly. Several companies are producing \*436 technologies that will be able to mark audio files,<sup>152</sup> video files,<sup>153</sup> and digital image files.<sup>154</sup> The watermark will be included when distributed from the record labels and when it is “ripped” from the digital audio source, usually a CD. An even better solution for the record companies would be to include compressed audio files accessible from a computer’s CD drive.

Any technology-based scheme to protect copyright will face challenges from hackers; this is a fact of life.<sup>155</sup> The watermark could not be removable from the basic audio file; if the watermark is removed, the file will be destroyed.<sup>156</sup> While no application can guarantee perfect or complete security, the level of security is growing through each generation of digital watermarks.<sup>157</sup>

Although digital watermarks can be used to control users’ access to files,<sup>158</sup> companies do not necessarily have to resort to such tactics. For example, licenses can be embedded in the files that stop users from using the files in unauthorized manners.<sup>159</sup> The files, when downloaded, can be opened, viewed, or listened to with no interference from the copyright owner.



In fact, the end-user would not even know that the file included a watermark.<sup>160</sup> The user would have unlimited access to the file, including being able to upload the file on the Internet. The only difference would be that the individual who chooses to download the file must also pay the royalty. Each user that downloads the watermarked file will pay the royalty encoded in the watermark. Many of the complaints from Internet users stem from the limited-use nature of the files that are downloaded from Pressplay and its competitors, but these problems will not arise with embedded licenses.

#### **\*437 2. The Royalty Computation & Its Implications**

The royalty could be calculated through a legislated process, similar to the compulsory licensing royalty procedures. Under the compulsory licensing scheme in the Copyright Act, Congress determined an initial statutory rate.<sup>161</sup> Congress directs the Library of Congress to create a copyright arbitration panel (CARP) that will set the mechanical license rate going forward.<sup>162</sup> A similar process could be enacted for the Internet copyright sphere.

However, this is not a true compulsory licensing system, and our economy should not be regulated until the government has found a pressing need.<sup>163</sup> Philip Lochner, Jr., a former Commissioner of the Securities and Exchange Commission, argues that “[m]odesty is not a virtue much appreciated in these times. But in economic policymaking, the law of unintended consequences is always in effect.”<sup>164</sup> A market for individual copyright-protected digital audio files currently exists.<sup>165</sup> Prices are reasonable,<sup>166</sup> but the market has not been successful because of the limitations placed upon these files. However, the existence of a market is clear. Content providers should set their own prices until a conflict with the public interest exists.

In a market-based system, barring market failures such as antitrust violations, prices will be set by supply and demand.<sup>167</sup> Mr. Lochner says, “markets can perhaps most favorably be viewed as an alternative to legal rules, since markets have some virtues, objectivity, and freedom from political bias, for example, which may make them a superior regulator to law-based regulators.”<sup>168</sup> This fits quite well in the case of setting royalty rates for copyrighted materials. The market **\*438** cannot be lobbied and thus cannot attain a political bias.<sup>169</sup> The fair market value is defined as “the price at which the property would change hands between a willing buyer and a willing seller . . . both having reasonable knowledge of relevant facts.”<sup>170</sup> If copyright owners exceed these prices, users will not purchase the files. This is basic economics: Adam Smith’s invisible hand of the market at work.<sup>171</sup> This plan will force the entertainment industry to offer the content for a price that takes into account the low costs of the medium; the industry should still make money. Innovations and technological progress reduce the costs to the producer;<sup>172</sup> these cost savings should be embraced rather than fought. Forcing the entertainment industry to price according to the demands of the market will provide the best solution.<sup>173</sup>

#### **3. The Transfer Process**

The actual transfer of royalties will take advantage of an infrastructure that already exists. The watermark will contain the amount of the royalty and the identity of the copyright owner. Once the watermark is scanned and read, the transfer process will begin. The ISP will be responsible for maintaining accounts for its users that will be used to pay for royalties attached to copyrighted files. When the user attempts to download a file with a royalty attached, a window will pop up asking the user if he is sure he wants to download the file for the given royalty and if he is willing to pay for it out of his royalty account. If he chooses “no,” the file will not be transferred. If the royalty is acceptable, the file will be transferred as usual. The royalty money will then be transferred from the ISP’s maintenance accounts to the copyright owner’s royalty account. The individual copyright owner will maintain these accounts, so if he chooses not to participate in the program, he will not collect royalties through this Internet royalty plan.

Under the section 115 compulsory licensing scheme, copyright owners are allowed to “designate common agents to negotiate, agree to, pay, or receive such royalty payments.”<sup>174</sup> Currently, most copyright owners use the Harry Fox Agency **\*439** (HFA) to receive and negotiate their mechanical licenses.<sup>175</sup> HFA takes notice for the publishers and collects and distributes the royalties.<sup>176</sup> An agency or company could be established either within the enabling legislation or left to develop in the private sector.

#### **C. Past, Future, and All Around**

Prospectively, this proposal is relatively easy to implement, as each new piece of music can have a watermark built into the published work. After this plan is implemented, every CD that is distributed and all audio “ripped” onto computers will have a watermark. If the music files are shared using programs like Kazaa or Morpheus, the royalty program will catch the

watermark and charge the user.

The more challenging technology question involves works that are already published. The best answer seems to lie in a technology that analyzes an audio file's sound waves, compares it to a database of song "fingerprints," and identifies music through a database of songs.<sup>177</sup> This technology is currently used primarily as an end-user application that helps users organize their music collection on their computers.<sup>178</sup> The hardware and software work would be much more challenging for past works, but it would certainly be possible.

Once this plan is implemented for digital music files, it can be modified to encompass audio books,<sup>179</sup> photographs, and art. Clearly, the most important application is video files. While the quality of video files is still relatively low,<sup>180</sup> with new compression schemes and the continued growth of broadband, file sharing of video files will dramatically increase.<sup>181</sup> Instead of opposing file \*440 sharing, the Motion Picture Association of America (MPAA) can embrace the technology.<sup>182</sup>

Finally, although this Article does not attempt to focus on European Union law, this system can be transported across the Atlantic. In terms of infrastructure, Europe is prepared for such a system. Internet penetration rates in some countries are significantly higher than American penetration rates.<sup>183</sup> Protection of copyright through the Berne Convention is substantially similar to American copyright for foreign authors.<sup>184</sup> With a few modifications, this system could be implemented in Europe and other jurisdictions.

#### **D. A Smile and a Wink, or, Why an ISP Would Want to Participate**

Obviously, this plan would put a significant burden on ISPs. ISPs would be responsible for maintaining individual users' accounts, detecting copyrighted songs, and transferring the royalties to the correct copyright owner. This process would obviously not be without cost to the ISPs. Implementation would require system resources,<sup>185</sup> additional software,<sup>186</sup> and manpower. All of these require significant expenditures.

In order to compensate ISPs for their participation, they must receive some percentage of the royalty transaction. While it is not necessary to determine the actual percentage, it should be fixed by the market at a rate slightly above the actual costs of implementation. The ISPs, like any other retailer, should be able to make money off the transaction. This prevents a number of problems. First, regulation can hurt small companies more than large companies by raising the bar to entry to market.<sup>187</sup> In this case, if the ISPs were not allowed to make a profit off the \*441 transaction, this would be an additional disincentive to enter the market. If one allows them to profit off the transactions, it would be part of the business opportunity, rather than an obstacle. Also, allowing ISPs to profit off the transaction discourages circumvention of the process by the ISP in order to attract customers. Allowing for a reasonable rate of return will fairly compensate ISPs for their cooperation with this plan.

#### **E. Protecting Consumers Under the Proposal, or, the Trade-Off**

What makes this proposal different from the CBDTPA, and other plans already proposed by the RIAA and others, is that the users would not be getting limited-use files. The only way that the copyright owners will be compensated for this is through these watermarked files. If files are transferred in other manners, such as a direct connection or on CDs, the copyright owner will not be compensated. Transferring files one at a time, through direct connections or local area networks, is inefficient and relatively uncommon.<sup>188</sup> While some may view this as a problem, it will ensure protection of uses, like format-shifting, that should be allowed.

In addition, space-shifting, such as that in Diamond Multimedia Systems,<sup>189</sup> would be allowed. This is a potentially large loophole, but, in order for complete functionality of the audio files, it is necessary. For example, users could abuse the important ability to burn tracks downloaded from the Internet by burning and distributing multiple copies.<sup>190</sup> Copyright owners should expect these types of uses, as they have been common for the last twenty years. Since the audiocassette soundly trounced the eight-track player twenty-five years ago,<sup>191</sup> the audio entertainment industry has, or should have, expected such limited copyright violations. This problem is neither new nor significant to copyright owners.

This plan will protect fair use, a doctrine necessitated by the First Amendment of the Constitution.<sup>192</sup> The copyright owner will have received a reasonable royalty, but all of the legal uses would be safely preserved. While some infringing uses would be tolerated, this is a more than reasonable trade-off for the \*442 entertainment industry. The copyright owner would have a

much easier access to royalties on downloaded files, only giving up royalties on a negligible number of file transfers.

## **F. Privacy Controls Under the Proposal**

The most glaring problem this plan creates is a privacy issue. In technical terms, the watermark-scanning program will look at every file that comes through to the end-user. All the files could be logged and used for commercial or governmental purposes. The information could be bought and sold on the Internet's information market, creating a serious privacy risk.

Consumers, however, have shown themselves to be only minimally interested in this type of list-keeping privacy. Grocery stores,<sup>193</sup> music clubs,<sup>194</sup> and video rental outlets<sup>195</sup> are among the many business that keep data on purchases. Customers of these firms usually have the opportunity to opt-out but can lose the benefit of loyalty programs.<sup>196</sup> The field of loyalty programs presents a threat to privacy that is at least as great as this system's potential threat to privacy.

The technology that will likely form the base of this system has also been used by governmental organizations. The FBI has claimed to use a device with these capabilities, Carnivore, in twenty-five investigations prior to August 2000.<sup>197</sup> In addition, that technology is not new; it has been around for at least ten years.<sup>198</sup> While legal scholars and members of the technology community have debated its **\*443** legality,<sup>199</sup> the consensus seems to be that this limited governmental use, when applied pursuant to a court order, is perfectly legal.<sup>200</sup>

The more disturbing cases of privacy incursions would be those used for commercial purposes since the FBI provides a governmental system of checks and balances. No such system is in place for private organizations or computer hackers. Either one could easily develop a two-program "packet sniffing" system that has the same functionality as Carnivore.<sup>201</sup> These programs could be, and have been, used to silently invade the privacy of Internet users and steal email, passwords, and files.<sup>202</sup>

Rather than using this issue to block progress in terms of copyright protection, Congress could use it as an opportunity to clarify the legal status of "packet sniffers" that invade an Internet user's privacy. In the proposed legislation,<sup>203</sup> Congress should include a section that would prohibit the use of commercial Carnivore-like systems without the express permission of the user.

This proposal's main goal is not to protect privacy, so a more limited privacy control method should be sufficient. This method would merely prohibit the Internet Service Provider from storing data any longer than is necessary to process the royalty transaction. The ISP would also be barred from storing any data that is entirely unconnected to a royalty transaction. These protections should be sufficient to prevent the loss of privacy that comes with implementing this plan.

## **G. Who Says? An Institutional Analysis**

Several ways to implement the proposed solution include a complete congressional solution, a complete industry solution, and a hybrid industry-government solution. First, a complete industry solution has serious problems. Among the findings of the CBDTPA is the statement that "[c]ompeting business interests have frustrated agreement on the deployment of existing technology in digital media devices to protect digital content on the Internet or on digital broadcast television."<sup>204</sup> In this case, the competing business interests are the **\*444** entertainment industry, which has an interest in maintaining strict control of their intellectual property, and the consumer electronics industry, which has an interest in the accessibility of the copyrighted works. Further, if one were to allow the entertainment industry to self-regulate, no assurances would exist that fair use would survive. Professor Lessig, in comments made in 1998, warns of the dangers of industry regulation of intellectual property:

This privatized copyright law will have none of the balance that the public law of copyright has. Instead, in the competition that will emerge to protect what we now call intellectual property, the codewriters will develop ever more secure ways for giving "owners" perfect control. Just as we would expect few to buy a lock to their house that permitted "fair use" by neighbors, we should expect few to buy a lock for their intellectual property that would permit "fair use" by others.<sup>205</sup> The combined effect of competing business interests and the threat to fair use make allowing only industry regulation risky for the rights of consumers.

Another option for implementation is congressional or administrative adoption of industry standards. While many agencies, including the FDA<sup>206</sup> and the FCC,<sup>207</sup> use incorporated industry standards, the process set up in the CBDTPA is especially vulnerable to capture by content providers.<sup>208</sup> Many have argued that standards-setting organizations are better than governmental regulators for several reasons, including technical expertise, flexibility, and government cost savings.<sup>209</sup> For several years, Internet industry standards have been a battlefield for many Internet interests.<sup>210</sup> Significant industry players, like Microsoft, AOL Time Warner, and Yahoo!, have all been involved in the fight over industry standards.<sup>211</sup> \*445 However, standards bodies have major problems as well. They are vulnerable to capture,<sup>212</sup> but they also have the problem that they rarely see the consumer perspective. Industry standards boards, by definition, are most responsive to industry.

Given all these problems, there will be a clash of interests in setting any standards; however, they must be overcome in order to protect all interests. The proposal defined above could be implemented without legislation by an association of ISPs with the support of the entertainment industry. Self-regulation is a viable option and should be the first choice for industry leaders. Any congressional intervention would be wastefully expensive and time consuming. In addition, as shown by the AHRA, congressional legislation does not always work.<sup>213</sup>

However, if the relevant industries are unable to come up with a reasonable system of self-regulation, Congress may need to intervene. Even though letting administrative agencies define specific regulations has its share of problems, this option appears to be the most likely to solve the Internet piracy problem if self-regulation does not occur. However, Congress needs to tightly circumscribe the FCC's authority in order to prevent any incursion upon protected activities that benefit the consumer. At the same time, Congress needs to allow the FCC the flexibility that is required when working with the Internet. Any enacted legislation must balance these competing goals to ensure the best possible result for the Internet and technological innovation, independent musicians and creative freedom, and the American consumer.

## V. Conclusion

The recording and movie industries estimate that they will lose a combined \$7.5 billion in annual revenue due to piracy.<sup>214</sup> If the solution to this problem must be congressionally compelled, all efforts should be made to avoid the incursion on fair use and privacy. Most importantly, it should be user-friendly. The proposals that are already in Congress clearly do not meet these standards. Not only do they limit fair use, but they also are seemingly designed to be difficult to use.

This article has attempted to outline a solution that would provide reasonable accommodations for the fair-use doctrine, ease-of-use, and privacy, all while \*446 attempting to fairly compensate the copyright owner. However, every proposal has its problems. Congress needs to recognize that the hasty regulation of this field could irreparably damage the growth of the Internet. Congress and other regulating bodies need to appreciate the effects of their actions before resorting to regulation. This is particularly important with regard to the Internet. Technological changes can easily sweep away the benefits of regulation, leaving only costs. If we proceed with caution, America can find a reasonable solution that both accommodates as many viewpoints as possible and allows the Internet to continue to grow and prosper.

## Footnotes

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<sup>1</sup> All websites were last visited in April of 2002.

<sup>2</sup> See ALERT: Oppose SSSCA; Support Intel's Bravery, EFF.org, at <http://www.eff.org/effector/HTML/effect15.07.html#I> (Feb. 14, 2002) [hereinafter EFF Intel Alert].

<sup>3</sup> Consumer Broadband and Digital Television Promotion Act, S. 2048, 107th Cong. §9 (2002) [hereinafter CBDTPA Bill].

<sup>4</sup> EFF Intel Alert, supra note2.

5 In this case, “big business” refers to big record labels.

6 In this scenario, independent musicians would be the analog to small business.

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http://www.napster.com/lowdown.html](http://web.archive.org/web/20020127142345/http://www.napster.com/lowdown.html) (last visited Apr. 2002). Because Napster has since folded, the website is no longer available. This is a stored copy at the Internet Archive, a very valuable resource.

8 See, e.g., Digital Millennium Copyright Act, Pub. L. No.105-304, 112 Stat. 2860 (1998).

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10 Id.

11 Fee-Based Online Music Faces Uphill Battle, Ipsos-Reid, at [http://  
www.ipsos-reid.com/media/dsp\\_displaypr\\_us.cfm?id\\_to\\_view=1439](http://www.ipsos-reid.com/media/dsp_displaypr_us.cfm?id_to_view=1439) (Feb. 25, 2002) [hereinafter Ipsos Online Music].

12 See generally John Perry Barlow, A Declaration of the Independence of Cyberspace, at [http://www.eff.org/Publications/John\\_Perry\\_Barlow/barlow\\_0296.declaration](http://www.eff.org/Publications/John_Perry_Barlow/barlow_0296.declaration) (Feb. 8, 1996).

13 Robert P. Merges, Peter S. Menell & Mark A. Lemley, Intellectual Property in the New Technological Age 350-52 (2d ed. 2000).

14 Id.

15 Merges et al., supra note14, at 346. Because continental Europe uses moral rights as a justifying theory for copyright, artists are given far more control over the dissemination of their work under European law than under American copyright law. For this reason, this article focuses on a change in American law, rather than a global change in international copyright law.

16 See American Home Recording Act, Pub. L. No. 102-563, 106 Stat. 4237 (1992).

17 James T. Russell, MIT Program’s Invention Dimension’s name inventor of the week, at <http://web.mit.edu/invent/www/inventorsR-Z/russell.html> (Dec. 1999). By 1985, Mr. Russell had earned twenty-six patents for CD technology. For a description of how Compact Discs work, see M. Brain, How CDs Work, howstuffworks.com, at <http://www.howstuffworks.com/cd.htm>.

18 Marshall Brain, How Analog and Digital Recording Works, at [http:// www.howstuffworks.com/analog-digital3.htm](http://www.howstuffworks.com/analog-digital3.htm) (last visited Apr. 2002).

19 A. McFadden, CD-Recordable FAQ, at [http://www.cdrfaq.org/faq07.html #S7-6](http://www.cdrfaq.org/faq07.html#S7-6) (last visited Apr. 2002).

20 To transfer 650 MB, or a completely full audio compact disk, at what is currently the maximum telephone modem connection, 56 Kbps, would take over twenty-five hours. J. Martindale, File Download Time Calculator, Martindale’s The Reference Desk, at <http://www-sci.lib.uci.edu/HSG/AATimeCalc.html> [hereinafter Download Calculator] (Feb. 23, 2002).

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- 22 MPEG Audio Layer-3, The Fraunhofer Institute, at <http://www.iis.fhg.de/amm/techinf/layer3/index.html> (last visited Apr. 2002). A good rule of thumb for the size of music files compressed by MP3 is about 1 MB/minute. While Mp3 standards are fascinating, they are not critical to this paper. For a good explanation see Marshall Brain, How MP3 Files Work, [howstuffworks.com](http://www.howstuffworks.com/mp3.htm), at <http://www.howstuffworks.com/mp3.htm> (last visited Apr. 2002).
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- 25 *Id.*
- 26 Download Calculator, *supra* note20.
- 27 Marshall Brain, How Napster Worked, at <http://www.howstuffworks.com/napster.htm> (last visited Apr. 2002) [hereinafter How Napster Worked].
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- 33 D-South Carolina. Senator Hollings has sometimes been sardonically referred to as the “Senator from Disneyland” for his extensive ties to the entertainment industry, generally, and in particular, Disney. ALERT: Congress Calls For Public Participation on Digital Media Technology Mandates, Electronic Frontier Foundation, at [http://www.eff.org/alerts/20020322\\_eff\\_cbdtpa\\_alert.html](http://www.eff.org/alerts/20020322_eff_cbdtpa_alert.html) (Apr. 9, 2002) [hereinafter EFF Participation Alert].
- 34 Anti-Copy Bill Hits D.C., Wired News, at <http://www.wired.com/news/print/0,1294,51245,00.html> (Mar. 22, 2002).
- 35 *Id.*
- 36 *Id.*
- 37 CBDTPA Bill, *supra* note3.

38      CBDTPA Bill, *supra* note3, §3.

39      Id.

40      Id.

41      EFF Participation Alert, *supra* note33.

42      CBDTPA Bill, *supra* note3, §3(h)(1)(B).

43      CBDTPA Bill, *supra* note3, §3(c)(1).

44      Thomas W. Merrill, Capture Theory and the Courts: 1967-1983, 72 Chi.-Kent L. Rev. 1039, 1053 (1997).

45      Mark A. Lemley, Antitrust and the Internet Standardization Problem, 28 Conn. L. Rev. 1041, 1063-64 (1996).

46      Daniel A. Farber & Philip P. Frickey, Law and Public Choice 14-15, (1991).

47      CBDTPA Bill, *supra* note3, §3.

48      EFF Participation Alert, *supra* note33.

49      CBDTPA Bill, *supra* note3, §3.

50      EFF Participation Alert, *supra* note33. These examples are by no means exclusive. Other features are vulnerable. Unprotected formats such as MP3 could be regulated out of existence. While some of these features would not be the real target of the regulation, the technology may be incompatible with whatever solution is built in the consensus under the CBDTPA.

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52      Id. at 442, 220 U.S.P.Q. at 678.

53      Takis Metaxas, Analog & Digital: Sound Representation, Wellesley College Computer Science Department, at <http://puma.wellesley.edu/~cs110/lectures/M07-analog-and-digital/> (Aug. 11, 1999).

54      CBDTPA Bill, *supra* note3 §2(3). (“Because digital content can be copied quickly, easily, and without degradation, digital programmers and content owners face an exponentially increasing piracy threat in a digital age.”).

55      Metaxas, *supra* note53.

56 See, e.g., MP3.com, at <http://www.mp3.com>; tobyslater, at [http:// www.tobyslater.com/](http://www.tobyslater.com/); Dufada Irish MP3 Music at i12, at <http://www.dufada.i12.com/index.html>.

57 CBDTPA Bill, *supra* note 3 §5(a)(1).

58 Mark J. Stefik, *The Internet Edge* (2000).

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67 *Lasercomb Am.*, 911 F.2d at 977, 15 U.S.P.Q. at 1852.

68 *Id.*

69 See, e.g., *DSC Communications Corp. v. DGI Techs.*, 81 F.3d 597, 38 U.S.P.Q.2d (BNA) 1699 (5th Cir. 1996); *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516, 45 U.S.P.Q.2d (BNA) 1780 (9th Cir. 1997); *F.E.L. Publ'ns, Ltd. v. Catholic Bishop of Chicago*, 214 U.S.P.Q.2d (BNA) 409 (7th Cir. 1982).

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71 Mann, *supra* note 61 (quoting David Nimmer).

72 *Lasercomb Am. Inc. v. Reynolds*, 911 F.2d at 977, 15 U.S.P.Q.2d (BNA) 1846 (4th Cir. 1990).

73 *Id.*



74 See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 57 U.S.P.Q.2d (BNA) 1729 (9th Cir. 2001).

75 See *UMG Recordings, Inc. v. MP3.com, Inc.*, 92 F. Supp. 2d 349, 54 U.S.P.Q.2d (BNA) 1668 (S.D.N.Y. 2000).

76 Erick Schonfeld, *Goodbye Napster, Hello Morpheus (and Audiogalaxy and Kazaa and Grokster...)*, *Business 2.0*, at <http://www.business2.com/articles/web/0,1653,38874,00.html> (Mar. 15, 2002).

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82 See *id.*

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- 94 Security Researchers Drop Scientific Censorship Case, Electronic Frontier Foundation, at [http://www.eff.org/IP/DMCA/Felten\\_v\\_RIAA/20020206\\_eff\\_felten\\_pr.html](http://www.eff.org/IP/DMCA/Felten_v_RIAA/20020206_eff_felten_pr.html) (Feb. 6, 2002).
- 95 The Federalist No. 43 at 270-71 (James Madison) (Clinton Rossiter ed., 1961).
- 96 Id.
- 97 John Perry Barlow, Roundtable: Life, Liberty, and the Pursuit of Copyright, Barlow - Opening Remarks, The Atlantic Online, at <http://www.theatlantic.com/unbound/forum/copyright/barlow1.htm> (Sept. 10, 1998) (“I have absolutely no economic interest in supporting either technical or legal efforts to protect the publishing industry, which has preyed on my kind for 500 years.”).
- 98 Lawrence Lessig, Roundtable: Life, Liberty, and the Pursuit of Copyright, Lessig - Opening Remarks, The Atlantic Online, at <http://www.theatlantic.com/unbound/forum/copyright/lessig1.htm> (Sept. 10, 1998) (“We may well see the day when our students are taught not of ‘copyright’ but of ‘copyduty’--the legal duty of copyright holders to assure public access.”).
- 99 Mark Stefik, Roundtable: Life, Liberty, and the Pursuit of Copyright, Stefik - Opening Remarks, The Atlantic Online (Sept. 10, 1998), at <http://www.theatlantic.com/unbound/forum/copyright/stefik1.htm> (Sept. 10, 1998) (“the workings of cyberspace must evolve to reflect not only technological forces but social and legal ones as well.”).
- 100 Barlow, *supra* note97.
- 101 Adam Powell, Web 101: A History of the GUI, Wired News, at <http://www.wired.com/news/topstories/0,1287,9297,00.html> (Dec. 19, 1997).
- 102 See generally Barlow, *supra* note97.
- 103 U.S. Const. Art. I, §8, cl. 8.
- 104 See generally Barlow, *supra* note97.
- 105 Lessig, *supra* note98.
- 106 The Federalist No. 43, at 270-71 (James Madison) (Clinton Rossiter ed., 1961) (“The public good fully coincides ... with the claims of individuals.”) (emphasis added).
- 107 Id.

108 U.S. Const. Art. I, §8, cl. 8.

109 17 U.S.C. §115 (2002).

110 Historical and Statutory Notes, 17 U.S.C.A. §115 (West 2002).

111 Id.

112 17 U.S.C. §115(a)(1) (2002).

113 17 U.S.C. §115 (2002).

114 60 U.S.P.Q.2d (BNA) 1354 (S.D.N.Y. 2001).

115 Id.at 1361.

116 Id. at 1360.

117 17 U.S.C. §115 (2002).

118 Judge Martin says, “[t]hus the Defendants’ server copies of the copyrighted works are not analogous to master recordings made in the course of the process of making phonorecords to be distributed to the public.... Since Defendants’ server copies are neither intended for distribution to the public nor part of a process for distributing digital copies of the existing phonorecords, Section 115 would not give the Defendants a right to a compulsory license for the server copies.” Id. at 1360.

119 See Schonfeld, *supra* note 76. Musiccity.com’s Morpheus service has over sixty million users, who, for the most part, are individuals who would have no interest of obtaining compulsory licenses.

120 See H.R. Rep. No. 102-873, pt. 2, at 2 (1992).

121 Id.

122 Audio Home Recording Act of 1992, Pub. L. No. 102-563, §1623, 106 Stat. 4237 (1992).

123 David Balaban, *The Battle of the Music Industry: The Distribution of Audio and Video Works Via the Internet, Music and More*, 12 *Fordham Intell. Prop. Media & Ent. L.J.* 235, 246, (2001) (citing William Sloan Coats, et al., *PLI’s Sixth Annual Institute for Intellectual Property Law: Streaming Into the Future: Music and Video Online*, 616 *PLI/Pat* 149, 164 (2000)).

124 17 U.S.C. §1008 (2002).

125 Balaban, *supra* note 123 at 247.

126 17 U.S.C. §1004 (2002).

127 17 U.S.C. §1006 (2002). (The fund is distributed to major musician trade organizations).

128 In my searches of two of the largest electronics stores on the web, buy.com, at <http://buy.com/> and amazon.com, at <http://amazon.com/>, I was unable to find a single DAT player or recorder.

129 17 U.S.C. §1003 (2002) (codifying process).

130 17 U.S.C. §1006 (2002) (providing allocation prescriptions).

131 29 F. Supp. 2d 624, 49 U.S.P.Q.2d (BNA) 1024 (C.D. Cal. 1998) [hereinafter Diamond I].

132 Id. at 625-26, 49 U.S.P.Q.2d at 1025-26.

133 Id. at 625, 49 U.S.P.Q.2d at 1026.

134 Id. at 627, 49 U.S.P.Q.2d at 1027.

135 Id. The Court holds that “the AHRA does not directly prohibit serial copying.”

136 Id. at 627, 49 U.S.P.Q.2d at 1027-28.

137 Recording Indus. Ass’n of Am., Inc. v. Diamond Multimedia Sys., 180 F.3d 1072, 1078, 51 U.S.P.Q.2d (BNA) 1115 (9th Cir. 1999) [hereinafter Diamond II].

138 17 U.S.C. §1001(3) (2002).

139 Id.

140 Diamond II, supra note137, at 1078, 51 U.S.P.Q.2d at 1120.

141 See Cable Modem Stats, supra note24.

142 See Brain, supra note22.

143 See Schonfeld, supra note76.

144 Bill Seitz, Developing on “Internet time,” at [http:// webseitz.fluxent.com/articles/DevelopingOnInternetTime](http://webseitz.fluxent.com/articles/DevelopingOnInternetTime) (Oct. 13, 2000). “Internet time” is a phrase which has come to mean a fast-track business operating procedure much faster than standard operating times.

- 145 Sonny Bono Copyright Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998).
- 146 EFF Participation Alert, *supra* note33.
- 147 Over 63 million copies of the Kazaa Media Desktop have been downloaded. Kazaa, at <http://www.kazaa.com> (April 24, 2002). While this is not a perfect estimate for the number of users, it is certainly indication that the P2P services have more users than the limited use offerings. Of course, the fact that the P2P services are without charges is responsible for much of that distinction. Pressplay, on the other hand, has not disclosed actual numbers of subscribers, but they have said that they have “thousands” of users. Gwendolyn Mariano, Pressplay slips onto MP3.com, News.com, at <http://news.com.com/2100-1023-820271.html> (Jan. 22, 2002).
- 148 John Borland and Gwendolyn Mariano, Anti-piracy feud bodes ill for Web music, News.com, at <http://news.com.com/2100-1023-276140.html> (Nov. 26, 2001).
- 149 Diamond I, 29 F. Supp. 2d at 625, 49 U.S.P.Q.2d (BNA) 1024, 1025.
- 150 See generally Digital Watermarking Frequently Asked Questions, Watermarking World, at <http://www.watermarkingworld.org/faq.html> (last visited Apr. 2002).
- 151 Brown, *supra* note92.
- 152 See, e.g., AudioMark (Overview), Alpha Tec, at <http://www.alphatecltd.com/watermarking/audiomark/audiomark.html> (last visited Apr. 2002); Giovanni Digital Watermarking Suite, Blue Spike, at <http://www.bluespike.com/giovanni.html> (last visited Apr. 2002).
- 153 See, e.g., VideoMark (Overview), Alpha Tec, at <http://www.alphatecltd.com/watermarking/videomark/videomark.html> (last visited Apr. 2002); MediaLabel™: Hidden and Inseparable Multimedia Labeling, MediaSec, [http://www.mediasec.com/html/en/products\\_services/index.htm](http://www.mediasec.com/html/en/products_services/index.htm) (last visited Apr. 2002).
- 154 See, e.g., EIKONAmark (Overview), Alpha Tec, at <http://www.alphatecltd.com/watermarking/eikonamark/eikonamark.html> (last visited Apr. 2002); Digimarc ImageBridge™ watermarking, Digimarc, at <http://www.digimarc.com/imaging/default.asp> (last visited Apr. 2002).
- 155 See *supra*, notes 86-94 and accompanying text.
- 156 FAQ, Kowa Company, at [http://www.ewatermark.com/dd\\_ot\\_faq.html](http://www.ewatermark.com/dd_ot_faq.html) (last visited Apr. 2002) (“Once embedded, a digital watermark cannot be removed. The user should back up his or her original before embedding a digital watermark.”).
- 157 See generally *id.*
- 158 Verance Content Management Solutions, Verance, at <http://www.verance.com/contentman/index.html> (last visited Apr. 2002).
- 159 How does Verance’s Watermarking Technology help you to manage your content?, Verance, at <http://www.verance.com/contentman/howitworks.html> (last visited Apr. 2002).
- 160 See, e.g., AudioMark (Overview), Alpha Tec, at <http://www.alphatecltd.com/watermarking/audiomark/audiomark.html> (last visited Apr. 2002).

161 17 U.S.C. §115(c)(2) (2002). The rate was initially set by Congress at “two and three-fourths cents, or one-half of one cent per minute of playing time or fraction thereof, whichever amount is larger.” *Id.* Everything over five and a half minutes will run into the upper limit of 2 cents. *Id.*

162 17 U.S.C. §115(c)(3)(C) (2002). The current rate set by the Copyright arbitration panel is, “either 8.0 cents, or 1.55 cents per minute of playing time or fraction thereof, whichever amount is larger.” Adjustment of Royalty Rate, 37 CFR §255.3(k) (2002). Currently, the LOC’s CARP has set rates through 2006.

163 Philip R. Lochner, Jr., Essay: Economic Regulation and Democratic Government, 25 Iowa J. Corp. L. 831, 841 (2000). Mr. Lochner argues for limited regulation, especially in the economic arena. Regulation comes with both benefits and costs, he asks that the costs of economic regulation not be ignored by those governmental actors in a position to implement regulations.

164 *Id.*

165 See, e.g., Liquid Store, Liquid Audio, at [http://store.liquid.com/en\\_US\\_USD/store\\_home.jhtml](http://store.liquid.com/en_US_USD/store_home.jhtml) (2002). Liquid Audio claims to have more than 200,000 tracks available for purchase and download.

166 *Id.* Most of the songs available at Liquid Audio are available at reasonable prices, typical around a dollar or two. More popular and more unique songs may sell for up to five dollars apiece.

167 Campbell R. McConnell, *Economics*, 59 (6th ed. 1975).

168 Lochner, *supra* note163, at 840-41.

169 *Id.*

170 Treas. Reg. §20.2031-1(b) (2002).

171 McConnell, *supra* note167, at 90-91.

172 McConnell, *supra* note167, at 235.

173 Letting the market control pricing, however, can occasionally promote unfair competition. McConnell, *supra* note167, at 545. In terms of antitrust, the record companies, through the RIAA and other organizations, present a history of questionable acts. See Joshua J. Kaufman et al., Symposium: Beyond Napster: Debating The Future Of Copyright On The Internet Panel Three: New Business Models, Regulatory Options And The Future Of Copyright On The Internet, 50 Am. U.L. Rev. 425, 436 (2000) (Philip S. Corwin speaking). These questions are best resolved through existing antitrust and copyright misuse law. See PartHistorical Conclusions, *supra*.

174 17 U.S.C §115(c)(3)(B) (2002).

175 *Rodgers & Hammerstein Org., v. UMG Recordings, Inc.*, 60 U.S.P.Q.2d (BNA) 1354, 1355 (S.D.N.Y. 2001).

176 *Id.*

177 Client - Identification, MoodLogic, at [http:// www.moodlogic.net/article.php?sid=21](http://www.moodlogic.net/article.php?sid=21) (2001). (“The MoodLogic Client examines the sound waves of your audio files for comparison with our comprehensive library of 2,103,948 (and growing) song ‘fingerprints’. When a match is found, the network can return an accurate song Profile to the client.”).

178 Client - Features Overview, MoodLogic, at [http:// www.moodlogic.net/article.php?sid=26](http://www.moodlogic.net/article.php?sid=26) (2001).

179 Actually, for audiobooks, there would be very little modifications. It is also questionable whether it would be necessary for audiobooks, as there is a robust market for digital audio books. See, e.g., audible.com--Store, Audible, at <http://www.audible.com/> (2002).

180 Web multimedia still low-grade, NUA Internet Surveys, at [http:// www.nua.com/surveys/index.cgi?f=VS&art\\_id=905356129&rel=true](http://www.nua.com/surveys/index.cgi?f=VS&art_id=905356129&rel=true) (2000).

181 No Net video-on-demand any time soon, NUA Internet Surveys, at [http://www.nua.com/surveys/index.cgi?f=VS&art\\_id=905357610&rel=true](http://www.nua.com/surveys/index.cgi?f=VS&art_id=905357610&rel=true) (2002). By 2005, 2% of film distribution revenue will come from online video.

182 The MPAA and its members have a history of fighting technology advances. See, e.g., Sony, supra note51, (MPAA was trying to block the introduction of the VCR to the United States): Go-Video, Inc. v. Motion Picture Ass’n of Am., No. 91-16039, 1992 U.S. App. LEXIS 26384, at \*2-3 (9th Cir. Oct. 9, 1992) (Go-Video accused the MPAA and other associations in antitrust action of conspiring to keep dual-deck VCRs out of the country.).

183 70% of Swedes surf the web, EuropeMedia, at [http:// www.europemedia.net/shownews.asp?ArticleID=9574](http://www.europemedia.net/shownews.asp?ArticleID=9574) (Mar. 25, 2002).

184 Berne Convention, supra note87.

185 The drain on system resources is not clear at this point and is clearly dependant on the feature set and efficiency of the implementing software. Although speculative, one can easily envision a software package that would not visibly slow down throughput to the end-user.

186 This process probably could be implemented through a hardware add-on, as well.

187 See Daniel J. Davis, The Fraud Exception To The Noerr-Pennington Doctrine In Judicial And Administrative Proceedings, 69 U. Chi. L. Rev. 325, 346 (2002). For example, consider environmental legislation. It takes a far smaller percentage of revenue for a large company to comply with the legislation than it would for a small company. If both companies need to buy the same equipment, for example, the expenditure will be far more manageable for the large company. See B. Peter Pashington, The Effect of Environmental Regulation on Optimal Plant Size and Factor Shares, 27 J.L. & Econ. 1, 25-26 (1984).

188 While a true accounting of files not transferred over the Internet is impossible, it makes sense that it is statistically irrelevant when compared to file transferring over the Internet. Morpheus, the leading p2p client, alone had sixty million downloads in the period between April 2001- February 2002. Steve Griffin, Steve Griffin, CEO of Streamcast Networks, Speech At The Digital Media Summit, StreamCast Networks, at [http:// www.streamcastnetworks.com/2\\_02.html](http://www.streamcastnetworks.com/2_02.html) (Feb 2002).

189 Diamond I, 29 F. Supp. 2d at 625, 49 U.S.P.Q.2d at 1026.

190 This process has a flipside as well. Copying files from CDs enables easy offline copying, but for many users it is also an important functionality.

191 Marshall Brain, How Tape Recorders Work, at [http:// www.howstuffworks.com/cassette1.htm](http://www.howstuffworks.com/cassette1.htm) (last visited Apr. 2002).

192 Dan L. Burk & Julie E. Cohen, Fair Use Infrastructure for Rights Management Systems, 15 Harv. J.L. & Tech. 41, 43 (2001).

193 See Randalls: Remarkable Application, Randalls Grocery Stores, available at <http://randalls.com/remarkablecardapp.asp?browser=ie&flag=0> (last visited Apr. 2002) (“We do record information regarding the purchases made with you Randall’s Remarkable Card to help us provide you with special offers and other information.”).

194 See BMG Music Service Privacy Policy, BMG Music Service, available at [http://www.bmgmusicservice.com/global/privacy\\_policy\\_enroll.jhtml](http://www.bmgmusicservice.com/global/privacy_policy_enroll.jhtml) (last visited Apr. 2002) (“Naturally, we also pay attention to what you buy so we keep track of your purchases, traffic patterns and related site usage inside our website. This helps us to understand your musical tastes more fully, and to present you with better recommendations, more relevant offers, important news about artists and other announcements we think may interest you.”).

195 See Privacy Policy, Blockbuster Video, available at [http:// www.blockbuster.com/bb/help/privacy\\_policy](http://www.blockbuster.com/bb/help/privacy_policy) (last visited Apr. 2002) (“Blockbuster defines personally identifiable information as information that includes any combination of the following: a person’s full name, street address, telephone number, date of birth, email address and/or the genre of products rented or purchased by a person.”).

196 See Randalls: Remarkable Application, Randalls Grocery Stores, available at <http://randalls.com/remarkablecardapp.asp?browser=ie&flag=0> (last visited Apr. 2002).

197 Robert Graham, Carnivore FAQ 3, available at [http:// www.robertgraham.com/pubs/carnivore-faq.html](http://www.robertgraham.com/pubs/carnivore-faq.html) (Oct. 2001) [hereinafter Carnivore FAQ].

198 Id. The author of the FAQ wrote a similar program in 1992.

199 See, e.g., id.; Thomas R. McCarthy, Don’t Fear Carnivore: It Won’t Devour Individual Privacy, 66 Mo. L. Rev. 827 (2001). E. Judson Jennings, Carnivore: US Government Surveillance of Internet Transmissions, 6 Va. J.L. & Tech. 10 (2001).

200 See id.

201 Carnivore FAQ, supra note197. Question Four outlines the basic technology behind Carnivore, a simple two-system program consisting of a “packet sniffer,” so called because they seek out “packets” of data, and a viewer program.

202 Id. Mr. Graham suggests that “packet sniffers” are widely used by hackers and unscrupulous business organizations in this manner.

203 Some suggested statutory language: “No person may, without express permission of all parties involved in the data transaction, store data after the transaction unless said data is intended for public dissemination.”

204 CBDTPA Bill, supra note3, at §2(7).

205 Lessig, supra note98.

206 Lars Noah, Doubts About Direct Final Rulemaking, 51 Admin. L. Rev. 401, 410 (1999). Professor Noah expresses concerns about



rushing through standards that are references from industry standards.

- 207 Carol R. Goforth, A Bad Call: Preemption Of State And Local Authority To Regulate Wireless Communication Facilities On The Basis Of Radiofrequency Emissions, 44 N.Y.L. Sch. L. Rev. 311, 380 (2001). In the case that Professor Goforth discusses, an industry standard was changed several years after it was incorporated into law. It took the FCC several years just to react to the changed standard, even requiring congressional prompting in the Telecommunications Act of 1996.
- 208 CBDTPA Bill, *supra* note3, §3(h). Perhaps it is not surprising that this bill was built based on a process that is susceptible to capture by Hollywood. In the 2000 election cycle, the entertainment industry gave \$24.2 million to Democrats and \$13.3 million to Republicans. This also explains the somewhat surprising party alignment on copyright issues in general, with Democrats usually supporting greater copyright protection and Republicans championing the public domain. Declan McCullagh & Robert Zarate, Content Spat Split on Party Lines, *Wired News*, available at <http://www.wired.com/news/print/0,1294,50754,00.html> (Mar. 1, 2002).
- 209 Douglas C. Michael, Federal Agency Use of Audited Self-Regulation as a Regulatory Technique, 47 *Admin. L. Rev.* 171, 181-82 (1995).
- 210 Lemley, *supra* note45, at 1043-54.
- 211 Philip J. Weiser, Internet Governance, Standard Setting, and Self-Regulation, 28 *N. Ky. L. Rev.* 822, 843-45. Professor Weiser focuses on the standards for Instant Messaging. During the merger of AOL and Time Warner, Microsoft and others attempted to get the FCC to force AOL to make their Instant Messaging client interoperable with others.
- 212 Lemley, *supra* note45, at 1086 (“That behavior is the ‘capture’ of a standard-setting group by a particular participant. In the context of Internet software markets, the most likely means of capturing a standard is by the strategic use of intellectual property rights.”).
- 213 See *supra* PartThe Audio Home Recording Act of 1992 (AHRA).
- 214 Alon Neches, The Great 8 Controversies That Are Shaping the Online Media World, Berkman Center for Internet & Society at Harvard Law School, available at [http://cyber.law.harvard.edu/events/netmusic\\_brbook.html](http://cyber.law.harvard.edu/events/netmusic_brbook.html) (last visited Apr. 2002).