

# Thawing Digital Media

Legal Uncertainties and the Chilling  
Effect on Innovation

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## EXECUTIVE SUMMARY

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### *Legal uncertainties are stifling innovation and technology development in consumer electronics and digital media.*

Since the enactment of the Digital Millennium Copyright Act (DMCA) in 1998, entrepreneurs, established businesses, innovators, and researchers have walked a tight rope while dealing with digital media. The law's vague language and the subsequent failings of the courts and Copyright Office to provide useful clarifications and exemptions pose a fatal risk that few companies are willing to test. The language of § 1201 of the DMCA, relevant court cases, and arcane statutory damage values are at the core of these legal uncertainties.

#### **Key Findings**

- Most DRM systems have failed to protect content, and the popularity of various peer-to-peer (p2p) networks have remained consistent.
- The courts are slowly addressing issues with the DMCA, but can only have an effect on the few cases that make it to trial. The Supreme Court's *Grokster* decision failed to examine important fair use and manufacturer liability concerns.
- The Copyright Office's triennial rulemaking for DMCA exemptions has not clarified fair uses related to the circumvention of protected content for personal use, nor the distribution of tools that enable such circumvention.
- Market reports and consumer trends show an exponential growth and interest in digital media and wireless devices, and consumer electronics.
- Legal uncertainties have created an environment in which entrepreneurs, researchers, and venture capitalists avoid "risky" products and features.
- The costs of the uncertain legal climate and associated lawsuits are placing a heavy burden on manufacturers, depleting the limited resources of startups and stripping funds from product research and development.

#### **Key Recommendations**

- Pass H.R. 1201, the "Freedom and Innovation Revitalizing U.S. Entrepreneurship Act of 2007" with modifications that permit circumvention tools for legal purposes.
- Use the digital age to reevaluate copyright law.
- Content owners and the market should change their approach to digital media distribution and shift toward less restricted media to encourage consumers away from illegal channels.
- A rights clearinghouse or voluntary licensing model should be considered to promote progress and ensure artist compensation as consumers become content producers.

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A special thank you to the fellow WISE interns for an unforgettable experience in Washington, DC; and my family for their support and encouragement.

# About the Author

David Pietrocola is a member of the Class of 2008 at Trinity College in Hartford, Connecticut. He is pursuing a Bachelor of Science degree in electrical engineering and an interdisciplinary minor in Italian Studies. At Trinity, David is chief engineer of the Robot Study Team, and held the positions of managing editor, news editor, online editor, and staff writer while working for the student newspaper, *The Trinity Tripod*. He has received awards for teaching assistantship, mathematics, and writing. After Trinity, he hopes to attend graduate school.

David recently spent a semester abroad in Rome, Italy, where he studied Italian language, politics, cinema, and art conservation. His interests include robotics, world percussion, espresso, and AS Roma. He was drawn to this topic after examining Digital Rights Management issues his freshman year of college, and reading Lawrence Lessig's *Free Culture* last year.

# About WISE

Founded in 1980 through the collaborative efforts of several professional engineering societies, the Washington Internships for Students of Engineering has become one of the premier Washington internship programs. Its goal is to groom future leaders of the engineering profession who are aware of and can contribute to the important intersections of technology and public policy. Please see <http://www.wise-intern.org> for more information.

# Prologue

A customer wants a car, so she heads over to a dealer to see the selection. She wonders why the lot is filled with four-door sedans and SUVs, and blue and gold are the only colors. The dealer places the blame on the manufacturer. Either way, she wants a car so she buys one (a blue sedan), gets behind the wheel, puts the key in the ignition and starts off on the open road. The sun is shining and the wind is blowing through her hair. Before long, though, she realizes that the car will follow only certain roads and routes. When she stops for gas, the car refuses all the stations except for one. Wanting to check under the hood, she finds that it has been welded shut; she will need to find a torch to open it up. Looking to drive into Canada? This model will not do it; she will have to buy the one that does.

Does this sound far-fetched? Of course, but these are exactly the circumstances consumers experience with most protected digital media today. And it is a problem. Is there a solution out there?

# Introduction

The explosion of high-speed broadband internet access and the drop in digital storage space over the past few years have presented markets and businesses with a viable infrastructure capable of content distribution, and interactive models unimaginable a decade ago. Advances in electronics, power management, and wireless technology have catapulted the internet and digital media resources toward an ubiquitous state, placing digital audio and video literally in the hands of consumers wherever they are. However, this progress has driven head-on into a legal climate that favors content owners and discourages innovation. The technology that enables content and information distribution, as well as cultural expression, is now partially controlled by the demands of content owners and the standards consortia they lead.

Since the enactment of the Digital Millennium Copyright Act (DMCA) in 1998, entrepreneurs, established businesses, innovators, and researchers have walked a tight rope while dealing with digital media.<sup>1</sup> The law's vague language and the subsequent failings of the courts and Copyright Office to provide useful clarifications and exemptions pose a fatal risk that few start-up companies are willing to test.

Proponents of the DMCA and the Digital Rights Management (DRM) it legally protects believe this techno-legal solution has led to a flourishing of online content in the past nine years. With DRM, device control, and the DMCA under their belts, content owners argued that only then would publishers, music labels, and film studios make their content available online for legal purchase. But as the market trends reveal in this paper, the DMCA was written during a time of technological transition and maturation; online content and new business models for the internet to satisfy consumer demand were inevitable. Instead, the techno-legal solution has failed to thwart piracy, and has enabled the control of digital content and the way it is used as the market grows and physical media sales decline.

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<sup>1</sup> A number of examples directly pertinent to this paper's focus will be discussed. For further examples, especially in computer security research, see the Electronic Frontier Foundation's "Unintended Consequences: Seven Years Under the DMCA."

The landmark 1984 Supreme Court decision in *Sony Corp. of America v. Universal City Studios, Inc.*, which established the concept of fair use and protection for manufacturers (see page 33 for case discussion), included the following:

*The [law] must strike a balance between a copyright holder's legitimate demand for effective – not merely symbolic – protection ... and the rights of others freely to engage in substantially unrelated areas of commerce. Accordingly, the sale of copying equipment ... 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.*

Unbeknownst to the deeply divided justices who decided the case 5-4, the last few words, “it need merely be capable of substantial noninfringing uses,” established a legal environment and precedent that ushered in the revolutionary consumer electronics and digital computer products that we now take for granted. The *Sony Betamax* decision made possible VCRs, DVD players, mp3 players, digital video recorders (DVRs), and the restriction-free development of personal computers. The same climate does not exist for today’s innovators.

This paper will consider the chilling effects of legal uncertainties inherent in the DMCA’s § 1201, and evaluate recent developments and related court cases in the area of consumer electronics, software, and services. Elements in copyright law including secondary copyright infringement and the statutory damage clauses will also be looked at from the point of view of entrepreneurs and investors. An essential observation of consumer demands and market trends will be taken into account. Lastly, the successes and failures of current solutions to piracy will be examined as they have affected legitimate innovation. While online piracy is at the core of the digital media issue and the main reason for the development of the DMCA, it will be looked at only so much as to provide further context to this paper’s discussion, findings, and subsequent recommendations.

**The Sony  
Betamax decision  
made possible  
VCRs, DVD  
players, mp3  
players, and  
digital video  
recorders**

This paper examines recent examples of the harms that the DMCA and other legislation have caused in the digital media and consumer electronics sectors. The set of recommendations

are aimed at directly addressing some of these laws while also proposing legislative and societal suggestions toward developing a promising framework in which serious discussions of the future of copyright as it relates to digital media can take place.

## Findings

- **Current market solutions have been unsatisfactory to one or more parties. The attempt to end digital media piracy has been mainly technological, and it has mainly failed. Most DRM systems have been unsuccessful in protecting content, and the popularity of various peer-to-peer (p2p) networks has remained consistent.**

Every DRM that has entered the marketplace has been cracked, sometimes within hours of release.<sup>2</sup> The system's inherent flaw is that it only takes one person to crack the protection, enabling others to do the same with far less effort and often with far less technical competence. The result is a constant cat and mouse game of DRM vendors patching their system and hackers finding a new method of exploit. For the hackers, the exercise is more often a technical challenge and an opportunity to flaunt their skills than anything else. Circumvention tools that enable trafficking of digital content are widely available and easily found on the internet, and most remain out of the reach of the DMCA by being hosted on offshore servers.

In addition to DRM circumvention and in response to increased legal action against p2p users, many are choosing to participate in "Darknets." The Darknet, as defined in a paper published by three Microsoft engineers, is a collection of small, intimate circles and trusted networks of friends who trade music and video with much greater security than closely-

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<sup>2</sup> Recent developments include the crack of Microsoft's DRM for the third time, and the release of decryption keys and cracks for the AACS 128-bit encryption system used on HD DVDs. A fix to the compromised AACS DRM was hacked within a day of its release.

Jessica Mintz. "Microsoft Copy Protection Cracked Again." July 17, 2007. The Associated Press.

Jeremy Reimer. "New AACS 'fix' hacked in a day." May 31, 2007. Ars Technica.

<http://arstechnica.com/news.ars/post/20070531-new-aacs-fix-hacked-in-a-day.html>. Accessed July 29, 2007.

monitored p2p networks.<sup>3</sup> Despite thousands of lawsuits targeting p2p users, and in spite of the nine years since the DMCA's enactment, a wide array of options remain for users to engage in illegal copying, and the circumvention tools that make content decryption possible are far from extinction.

- **The courts are slowly establishing limits and clarifications for the DMCA, but can only have an effect on the few cases that make it to trial. Recent cases, including the Supreme Court's *Grokster* decision in 2005, have failed to address important fair use questions as they apply to the digital arena, throwing the ball back in Congress' yard.**

Judges have been consistent in ruling against anti-competitive uses of the DMCA, as noted in the *Lexmark* and *Chamberlain* cases.<sup>4</sup> The DMCA's anti-circumvention measures cannot be applied, the Court of Appeals found in the *Chamberlain* case, in an "attempt to leverage its sales into aftermarket monopolies."<sup>5</sup> But many problems still exist for innovators that the courts have not addressed.

The fair use doctrine established in the 1984 *Sony Betamax* decision created a gray area and a protection for products capable of substantial noninfringing uses, ushering in thousands of new products, devices and technologies in the new digital age, including the first mp3 players. But its diminished effect at the court level following the DMCA and the Supreme Court *Grokster* decision has made it an unreliable defense.<sup>6</sup> The fair use defense in determining consumer rights has also largely remained undependable in the court system, making a particular use in

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<sup>3</sup> Peter Biddle, Paul England, Marcus Peinado, and Bryan Willman. "The Darknet and the Future of Content Distribution."

<sup>4</sup> In *Lexmark v. Static Control Components* (2004), the U.S. Sixth Circuit Court of Appeals ruled against Lexmark after the printer manufacturer claimed Static Control Components violated the DMCA by circumventing protection measures that prevented the development of third-party toner cartridges. In a similar anti-competition use of the DMCA, the Court of Appeals ruled against The Chamberlain Group in *Chamberlain v. Skylink* (2004) after the defendant was accused of circumventing Chamberlain's access controls to produce third-party garage door openers.

<sup>5</sup> *Chamberlain Group v. Skylink Technologies*, 381 F.3d 1178 (Fed.Cir.2004).

<sup>6</sup> In *MGM Studios, Inc. v. Grokster, Ltd.* (2005), the Supreme Court found p2p software company Grokster liable for inducing copyright infringement, a decision that has arguably weakened the *Sony Betamax* defense for technology companies and manufacturers. A case summary is available on page 34.

certain circumstances an official “fair use” only after a court has evaluated four criteria and ruled in favor of the “fair use.” (see page 35 for the four criteria).

The outcome of the *Grokster* decision poses a dilemma in which companies who advertise products and services they deem are fair use are betting their cards on the courts agreeing with them. If a judge rules against the fair use claim, the companies could now be found liable for inducement and face maximum statutory damages for contributory copyright infringement.

- **When Congress passed the DMCA in 1998, they were well aware the bill did not address all applicable exemptions to the new measures. As a result, they charged the Copyright Office with reviewing exemption requests every three years. They issued six exemptions in November 2006, none of which clarify fair uses related to the circumvention of protected content for personal use, nor the distribution of tools that enable such circumvention.**

The six exemptions made in the most recent rule-making (see page 36) permit circumvention of protection measures in specific circumstances and for specific individuals. However, at issue is an inherent flaw within the DMCA that makes these exemptions virtually toothless for most users, and inadvertently tramples on the fair uses allowed under traditional copyright law.

In traditional copyright law, users were allowed to make a copy or transformation of a work if it was deemed a fair use, such as scholarship, research, parody, or news reporting. Congress recognized this and included an explicit declaration in § 1201: “nothing in this section shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under this title.”<sup>7</sup> The issue rests in the DMCA’s distinction between the act of circumventing and the tools that facilitate it. A parallel distinction exists between access controls and copy controls. Wishing to avoid conflicts over allowed copying, the DMCA permits circumvention of a copy control, and existing copyright law effectively covers any unauthorized or illegal copying that would come out of circumvention. But the act of circumventing an access control,

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<sup>7</sup> 17 USC 1201(c)(1)

such as DRM or the DVD's Content Scramble System (CSS), is prohibited outright. While in theory these distinctions would do as they were intended – to provide a balance in protecting content and ensuring fair uses – that is certainly not the case in the real world. As Cornell University Professor Tarleton Gillespie points out:

*Rules can be applied to access without seeming to affect use; protections in one are presumably not compromised by restrictions in another. But the DRM strategy depends on the fact that use always follows access and that rules about access therefore have ramifications for use. Access controls channel users into a technical realm where only some uses are possible and copying can be eliminated, leaving fair use nothing to shield.<sup>8</sup>*

Consider now the other half of the equation: the tools that facilitate circumvention. The DMCA explicitly prohibits the manufacturing or distribution of tools that enable users to circumvent any technological protection measure, regardless of it being an access or copy control and, more importantly, regardless of the purpose for the circumvention. Keeping this in mind, we can reevaluate the exemptions outlined in the DMCA and the triennial rulings of the Copyright Office to realize that, unless users have the technical skill and expertise to personally circumvent an encryption or DRM to make fair use of a work, they are out of luck. Accordingly, even if the exemption or authorized copying right is there, the tools needed for the common user to fulfill such acts are illegal. Thus, the law now grants special rights to the technically proficient to make fair use of encrypted works while leaving other users out in the cold. In other words, a user may have a license to drive a car and the permission to do so, but they lack the ignition key to exercise that right.

A review of the public comments submitted to the Copyright Office for the 2003 and 2006 rulemakings also reveals the Office's refusal to exempt DVD circumvention for personal backups, playback in geographical regions that differ from where the DVD was purchased, skipping of pre-feature commercials and trailers, and open-source DVD players for the Linux operating system. In a 2007 interview with online tech news portal *Ars Technica*, Register of Copyrights Marybeth Peters pointed out the ambiguous legal concept of fair use and stated that

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<sup>8</sup> Tarleton Gillespie, *Wired Shut* (Cambridge: MIT Press, 2007), 180. Many thanks to Professor Gillespie for his comments and insight on this distinction in the DMCA.

the *Sony Betamax* decision and other fair use court cases are relevant only to the narrow uses they address. So until a court decides ripping a DVD for personal backup is a fair use, its legality remains uncertain and the Copyright Office will not issue a DMCA exemption.

The other factor considered in the rulemaking process is convenience. Exemptions are made to give users access to material that is lawful for them to use and that they cannot get in any other way. In other words, if a work is available in other formats, regardless of the quality or convenience of accessing that format, there is no justification for an exemption. As Peters told *Ars Technica*, "Nothing says that fair use says you get to do it in the most convenient form, and the one that is preferable to you. Fair use is really about content, and you shouldn't be hacking through things to get the most convenient format."<sup>9</sup> These comments and the rulings issued by the Office reveal that the Congress-mandated triennial rulemakings have not accomplished much in the way of clearing ambiguities and uncertainties for digital media uses and the tools that enable them.

- **Market reports and consumer trends show an exponential growth and interest in digital media and wireless devices. The ubiquity of the internet and advances in infrastructure and mobile technology have driven the behavior of consumers accessing content in myriad ways, when they want and where they want. Also, the explosion of user-produced works on the internet makes apparent the popularity of interacting with content and commercial culture.**

Since the release of the DVD and the mass popularity of mp3s, consumers have shown a profound desire for digital content for three main reasons: better quality, increased portability, and custom-tailored media experiences. Certainly the market exists, and current estimates predict online content sales to reach \$7.8 billion by 2010, while physical media formats continue to decline.<sup>10</sup> With the desire for digital content comes also the ability and the motivation for consumers to *interact* with content and culture. Greater accessibility to

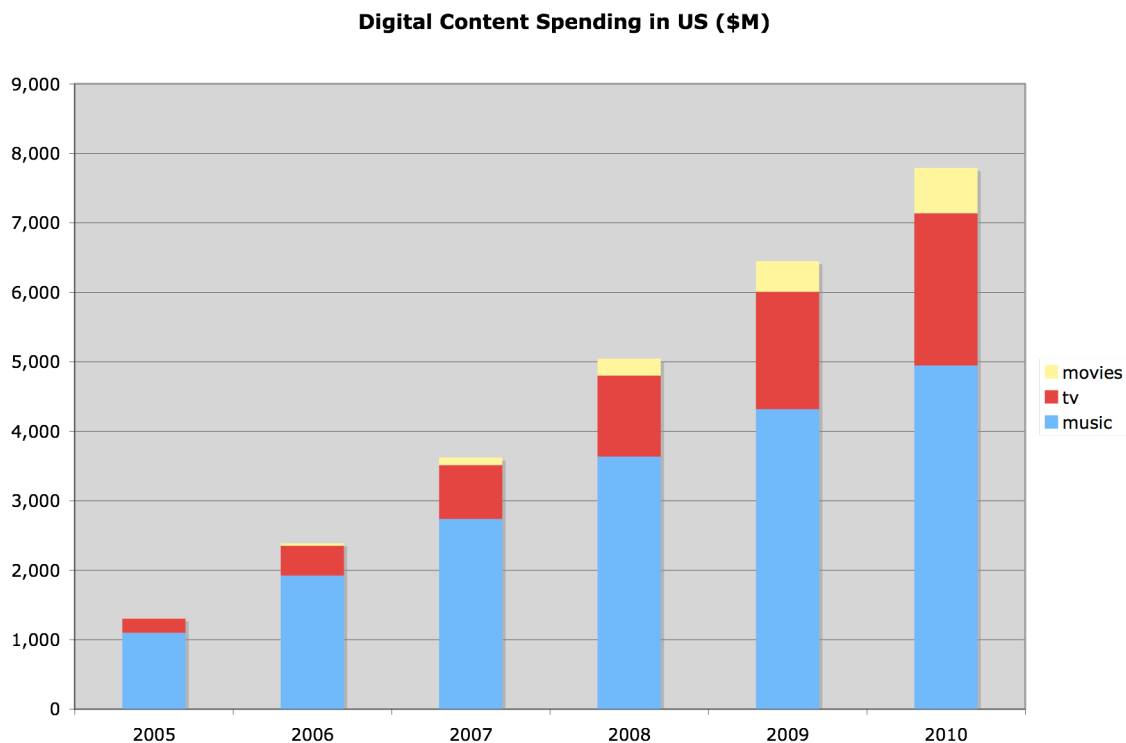
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<sup>9</sup> Nate Anderson. "What the Copyright Office thinks about Fair Use." *Ars Technica*. May 20, 2007. <http://arstechnica.com/articles/culture/fair-use.ars>. Accessed July 29, 2007.

<sup>10</sup> Ben Macklin. "Digital Downloading: Music, Movies and TV." eMarketer, January 2007.

computing power, broadband connections, home networks, and easier tools enable consumers to become producers, a transition that Stanford Law Professor Lawrence Lessig labels as read-only culture to a read-write culture.<sup>11</sup>

As noted in a 2006 market report by Oppenheimer, content protection implementation remains the key balancing act in expanding the digital content marketplace. In their opinion, “it is unlikely ... an end-to-end standard for protection of content will emerge over the next five years.”<sup>12</sup> Ultimately, diverging protection agendas between content owners and technology companies means continued consumer frustration over fragmented and overlapping DRM solutions. This can result in the slowed adoption of digital media and devices, as consumers fear being locked-out of their purchases if one standard becomes victorious.



**Figure 1: Digital content spending will reach \$7.8 billion by 2010, and most of the growth will be seen in digital TV and movie sales.**

<sup>11</sup> Lawrence Lessig. *Free Culture* (New York: Penguin, 2004).

<sup>12</sup> Alan Bezoza, Thomas W. Eagan, Lawrence M. Harris, Shawn C. Milne, Vijay R. Rakesh, A. Sasa Zorovic. “The Digital Consumer: Examining Trends in Digital Media.” Oppenheimer Equity Research, January 3, 2007, p. 24

The most pressing issue in digital media and content protection is what to do about video. Having learned from the mistakes of the recording industry, the movie industry has done a much better job from the start of protecting its DVD content with an established encryption standard, and expansive DRM measures making streaming video difficult to download or copy. Figure 1 reveals the growth of online television and movie sales is set to outpace that of music moving toward 2010.<sup>13</sup> However, market forecasts and findings presented in this paper point out that the level of growth and adoption of online video will depend greatly upon the availability of content under terms accepted by consumers, as well as a variety of user-friendly devices essential to content access.

Devices such as the Apple video iPod and the Sony Playstation Portable ushered in the age of portable television shows and movies in the hands of consumers. At the 2006 International Consumer Electronics Show, much of the excitement from attendees and the press centered on devices that could enable content movement wherever the user went.<sup>14</sup> If a customer purchases a digital film and begins watching it on the computer, she could pause it and continue watching it on a portable device on the subway. Back home at the end of the day, she could lead right to where she left off on a widescreen television and home theater system. And with the new Verizon V CAST mobile phone and the SongID service, a user interested in immediately downloading a song playing from a radio need merely point the phone in the radio's direction and software will recognize the clip, find the song, and download the purchase for playback on the device. This is the experience consumers are moving toward: hassle-free content access wherever and whenever, without the worry of compatibility problems or repurchasing fears.

Coupled with mobile devices is the increase in personal home networks. In a study performed by Forrester Research in early 2007, 27 percent of respondents with broadband access reported having and using a home network to stream music, movies, television shows and other media

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<sup>13</sup> Macklin, above n 10.

<sup>14</sup> CEA White Paper. "Washington Insider Series: Empowering the Consumer." March 2006.

throughout the house. This statistic reveals the trend of multiple, diverse devices being used to access a wide array of digital content.<sup>15</sup>

While peer-to-peer (p2p) online piracy has remained at a stable level of popularity over the past few years, legitimate online stores that sell DRM and DRM-free content have had great success, despite competing with “free” content. The Apple iTunes Music Store, launched in April 2003, now features over five million songs and began selling music videos, television shows, and feature-length films in 2005. As of April 2007, the Music Store has sold over 2.5 billion songs and two million movies. In June 2007, iTunes became the third largest music store in the country, surpassed only by brick-and-mortar stores Wal-Mart and Best Buy.<sup>16</sup>

The success of the iTunes Music Store has shown content owners that online business models can, in fact, compete with illegal copying by offering a superior user experience, a diverse selection, and relatively fair pricing. Even with restrictions that limit the ways in which a Music Store file can be used,<sup>17</sup> consumers have chosen to use these over free, non-restrictive alternatives. Perhaps more of an eye-opener to content owners has been the immediate popularity of higher quality, DRM-free music on iTunes from major record label EMI. Album sales of the new offerings jumped by as much as 350 percent in the first week alone for classics like Pink Floyd’s *Dark Side of the Moon*, providing an insight into the immense consumer demand for high-quality digital media that can operate on any device or platform.<sup>18</sup> The second largest online music store, eMusic, which sells over two million DRM-free music tracks from 13,000 independent labels, has also successfully competed against free alternatives by finding a

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<sup>15</sup> Eric Bangeman. “Report: one-third of all home networks used for entertainment.” *Ars Technica*. June 26, 2007. <http://arstechnica.com/news.ars/post/20070626-report-one-third-of-all-home-networks-used-for-entertainment.html>. Accessed July 29, 2007.

<sup>16</sup> Jim Dalrymple. “iTunes moves up to third largest music store.” *Playlist*. June 22, 2007. <http://playlistmag.com/news/2007/06/22/itunesthird/index.php>. Accessed July 29, 2007.

<sup>17</sup> Standard music tracks purchased from the iTunes Music Store include the following DRM restrictions: playback on five authorized computers at a time; a playlist containing at least one DRM-encoded track can be burned onto an audio CD seven times before the playlist must be changed; the track can be burned onto an audio CD an unlimited amount and uploaded to an unlimited number of iPods.

<sup>18</sup> Jonny Evans. “EMI Sales Climb on iTunes Plus Plan.” *PC World*. June 20, 2007.

niche market of non-mainstream music lovers. Universal Music Group has also just announced that it will begin offering DRM-free mp3 content for online purchase.<sup>19</sup>

Despite massive consumer adoption of digital content and mobile devices, motivated users faced with DRM that rubs them the wrong way are still turning toward illegal measures to do what they think is their fair use right with the content they purchase. The nine years since the enactment of the Digital Millennium Copyright Act has seen the removal of most DVD-backup software from store shelves, but tools are widely available online and mainstream news media such as the *New York Times* have no problem discussing such software and providing download links for readers.<sup>20</sup> However, a preliminary study recently conducted by the NPD Group suggests that fewer than two percent of 12,000 surveyed Americans use DVD ripping software. But, as consumers are known to follow the path of least resistance, the same report shows three times that amount have no problem using their broadband connections to download movies free from restrictions on services like p2p and BitTorrent.

The trends discussed in this finding show widespread support and interest for online media, and business models that offer variety and fairness in pricing and uses will most likely prevail. Devices and services will of course follow the strong prospects of this market, but content owners continue to hold out for impenetrable content protection measures, creating a dragging-of-the-feet effect in some device areas and an environment that is not free for innovation. Digital video is a key arena given broadband expansion and device advances, and if digital

### What is the difference between P2P and BitTorrent?

**Peer-to-peer** file sharing comprises a network of users running a particular piece of software that can search other users for files they might be sharing. Download initiates between requesting user and sharing user.

**BitTorrent** file sharing follows a more distributed model and is ideal for large files. A user requesting a specific file will download pieces of it from as many other users as possible who already have that file, so bandwidth resources are distributed among many.

<sup>19</sup> Jeff Leeds. "Universal Music Will Sell Songs Without Copy Protection." *The New York Times*. Aug. 10, 2007.

<sup>20</sup> Peter Wayner. "A Laboratory Tool Kit for Converting DVD Movies." *The New York Times*. June 28, 2007.

music is any indication, it has the potential to follow the same growth trends while physical sales decline.

- **Legal uncertainties pertaining to the development of devices and services that interact with digital media have created an environment in which entrepreneurs, researchers, and venture capitalists avoid “risky” products and features. For the products that have successfully made it to market, manufacturers still deal with hefty legal costs when confronted with legal challenges in a system that favors deeper pockets, a situation that largely rules out resource-strapped startups.**

The language of § 1201 of the DMCA, relevant court cases, and arcane statutory damage values are at the core of these legal uncertainties and the focus of the policy analysis and recommendations presented here. Although it is impossible to measure the direct effect and economic impact of legal uncertainties on research and products that never reached the marketplace, this research presents myriad examples, anecdotes and interviews from many sectors of the consumer electronics industry. A complete examination of court cases is also difficult if not impossible due to numerous settlements involving nondisclosure agreements. The analysis here suggests an economically and culturally important part of technological development that is increasingly influenced by the desires of copyright holders and under the direction of licenses required to decrypt and play content such as DVDs.

In the grand scheme of the ongoing debate between copyright holders and technology producers, the information presented in this paper reveals an environment that is not conducive toward the open, tinkering, and risk-taking atmosphere that jump-started the 1970s computer revolution. Instead there is a situation in which government intervention – the law and vague court decisions – is giving preferential treatment to particular business models and devices in the new digital landscape while discouraging or outright outlawing others.<sup>21</sup> The

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<sup>21</sup> For example, the Family Movie Act of 2004 legalized a device manufactured by ClearPlay that allows users to filter scenes and language from movies they deem obscene or offensive. Every other competitor offered a similar service by selling DVDs that had already been filtered. The pending lawsuits from the MPAA and the Directors Guild were dropped against ClearPlay, while the competitors were forced out of business.

result is less innovation reaching the marketplace and an apparent oversight over the way culture is consumed, accessed, manipulated, and transferred.

Table 1: Products/services mentioned in this finding and current status

<b>Product/service</b>	<b>Status</b>	<b>Outcome</b>
Kaleidescape media server	Sued by DVD-CCA for violating CSS license	Won in court; DVD-CCA filed an appeal and wants to amend CSS license
Cablevision RS-DVR	Service stopped by federal circuit court judge	Appeal to be heard in August 2007
Load 'N Go	Sued by MPAA	Out of business, signed nondisclosure agreement
XM + MP3	Sued by RIAA	Headed to trial
Sling Media's Slingbox	Uses analog hole	Avoids risky products and features, difficult to improve current offerings
Sonicblue's ReplayTV	Sued for commercial-skip and share over the internet features	Bankruptcy before trial, bought by Japanese company that removed the features and re-released product
321 Studios' DVD X Copy	Sued by MPAA for circumventing CSS	Lost case, removed product from market

With today's technological advancements, more and more devices and consumer electronics are being fitted with powerful and flexible computers, making nearly any programmable feature possible in products. From a technological standpoint, *more* innovative and diverse products, not less, should be making their way to the market. However, since the debut of the DVD in 1996, copyright holders have gained a hand in the design of products and features through licensing agreements required to decrypt their content – an advantage they failed to capture in the *Sony Betamax* decision. Thus, products and features are developed at the discretion of copyright holders and licensing costs alone weed out the smaller innovators.<sup>22</sup> By dictating in the design phase, copyright holders have abilities they were unable to secure in congressional legislation or court cases.

<sup>22</sup> Annual membership fee in the DVD-CCA is \$15,000.

The next section will outline the creation-process of DRM and DVD licenses, how they contribute to lawsuits in stopping products and features content owners do not like, and a look at recent court cases.

### ***DVD, DRM, and the Consortia***

Without access to content, technology firms have no reason to design and manufacture devices. This simple fact, along with the threat of legal action for non-compliance in licensing agreements, has brought manufacturers to negotiate alongside copyright holders for a variety of DRM systems across digital media. An example of one of these negotiation processes is the Content Scramble System (CSS), the content protection mechanism worked out in 1996 and found on all DVDs (see page 35 for CSS design requirements).

The CSS is, from an encryption-strength perspective, very weak at protecting DVD content.<sup>23</sup> It relies on a secret key to ensure that only authorized devices can unlock the content, and that key is only available to paying, license-abiding members of the DVD-CCA (Copy Control Association). Any other attempt to access DVD content through circumvention of the CSS would be illegal under § 1201(a).

The influence of the CSS license, without even considering the use of DMCA arguments, is evident in the recent court case between the DVD-CCA and Kaleidescape, Inc., a startup manufacturer that produces high-end movie jukeboxes capable of storing a user's complete DVD collection on hard disks for quick and easy retrieval.<sup>24</sup> The company has now been profitable for a year and shipments are rising 10 percent each month. The DVD-CCA argued that the manufacturer had violated provisions of the CSS contract, but a Superior Court judge ruled in March in favor of Kaleidescape, citing a contract that was "worded and administrated in a confusing matter"; fair use was not considered nor mentioned in his decision.

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<sup>23</sup> The weakness of CSS derives from two design constraints: relatively low-cost implementation in devices, and the U.S. export restriction on encryption technology, limiting the algorithm to 40-bit encryption.

<sup>24</sup> Merritt, Rick. "Sparks fly as DVD group, startup clash on digital media." *EE Times*. July 2, 2007.

Although the DVD-CCA filed an appeal on June 5, they have taken up a one-paragraph amendment that would forbid all forms of DVD backups, as well as playback without a physical disc present in the drive.<sup>25</sup> As of this writing, the 25-member DVD-CCA council is considering a vote on the amendment. If it were to pass, the amendment would put Kaleidescape out of business and eliminate an entire category of DVD devices. But in the meantime, technology firms will not release similar products amid the uncertainty, freezing the expansion of a promising market area as consumers try to keep track of their growing DVD and media collections.

### ***DMCA and Copyright Infringement***

Over the past nine years, established and startup companies alike have faced lawsuits from recording companies, movie studios, and broadcasters along two lines of argument: copyright infringement, and circumvention of protection measures as stated in § 1201. If the technology and/or service deals with television signals or DRM-free music, lawsuits generally focus on copyright infringement and seek statutory damages for each infringement. On the other hand, any product that deals with DVD or DRM-protected video, audio, or literature, will be sued under the DMCA for technology protection measure circumvention, completely bypassing the need to prove copyright infringement and denying the ability to attempt a *Sony Betamax* fair use defense.

The popularity of DVRs began in 1999 at the Consumer Electronics Show with the introduction of TiVo and Sonicblue's ReplayTV. Both models offered similar features of hard-disk-based recording of television shows, a time-shifting fair use right at the center of the *Sony Betamax* decision. The ReplayTV 4000, introduced in 2001, allowed commercial skipping and relaying a program to another ReplayTV unit on a home network or across the internet, two features that landed the company a lawsuit from 28 entertainment companies.<sup>26</sup> The plaintiffs, representing major movie studios and broadcast networks, claimed the product contributed to copyright infringement. Sonicblue went bankrupt before the case could reach the courts, and

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<sup>25</sup> "Proposed Amendment Would Ban All DVD Copying." *PC Magazine*. June 20, 2007.

<sup>26</sup> Fred von Lohmann, Wendy Seltzer. "Death by DMCA." *IEEE Spectrum*. June 2006.

the company that bought them, Japan's D&M Holdings, Inc., settled the case and agreed not to include the offending features in future models.<sup>27</sup> No DVR since then has attempted to include these features.

With DVR penetration expected to reach 30 percent by 2009,<sup>28</sup> cable and satellite providers have been rolling out their own offerings to customers following the success of TiVo. Last year, Cablevision, a major cable television provider, was ready to roll out their new RS-DVR product, a DVR that replaces the set-top box in a customer's home with remote servers at Cablevision; the user-experience and available features would remain essentially the same. The new service was expected to expand DVR adoption. Suppliers of cable television content sued the company, claiming copyright infringement since the agreed-upon license was for a traditional cable delivery model. The U.S. District Court for the Second District of New York ruled against Cablevision in March and blocked service deployment. In the decision, the judge cited the difference in architecture between a centralized device like TiVo, and a networked service like the one proposed by Cablevision.<sup>29</sup> In essence, the decision narrows the applicability of the *Sony Betamax* decision over who physically pushes the "record" button on a device that permits time-shifting uses. While Cablevision is appealing the ruling, other companies are worried that some internet-based services could follow the same fate.

A similar situation involving licensing agreements between copyright holders and broadcaster has developed in the satellite radio arena, which will double its subscribers since 2005 to 18.5 million by EOY 2007.<sup>30</sup> In 2006, XM Satellite Radio began promoting a new service and set of devices known as "XM+MP3," allowing XM subscribers to record songs off XM radio and save them to mp3 format for later playback and custom playlists. The RIAA filed a lawsuit soon after claiming copyright infringement and violation of the license agreement between the RIAA and the company. XM Radio contends the service is permitted under the 1992 Audio Home Recording Act, but the RIAA says the Act does not apply to digital satellite

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<sup>27</sup> Ibid.

<sup>28</sup> Bezoza, above n 12, 18.

<sup>29</sup> Eric Bangeman. "Broadcasters win legal fight against Cablevision's 'networked DVR'." *Ars Technica*. March 23, 2007.

<sup>30</sup> Bezoza, above n 12, 9.

transmissions. In January a U.S. District Court judge in New York ruled the lawsuit could move to trial, but the devices remain available for now.<sup>31</sup>

Copyright infringement continues to be a concern among companies working with digital media services, but the DMCA has raised a new set of issues. The rapid adoption of the DVD format following its 1996 release was unprecedented and, naturally, startup companies and device manufacturers alike have attempted to tap into the market with new models, services, and portable devices. In 2005 a five-man startup company out of Boston called Load ‘N Go began a service from which customers could purchase DVDs and Apple’s newly introduced video iPod, and the company would transfer the former onto the latter, sending both the iPod and physical DVDs to the customer. The MPAA filed a lawsuit 16 months later, arguing the company violated the DMCA by circumventing the CSS encryption on DVDs in order to transfer them to the iPod. The suit also sought millions of dollars in statutory damages for copyright infringement. Unable to fund a legal fight, Load ‘N Go settled the case, signed a nondisclosure agreement, and closed up shop.<sup>32</sup> No similar services exist today, and only technically competent consumers can attempt to rip their own DVDs using illegal software found on the internet. For the video iPod, the only legal alternative is to purchase the DRM-protected movies and television shows available on the iTunes Music Store, even if they already own the DVD version.

A Norwegian teenager cracked the CSS encryption on DVDs in 1999, enabling the “ripping” of DVDs onto computers and into other digital formats.<sup>33</sup> But the released code, called DeCSS, was targeted toward technically savvy users and programmers who could incorporate it into their own software and systems. In 2003, 321 Studios released DVD X Copy, enabling anyone with a computer the ability to back-up DVDs on their PC and strip the region encoding of foreign DVDs they purchased in other parts of the world. The software included anti-piracy splash screen messages and traceable watermarks on copies, and since the product was capable

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<sup>31</sup> Greg Sandoval. “Judge allows music industry to sue XM Satellite.” *CNET News*. January 19, 2007. [http://news.com.com/Judge+allows+music+industry+to+sue+XM+Satellite/2100-1027\\_3-6151695.html](http://news.com.com/Judge+allows+music+industry+to+sue+XM+Satellite/2100-1027_3-6151695.html). Accessed July 20, 2007.

<sup>32</sup> Eric J. Sinrod. “Perspective: Ripping DVDs may never be the same again.” *CNET News*. November 29, 2006.

<sup>33</sup> Von Lohmann, above n 26.

of substantial noninfringing use, the company thought they were protected under the *Sony Betamax* defense. But soon after, the MPAA went after 321 Studios and claimed DVD X Copy violated the DMCA by circumventing the CSS encryption. As a result, the *Sony Betamax* defense had no chance to be heard in court. The product and similar software were taken off shelves, but a variety of DVD ripping products are easily found on the internet and have been featured in articles from mainstream media outlets.

### **Inducement**

In addition to the DMCA, the *Grokster* Supreme Court decision in 2005 strengthened the concept of inducement and knocked the legs out from under the fair use doctrine in the *Sony Betamax* decision. Although targeted at p2p companies who “induced” copyright infringement through deliberate software and advertising decisions – and benefited financially from them – the idea of inducement is being used against manufacturers in contributory infringement complaints. In the XM case, counts 5, 6 and 7 of the RIAA complaint allege inducement, contributory infringement and vicarious infringement:

*# Count 5: Inducement by actively marketing and advertising the "librarying" function of Inno receivers and failing to "take readily available steps to prevent infringement."*

*# Count 6: Contributory Infringement by providing and activating XM receivers knowing they will be used to create infringing permanent libraries of sound recordings.*

*# Count 7: Vicarious Infringement by failing to prevent infringement despite having both legal and practical mechanisms whereby user infringement could be detected and prevented.*

The following statements used in XM promotional materials are at the heart of the inducement charge: "Hear It, Click It, Save It!"; "[XM] delivers new music to you everyday and lets you choose tracks to create your own custom playlists"; "record with the touch of a button"; and "store up to 50 hours of XM."<sup>34</sup> Under the same arguments and examples, Apple’s 2001 “Rip it. Mix it. Burn it.” Campaign and the subsequent release of the iPod would have faced the same legal battle now underway.

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<sup>34</sup> Complaint filed in U.S. District Court for the Southern District of New York against XM Satellite Radio by major music labels.

### ***The analog hole work-around, for now***

A few companies managed to stay clear of the DMCA and its legal uncertainties by targeting the decades-old analog hole, the unencrypted analog outputs still commonly found in most consumer electronics devices. Since the output is unencrypted, the devices looking to use the content from it avoid having to circumvent any protection measures. One of the most successful and recognizable products in this arena is Sling Media's Slingbox, a \$250 device that allows customers to "place-shift" their television feed. Although the product has been hugely successful since selling out in many locations when it launched in 2005, Sling Media CEO Blake Krikorian has noted that only so many improvements can be made when dealing with analog signals, and digital would allow the obvious advantages of better quality and reduced product costs.<sup>35</sup> Begun as a startup, Krikorian admitted products like the Slingbox would be impossible if the company had waited three years, when the 2008 Congressional mandate for digital television kicks in. A recurrence of bills calling for analog hole closure still threaten products like the Slingbox.

- **The costs of the uncertain legal climate and associated lawsuits are placing a heavy burden on manufacturers, depleting the limited resources of startups and cutting funds from product research and development. Companies attempt to sort out their legal footing by hiring the best lawyers and firms, but many avoid controversial products and features due to lawsuits that can seek statutory damages easily reaching into the tens of millions of dollars.**

Many attempts were made to measure the impact of legal costs on a variety of technology of companies. Unfortunately, the same firms most vulnerable to DMCA and copyright infringement lawsuits declined to comment, citing legal advice they had been given. In the case of legal actions that went to court, companies were more likely to settle rather than test the DMCA against the recent unreliable track record of the *Sony Betamax* defense. These settlements were found to include nondisclosure agreements, gagging the parties from revealing details of the deal and thus minimizing negative press coverage.

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<sup>35</sup> Interview with Blake Krikorian July 2, 2007.

However, in 2003 then-CEO of Sonicblue Greg Ballard noted at a Digital Rights Summit hosted by Intel that the company was spending \$3 million a quarter – the equivalent of employing 120 engineers -- in ReplayTV litigation costs.<sup>36</sup> At that time he also stated the company was not releasing new technologies in fear of further lawsuits. Other startup companies have recently been spending an average of \$750 per hour for the “best attorneys” in hopes of avoiding bankruptcy-inducing legal action. Although statistics have been difficult to compile, the trend since the DMCA was enacted reveals a focus on lawsuits targeting smaller companies unable to sustain a legal fight.

Most lawsuits discussed thus far have involved some sort of copyright infringement claim, with plaintiffs seeking statutory damages for each infringed copyright. Prior to the digital era, the idea of statutory damages made sense as mass copying was difficult and reserved for the few pirates with the appropriate resources and equipment. But in today’s age, digital means easy, exact duplication available to any user with a computer. Much press and discussions have covered the RIAA’s actions against their own customers, but similar RIAA and MPAA

lawsuits have been launched against manufacturers for contributory infringement, which has gained strength in courts following the *MGM v. Grokster* decision.

Statutory damages are set out in Title 17, Section 504 of the U.S. Code. The basic level of damages is between **\$750** and **\$30,000** per work, at the discretion of the court. Plaintiffs who can show willful infringement may be entitled to damages up to **\$150,000** per work. Defendants who can show that they were "not aware and had no reason to believe" they were infringing copyright may have the damages reduced to \$200 per work.

In all the court cases mentioned in this paper where the plaintiffs were seeking damages for infringement, the maximum amount of \$150,000 per work was sought since contributory infringement would prove willful infringement. The ongoing XM case can be examined more closely in this context:

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<sup>36</sup> Dean, Katie. “Summit: DMCA Blocks Tech Progress.” *Wired*. Feb. 20, 2003. <http://www.wired.com/entertainment/music/news/2003/02/57740>.

*The RIAA complaint seeks \$150,000 in damages for each song recorded by an XM subscriber.*

*The complaint also seeks damages for every song on every channel to which an Inno subscriber is tuned, since the device automatically keeps a live radio buffer that temporarily stores songs.*

*XM broadcasts approximately 160,000 songs per month. Assuming 20 percent of those songs change each month, then 512,000 unique songs are broadcasted each year. If Inno subscribers were tuned in to even half those songs, damages would reach \$38.4 **Billion**.*

Facing damages of this scale, in a legal environment with a weakened *Sony Betamax* defense, manufacturers risk a costly uphill battle that can bankrupt the entire company if they were to lose. Thus, settlements involving nondisclosure agreements have become commonplace.

## Recommendations

The findings and discussions in this paper have painted a picture of the legal, technological, and societal environments and their interactions in the latest developments on the digital media landscape. The trends of today's consumers and failure of DRM and the DMCA to curb piracy in the past nine years lead towards the following idea:

*Technological solutions alone cannot solve the complex and important issues that have presented themselves in the new digital era.*

Lawmakers unaware of technology's limits, copyright holders looking to retain control of their works, and DRM vendors selling systems with flawed assumptions have all hoped technology would stop online piracy and usher in a new era of commerce across the internet. Doing so has caused unintended consequences in innovation, consumer fair use rights, and the overall potential of the internet medium to revolutionize the way culture is created and consumed. However, much can still be accomplished by shifting current debates toward answering the difficult questions and developing balanced policies that foster innovation, compensate artists and creators, and promote the mass cultural interaction promised and made

possible by computers, devices, and digital editing tools. To these objectives, the following recommendations are presented along two fronts: legislative and market.

### ***Legislative***

- **Congress should pass H.R. 1201, the “Freedom and Innovation Revitalizing U.S. Entrepreneurship Act of 2007” (FAIR USE Act), with modifications.**

Introduced on February 27, 2007, the FAIR USE Act addresses the two biggest legal uncertainties discussed in this paper: statutory damages and secondary infringement liability. Section 2(a) of the bill modifies Section 504(c)(2) of title 17 of the United States Code by exempting statutory damages for secondary infringement, except in circumstances in which no reasonable person could have believed such act or acts to be lawful. This amendment would largely eliminate the fear of huge damages and definite bankruptcy in an uncertain legal environment that has seen a greater use of secondary infringement arguments (contributory, inducement, and vicarious liability). This would allow entrepreneurs, venture capitalists, and technology firms to have more confidence in introducing new products and features.

Section (2)(b) effectively strengthens the *Sony Betamax* defense following the *Grokster* decision. The amendment would modify Section 501 of title 17 to protect manufacturers from copyright infringement “if the device is capable of substantial, commercially significant noninfringing use.”<sup>37</sup> Just like in the *Sony* case, the design, manufacture, or distribution of a device capable of substantial noninfringing use would not make companies liable to the extent that they currently are after *Grokster*.

In Section 3, H.R. 1201 focuses on making permanent certain exemptions, allowing the act of circumvention in particular circumstances that were not expressed in the DMCA. However, the bill fails to address the legality of the *tools* that enable such acts of circumvention. As the bill stands right now, it glosses over one of the subtle but most significant flaws of the DMCA,

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<sup>37</sup> H.R. 1201, 110<sup>th</sup> Congress

explicitly permitting acts of circumvention while prohibiting the trafficking of all tools. Thus, as discussed in the findings, the exemptions really only apply to technically-savvy users and the developers of these tools will continue to face legal action as the DMCA anti-circumvention measures hold priority over the *Sony Betamax* defense in courts.

- **Congress should use the digital age to reevaluate copyright law and create an easily understandable and implemented framework that would foster creativity, improve respect of the law, and promote “the progress of science and the useful arts.”**

Title 17 of the United States Code is a messy and complicated series of laws that contains ambiguities and ignites debates even among copyright law scholars. Over the past 100 years, with the numerous compromises among interested parties and the term extensions in 1976 and 1998, copyrights have reached the point where they prevent knowledge from moving into the public domain and most citizens are clueless of the law. If people do not understand the law, they can not respect it, and that is a problem that affects an entire law-abiding society. The opportunity is ripe to develop a copyright system that does what it was intended to do: ensure compensation for creators and promote the spread of knowledge and culture in society.

### **Market**

- **Content owners and the market should change their approach to digital media distribution and shift toward DRM-free media that are easy to purchase, of high quality, and interoperable with any device over any network.**

The popularity of DRM-free music and the success of innovative technologies such as the Slingbox and growing trends in digital media mobile sales reveal the core set of consumer demands. It is up to the market to meet those demands if they wish to curtail piracy; there is no one-stop technological or legal solution. Content owners should relax their control and demands over media and allow the emergence of new business models that will drive the future

of the industry to develop and succeed. The competition and interest exists in such a way that some business models will draw consumer acceptance and offer legal alternatives to online piracy.

- **Recognizing the current emergence of a culture in which consumers are becoming users, interacting with media and exercising their creativity, a dialogue should be initiated to begin looking beyond the copyright model.**

The technology and demand exists for a read-write culture that encourages interaction with media. New forms of expression, criticism, and parody have developed around digital content, tools, and the limitless audience of the internet. If content owners were to establish a type of rights clearinghouse or volunteer licensing system, they would win because they would sell more content; technology companies would win because they would sell more tools that enable such interactions; and users and society would win because everyone with a computer and an internet connection could transform and contribute to culture. To adopt such an approach would still respect intellectual property and a larger group of artists and creators would receive compensation.

# Appendix

## Putting DMCA Section 1201 into context: before and during the bill's creation, a history lesson

The idea for the Digital Millennium Copyright Act developed out of a white paper from the Information Infrastructure Task Force, a group established by President Bill Clinton shortly after his inauguration. Their task was to construct government policy related to the newly named National Information Infrastructure, or the internet as it is known today. Within this task force was an intellectual property working group led by then-patent commissioner Bruce Lehman. His senior staff included former copyright lobbyists while the group's membership drew from government agencies and departments throughout the executive branch.<sup>38</sup> The group set out to find what protections content owners needed in order to invest in the National Information Infrastructure. Following public hearing, the group issued a preliminary "Green Paper" in July 1994, calling for, among other things, the use of copy-protection technology and laws that prohibit circumvention of such technology. After a series of public hearings and meetings with various interest groups, the Lehman working group issued its White Paper in September 1995,<sup>39</sup> and then Congress stepped up to the plate.

Both houses immediately introduced legislation in line with the White Paper recommendations, but huge opposition from user interest groups and the American Library Association led to lengthy and complicated negotiations. With legislation essentially stalled by the summer of 1996, Lehman set out to get the White Paper provisions accepted by the World Intellectual Property Organization (WIPO). Although Lehman and the U.S. delegation failed to push through much of the proposal's language, the agreed-upon treaty did include many of the same ideas.

A clarification important to *Thawing Digital Media's* discussion is the language WIPO adopted in the treaty concerning acts of and tools that facilitate circumvention: signatory nations must

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<sup>38</sup> Jessica Litman. *Digital Copyright* (Amherst, New York: Prometheus, 2001), 90.

<sup>39</sup> *Ibid.*, 90-6.

“provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors ... [to] restrict acts ... which are not authorized by the authors concerned or permitted by law.”<sup>40</sup> As Law Professor Jessica Litman points out, United States law already satisfied this requirement with prosecution against circumventers who produced copyright infringement, and the illegality of devices incapable of legitimate uses thanks to the *Sony Betamax* decision.<sup>41</sup> However, copyright owners felt “effective legal remedies” meant outlawing circumvention of technological protection measures completely, regardless of the intended use. At the other end of the spectrum, user interest groups sought greater legal protection for fair use in regard to encrypted digital content.

The Department of Commerce attempted to remedy the situation as they helped draft the treaty implementing bill. The compromise involved splitting the act of circumvention into two ideas: circumvention of access control, and circumvention of copy control (previously discussed in findings). The draft also included the idea to prohibit all tools that facilitated circumvention, regardless of intended use. As the draft headed to the Hill, Congressional staff mediated months of negotiations between content producers, internet service providers, and telephone companies to carve out safe harbor exemptions and gain backers for the legislation.

The Senate introduced the Digital Millennium Copyright Act as S. 2037. The Judiciary Committee reportedly favorably on it, and one week later it went to the Senate floor, where it passed 99-0. The House was a different matter, as Rep. Rick Boucher introduced his own alternative to S. 2037, the Digital Era Copyright Enhancement Act. The House Judiciary Committee, of which he was a member, did not support it. But Boucher also sat on the House Commerce Committee, which had expanded its oversight to include the internet and electronic commerce. The Committee’s leadership sought jurisdiction over the House version of S. 2037, which at the time was in the hands of the House Judiciary Committee. House leadership granted the Commerce Committee jurisdiction over the bill for a few weeks, much to the

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<sup>40</sup> Ibid., 131.

<sup>41</sup> Ibid.

chagrin of the content community.<sup>42</sup> In fact, Committee members suggested content owners hold negotiations with the consumer electronics, libraries, and user interest groups to sort out fair use compromises, an idea the content community resented. It took until the night before a scheduled full committee markup, which would have involved amendments without the input of the content industry, before they would agree to negotiate terms. The committee implemented the bargain in the bill's language when it finally met for markup a day later than originally scheduled, and then sent the amended bill to the House floor.

A discrepancy existed between the version of the bill agreed-upon by the House Judiciary Committee, and the newer one from the Commerce Committee. With Congress quickly approaching summer recess, House leadership and House judiciary committee staff attempted to sort out the big issues and get the bill ready for a floor vote. Much of the Commerce Committee's amendments were gutted and the bill passed the House without debate. However, the Senate refused to agree to this new version, resulting in the creation of a House-Senate Conference Committee. Members rushed to incorporate pieces from each version of the bill and, what originally began as a 3,000-word House and Senate bill, ended as the 30,000-word Digital Millennium Copyright Act. The compromised bill passed both Houses just before recess and was signed into law on October 28, 1998 by President Bill Clinton.

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<sup>42</sup> Ibid., 138.

## Court cases of interest

*Sony Corp. of America v. Universal City Studios, Inc. (2004)*

In the 1970s, Sony released the Betamax, a video tape recording format that allowed, among other things, users to record television programming. The film industry sued the manufacturer in 1976 in U.S. District Court for the Central District of California. They claimed that Sony's device enabled users to engage in copyright infringement and thus the manufacturer should be liable for contributory infringement. The District Court ruled in favor of Sony, citing fair use of the device for noncommercial home use recording. The United States Court of Appeals for the Ninth Circuit reversed the decision, leading to the Supreme Court accepting the case and hearing arguments in January 1983.

The justices took a year to issue their ruling, which was originally a 6-3 decision affirming what the Court of Appeals had said. However, Justices O'Connor and Brennan were still on the fence – Justice O'Connor showed concern over shifting the burden of proving away from the plaintiff, and Justice Brennan was still considering the noninfringing uses of the technology. Justice Stevens modified his dissenting opinion to accommodate the Brennan and O'Connor positions, resulting in a 5-4 ruling that reversed the Ninth Circuit's decision. The new majority opinion affirmed time-shifting as a fair use and established protections for manufacturers against contributory copyright infringement:

*If there are millions of owners of VTR's who make copies of televised sports events, religious broadcasts, and educational programs ... and if the proprietors of those programs welcome the practice, the business of supplying the equipment that makes such copying feasible should not be stifled simply because the equipment is used by some individuals to make unauthorized reproductions of respondents' works.<sup>43</sup>*

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<sup>43</sup> 464 U.S. 417

*MGM Studios, Inc. v. Grokster, Ltd. (2005)*

Twenty-eight entertainment companies sued file-sharing software makers Grokster and Streamcast for inducing copyright infringement through their peer-to-peer software and marketing. Before reaching the Supreme Court, Grokster prevailed in the United States District Court for the Central District of California (dismissed the case in 2003, citing the *Betamax* decision), and also in the Ninth Circuit Court of Appeals, which upheld the lower court's decision after acknowledging that the software had legitimate and legal uses. The Supreme Court heard arguments in March 2005 and ruled three months later with a unanimous decision against Grokster. However, instead of reevaluating the *Sony Betamax* decision and providing clarifications to fair use and manufacturer liability that Congress had hoped for, the Court effectively sidestepped the issue and focused on the software features and marketing that Grokster used to profit from inducing copyright infringement. Many of the legal uncertainties discussed in this paper involve the secondary copyright infringement liabilities stemming from the *Grokster* decision.

## Definitions

**Inducement** – A form of secondary liability that the *MGM v. Grokster* decision strengthened. As defined by the Supreme Court, an inducer is “[O]ne who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement.” Grokster was found guilty of inducement because internal documents and its advertising showed clear intent to profit from the illegal file-sharing of its users.

**Contributory infringement** – As the courts have put it, “one who, with knowledge of the infringing activity, induces, causes, or materially contributes to the infringing conduct of another, may be held liable as a contributory infringer.” Sony was not liable for contributory infringement because its Betamax recorder was capable of substantial noninfringing use.

**Vicarious liability** – Applies when someone has the right and ability to supervise a direct infringer, and also has a direct financial interest in the infringer’s activities. The RIAA targeted the venture capitalists who funded Napster for vicarious liability.

**Fair use** – Fair use is a legally ambiguous concept that permits users to make unauthorized use of a copyrighted work for a good reason, usually criticism, comment, news reporting, teaching, scholarship, and research. However, courts can decide only if a particular use is a fair use under the four following criteria:

1. The purpose and character of the use, including whether such use is of commercial nature or is for nonprofit educational purposes;
2. The nature of the copyrighted work;
3. Amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
4. The effect of the use upon the potential market for or value of the copyrighted work.<sup>44</sup>

## **CSS Device Design Requirements for manufacturer members of DVD-CCA**

By law, the DMCA does not require manufacturers to implement specific content protection measures. Instead, consortia outline design requirements for members to follow in order to receive the keys to decrypt content. Below are design requirements from the DVD-CCA, and compliance is the only legal channel if a manufacturer or software company wants to play a DVD.

- Incorporate copy control signals, such as automatic gain control, in any analog output signal.
- Deliver a high definition analog signal only if the DVD is already encoded as such.
- Only deliver digital output in one of three authorized formats (IEEE 1394, USB, DVI), equipped with digital transmission copy protection.
- Refuse to play recorded media that indicates it was not meant to be copied, or CSS-encrypted material on a consumer-grade DVD-R.

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<sup>44</sup> “U.S. Copyright Office – Fair Use.” <http://www.copyright.gov/fls/fl102.html>. Accessed July 30, 2007.

- Scramble the CSS key inside the software in transit between authentication and decryption modules.
- Actively frustrate attempts to defeat copy protection through appropriate encryption, physical architecture design, information flow integrity, and system integrity monitoring.

## 2006 Copyright Office Triennial Rulemaking on DMCA Exemption

The Copyright Office issued the six following exemptions to the DMCA in November 2006 for its third triennial rulemaking:

1. Audiovisual works included in the educational library of a college or university's film or media studies department, when circumvention is accomplished for the purpose of making compilations of portions of those works for educational use in the classroom by media studies or film professors.

2. Computer programs and video games distributed in formats that have become obsolete and that require the original media or hardware as a condition of access, when circumvention is accomplished for the purpose of preservation or archival reproduction of published digital works by a library or archive. A format shall be considered obsolete if the machine or system necessary to render perceptible a work stored in that format is no longer manufactured or is no longer reasonably available in the commercial marketplace.

3. Computer programs protected by dongles that prevent access due to malfunction or damage and which are obsolete. A dongle shall be considered obsolete if it is no longer manufactured or if a replacement or repair is no longer reasonably available in the commercial marketplace.

4. Literary works distributed in ebook format when all existing ebook editions of the work (including digital text editions made available by authorized entities) contain access controls that

prevent the enabling either of the book's read-aloud function or of screen readers that render the text into a specialized format.

5. Computer programs in the form of firmware that enable wireless telephone handsets to connect to a wireless telephone communication network, when circumvention is accomplished for the sole purpose of lawfully connecting to a wireless telephone communication network.

6. Sound recordings, and audiovisual works associated with those sound recordings, distributed in compact disc format and protected by technological protection measures that control access to lawfully purchased works and create or exploit security flaws or vulnerabilities that compromise the security of personal computers, when circumvention is accomplished solely for the purpose of good faith testing, investigating, or correcting such security flaws or vulnerabilities.