Copyright Reform Act

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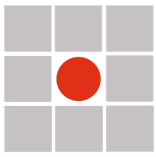

Public Knowledge

Report 2

Updating 17 U.S.C. § 1201 for Innovators, Creators, and Consumers in the Digital Age

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This Report is one of a series related to the Copyright Reform Act, a project created on behalf of Public Knowledge as a client of the Samuelson Law, Technology & Public Policy Clinic at UC Berkeley School of Law and the Stanford Cyberlaw Clinic.[†]

Public Knowledge is a Washington, D.C., based public interest organization that works to protect the rights of citizens and consumers to communicate and innovate in the digital age. Ensuring these rights requires a copyright law that does not unduly restrain everyday communications or new sources of creativity, and one that can account for current and future changes in technology.

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Executive Summary

It has been a decade since § 1201 of the Digital Millennium Copyright Act took effect. In passing § 1201, Congress hoped to support the emerging digital economy and to encourage the digital distribution of copyrighted works by regulating the circumvention of technological protection measures ("TPMs")—such as encryption or access-control systems—used to protect copyrighted works. The anticircumvention provisions were structured with two goals in mind: to protect copyright owners who distribute works in digital form, and to prevent these protections from creating unintended consequences that harm the public's interests in innovation, access to information, and the public rights inherent in copyright law. Section 1201 approaches these goals by (1) prohibiting the circumvention of TPMs; (2) prohibiting the manufacture, marketing or distribution of tools that facilitate the circumvention of TPMs; and (3) attempting to balance these prohibitions by carving out limited exemptions that allow circumvention for certain purposes or pursuant to a triennial review and rulemaking process in the Copyright Office.

Unfortunately, neither § 1201's mechanisms for avoiding public harm nor its protections for copyright owners have proven adequate over time. With regard to public harms, as employed by copyright holders and as interpreted by courts, § 1201 has proven to be both too broad in its prohibitions and too narrow in its exceptions. Because of this, it fails to appropriately distinguish between circumvention for lawful purposes and circumvention for unlawful purposes, causing a range of harmful effects to befall creators, consumers, researchers, innovators, and competitors. Section 1201's strict prohibitions against tools for circumvention exacerbate these problems. At the same time, the anticircumvention provisions have failed to provide copyright owners adequate relief from large-scale infringement.

Section 1201 is in need of reform. In this Report, we propose the following:

- § 1201(a)(1) should be amended to allow circumvention for the purpose of making a non-infringing use of the protected work; and

- § 1201(a)(2) and (b)(1) should be amended to permit the making and distribution of tools capable of enabling substantial non-infringing use of a work, in order to allow those making lawful uses the practical ability to circumvent.

These proposed reforms refocus the anticircumvention provisions on preventing and punishing circumvention for the purpose of infringement, and reinstate copyright law's longstanding balance between rewarding authors on the one hand, and supporting the public's interest in innovation, creativity, and access to information, on the other hand.

Section 1201's Harmful Unintended Consequences

Section 1201's system of blanket prohibitions, combined with limited exceptions, has had unfortunately deleterious effects over the years since the DMCA took effect. In this Report, we map the types of harm occurring and collect examples. Our findings include the following:

- **§ 1201 prevents follow-on creators from using existing works as the foundation of new works.**

Section 1201's prohibitions have dealt a serious setback to follow-on creators—such as documentary filmmakers and remix artists—who build on existing works, because source material that is protected by a TPM can become effectively unavailable for new uses. This issue has come to the forefront in the present digital era, in which both natively digital works and older, newly digitized works are commonly placed behind TPMs. This makes liability under § 1201 a critical issue for creators who wish to make use of existing source material, especially when they must rely on copyright's limitations, such as fair use.

- **§ 1201 prevents individual and institutional consumers from making lawful uses of works.**

By blocking the distribution of innovative consumer products and by regulating consumer behavior, § 1201 has prevented consumers from making a range of valuable uses, including: backing up lawfully purchased media; time- and format-shifting digital works; importing and using lawfully-purchased foreign media; and taking advantage of competitive offerings such as alternative gaming platforms. Some consumers have also been stymied from making specific uses of materials; for example, teachers have been prevented from making film compilations to present in class.

- **§ 1201 lacks sufficient protections for disruptive innovation and for research, limiting technological development.**

Innovators and researchers often need to use or build on copyrighted works in order to explore scientific questions and build new technologies. Traditional copyright law protects this need for access through various mechanisms, such as the fair use doctrine, the first sale doctrine, and limitations on secondary liability. Section 1201, however, can be used to limit the ability of researchers and innovators to access copyrighted works, harming disruptive innovation and security research.

- **§ 1201 can be used for anticompetitive purposes.**

Closely related to § 1201's harms to innovation is the fact that it has been used by copyright owners in attempts to limit competition. Where a key communications protocol, authentication method, or other technological barrier controls the interoperability between separate elements of a company's product, the company may then invoke § 1201 against competitors seeking to develop or distribute technology related to the rights-owner's product. This problem is especially acute in cases where competitors must reverse engineer to create an aftermarket product that must work with the rights-owner's product.

- **§ 1201(a)(2) and (b)(1) restrict the distribution of tools that would allow those who are not technical experts to circumvent.**

Even where a use is formally exempted from § 1201(a)(1) liability through the triennial rulemaking procedure, or where a use is lawful under copyright law, § 1201 can still prevent these lawful uses by prohibiting the tools needed for circumvention.

Section 1201's Exemptions Are Insufficient

Section 1201 causes these harms in large part because its overly limited exemptions depart from the safety valves present in traditional copyright law, such as fair use and the first sale doctrine. The safety valves written into § 1201 by Congress—such as the specific exemptions for encryption research, some forms of reverse engineering, and other uses defined in § 1201(d)-(j)—were well-intentioned, but are too narrow. These exemptions are limited in scope, each covering narrowly defined classes of works or uses, and each addressing only a small number of potential lawful uses. Similarly, the triennial rulemaking procedure is insufficient to mitigate the harms caused by § 1201's provisions: it requires a cumbersome application process; offers exemptions that last only for a short duration of time; and limits each exemption to a narrow application for a tightly-defined class of works. Moreover, exemptions granted under the rulemaking do not cover the making or use of circumvention tools, which most users need in order to actually take advantage of an exemption.

Legislative Reform Is Necessary to Remedy the Harms Caused by § 1201

By creating general prohibitions on circumvention and circumvention tools while relying largely on insufficient, specific exceptions as limitations, § 1201's anticircumvention provisions move the law from the flexibility of the traditional copyright regime to an inflexible, overly limited regime that causes the harms outlined in this Report. Commentators have frequently criticized this shift and called for reform. At the same time, although some courts have found room to allow circumvention where the underlying use was lawful under copyright law, courts have been at best inconsistent in

deciding to protect the interests of follow-on creators, consumers, and innovators in § 1201 cases. This causes uncertainty that—in light of the high cost and inconvenience of litigation—prevents creators, innovators, and consumers from making socially valuable uses of works behind TPMs. As such, reforming § 1201 can best be addressed by legislative means.

Any reform that restores balance to the law and credibility to the anticircumvention provisions must incorporate two key elements: (1) circumvention liability should be eliminated for non-infringing uses; and (2) the prohibition on tools must be reformed to allow those making lawful uses the practical ability to circumvent. As such, we propose the following legislative reforms:

First, to address the harms that result from circumvention liability that reaches beyond the rights granted to owners by copyright law, users must be given the right to circumvent TPMs for lawful, non-infringing uses of a work. We propose amending § 1201(a)(1) as follows:

"(F) Notwithstanding the prohibition contained in subparagraph (A), it shall not be a violation of this section to circumvent a technological measure in connection with access to, or the use of, a work if such circumvention is for the purpose of engaging in non-infringing use of a work."

Second, to fully remedy the harms caused by the unintended consequences of § 1201 and to restore balance to copyright law, users must have access to the means with which to circumvent TPMs for non-infringing uses. Because a user often will not have the knowledge or skill to circumvent a technical protection measure without expert help, removing circumvention liability for lawful uses will be ineffective if the present blanket ban on circumvention tools remains in place. The remaining two reforms both address this need. We propose amending both § 1201(a)(2) and § 1201(b)(1) by adding the following section to each:

"(D) Notwithstanding the prohibition contained in this paragraph, it shall not be a violation of this section to manufacture, import, offer to the public, provide, or

otherwise traffic in any technology, product, service, device, component, or part thereof capable of enabling substantial non-infringing use of a work protected under this title."

While our proposed reforms mitigate the unintended consequences of § 1201's overly broad prohibitions and overly narrow exceptions, they maintain the integrity of § 1201's additional protections for copyright holders who choose to use TPMs, preserving Congress's core goals in enacting the anticircumvention provisions. Section 1201's additional causes of action and additional remedies—beyond the direct and secondary copyright claims already available under copyright law—remain in place to be used against those who circumvent to infringe, or who traffic in circumvention tools for copyright infringement. Allowing circumventions for the purpose of making non-infringing uses would preserve § 1201 accountability for bad actors while curing the problems caused by the overly narrow exemptions that presently exist. Similarly, by reforming the anti-tool provisions to reflect the standard for secondary liability articulated by the Supreme Court in *Universal Studios v. Sony*, the proposed reform both aligns with Congress's intent to distinguish between devices that serve legitimate and non-legitimate purposes, and preserves liability for tool manufacturers who distribute tools that would not pass muster under secondary liability rules. The proposed reform thus creates a safety valve that allows honest users to be separated out from bad actors, while leaving § 1201's core protections in place.

Enacting the reforms proposed in this Report would remedy the unintended consequences caused by § 1201's overbroad prohibitions while continuing to offer copyright owners extra protections for digital works guarded by TPMs. As such, they would restore needed balance to copyright law by protecting the rights of copyright owners and, at the same time, supporting the public's interest in access to copyrighted works, diversity of expression, research into and development of innovative products, and marketplace competition.

I. Introduction

This second installment of our Report series accompanying the Copyright Reform Act addresses some of the unintended societal harms caused by the anticircumvention provisions of the Digital Millennium Copyright Act ("DMCA"), and proposes legislative reforms intended to mitigate these harms while preserving the benefits of the statute. Parts I and II provide an introduction to this Report and some brief background information on the anticircumvention provisions. Parts III and IV describe some of these harms—to consumer freedom, follow-on creativity, disruptive innovation, and competition policy—and identify their root cause as a misalignment between the anticircumvention provisions, as implemented in the DMCA and applied by the courts, and traditional copyright law. Part V discusses our proposed reforms to the statute; these reforms retain liability for anticircumvention, but restore needed balance by ensuring that behavior that is lawful under copyright law is not prevented by the anticircumvention provisions.

The DMCA anticircumvention provisions, codified at §§ 1201-1205 of Title 17, were introduced to protect the rights of copyright owners in digital media.[1] In order to accomplish this, § 1201 regulates the circumvention of technological systems used to protect copyrighted works, commonly referred to as technological protection measures (TPMs).[2] By creating liability for circumventing TPMs, and for manufacturing, marketing, or distributing tools that are primarily designed to facilitate circumvention, Congress intended to "address the problems posed by the possible circumvention of technologies, such as encryption . . . used to protect copyrighted works in the digital environment."[3] At the same time, Congress was aware of the critical balance that exists

[1] H.R. REP. NO. 105-551, pt. 1, at 9 (1998).

[2] This reform focuses on 17 U.S.C. § 1201 (2006). The remaining sections handle the integrity of copyright information (§ 1202), describe civil remedies (§ 1203), describe criminal offenses and penalties (§ 1204), and provide a savings clause to preserve "privacy of [] individual[s] in connection with the [their] use of the Internet" (§ 1205).

[3] H.R. REP. NO. 105-551, pt. 1, at 10 (1998).

in copyright law between "the interests of content creators and information users . . . [and] consider[ed] it particularly important to ensure that the concept of fair use remain[] firmly established in the law."[4] To this end, seven specific exemptions were codified within § 1201,[5] and a provision was made for a triennial rulemaking process to establish additional exceptions to § 1201(a)(1).

Unfortunately, § 1201, as interpreted by courts, has proven both too broad in its protections and too narrow in its exceptions, creating several unintended consequences. For example, § 1201 has prevented innovators and creators from reverse engineering, from making valuable advances through follow-on creations, from expanding their knowledge of science and engineering through research, and from accessing important cultural works for commentary and other socially productive purposes.[6] Section 1201 has also prevented consumers from making valuable lawful uses of copyrighted works that they own.[7] Further, § 1201 has served anti-competitive purposes by locking consumers into specific devices and platforms and locking out competitors who attempt to offer legitimate and more innovative alternatives.[8]

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[4] H.R. REP. NO. 105-551, pt. 2, at 26 (1998).

[5] The exemptions are codified at 17 U.S.C. § 1201(d)-(j).

[6] *See, e.g.*, Electronic Frontier Foundation, Unintended Consequences: Twelve Years under the DMCA 3, 7-8, Mar. 16, 2010, http://www.eff.org/files/eff-unintended-consequences-12-years.pdf [hereinafter *Unintended Consequences*] (describing a DMCA-based threat from Apple against a wiki discussing reverse engineering of iPods, a threat from Texas Instruments against bloggers commenting on reverse engineering of TI-83 graphing calculators, and a threat from Sony against hobbyists reverse engineering the Aibo robotic pet dog); *id.* at 4 (describing a DMCA-based threat against Professor Felten and his team of researchers for their intent to present results of research successfully circumventing digital watermarking technology); *id.* at 10-11 (describing the banning of DVD copying tools).

[7] *See, e.g.*, Christopher Soghoian, RM 2008-8: Exemptions to Prohibition on Circumvention of Copyright Protection Systems for Defunct DRM and Copy Protection-Based Stores 4, Dec. 2, 2008, http://www.copyright.gov/1201/2008/comments/soghoain-christopher.pdf.

[8] For example, proprietary firmware encryption, such as the one used by Apple on its iPhone, denies consumers the freedom to run applications offered by a source other than the iTunes App Store. Fred von Lohmann & Jennifer S. Grannick, RM 2008-08: Comment of the Electronic Frontier Foundation: In re Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 4-5, 2008, http://www.copyright.gov/1201/2008/comments/lohmann-fred.pdf. Also, because Apple uses TPMs to lock out iPhone apps that it does not pre-approve, the anticircumvention provisions of the DMCA can effectively help Apple limit free expression. For example, Mark Fiore—a Pulitzer Prize winning cartoonist—had his iPhone app rejected by Apple because it ran afoul of a term in Apple's license agreement, which allows Apple to reject apps if the content is found to be objectionable. Fiore's app was

At the same time, § 1201 has failed to make a significant dent in the practice of unauthorized digital copying. In the 1998 House Report on § 1201, Congress made its case to create a "legal framework to ensure [that content providers] can protect their work from piracy."[9] However, twelve years later, this policy unfortunately has not met its goal of preventing large-scale copying of digital goods. Unauthorized digital copying is still perceived by the copyright industries to be a large problem[10] and many known TPMs or digital rights management (DRM) systems have been broken, some within hours of release.[11] As such, the DMCA has failed to meet its intended goals at the same time as it has caused broad, if unintended, societal harms.[12]

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considered objectionable by Apple because it included cartoons that mocked political figures. After Fiore became the first online-only cartoonist to ever with a Pulitzer, however, Apple is reconsidering his iPhone app. *See* Brian Stelter, *A Pulitzer Winner Gets Apple's Reconsideration*, N.Y. TIMES (Apr. 16, 2010), http://www.nytimes.com/2010/04/17/books/17cartoonist.html?scp=1&sq=fiore%20apple&st=cse.

[9] H.R. REP. NO. 105-551, pt. 2, at 23.

[10] A 2007 copyright industry report, for example, states that "U.S. copyright-protected works are pirated in vast numbers in the U.S." Stephen E. Siwek, Institute for Policy Innovation: Policy Report #189: *The True Cost of Copyright Industry Piracy to the U.S. Economy* i, Oct. 2007, http://www.ipi.org/ipi%5CIPIPublications.nsf/PublicationLookupFullTextPDF/02DA0B4B44F2AE9286257369005ACB57/$File/CopyrightPiracy.pdf?OpenElement. It is important to note that copyright infringement is very difficult to quantify, and the Siwek report findings have been questioned. Other reports have come to different conclusions. For example, a recent comprehensive report by the Government Accountability Office found it difficult or impossible to quantify losses due to infringement, and a report by researchers at Harvard and the University of North Carolina-Chapel Hill found little effect on record sales from peer-to-peer filesharing. *See, e.g.*, Gov't Accountability Office Report to Cong. Comm., GAO-10-423 (2010); see also Felix Oberholzer, *The Effect of File Sharing on Record Sales An Empirical Analysis* (March 2004), at http://www.unc.edu/~cigar/papers/FileSharing_March2004.pdf. At the same time, losses due to large-scale copying are perceived by the copyright industries to be a substantial problem.

[11] For example, after drawing global attention, Ubisoft's DRM for its newly released videogame Assassin's Creed 2 was broken within hours of its release. See Cory Doctorow, *Ubisoft's notorious "uncrackable" unfair game DRM falls in less than 24h*, BOINGBOING, Mar. 4, 2010, http://www.boingboing.net/2010/03/04/ubisofts-notorious-u.html.

[12] It is worth noting that despite the failure of DRM and the DMCA to prevent massive digital copying, several of § 1201's strongest advocates have had some of their most successful and profitable years to date. *See, e.g.*, Rob Pegoraro, *The MPAA Says the Movie Business is Great. Unless It's Lousy*, WASHINGTON POST, Mar. 11, 2010, http://voices.washingtonpost.com/fasterforward/2010/03/mpaa_box_office_bragging.html.

It is time to come to terms with the failures of § 1201 and the harms it is causing our economy, our culture, and the up-and-coming generation of American creators and innovators. Over a decade of hindsight suggests that anticircumvention regulations can play a productive role in our digital economy, but only if they are tied to longstanding copyright law principles that strike a balance between the rights and responsibilities of copyright owners and the freedom to innovate and create outside of those rights. Therefore, we propose two key legislative reforms:

- Amending § 1201(a)(1) to permit the circumvention of access controls for the purpose of making a noninfringing use of the protected work; and
- Amending § 1201(a)(2) and § 1201(b)(1) to permit the making and distribution of tools capable of enabling substantial noninfringing use of a work.

By refocusing § 1201 on preventing circumvention for infringing purposes, these reforms address § 1201's unintended harms and reinstate copyright's longstanding balance between rewarding authors and supporting the public's interest in innovation, creativity, and access to information. In developing these reforms, we have incorporated existing academic research and expert thinking,[13] along with previous policy work that addressed the harms imposed by the anticircumvention statute,[14] and have aligned our reforms with other well-considered proposals.[15]

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[13] The anticircumvention provisions have been widely criticized by commentators, and a variety of reforms have been proposed. *See, e.g.*, Timothy K. Armstrong, *Fair Circumvention*, 74 BROOK. L. REV. 1 (2008); Dan Burk, *Anticircumvention Misuse*, 50 UCLA L. REV 1095 (2003); Jon M. Garon, *Normative Copyright: A Conceptual Framework for Copyright Philosophy and Ethics*, 88 CORNELL L. REV. 1278 (2003); Jessica Litman, *Real Copyright Reform* (U. of Michigan Law & Economics, Olin Working Paper No. 09-018, 2010); Aaron K. Perzanowski, *Rethinking Anticircumventions Interoperability Policy*, 42 U.C. DAVIS. L. REV. 1549 (2009); Pamela Samuelson, *Why the Anticircumvention Regulations Need to be Revised*, 14 BERKELEY TECH. L.J. 519 (1999); Pamela Samuelson, *Preliminary Thoughts on Copyright Reform*, 2007 UTAH L. REV. 551 (2007).

[14] *See, e.g.*, *Unintended Consequences*, *supra* note 6; Fred von Lohmann, *Measuring the Digital Millennium Copyright Act Against the Darknet: Implications for the Regulation of Technological Protection Measures*, 24 LOY. L.A. ENT. L. REV. 635 (2004).

[15] Previous congressional work on § 1201 reform, and particularly the work of Representatives Boucher, Lofgren, and Doolittle, have been helpful in developing our proposals. *See, e.g.*, Freedom And Innovation Revitalizing U.S. Entrepreneurship Act of 2007, H.R. 1201, 110th Cong. (2007); Digital Media

II. Background

Two major catalysts prompted the creation of the DMCA. First, to promote the development of the digital economy, the United States joined the World Intellectual Property Organization (WIPO) Copyright Treaty.[16] This required that the United States address the circumvention of effective technological measures protecting copyrighted works.[17] Second, Congress recognized a need to update national laws for the digital era, and to promote the development of electronic commerce and digital distribution of copyrighted works.[18]

The provisions of the DMCA[19] created to address circumvention of technological measures were implemented at 17 U.S.C. §§ 1201-1205.[20] The three primary anticircumvention provisions are § 1201(a)(1)(A), which prohibits circumventing TPMs that effectively control access to a work (commonly called "access controls"); § 1201(a)(2), which prohibits the manufacture, marketing, or distribution of tools[21] that

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Consumers' Rights Act of 2005, H.R. 1201, 109th Cong. (1st Sess. 2005); Benefit Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act, H.R. 1066, 108th Cong. (2003).

[16] H.R. REP. NO. 105-551, pt. 1, at 9-11 (1998). There were actually two WIPO treaties, the other being the Performances and Phonograms Treaty, but as the provisions of interest regarding technical protection measures were substantially the same, for simplicity, we will refer only to the WIPO Copyright treaty in this Report. It is important to note that the DMCA's provisions far surpass the requirements of the WIPO treaties. *See* Samuelson, *supra* note 13, at 521, Urs Gasser, *Legal Frameworks and Technological Protection of Digital Content: Moving Forward Towards a Best Practice Model*, 17 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 39, 62 (2006) ("Notably, the scope of [§ 1201(a)(1)] is very broad, because acts of access control circumvention are even outlawed if undertaken for purposes that are entirely lawful (e.g. fair use) and authorized by the Copyright Act. In this respect (and others), the DMCA significantly exceeds the minimal protection level as set forth by the WIPO Internet Treaties.").

[17] WIPO Copyright Treaty, adopted by the Diplomatic Conference on Dec. 20, 1996, WIPO Doc. CRNR/DC/94 (Dec. 23, 1996) [hereinafter WIPO Copyright Treaty].

[18] H.R. REP. NO. 105-551, pt. 1, at 9 (1998).

[19] The DMCA also included safe harbor provisions for online service providers and even protection of vessel hull designs. *See* 17 U.S.C. § 512 (2006); Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860, 2905 (1998).

[20] *See supra* note 2 (describing the other Chapter 12 provisions for anticircumvention created by the DMCA).

[21] The statute contemplates a broad array of tools: "technology, product, service, device, component, or part thereof." 17 U.S.C. § 1201(a)(2) (2006).

are designed for circumventing access controls;[22] and § 1201(b)(1), which prohibits the manufacture, marketing, or distribution of tools that enable the circumvention of TPMs that "effectively protect[] a right of a copyright owner" (commonly called "copy controls").[23] The copy control portion of the statute does not contain a prohibition on the act of circumventing copy controls analogous to § 1201(a)(1)'s prohibition on the act of circumventing access controls, because such copying—for example, copying a copy-protected CD for an infringing purpose—would already be prohibited as copyright infringement.[24]

The main remedies for violations of § 1201 are civil, defined in § 1203, and criminal, defined in § 1204. Under the civil remedy, violators are liable for either "actual damages and any additional profits of the violator" or statutory damages of "not less than $200 or more than $2,500 per act of circumvention, device, product, component, offer, or performance of service, as the court considers just."[25] However, any person who willfully violates § 1201 for "purposes of commercial advantage or private financial

[22] In order to qualify as a prohibited tool under § 1201, a tool must be "primarily designed or produced for the purpose of circumventing protection afforded by a technological measure that effectively protects a right of a copyright owner," have "only limited commercially significant purpose or use" aside from such circumvention, or are marketed for use in such circumvention. 17 U.S.C. § 1201(b)(1)(A)-(C) (2006).

[23] Perzanowski, *supra* note 13, at 1565 ("Copy controls are measures intended to prevent infringement of the exclusive rights afforded by copyright.").

[24] *See* S. REP. NO. 105-190, at 12 (1998) ("The copyright law has long forbidden copyright infringements, so no new prohibition [on conduct in 1201(b)] was necessary. The device limitation in 1201(b) enforces the longstanding prohibitions on infringements."); Neil J. Conley, *Circumventing Rights Controls: The Token Crack in the Fair Use Window Left Open By Congress in Section 1201 May Be Open Wider Than Expected— Technically Speaking*, 8 CHI.-KENT J. INTELL. PROP. 297, 303-04 (2009) ("The reason for this distinction is because Congress felt that any reproduction of the work after the rights (copy) control technology had been circumvented 'would remain subject to the protections embodied in title 17 [i.e., the U.S. Copyright Act].' In other words, once a person has circumvented a rights (copy) control protecting a work that they are authorized to access, any subsequent reproduction or use of that work would remain subject to copyright infringement."); Perzanowski, *supra* note 13, at 1567 ("The act of circumventing a copy control, while not prohibited by § 1201, may constitute copyright infringement.").

[25] 17 U.S.C. § 1203(c)(1)-(3) (2006). These damages may be tripled for situations where the court finds that an infringer has violated § 1201 within three years of another such violation. 17 U.S.C. § 1203(c)(4) (2006). Also, there is a provision for remission of damages where an "innocent violation" was made, specifically highlighting "nonprofit librar[ies], archives, educational institution[s], or public broadcasting entit[ies]" as candidates for this consideration. 17 U.S.C. § 1203(c)(5)(A)-(B) (2006).

gain" may be subject to the criminal punishment of a fine "not more than $500,000," or imprisonment "not more than 5 years," or both, for a first offense.[26]

In consideration of the possibility that these measures could be too expansive, Congress also included three main safety valves within the DMCA. The first is a triennial rulemaking process, established by § 1201(a)(1), during which the Librarian of Congress, upon the recommendation of the Register of Copyrights, may exempt specific classes of copyrighted works from anticircumvention liability under § 1201(a)(1)(A). This rulemaking process is an important check, intended to prevent § 1201 from blocking noninfringing uses by legitimate users. Unfortunately, the protection is so limited—the exemptions are time-consuming and difficult to apply for, historically have applied only to very limited classes of works, last for only three years at a time, and do not apply to the prohibitions on circumvention tools at all—that it is an insufficient check on the breadth of the anticircumvention provisions to preserve traditional copyright limitations.

Section 1201 also defines specific individual exemptions to the anticircumvention provisions.[27] These exemptions provide some degree of balance against the prohibitions in the statute, but, as with the triennial rulemaking process, commentators have criticized the exemptions as being too narrow to accommodate some important noninfringing uses.[28] For instance, the "too narrow and technical"[29] reverse-engineering exception "fails to account for technologies that rely on access to other types of [non-computer

[26] 17 U.S.C. § 1204(a)(1) (2006). For subsequent offenses, the punishment is increased to $1,000,000 and 10 years, respectively. 17 U.S.C. § 1204(a)(2) (2006). The criminal sanction does not apply to "nonprofit library[ies], archives, educational institution[s], or public broadcasting entit[ies]." 17 U.S.C. § 1204(b) (2006).

[27] The exemptions are for (d) nonprofit libraries, archives, and educational institutions; (e) law enforcement, intelligence, and other government activities; (f) reverse engineering; (g) encryption research; (h) exceptions regarding minors; (i) protection of personally identifying information; and (j) security testing. 17 U.S.C. § 1201(d)-(j) (2006).

[28] *See, e.g.*, Samuelson, *supra* note 13, at 537-38 ("While several of these exceptions and limitations respond to the gravest of concerns expressed by digital economy firms, they are still too narrowly crafted . . . ."). Professor Samuelson goes on to relate examples of situations not covered by the exemptions that demonstrate their narrowness, such as gaining rightful access to software that a vendor refuses to support in breach of contract, or a whistle blower breaking encryption to report a chemical spill. *Id.* at 543-45.

[29] Garon, *supra* note 13, at 1354.

program] copyrighted works to achieve interoperability."[30] In addition, the exemption for nonprofit libraries, archives, or educational institutions "did not satisfy library and nonprofit groups who expressed substantial concern about the impact that the anticircumvention provisions would have on public access to information."[31] Below in Section (b) of Part IV, we discuss these criticisms further, as well as the exemptions' limited impact since § 1201 took effect.

A final safety measure is § 1201(c), also referred to as the "savings clause." This portion of the statute declares that nothing in § 1201 "shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use." However, while this clause may have served as a useful statement of Congress's goals, courts' interpretations of it have minimized, and at times apparently eliminated, its practical efficacy. For example, the Second Circuit, in *Universal City Studios, Inc. v. Corley*, found that interpreting the savings clause to allow circumvention for fair use was "outside the range of plausible readings of the provision."[32] Likewise, the court in *321 Studios v. Metro Goldwyn Mayer Studios, Inc.*, held that circumvention for the purpose of making a fair use was still prohibited.[33] The courts in *Lexmark Int'l, Inc. v. Static Control Components, Inc.*,[34] and *RealNetworks, Inc. v. DVD Copy Control Ass'n*,[35]

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[30] Perzanowski, *supra* note 13, at 1552.

[31] Samuelson, *supra* note 13, at 540.

[32] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 443 (2d. Cir. 2001). Compare this to the Federal Circuit's analysis of § 1201(c) in *Skylink*, stating that "the DMCA granted copyright holders additional legal protections, but [did not] rescind[] the basic bargain granting the public noninfringing and fair uses of copyrighted materials." Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178 (Fed. Cir. 2004).

[33] 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1101-02 (N.D. Cal. 2004) (stating that the "fair user may find it more difficult to engage in certain fair uses with regard to electronic books, but nevertheless, fair use is still available" (citing United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1134-35 (N.D. Cal. 2002))).

[34] Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 549 (6th Cir. 2004) (borrowing the *Corley* court's language, "[b]acking with legal sanctions 'the efforts of copyright owners to protect their works from piracy behind digital walls,'" describing Congress's purpose in enacting the DMCA (citing *Corley*, 273 F.3d at 435)).

[35] RealNetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913, 943-44 (N.D. Cal. 2009) (finding "[i]n accord with . . . *Corley* . . . that the fair use of the copyrighted material by end users is not a defense to, and plays no role in determining, liability under the DMCA").

adopted similar reasoning, following *Corley*. The limitations of these safety valves are discussed in greater detail below, in Section (b) of Part IV.

III. Section 1201's Unintended Consequences Demonstrate a Need for Reform

Despite the laudable intentions behind the anticircumvention provisions, they fail to distinguish appropriately between circumvention for gaining access to a work for unlawful purpose and circumvention for making noninfringing uses of a lawfully obtained copy.[36] Their restrictiveness has had unfortunately deleterious effects over the years since the DMCA took effect. At least four key types of harm occur. First, the common use of TPMs, combined with a lack of sufficient protections for lawful circumvention, can prevent follow-on creators from using existing works as the foundation of new works. Second, the statute enables rights-holders to prevent consumers—from individuals to institutions—from making uses of works that are lawful. Third, both the prohibitions against access and the prohibitions against circumvention tools lack sufficient protections for disruptive innovation and for research, limiting technological development. Fourth, § 1201's breadth has been at times abused in attempts to stifle free competition. Taken together, these harms undermine copyright law's goals to "promote the Progress of Science"[37] and indicate a strong need for reform.

A. Section 1201 restricts artists and other follow-on creators

Section 1201's prohibitions on circumventing access controls and on distributing tools that facilitate circumvention each dealt a serious setback to follow-on creators who build on existing works. Because of these prohibitions, any source material that is protected by a TPM and that meets the low bar for copyright protection[38] can be made effectively unavailable for new uses. This issue has come to the forefront in the present digital era, in which both natively digital works and older, newly digitized works are

[36] Samuelson, *supra* note 13, at 539.

[37] U.S. CONST. art. I, § 8, cl. 8.

[38] "Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression." 17 U.S.C. § 102(a) (2006).

commonly placed behind the walls of technological measures, making liability under § 1201 a critical issue for creators who wish to make use of existing source material.

Because of this, creators have voiced their concerns about § 1201 to the Copyright Office in the triennial rulemaking proceedings.[39] For example, documentary filmmakers have explained the harms anticircumvention provisions have caused within their creative community. Documentarians rely on existing audiovisual media in order to tell factual stories and to create new artistic expression, and they commonly engage in uses of material that would be considered lawful fair uses under copyright law. However, much of today's audiovisual media is distributed by default in the form of encrypted DVDs.[40] Though filmmakers can, in theory, avoid the need to circumvent TPMs by using analog capture methods to access needed materials, these analog methods ultimately result in low quality film that falls below the standards of broadcasters, theaters, and film festivals—resulting in a film that effectively cannot be distributed to the public.[41] Thus, documentary filmmakers who wish to make fair use of existing materials have no practical alternative to circumventing encryption on DVDs.[42] As a result, the risk of liability under § 1201 chills documentary filmmakers who need to circumvent. For example, Professor Caitlin Manning of California State University needed to incorporate old television footage into a documentary she was making about her late grandfather. Unfortunately, because this material was only available on DVD, her fear of liability under § 1201 hindered her ability to use the footage, even though her use would likely have been a fair use under copyright law.[43] Professor Manning's documentary—exactly

[39] *See, e.g.*, Mark Wilkins, RM 2002-04: Comment of Mark Wilkins: Proposed Class of Works to be Exempted, 2002 (seeking exemption for audiovisual demo reels), http://www.copyright.gov/1201/2003/comments/001.pdf; Jack I. Lerner, Ashlee Lin, & Christopher Perez, RM 2008-08: Comments of Kartemquin Educational Films, Inc. and The International Documentary Association: Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 3, 2008, http://www.copyright.gov/1201/2008/comments/kartemquin-ida.pdf; von Lohmann & Grannick, *supra* note 8, at 4-5.

[40] Lerner, Lin, & Perez*, supra* note 39*,* at 4-5.

[41] *Id.* at 5-6.

[42] *Id.*at 5.

[43] *Id.* at 8.

the type of work that enriches society and is encouraged by copyright law—was thus impeded by the anticircumvention provisions of the DMCA.

The anticircumvention provisions have affected other art forms, as well; for example, video remix artists have been frustrated by the restrictions of § 1201. This type of grassroots filmmaking, which entails creating original expression by remixing clips from television shows and movies, has a long history.[44] Today, as tools for remixing are widely available and sites like YouTube provide accessible platforms for sharing new works, this legacy has moved into digital form and into the hands of amateur artists as well as professionals. Remix embodies expression ranging from movie trailer mashups to political commentary.[45] As such, under traditional copyright law, many remixes are likely protected by the fair use doctrine, which relies on a judicial review that takes the fair use factors—which often favor remix artists because their works are noncommercial, transformative, use a small fraction of the original works, and are not substitutes for the original work—into consideration.[46] However, because courts have been reluctant to allow circumvention for fair uses,[47] the possibility of claims under § 1201(a)(1) can seriously change the calculus for remix artists who are deciding whether or not to create a new artwork. As such, remix artists who need to use source material found in DVDs or other TPM-protected media are impeded by the risk of § 1201 liability.[48]

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[44] von Lohmann & Grannick, *supra* note 8, at 14 (describing how Lev Kuleshov was splicing and reassembling film fragments to tell new stories in 1918).

[45] *Id.* at 18.

[46] 17 U.S.C. § 107 (2006) (describing the four fair use factors: purpose and character of the use, nature of the copyrighted work, amount and substantiality of the portion used, and the effect of the use on the market for the copyrighted work).

[47] *See, e.g.,* Universal City Studios, Inc. v. Corley, 273 F.3d 429, 443 (2d. Cir. 2001) (finding that the interpretation of § 1201(c) as a fair use savings clause was implausible).

[48] Whereas ripping clips from a DVD you lawfully own in order to make a fair use is legitimate under copyright law, it creates a risk of liability for circumvention of the CSS TPM under § 1201(a)(1). Ironically, downloading a digital copy of the same DVD through a file-sharing network and then taking a clip from that file would not raise the specter of circumvention liability. *See* von Lohmann & Grannick, *supra* note 8, at 21.

We have focused on two representative examples, but the barriers created by § 1201 and faced by documentary filmmakers and remix artists can impede any creator, working in any genre, who needs to make a lawful use of material that is behind a TPM. Further, if documentary filmmakers and remix artists do receive an exemption through the triennial rulemaking process, only those creators falling within the specific class defined in the exemption[49] will benefit from its protection. And importantly, as discussed further below in Section (e) of Part III, any granted exemption would not cover the tools that creators would, as a practical matter, need in order to make uses of works protected by TPMs.

B. Section 1201 prevents individual and institutional consumers from making lawful uses of works

Consumers of any sort—from individuals, to librarians buying on behalf of their patrons, to educators using copyrighted materials for teaching—should be able to make lawful uses of copyrighted works without having to worry about liability. For consumers who wish to make lawful uses of works protected by technological measures, however, § 1201 can present a significant barrier, both by prohibiting circumvention and by prohibiting the tools that would allow consumers to circumvent for lawful purposes. Four examples aptly illustrate this: (1) teachers' inability to make compilation DVDs to use as teaching tools; (2) consumers' inability to watch DVDs lawfully purchased outside the United States because of "region coding"; (3) consumers' inability to effectively back up media they own; and (4) consumers' inability to time-shift or format-shift lawfully purchased media for listening or viewing at a later time or on a new device.

[49] The exemption for documentary filmmakers, if approved in the triennial rulemaking proceeding, would only exempt a specifically defined set of works from § 1201 liability. The proposed class definition for documentary filmmakers for the 2009 triennial rulemaking is: "Motion pictures and other audiovisual works in the form of Digital Versatile Discs (DVDs) that are not generally available commercially to the public in a DVD form not protected by Content Scramble System technology when a documentary filmmaker, who is a member of an organization of filmmakers, or is enrolled in a film program or film production course at a post-secondary educational institution, is accessing material for use in a specific documentary film for which substantial production has commenced, where the material is in the public domain or will be used in compliance with the doctrine of fair use as defined by federal case law and 17 U.S.C. § 107." Lerner, Lin, & Perez, *supra* note 39, at 1.

1. Compilations for classroom teaching

Among the consumers wishing to make lawful uses of media who have been hindered by the anticircumvention provisions are teachers drawing on films for instructional purposes. In many cases, one may lawfully use film clips for teaching purposes under copyright law, for example, under § 107 (which covers fair use), or under § 110 (which includes a specific exemption for face-to-face teaching).[50] However, prior to the 2006 triennial rulemaking, there was no equivalent exemption to § 1201 for any form of teaching, leaving teachers who wished to make use of copyrighted works worried about liability for circumventing to meet such common teaching needs as making film compilations to present in class. Because making a film compilation from DVD media generally requires circumventing the encryption TPM used by the movie industry to prevent copying in order to copy out the specific segments of film needed for teaching, teachers must both worry about liability for the act of circumvention[51] and manage in spite of the prohibition on tools that would allow them to circumvent.

In recognition of these concerns, the Copyright Office granted a limited exception in the 2006 triennial rulemaking for creating video compilations used in teaching. However, this exemption covers only media studies or film professors,[52] disregarding the fact that edited compilations of video footage are valuable teaching tools in many other fields as well. For example, History Professor Sarah Deutsch juxtaposes scenes from old western films to illustrate the changing representations of the American West.[53] Playing

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[50] *See* 17 U.S.C. §§ 107, 110(1) (2006).

[51] Kevin L. Smith, Comment of Duke University: In re Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 2, Dec. 2, 2008, http://www.copyright.gov/1201/2008/comments/smith-kevin-duke-university-libraries.pdf (stating that "faculty simply do not know whether they are entitled to avail themselves of the exception as it now exists, although it is abundantly clear that allowing them to do so would have the same beneficial effect that the exception was intended to offer and would create no hardship or threat to content owners").

[52] Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68472, 68480 (Nov. 27, 2006) (describing the class of exempted works as "[a]udiovisual 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").

[53] Smith, *supra* note 51, at 2. (describing Dean Sarah Deutsch's approach to classroom instruction).

these clips without making a compilation requires seeking to the correct point in each separate DVD – an impractical solution that reduces the impact of the comparisons between the film footage of interest and decreases their effectiveness for teaching.[54] Further, as noted above, the triennial rulemaking is limited to exemptions for the act of access—the Copyright Office cannot remove the ban on circumvention tools. This leaves teachers in all disciplines, including film and media studies, without tools that allow them to access the material they need. Thus, although performance of audiovisual clips in a classroom is permitted under § 110 of the copyright statute, and assembling a compilation of film clips would likely enjoy the privilege of fair use under § 107,[55] fear of liability under § 1201 can force teachers to use cumbersome methods of presentation, resulting in a less effective educational experience.

2. Region coding

Another harm, one commonly experienced by consumers, stems from the "region coding" system used on DVDs. This system controls where in the world any DVD—including lawfully purchased discs—may be played. Though it is perfectly legal to purchase DVDs overseas and import them into the U.S. for private use,[56] this system—combined with § 1201—can prevent consumers from watching DVDs legally acquired outside the United States. This is because the standard encryption system (known as the "Content Scramble System," or "CSS") is, on most DVDs, augmented with a second layer of technological protection called region playback control ("RPC") that also governs access to the disc.[57] DVD players and DVDs are each coded to six geographical

[54] *Id.* ("Prof. Wilson expresses concern about how much class time must be wasted trying to locate each segment in a DVD, as well as the reduced pedagogical impact when she cannot place the clips side-by-side.").

[55] Jonathan Band, RM 2005-11: Comments of the Library Copyright Alliance and the Music Library Association, In re Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 7, 2005, http://www.copyright.gov/1201/2006/comments/band_LCA.pdf (stating that such uses for teaching are "unquestionably lawful").

[56] 17 U.S.C. § 602(a)(3)(B) (2006).

[57] Fred von Lohmann & Gigi Sohn, RM 2002-04: Comments of EFF and Public Knowledge: In re Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 14-15, 2002, http://www.copyright.gov/1201/2003/comments/035.pdf.

regions around the world,[58] and the RPC generally requires a DVD player's code to match the same geographical region as the DVD in order for access to be granted. This prevents a consumer from playing a DVD lawfully purchased, for example, in France, on her DVD player at home in America. Further, in response to the innovation of multi-region playback, now available in some DVD players, some copyright owners have placed on DVDs a *third* layer of technological protection, called region code enhancement ("RCE"), which blocks access when played on a multi-region DVD player.[59]

Consumers' ability to make private use of legitimately purchased foreign DVDs on their DVD players in the United States is thus challenged regardless of whether they lawfully imported foreign DVDs themselves or legally purchased them from an overseas vendor, though both methods of acquisition are "plainly legal" under copyright law.[60] This type of "post-purchase control," which can prevent a consumer from playing a lawfully acquired DVD on the consumer's DVD player simply because the region codes do not match, is a creation of the DMCA.[61] As such, § 1201(a) can prevent consumers from enjoying the explicitly defined exceptions for private uses provided by § 602(a)(3).[62] This practice not only grants a rights-owner control over the work, it also grants control over the market and geography of a work. Traditional copyright law does not recognize such a right to control where a work may be accessed, and by whom, after a legal purchase is made.[63]

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[58] *Id.* at 15.

[59] *Id.*

[60] *Id.* at 16.

[61] Niva Elkin-Koren, *Making Room for Consumers Under the DMCA*, 22 BERKELEY TECH. L.J. 1119, 1125 (2007).

[62] *See* 17 U.S.C. § 602(a)(3) (2006) (describing importation exceptions for government-authorized, private, scholarly, educational, or religious uses).

[63] Commentators have been critical of this practice, which was not available to copyright holders prior to § 1201. For example, Professor Dan Burk argues that, "[t]his is in essence a form of tying, using the technological control system, and the legal sanctions backing it, to force customers who purchase DVDs to use only particular DVD players." Burk, *supra* note 13, at 1134.

The Copyright Office, in its 2003 triennial rulemaking, recognized that region coding created difficulties for "individuals who had acquired DVDs from a region outside the U.S. and then encountered difficulty in playing those DVDs on devices purchased in the U.S." However, in denying an exemption for circumventing region coding, it went on to declare that "such consumers have a number of options that will permit them to view such region coded DVDs."[64] In the 2006 triennial rulemaking, the Copyright Office described these options as "obtaining DVD players, including portable devices, set to play DVDs from other regions and obtaining DVD–ROM drives for their computers, and setting those drives to play DVDs from other regions."[65] Unfortunately, these options are wholly insufficient for remedying the harm created by DVD region coding. First, a burdensome expense is imposed upon consumers in purchasing extra equipment that bears no difference in functionality from devices they already own. Rather, the only difference within the equipment is an arbitrary geographic setting imposed by the rights-owner. Further, the device for a specific region often must be purchased from that geographical location, adding further expense for consumers.[66] Thus, the freedom to watch lawfully purchased DVDs from other regions can quickly become prohibitively expensive. Second, DVD-ROM drives are typically limited to five region changes before the drive becomes locked.[67] This does not provide a permanent means to view DVDs

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[64] Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 68 Fed. Reg. 62011 (Oct. 31, 2003).

[65] *Id.*

[66] *See* Samuel Greenfeld, RM 2002-4: In re Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 6, 2002, http://www.copyright.gov/1201/2003/comments/032.pdf ("An argument was made during the previous comment round that people wishing to use foreign works that contained region-code access controls could simply purchase products capable of playing them. But given these products are typically sold in foreign markets, they may not meet U.S. standards for import and/or sale. . . . Furthermore, the cost to purchase all the necessary support equipment can be orders of magnitude higher than the cost of importing the work itself, when there is no difference in storage formats other than that due to the region access code."). Also, purchasing such foreign equipment incurs additional costs upon the consumer, since some utilize output formats different from the U.S. standard. *See* von Lohmann and Sohn, supra note 57, at 21 ("[T]his is not feasible without also purchasing an expensive multi-standard televisions or signal converters, due to incompatibility between the main three video display standards used across the world (PAL, SECAM, and NTSC) and differing power international standards.").

[67] See Mark Salloway's Windows XP Resource Center, at http://www.mvps.org/marksxp/WindowsXP/dvd/regions/regions.php ("RPC 2 drives come normally with a 5 change limit on regions, once the counter gets to 0 your drive is permanently locked to the last region it was set to. Even if you reformat or move the drive to another system it will still be locked to the last

from other regions unless multiple DVD-ROM drives are purchased, again creating overly burdensome expense and requiring the purchase of redundant and unnecessary technology—all to exercise rights specifically granted to consumers by copyright law.

3. Back-up copies

Another example of the way in which technological protection schemes, coupled with the anticircumvention provisions, have created severe limitations on consumers' ability to make noninfringing uses of their lawfully purchased products is their effect on consumers' ability to create backup copies of DVD movies and copy-protected CDs.[68]

There exists significant tension between the anticircumvention provisions of the DMCA and consumers' interest in backing up their lawfully purchased media. While backup copying is recognized in various places in copyright law as a noninfringing use,[69] and the Copyright Office has described making back-ups of a CD or DVD as "probably a fair use,"[70] products designed to help consumers back up lawfully-purchased materials protected by TPMs have not fared well under § 1201's prohibition on circumvention tools. Because most DVDs are protected by CSS, creating a DVD backup copy without decrypting CSS results in a scrambled, unplayable file. In order to make a backup copy

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region."). This means that a consumer who watches a DVD from the United States, then one from Asia, then another from the United States, has already used up two of the five changes permitted by the drive.

[68] The advent of digital technologies has created a need for consumers to back up digital data. An international survey found that 66% of individuals surveyed have permanently lost digital files, and 42% lost them within the last year. *See* Kabooza, *Kabooza Global Backup Survey*, at http://www.kabooza.com/globalsurvey.html (last visited Apr. 18, 2010). One cause for such data loss is physical damage. Furthermore, digital archives facilitate the preservation of, and access to, our cultural heritage. *See* Brief for the Internet Archive, Prelinger Archives, and Project Gutenberg Literary Archive Foundation as Amici Curiae Supporting Petitioners, Eldred v. Ashcroft, 537 U.S. 186 (2003).

[69] *See* 17 U.S.C. § 117 for protections for software backup copying; *see also* Fred von Lohmann, *Fair Use as Innovation Policy*, 23 BERKELEY TECH. L.J. 829, 861 (2008) ("U.S. copyright law has treated private, personal-use copying as a de facto noninfringing use since at least the 1970s, tolerating and facilitating the introduction of an impressive array of private copying technologies."); EFF, Fair Use Frequently Asked Questions (and Answers), http://w2.eff.org/IP/eff_fair_use_faq.php ("many lawyers believe that the following (and many other uses) are also fair uses: . . . Making a personal back-up copy of content you own—for instance, burning a copy of an audio CD you own.").

[70] U.S. Copyright Office, DMCA Section 104 Report 157 (Aug. 2001), *available at* http://www.copyright.gov/reports/studies/dmca/sec-104-report-vol-1.pdf.

that is playable later, a user must decrypt the DVD by circumventing CSS[71] in possible violation of § 1201(a)(1), and must use a tool for circumvention that may be prohibited by § 1201(a)(2).[72]

Unfortunately, some courts have found tools specifically designed for backing up lawfully acquired files to be illegal under § 1201. RealNetworks produced one such tool, called "RealDVD," that enabled users to store a DVD's content onto their hard drives,[73] providing portability, archival storage for safekeeping, and easy access to auxiliary information about the DVD from Internet databases or other information websites.[74] Making this backup copy required RealDVD to decrypt the CSS on the DVD.[75] In *RealNetworks, Inc. v. DVD Copy Control Ass'n, Inc.*—a declaratory judgment action in which RealNetworks sought to establish the legality of RealDVD—the court held that RealDVD violated § 1201(a) because it "makes a copy of the content on the device's hard drive"[76] and went on to state that, "[f]air use is prohibited in the access-control provision of section (a). . . ."[77]

Similarly, in *321 Studios v. Metro Goldwyn Mayer Studios, Inc.*, 321 Studios brought a declaratory action against an array of Hollywood movie studios, seeking a

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[71] 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1097 (N.D. Cal. 2004) (stating that copies made without circumventing CSS could not be accessed or viewed).

[72] *See generally* RealNetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913, 920 (N.D. Cal. 2009) ("CSS technology requires that players authenticate themselves to DVD drives to establish mutual trust, both to 'unlock' the DVD and gain access to its protected video contents and also separately to gain access to keys stored in secure areas of the DVD, which then decrypt and descramble the DVD content. . . The drive-locking and authentication steps of the CSS technology thus tie the playback of the DVD content to the DVD itself in an authorized DVD drive. The process of authentication with the DVD drive, and subsequent content decryption, will fail if a DVD is not in the DVD drive.") (internal citation omitted).

[73] *DVD Copy Control Ass'n*, 641 F. Supp. 2d at 933. ("Prior to the TRO in this action, Real sold and distributed a software product known as RealDVD.").

[74] *Id.* at 924-25.

[75] *Id.* at 919 ("CSS encrypts the content on DVDs, scrambles the video content and renders it unusable and unplayable to the user, unless and until the content is decrypted with CSS keys.").

[76] *Id.* at 933.

[77] *Id.* at 942.

ruling that its "DVD Copy Plus" software tool, which allowed users to make backup copies of DVDs, did not violate § 1201. 321 Studios believed it did not violate the anticircumvention provisions of the DMCA because it gave strong notice to users that DVD Copy Plus was only for making backup copies of movies that they lawfully owned, and because it could be used only on original DVDs.[78] In addition, the software did not make identical copies to the original DVD—interactive menu features of the DVD could not be copied and a lower quality video file was created.[79] As with the RealDVD product, however, 321 Studios was held liable for violation of § 1201, and a preliminary injunction was issued.[80]

In holding that manufacturing, marketing, or distributing tools that enable circumvention of the CSS encryption on DVDs is illegal under § 1201, courts have recognized that this may indeed block fair uses such as the creation of backup copies.[81] For example, in *DVD Copy Control Association*, the court noted that "while it may well be fair use for an individual consumer to store a backup copy of a personally-owned DVD on that individual's computer, a federal law has nonetheless made it illegal to manufacture or traffic in a device or tool that permits a consumer to make such copies."[82] Similarly, in *Universal City Studios, Inc. v. Reimerdes*, the court stated that "certain uses that might qualify as 'fair' for purposes of copyright infringement . . . would be difficult or impossible absent circumvention of the CSS encryption."[83] However, in both *DVD Copy Control Association* and *Reimerdes*, the courts found liability despite their

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[78] Complaint for Declaratory Relief at 7, 321 Studios v. Metro Goldwyn Mayer Studios, Inc., C 02 1955, available at http://w2.eff.org/IP/DMCA/20021220_321_studios_complaint.pdf; 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1097 (N.D. Cal. 2004) ("DVD Copy Code works on original DVDs the user has already purchased").

[79] *Id.*

[80] 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1105 (N.D. Cal. 2004) ("Accordingly, this Court enjoins 321, as of seven days from the issuance of this order, from manufacturing, distributing, or otherwise trafficking in any type of DVD circumvention software.").

[81] *See* Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 322 (S.D.N.Y. 2000).

[82] *DVD Copy Control Ass'n*, 641 F. Supp. 2d at 942.

[83] *Reimerdes*, 111 F. Supp. 2d at 322.

recognition that CSS might be preventing fair use.[84] Thus, some courts have recognized the tension between fair use and the anticircumvention provisions, but have felt bound by the overly broad language of § 1201.[85]

4. Time- and format-shifting

The Supreme Court's landmark 1984 ruling in *Sony Corp. of America v. Universal City Studios, Inc.*, declared that "time-shifting" a broadcast television show for the purpose of consuming it at a different moment in time was a fair use.[86] This holding in *Sony* enables millions of Americans to time-shift their favorite television shows for later viewing through the use of digital video recorders and other devices."[87] With the advent of new forms of media, courts have examined the value of shifting lawfully owned media into a new format—"format-shifting"—and at least one court has protected this type of shifting, as well.[88] However, since the enactment of § 1201, tools that allow consumers to shift lawfully owned media have been successfully challenged in the courts.[89] Comparing the capacity of courts to protect the ability of users to make these

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[84] See *id.*; Universal City Studios, Inc. v. Corley, 273 F.3d 429, 458-59 (2d Cir. 2001); Memorandum & Order at 39, *DVD Copy Control Ass'n*, 641 F. Supp. 2d at 942.

[85] Further complicating matters, the Copyright Office has taken the position that private copying of a DVD violates the DMCA, a position that has informed the Office's approach to the triennial rulemaking process. *See* Memorandum from Marybeth Peters, Register of Copyrights to James H. Billington, Librarian of Congress, Recommendation of the Register of Copyrights in RM- 2005-11, 12 at 80-83 (Nov. 17, 2006), *available at* http://www.copyright.gov/1201/docs/1201_recommendation.pdf.

[86] Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 454-55 (1984). ("When these factors are all weighed in the "equitable rule of reason" balance, we must conclude that this record amply supports the District Court's conclusion that home time-shifting is fair use.").

[87] See Anne Marie Kelly, *Adults with Digital Video Recorders Upscale and Print-Oriented*, Mediamark Research Inc. (July 2006), *available at* http://www.mediamark.com/PDF/Adults%20with%20Digital%20Video%20Recorders%20Up-scale%20and%20Print%20Oriented.pdf#search="dvr" ("More Than 11% of Adults Live in Households That Have DVR's").

[88] *See, e.g.,* Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., Inc., 180 F.3d 1072, 1079 (9th Cir. 1999) (upholding space shifting as a noncommercial personal use). *But see* A & M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1019 (9th Cir. 2001) (rejecting the space-shifting argument narrowly with regard to converting media to electronic files in a file sharing system).

[89] See Julie E. Cohen, *The Place of the User in Copyright Law*, 74 FORDHAM L. REV. 347, 356-57 (2005).

types of fair uses before and after the passage of § 1201 demonstrates the impact of the statute on copyright law's balance between owner control and user freedom.

Comparing *Sony* with the post-DMCA case *RealNetworks, Inc. v. Streambox, Inc.* illustrates the difference in application of the law to similar situations before and after the DMCA took effect—in both cases, a company provided a tool to the public that allowed users to engage in the practice of time-shifting. In *Sony*, decided fourteen years before the DMCA, the Court held that the personal time-shifting enabled by the Betamax player (i.e., a VCR) was a fair use,[90] that the Betamax was capable of enabling substantial noninfringing uses such as time-shifting,[91] and that Sony was thus not liable for contributory infringement for the non-fair uses likely made by some of its customers.[92] In *Streambox*, decided two years after § 1201 took effect, however, the court issued a preliminary injunction prohibiting Streambox from making and distributing two products that enabled users to similarly time-shift streaming content from the Internet.[93] The court considered a comparison with *Sony*, but ultimately ruled that § 1201 took precedence because the "Sony decision did not involve interpretation of the DMCA,"[94] and that § 1201, as it expressly forbids the distribution of tools by which circumvention can be

[90] *Sony*, 464 U.S. at 442 ("even the unauthorized home time-shifting of respondents' programs is legitimate fair use.").

[91] *Id.* at 456 ("The Betamax is, therefore, capable of substantial noninfringing uses.").

[92] *Id.* ("Sony's sale of such equipment to the general public does not constitute contributory infringement of respondents' copyrights.").

[93] *Streambox*, 2000 WL 127311, at *12-13 (W.D. Wash. Jan. 18, 2000) (granting a preliminary injunction on versions of the Streambox VCR and Streambox Ferret). The Streambox VCR enabled users to download copies of RealMedia files streamed over the Internet; the Ferret was an add-on to the RealPlayer media player that allowed customers to use the Streambox search system to find streaming files. *See id.* at *4, *6.

[94] *Id.* at *8. In distinguishing *Sony*, the *Streambox* court focused solely on the lack of explicit authorization by the copyright holder, and disregarded *Sony*'s analysis of the statutory fair use factors. See *id.* ("The *Sony* decision turned in large part on a finding that substantial numbers of copyright holders who broadcast their works either had authorized or would not object to having their works time-shifted by private viewers. . . . Here, by contrast, copyright owners have specifically chosen to prevent the copying enabled by the Streambox VCR by putting their content on RealServers and leaving the Copy Switch off.") (internal citations omitted). Yet, while the *Sony* Court did note that many broadcasters would not object to the time-shifting done by users of the Sony Betamax, this was not the primary justification for the *Sony* Court's ruling. Rather, the Court went on to analyze the validity of fair use for unauthorized copying under the statutory fair use factors. The Court held that "[w]hen these factors are all weighed in the 'equitable rule of reason' balance, we must conclude that this record amply supports the District Court's conclusion that home time-shifting is fair use." *Sony*, 464 U.S. at 454-55.

accomplished, prohibited Streambox's time-shifting tool. In the *Streambox* case, then, § 1201 effectively superseded the long-standing right of time-shifting protected by the Supreme Court in *Sony*.

As the above examples show, § 1201 can prevent consumers and other users from engaging in lawful uses, whether they are instances of fair use, such as time-shifting and creating compilations for educational purposes, or explicitly exempted uses, such as the private use of legally imported foreign media.

C. Section 1201 can restrict innovation and scientific research

Innovators and researchers often need to use or build on copyrighted works in order to explore scientific questions and build new technologies. Basic research can depend on the use of copyrighted works. For example, researchers in the security field often need to access and study copyrighted works in order to advance the state of the art. On the innovation side, examples of technologies based on the use of copyrighted works abound in the media player space: VCRs, DVD drives, iPods, and TiVos are all private copying devices that have gained value in the marketplace precisely because they enable various uses of copyrighted works.[95] Examples of innovation based on other types of copyrighted works also abound—to use the videogame industry as an example, Accolade reverse engineered the copyrighted source code behind Sega's Genesis games in order to create new, compatible game cartridges,[96] and Connectix reverse engineered Sony's copyrighted Playstation BIOS in order to write an emulation program that would allow users to play Playstation games on personal computers.[97]

Traditional copyright law protects this need for access through various mechanisms, such as the fair use doctrine, the first sale doctrine, and limitations on secondary liability. The additional cause of action created by § 1201, however, can be

[95] Note, however, that the DVD *player* contrasts with the rest as it operates based on a TPM-protected medium (DVDs) and has suffered from a lack of disruptive innovation by comparison to the other devices in the list. *See* von Lohmann, *supra* note 69, at 861-62.

[96] Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1514-15 (9th Cir. 1992).

[97] Sony Computer Entm't, Inc. v. Connectix, Corp., 203 F.3d 596, 601 (9th Cir. 2000).

used to limit the ability of researchers and innovators to access copyrighted works, because accessing TPM-restricted media may raise the specter of a lawsuit under the anticircumvention provisions.

1. Limits on research

The anticircumvention provisions of the DMCA can affect the research into and development of many technologies, even research into TPMs themselves. Cryptographer Niels Ferguson, who stopped researching copyright-protection systems,[98] Professor David Wagner, whose publications on copyright-protection systems were delayed by legal questions,[99] and Professor Edward Felten, whose story follows below, each have felt the impact of the DMCA on their work.

A specific instance of § 1201 standing in the way of research is found in the experience of Edward Felten, a Princeton University professor who took on a publicly announced challenge by the Secure Digital Music Initiative ("SDMI") to break watermarking technology it had developed to protect music files.[100] As part of the challenge, SDMI specifically invited contestants to crack its technology.[101] In response, Felten and his team found vulnerabilities within the SDMI code and wrote an academic paper regarding their approach and discovery, which they intended to present at a

[98] Ferguson declined to publish his work on HDCP content protection to avoid incurring liability under the DMCA, and instead wrote a piece titled "Censorship in Action: Why I Don't Publish My HDCP Results" and commented that he has "stopped doing research on the security of cryptographic systems that protect copyrights . . . [as] [t]here is no point in doing research if [he] can't publish." Barbara Simons, Statement of Barbara Simons, Co-Chair of The Ass'n For Computing Machinery, Before the Copyright Office of the Library of Congress Regarding The Need for Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, May 14, 2003, *available at* http://usacm.acm.org/usacm/Testimony/Simons_LOC_Copyright.htm.

[99] Professor Wagner and his team also did research into HDCP and were able to publish eventually after lengthy consultation with lawyers, but found it not to be a good experience, because they "wasted a lot of time on the legal aspects." *Id.*

[100] *Unintended Consequences*, *supra* note 6, at 4.

[101] Complaint for Declaratory Judgment and Injunctive Relief at 1, Felten v. RIAA (June 6, 2001) (No. CV-01-2660), *available at* http://w2.eff.org/IP/DMCA/Felten_v_RIAA/20010606_eff_felten_complaint.html.

technical conference.[102] However, SDMI, the Recording Industry Association of America (RIAA), and Verance (the maker of one of the technologies) threatened to sue Felten and his team for providing a circumvention tool in violation of the DMCA if they presented their research.[103] It was not until the Electronic Frontier Foundation filed a suit for declaratory judgment that the organizations withdrew their threats against publication of Felten's research.[104]

Though Felten was ultimately able to publish his research, he incurred the costs of being threatened and of having to pull his paper from the conference. More broadly, the fear of incurring liability for a § 1201 violation can suffice to chill the valuable work of innovators and researchers.[105] Both Niels Ferguson and David Wagner have explained the detrimental impact the DMCA has had on their work, as have others.[106] The chilling effect that the SDMI experience had on Felten himself came to light four years later, when he and graduate student J. Alex Halderman discovered the security flaws in a Sony digital rights management scheme for music discs.[107] Sony BMG had included a TPM scheme on some new music discs that secretly installed a rootkit—a specialized program, commonly used by black-hat hackers, that can be used to gain control of a computer system[108]—on users' computers. The rootkit could hide its existence from both a computer's user and the computer's operating system and could act as spyware, surreptitiously sending information about a user to Sony.[109] Trying to remove the rootkit

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[102] *Id.*

[103] Electronic Frontier Foundation: Frequently Asked Questions About Felten v. RIAA, http://w2.eff.org/IP/DMCA/Felten_v_RIAA/faq_felten.html (last visited Apr. 18, 2010).

[104] Robin D. Gross, *Digital Millennium Dark Ages: New Copyright Law Used to Threaten Scientific Research*, CALIFORNIA DAILY JOURNAL, Nov. 7, 2001, *available at* http://w2.eff.org/IP/DMCA/Felten_v_RIAA/20011107_eff_felten_article.html.

[105] *See supra* notes 98-104 (describing the experiences of Felten, Ferguson, and Wagner).

[106] *Id.*

[107] Anne Broache & Declan McCullagh, *Seeking Changes to the DMCA*, CNET NEWS, Mar. 31, 2006, http://news.cnet.com/Seeking-changes-to-the-DMCA/2100-7348_3-6056616.html.

[108] GREG HOGLUND AND JAMIE BUTLER, ROOTKITS: SUBVERTING THE WINDOWS KERNEL 4 (2005).

[109] *See* Deirdre K. Mulligan & Aaron K. Perzanowski, *The Magnificence of the Disaster: Reconstructing the Sony BMG Rootkit Incident*, 22 BERKELEY TECH. L.J. 1157, 1160-63 (2007).

would actually damage users' Windows installations.[110] Worst of all, leaving the rootkit installed could allow a computer to be "exploited by attackers to penetrate otherwise secure corporate, university, government, or military networks," to serve as part of a distributed network conducting denial of service attacks on third party machines, or even to hide criminal or terrorist communications from law enforcement.[111]

Despite the serious risks to consumers, companies and other organizations that were created by the security flaws in the Sony TPM, Felten's fear of § 1201 liability prevented him from coming forward with this critical information, even though his discovery occurred a full month before programmer Mark Russinovich independently published similar findings. As a result, millions of consumers were left at risk for much longer than they would have been if the Felten team had not feared liability.[112] In the interim, more than half a million networks comprising an unknowable number of computers were infected with the rootkit, which spread to 165 countries across the globe.[113] If Russinovich had not come forward, it seems clear that the effect on the public would have been far worse. In light of this example, the range of potential vulnerabilities that researchers may not feel comfortable disclosing as a result of § 1201's chilling effect is worrisome to ponder.

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[110] Bruce Schneier, *Real Story of the Rogue Rootkit*, WIRED, Nov. 17, 2005, http://www.wired.com/politics/security/commentary/securitymatters/2005/11/69601. *See also* Brian Krebs, *Study of Sony Anti-Piracy Software Triggers Uproar: File-hiding Technique Alarms Security Researchers; Developer Offers Patch*, WASHINGTON POST, Nov. 2, 2005, http://www.washingtonpost.com/wp-dyn/content/article/2005/11/02/AR2005110202362.html; John Borland, *Sony CD Protection Sparks Security Concerns*, CNET NEWS, Nov. 17, 2005, http://news.cnet.com/2100-7355_3-5926657.html.

[111] *See* Mulligan & Perzanowski, *supra* note 109, at 1172-73.

[112] Comment from Edward W. Felten & J. Alex Halderman to Office of the General Counsel, U.S. Copyright Office, Re: RM 2005-11: Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies 7, Dec. 1, 2005, http://www.copyright.gov/1201/2006/comments/mulligan_felten.pdf.

[113] Quinn Norton, *Sony Numbers Add Up to Trouble*, WIRED, Nov. 15, 2005, http://wired-vig.wired.com/politics/security/news/2005/11/69573?currentPage=1.

2. Limits on innovation and technological development

In addition to chilling important research, the anticircumvention provisions can also harm the technology innovators who apply that research to create new products and services. The *DVD Copy Control Ass'n* and *321 Studios* cases discussed above show how companies seeking to introduce an innovative product to the market face a roadblock in the form of § 1201.[114] Regardless of any applicability of the fair use doctrine to the beneficial uses consumers could make using the RealDVD software, the court found RealNetworks liable under the DMCA because its software was a circumvention tool.[115] Similarly, 321 Studios' DVD Copy Plus was an innovative product that was both beneficial to consumers and carefully crafted to encourage only lawful uses, but was blocked by § 1201.[116]

The cases related to media stored on DVDs, specifically, provide an especially useful—if sobering—example of how § 1201's limitations on both consumer uses and the development of tools can seriously impede disruptive innovation that benefits consumers and opens new markets. Fred von Lohmann argues that § 1201's limits on consumers' private copying of CSS-encrypted DVDs have seriously limited innovation around DVD players and other DRM-based technologies as compared to technologies based around non-encrypted media, such as traditional music CDs.[117] While we have witnessed an explosion in devices and services for selling and playing music, DVD players have not kept pace with recent improvements in digital video recorders, home-video editing software, and portable media players.[118] Wendy Seltzer explains that this lack of

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[114] *See* RealNetworks, Inc. v. DVD Copy Control Ass'n., Inc., 641 F.Supp.2d 913 (N.D. Cal. 2009)); 321 Studios v. MGM Studios, Inc., 307 F. Supp. 2d 1085 (N.D. Cal. 2004).

[115] *DVD Copy Control Ass'n,* 641 F. Supp. 2d at 944.

[116] 321 Studios, 307 F. Supp. 2d at 1095.

[117] von Lohmann, *supra* note 69, at 852 ("The Copyright Office, for its part, has opined that, absent a regulatory exception, private copying of encrypted DVDs violates the DMCA. As a result, far less disruptive innovation has been attracted to the DVD market than to the CD market.").

[118] Wendy Seltzer, *The Imperfect is the Enemy of the Good: Anticircumvention Versus Open Development* 6-7, 25 BERKELEY TECH. L. J. (forthcoming Spring 2010) ("The DVD has been one of the most successful consumer electronics products of all time, its numbers mounting rapidly after its 1997 launch, but the

innovation in DVD players results in large part because the anticircumvention provisions of the DMCA "support[] privately created systems of copyright protection through technological restriction"; therefore, the "terms on which the DVDCCA is willing to license players—including required limitations on outputs, restrictions on copying, and geographically-limited playback enforced by region coding—set a ceiling on all players' capabilities, while the requirement of authorization prevents independent, unpermissioned development."[119] Music player developers, on the other hand, have much more room to innovate, because music is widely distributed on CDs that are not locked down by encryption or by related DVDCCA-like licensing schemes.

Because § 1201 can limit innovation in this way, innovators face challenges in developing new technologies for consumer markets generally. Further, they can be stymied in their attempts to serve specialized markets in which there are particular needs for innovative solutions. For example, as media has crossed into the digital domain, accessibility has at times diminished for some groups who need specialized products and services. The blind, for example, need screen readers in order to access screen-based content, but compatibility issues often exist between screen readers and the files containing the works. Further, while this problem is easily remedied as a matter of technology development, the technology development itself comes into question under § 1201.[120] This example, specifically, was at issue in the case of *United States v. Elcom Ltd*.[121]

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movie-watching experience has barely changed since. . . . For the most part, we're offered only the same basic features that DVD players have had since their introduction a decade ago. No DVD jukebox, no multiple bookmarks, no easy direct navigation, no option to select scenes from a few movies to show in sequence/comparison."), *available at* http://wendy.seltzer.org/media/seltzer-anticircumvention.pdf. *See also 'DRM' Protects Downloads, But Does It Stifle Innovation?*, WALL ST. J., June 20, 2006, http://online.wsj.com/article/SB115047057428882434.html.

[119] Seltzer, *supra* note 118 (emphasis omitted).

[120] Examples typical of the frustrations experienced by a blind person attempting to access an e-book were provided by the American Foundation for the Blind (AFB) in its 2006 triennial rulemaking comment. *See Comments of the American Foundation for the Blind Before the Copyright Office*, *available at* http://www.afb.org/Section.asp?SectionID=3&TopicID=135&DocumentID=4609. In one instance, the incompatibility caused the screen reader to dictate an extended series of question marks when used to read a work by prolific e-book author Joann Klusmeyer. While problems like these are not difficult to resolve technologically, fixing them can be precluded by the technological protection measures used on the files. Because of this, the Copyright Office created an exemption to the circumvention of ebooks in these

Dmitry Sklyarov was a computer programmer, employed by ElcomSoft, who developed a software tool that could convert Adobe e-books into Portable Document Format files, commonly known as "PDFs."[122] The software distributed by ElcomSoft had many uses, among which was enabling the blind to hear eBooks, because PDFs are more readily read by the screen readers used by people with visual impairment than other formats.[123] Though this conversion software was plainly legal in Russia, where it was developed,[124] in the United States, criminal charges were brought against Sklyarov and his employer for violating the anticircumvention provisions. Despite the fact that ElcomSoft's software enabled substantial noninfringing uses, Sklyarov was criminally charged under § 1204 for trafficking in an anticircumvention tool under § 1201 (b)(1)(A) and faced up to twenty-five years in prison, along with a $2,250,000 fine. A jury eventually acquitted ElcomSoft of all counts of violating the DMCA. However, Sklyarov spent almost five months in jail before his release was negotiated in exchange for testimony against his employer. Despite the fact that ElcomSoft was finally acquitted, both it and Sklyarov paid a very high price, and future innovators are very likely to be chilled in light of their experience.

Section 1201's consequences for innovation are unfortunately not limited to development focused on DVD-based media or undertaken on behalf of specialized markets. *Davidson & Assocs. v. Jung* ("*Blizzard*"), presents another case of thwarted

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situations during the triennial rulemaking of 2003. However, this exemption lacks effectiveness because it does not alter the prohibition on anticircumvention tools found in § 1201(a)(2) and 1201(b).

[121] United States v. Elcom Ltd., 203 F. Supp. 2d 1111 (N.D. Cal. 2002).

[122] *Id.* at 1118; *see also* Electronic Frontier Foundation, *United States v. ElcomSoft & Sklyarov FAQ*, at http://www.eff.org/cases/us-v-elcomsoft-sklyarov/faq#AEBPR (last visited Apr. 18, 2010) ("ElcomSoft's Advanced eBook Processor (AEBPR) allegedly removes the technological protection from eBooks that are in Adobe's eBook format and converts them into Adobe's Portable Document Format, so that people can use eBooks in more expanded ways than currently available under the Adobe eBook format.").

[123] Press Release, Electronic Frontier Foundation, Dmitry Sklyarov and ElcomSoft Arraigned in San Jose, CA (Aug. 30, 2001), *available at* http://www.eff.org/press/archives/2008/04/21-6.

[124] *US v. ElcomSoft & Sklyarov FAQ*, *supra* note 122 ("Can the US even have jurisdiction over Dmitry and/or ElcomSoft for developing software in Russia that is perfectly legal to distribute in Russia?").

innovation.[125] There, the video game powerhouse Blizzard Entertainment (makers of, among other games, Diablo II and the Warcraft series),[126] sued three software programmers who had created an open source program (known as "BnetD") that functioned as an alternative multiplayer platform, allowing purchasers of Blizzard's video games to play online without using Blizzard's Battle.net multiplayer service.[127] The programmers were originally motivated by the fact that some users of Battle.net were frustrated by profanity and client hacks that made the Battle.net gaming environment unfriendly.[128] In addition to providing an innovative piece of open source software that provided alternative matchmaking services for users of multiplayer Blizzard games seeking to avoid the various difficulties and hassles of Battle.net, the programmers' open source project also encouraged further innovation through online discussion forums and access to the BnetD source code.[129]

In order to create this alternative platform, the programmers needed to reverse engineer Blizzard's software because the BnetD platform's successful operation ultimately depended on it speaking the same protocol language as Battle.net.[130] However, although reverse engineering to create interoperable products is an established fair use under copyright law,[131] the protocol language used in the project included a

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[125] Davidson & Assocs. v. Jung ("*Blizzard"*), 422 F.3d 630, (8th Cir. 2005).

[126] *Id.* at 633.

[127] *Id.*

[128] *See id.* at 635 n.6.

[129] *See id.* at 635-36. The development of additional Battle.net emulators based on the BnetD source code, which was freely available, is one example of how BnetD encouraged innovation. *See id.* at 637.

[130] As the district court noted, "[i]t would not have been possible to create a workable BnetD server without reverse engineering Blizzard's software and protocols." Davidson & Assocs., Inc. v. Internet Gateway, Inc., 334 F. Supp. 2d 1164, 1172 (E.D. Mo. 2004). The Eighth Circuit also recognized that it was necessary to reverse engineer Blizzard's code in order to create the BnetD platform. *Blizzard*, 422 F.3d at 641 ("[The programmers] could not have obtained a copy of Battle.net or made use of the literal elements of Battle.net mode without acts of reverse engineering.").

[131] *See, e.g.*, *Internet Gateway*, 334 F. Supp. 2d at 1180 ("Reverse engineering as a fair use is firmly established."); Bowers v. Baystate Techs., Inc., 320 F.3d 1317, 1325 (Fed. Cir. 2003) (reverse engineering is a fair use under 17 U.S.C. § 107)); Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 602 (9th Cir. 2000) (holding that reverse engineering was fair use for the purpose of gaining access to the unprotected elements of software); Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992)

"secret handshake" required to access the Battle.net mode. The court held that this handshake "effectively controlled access to Battle.net mode within [Blizzard] games," and that use of the handshake by the BnetD platform was an "infringing circumvention" of § 1201(a)(1); as such, it shut down the alternative BnetD platform.[132]

Comparing the *Blizzard* decision with the pre-DMCA cases *Sega v. Accolade* and *Sony v. Connectix* further demonstrates § 1201's negative impact on innovation through reverse engineering. In *Sega v. Accolade*, Accolade reverse engineered Sega's videogames to determine the protocol necessary to create game cartridges that could interoperate with the Genesis game system.[133] Despite the fact that Accolade engaged in "wholesale copying" of Sega's object code in its reverse-engineering process,[134] the Ninth Circuit held that, where reverse engineering is the "only means of gaining access to . . . unprotected aspects of the program,"[135] such copying is a fair use. Similarly, in *Sony v. Connectix*, Connectix reverse engineered Sony's Playstation BIOS in order to create an emulation program, the "Virtual Game Station," that could run Playstation games on a regular computer.[136] The Virtual Game Station thus allowed computer owners to play Sony Playstation games on their computers instead of on Sony Playstation console

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("[D]isassembly of copyrighted object code is, as a matter of law, a fair use of the copyrighted work if such disassembly provides the only means of access to those elements of the code that are not protected by copyright and the copier has a legitimate reason for seeking such access.")

[132] *See Blizzard*, 422 F.3d at 640, 642. In this case, § 1201 combined with an overarching End User License Agreement ("EULA") to prevent innovation. The *Blizzard* court decided that the ability of BnetD to perform legitimate reverse engineering was trumped by a term within the license agreement. Ironically, in taking care to lawfully purchase Blizzard games and access to Battle.net, the programmers implicitly agreed to the terms of the games' EULA and agreed to Blizzard's online terms of use. *See* 422 F.3d at 635. This left them unable to defend against Blizzard's claims that they had violated the end user license agreement and terms of use, through which they had "expressly relinquished their rights to reverse engineer." *See id.* at 639. By combining TPMs with contractual limitations in this way, copyright holders can even further limit innovation and competition around copyrighted works.

[133] Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1514-15 (9th Cir. 1992). Note that though Accolade could have entered into a licensing agreement with Sega to avoid this, it declined to do so due to Sega's anticompetitive requirement that it be the exclusive manufacturer for all Accolade games. *Id.* at 1514.

[134] *Id.* at 1527.

[135] *Id.* at 1520.

[136] Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 599 (9th Cir. 2000).

systems.[137] As in *Accolade*, the Ninth Circuit found that Connectix's reverse-engineering process, though it required making various intermediate copies, was necessary to gain access to unprotected functional elements in the program, and was a lawful fair use.[138]

Although the courts in *Accolade* and *Connectix* both agreed that reverse engineering is an established fair use under copyright law,[139] and in each case the defendants reverse engineered for the purpose of creating a competing alternative to a videogame experience controlled by the plaintiffs, there is a sharp contrast between these cases, decided before the anticircumvention provisions took effect, and *Blizzard*, which was decided after they took effect. Overall, Section 1201's chilling effect on scientific research and technological innovation, and the fact that its use has at times suppressed information valuable to the public interest, are sobering aspects of its legacy that invite reform.[140]

D. Section 1201 can be used for anticompetitive practices

In addition to harming innovators, creators, consumers, and other users, § 1201(a) has also been used by copyright owners in attempts to limit competition. Where a key communications protocol, authentication method, or other technological barrier controls the interoperability between separate elements of a company's product, the company may claim that the barrier is a technological protection measure guarding the underlying product, such as software, in which the company may own a copyright. The company can then invoke § 1201(a)(1) against competitors seeking to develop technology related to the rights-owner's product, because reverse engineering often requires competitors to

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[137] *Connectix*, 203 F.3d at 599.

[138] *See id.* at 603, 608.

[139] Davidson & Assocs. v. Internet Gateway, 334 F. Supp. 2d 1164, 1180 (E.D. Mo. 2004) ("Reverse engineering as a fair use is firmly established."); *Connectix*, 203 F.3d at 608 ("[W]e conclude that Connectix's intermediate copying of the Sony BIOS during the course of its reverse engineering of that product was a fair use."); *Accolade*, 977 F.2d at 1527-28 (concluding that the reverse engineering performed by Accolade constituted fair use).

[140] Though there are specific exemptions for reverse engineering and encryption research, *see* 17 U.S.C. § 1201(f), (g) (2006), they have thus far been inadequate protections for innovation and research; this is discussed further below, in Section (b) of Part IV.

engineer a way to work with, bypass, or otherwise circumvent the technological barriers.[141] Further, competing often requires distributing tools to consumers that allow them to use a competing device or to reprogram a manufacturer's product—giving rise to a separate claim for tool distribution. This risk to competitors can be especially acute for aftermarket products that must interoperate with existing products, as shown by cases (discussed further below) involving aftermarket garage door opener remotes and refill printer cartridges. Such anticompetitive use of the anticircumvention provisions contrasts with traditional copyright law, which allows others to engage in free competition by limiting the degree of control copyright owners may exert over a work.

The *Blizzard* case described above, for example, contained anticompetitive elements.[142] There, the programmers hoped to address user frustration with the Blizzard's Battle.net service by providing a better gaming environment.[143] Though they did not try to monetize their alternative multiplayer platform, it essentially competed with Blizzard's less satisfactory offering.[144] Blizzard was able to use a combination of the anticircumvention provisions of § 1201 and overbroad EULA and TOS provisions to stop the innovative creators of BnetD from distributing their competing—and, to some users, preferable—platform software.[145] As before, comparing this case to *Sega* and *Connectix*, which were decided prior to the DMCA's passage, is instructive. In *Sega*, the court explicitly indicated that Accolade had a legitimate competitive interest in determining

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[141] Section 1201(f) provides a limited exemption for reverse engineering, but it is both limited in scope, allowing "a person who has lawfully obtained the right to use a copy of a computer program [to] circumvent a technological measure that effectively controls access to a particular portion of that program for the *sole purpose* of identifying and analyzing those elements of the program that are necessary to achieve interoperability," 17 U.S.C. § 1201(f) (2006) (emphasis added), and rarely applied to protect reverse engineers by courts. *See, e.g.*, Davidson & Assocs. v. Jung, 422 F.3d 630, 641-42 (8th Cir. 2005) (finding that defendants could not rely on the reverse-engineering exception because the alleged circumvention constituted infringement); Universal City Studios v. Reimerdes, 111 F. Supp. 2d 294, 320 (S.D.N.Y. 2000) (holding that defendants were unable to meet the "sole purpose" of interoperability requirement to use the reverse-engineering exception).

[142] *Blizzard*, 422 F.3d at 635.

[143] *See id.* at 635 n.6.

[144] *See id.* at 635 ("The BnetD project is a volunteer effort and the project has always offered the BnetD program for free to anyone.").

[145] *See id.* at 639.

how to make its cartridges compatible with the Sega Genesis console.[146] Likewise, the *Connectix* court recognized with approval that Connectix's software was competing with Sony's game consoles.[147] The Battle.net protocol is analogous to the various unprotected functional elements involved in Sony's Playstation BIOS and Sega's game cartridge code, and the programmers in all three cases were seeking competitive interoperability with an existing system. However, the ruling in *BnetD* shows that § 1201 has provided rights-holders with an effective mechanism to block competition where TPMs are involved, even in cases of reverse engineering for competitive purposes.[148]

Chamberlain Group v. Skylink is another case involving a rights-holder attempting to limit competition by claiming a § 1201 violation.[149] Skylink was a seller of universal garage door opener ("GDO") transmitters that could be programmed to interoperate with Chamberlain's garage door openers—if a consumer needed an additional or replacement transmitter, she could purchase either Chamberlain's replacement device or Skylink's competing device.[150] As such, Skylink was competing with Chamberlain in the aftermarket for replacement transmitters. Once programmed by the consumer to work with her garage door opener, the Skylink transmitter worked by transmitting a set of opening codes that used some built-in exceptions to Chamberlain GDO authentication sequences, causing them to operate in response to the Skylink signal and open the consumer's garage door.[151] Characterizing this as a circumvention of an access control, Chamberlain argued that that § 1201(a)(1) allowed it to prevent

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[146] Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1523-24 (9th Cir. 1992) (stating that "Accolade . . . sought only to become a legitimate competitor in the field of Genesis-compatible video games" in addressing the effect on Sega's Genesis games market).

[147] *See* Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 607 ("[T]he Virtual Game Station is a legitimate competitor in the market for platforms on which Sony and Sony-licensed games can be played.").

[148] As noted, above, however, Blizzard also succeeded on their claims of end user license agreement and terms of use violations, so this case was not decided only on the DMCA claims.

[149] Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178 (Fed. Cir. 2004).

[150] *See id.* at 1183.

[151] *See id.* at 1184-85.

consumers from "using embedded software products in conjunction with competing products,"[152] and that Skylink, therefore, could not market its replacement transmitters, which were circumvention tools under § 1201(a)(2).[153] Though Skylink ultimately prevailed at the district court and then in the Court of Appeals for the Federal Circuit, this took "many months of expensive litigation,"[154] and the court recognized that Chamberlain was "attempt[ing] to leverage its sales into aftermarket monopolies—a practice that both the antitrust laws . . . and the doctrine of copyright misuse . . . normally prohibit."[155]

Like the *Skylink* case, *Lexmark v. Static Control* also involved a manufacturer asserting § 1201 infringement against an aftermarket competitor.[156] Lexmark, a printer manufacturer, had developed a system in which its printers used a microchip-based authentication system to operate exclusively with Lexmark toner cartridges.[157] This system was intended to prevent consumers from buying competing replacement cartridges made by companies other than Lexmark. Static Control sought to support the competitive market for toner cartridges by selling 'SMARTEK' microchips that mimicked the Lexmark chips, enabling non-Lexmark toner cartridges to interoperate with Lexmark printers.[158] Lexmark brought a § 1201 claim against Static Control for its microchips, arguing that they circumvented Lexmark's printer authentication sequences, which effectively controlled access to its copyrighted printer software programs.[159]

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[152] *See id.* at 1185, 1193.

[153] *See id.* at 1183.

[154] *Unintended Consequences*, *supra* note 6, at 15. Chamberlain also pursued Skylink in the International Trade Commission, seeking to prevent it from importing its transmitters into the United States, adding to Skylink's costs. *See* Order, In the Matter of Certain Universal Transmitters for Garage Door Openers, USITC Inv. No. 337-TA-497, 2004 WL 1571639 (U.S.I.T.C. July 7, 2004).

[155] *Skylink*, 381 F.3d at 1201 (internal citations omitted).

[156] Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522 (6th Cir. 2004).

[157] *Id.* at 529.

[158] *Id*.

[159] *Id.* at 546. The two programs involved were Lexmark's "Toner Loading Program," a piece of software that measured the amount of remaining toner, and its "Printer Engine Program," software controlling the

The district court issued a preliminary injunction against Static Control, preventing it from "making, selling, distributing, offering for sale or otherwise trafficking in the 'SMARTEK' microchips for the Lexmark [toner cartridges in contention]."[160] As in the *Skylink* case, the competitor, Static Control, eventually succeeded in overturning the preliminary injunction,[161] but only after 19 months of litigation, which "sent a chilling message to those in the secondary market for Lexmark cartridges."[162]

The cases discussed above show some of the ways in which § 1201 has been used by companies in an attempt to diminish competition. Though some competitors were ultimately vindicated, these competitors did not escape from the harms of protracted litigation, restricting their ability to compete in the market.[163] Further, as we discuss in Section (d) of Part IV below, the courts' approaches in different jurisdictions are sufficiently different that competitors are left with uncertainty that can chill valuable, innovative products and services.

E. Sections 1201(a)(2) and 1201(b)(1) impede the public's ability to make noninfringing uses by prohibiting needed tools

Because of their profound negative effect on lawful uses, a separate discussion of the harms caused by § 1201's "tools" provisions is in order. Sections 1201(a)(2) and (b)(1) prohibit "manufactur[ing], import[ing], offer[ing] to the public, provid[ing], or

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printer itself; the two programs were stored in unencrypted form on toner cartridges and printers, respectively. *See id.* at 529-30.

[160] Lexmark Int'l, Inc. v. Static Control Components, Inc., 253 F. Supp. 2d 943, 974 (E.D. Ky. 2003).

[161] *Lexmark*, 387 F.3d at 551. In a concurring opinion, Judge Merritt found Lexmark's argument anticompetitive, stating that it would allow manufacturers to "create monopolies for replacement parts simply by using similar, but more creative lock-out-codes," and that "Congress did not intend to allow the DMCA to be used offensively in this manner." *Id.* at 552 (Merritt, J., concurring).

[162] *Unintended Consequences*, *supra* note 6, at 15.

[163] Even ignoring resources expended on litigation which could otherwise have gone into research and development or marketing and sales, Lexmark's district court win caused Static Control to suffer market harm by preventing it from selling its products at all. *Lexmark*, 387 F.3d at 529 (stating that the district court entered a preliminary injunction against Static Control).

otherwise traffic[king] in" tools for circumvention.[164] They differ in that (a)(2) addresses tools targeting access controls, and (b)(1) refers to tools to circumvent copy controls, but they each restrict the distribution of tools that would allow those who are not technical experts to circumvent. Because of these provisions, even where a use is formally exempted from § 1201(a)(1) liability through the triennial rulemaking procedure, or where a use is lawful under copyright law, § 1201 can in practical terms still prevent the general public from engaging in those uses by prohibiting the tools needed to accomplish them. Moreover, even where an exemption is granted through the triennial rulemaking procedure, the Librarian of Congress has no power to lift the prohibition on tools.

The reason that this problem occurs is that technological protection measures controlling access to or protecting a copyright owner's right in a work remain present despite the legality of a person's attempted use. Unless a user is technologically expert and can circumvent the technological protection without third party assistance, the user would need a tool in order to circumvent and complete the use.[165] Thus, in many instances, users wishing to make lawful or exempted uses would be unable to successfully circumvent the technological measures. As Professor Jacqueline Lipton notes, "the loss of circumvention technology because of aggressive DMCA enforcement creates an effective ban on the activities of fair users"[166]—because fair users may not be able to access works in the first place.

To put this serious limitation into context, consider the examples of harm discussed earlier. Some describe direct prohibitions on tools, even where underlying uses

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[164] The provisions describe tools as any technology, product, service, device, component, or part thereof. 17 U.S.C. § 1201(a)(2), (b)(1) (2006). They continue to specify that the prohibition applies to tools that are primarily designed or produced to circumvent effective technological protection measures, that have limited commercially significant purpose or use other than the circumvention, or that are marketed for use in circumvention. *Id.*

[165] *See* Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1, 80-81 (2001) (stating that "[a]ll but the most technologically sophisticated users need to acquire [the prohibited] devices to circumvent").

[166] Jacqueline D. Lipton, *Solving the Digital Piracy Puzzle: Disaggregating Fair Use from the DMCA's Anti-Device Provisions*, 19 HARV. J.L. & TECH. 111, 116 (2005).

are likely to be lawful—for example, the courts' prohibition of the RealDVD and DVD Copy Plus back-up tools, and the cost to Dmitry Sklyarov and his employer, ElcomSoft, for developing their PDF converter. Other examples describe limits on access to works that, even if lifted, would still leave users practically unable to gain access because of the anti-tool provisions. For example, if documentary filmmakers gain an exemption allowing them to circumvent the CSS encryption on a DVD via the triennial rulemaking, they may still be unable to make use of it without the assistance of a CSS decryption tool. The same goes for teachers creating film clip compilations for educational purposes, and for ordinary consumers creating backup copies of a DVD. Because the great majority of those who might make lawful uses of works are not technical experts, tools are needed in order to adequately enable the public to make lawful uses of works. However, § 1201 expressly forbids the manufacturing and trafficking of tools that are primarily designed or produced for the purpose of circumventing a technological measure, leaving users without a meaningful remedy.

Prior to the DMCA, traditional copyright law dealt with TPM circumventions in a more balanced manner. For example, in *Vault v. Quaid*, Vault produced a product named PROLOK, copy protection software that it marketed to software manufacturers. Quaid created a program called RAMKEY, which enabled users to run software protected by PROLOK without the presence of the original disk. Among other claims, Vault sued for contributory infringement, since the RAMKEY program could enable copying of software that PROLOK protected. However, the court applied the Supreme Court's *Sony* standard and held that RAMKEY had the substantial noninfringing use of enabling users to make backup copies of their software.[167] Vault and its software development customers remained free to seek action against those who used RAMKEY to copy software. However, the court refused to hold the distributor of a tool capable of significant noninfringing uses liable for infringements committed by individual bad actors because the RAMKEY tool also facilitated this lawful use for consumers.

[167] Vault Corp. v. Quaid Software, Ltd., 847 F.2d 255, 262 (5th Cir. 1988).

If this case were to appear before a court today, however, it would be easy for Vault to claim that the RAMKEY program violated § 1201(a)(2), which prohibits the manufacture and distribution of circumvention tools. Even though the *Vault* court's analysis regarding contributory infringement would remain valid, the broad anti-tool prohibitions of § 1201 could result in DMCA liability for Quaid. A court applying § 1201(a)(2) to the facts of the case could conclude without difficulty that RAMKEY is a technology or product that is primarily produced for the purpose of circumventing a technological measure. Assuming the court followed other cases considering circumvention tools,[168] liability could be found regardless of any substantial noninfringing uses RAMKEY may serve. For example, 321 Studios argued that its DVD Copy Plus backup software had substantial noninfringing uses, yet the court found liability under both § 1201(a)(2) and § 1201(b)(1) because it was primarily designed and produced to circumvent the CSS encryption technology on DVDs and because it was marketed to the public as facilitating circumvention—even though it was not designed to facilitate *infringement*, and even though it was capable of substantial noninfringing uses. Rather, liability attached regardless of whether the underlying uses made by the tool were likely to be noninfringing.[169]

As such, the § 1201 ban on circumvention tools causes significant harm to those who wish to make lawful uses of works protected by TPMs, and operates to undermine the balance pre-DMCA courts struck in deciding when companies should be prevented from distributing goods or services that might be used by some for infringement. Professor Pamela Samuelson summarizes the practical incongruities created by § 1201(a)(2) and (b), noting that "the deepest puzzle of section 1201 is whether Congress implicitly intended to allow the development and/or distribution of technologies necessary to accomplish legitimate circumvention activities, or whether, in essence, it

[168] *See, e.g.*, RealNetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913 (N.D. Cal. 2009); 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1097 (N.D. Cal. 2004); United States v. Elcom Ltd., 203 F. Supp. 2d 1111 (N.D. Cal. 2002); RealNetworks, Inc. v. Streambox, Inc., No. 2:99CV02070, 2000 WL 127311 (W.D. Wash. Jan. 18, 2000).

[169] *See 321 Studios*, 307 F. Supp. 2d at 1099.

created a number of meaningless privileges" in including the statutory exemptions.[170] Section 1201 needs reform that corrects the anti-tool provisions' tendency to convert § 1201's exemptions into "meaningless privileges" and that realigns them with copyright's secondary liability principles.

IV. The Anticircumvention Provisions Must Be Reformed

In order to address the harms caused by the anticircumvention provisions, § 1201 requires reform. By creating additional liability for circumvention-related activities that is much more expansive than liability under traditional copyright law, the anticircumvention provisions have departed from the more balanced traditional copyright framework, causing the severe unintended consequences described above. The safety valves written into § 1201 by Congress—both the specific exemptions defined in § 1201(d)-(j), and the triennial rulemaking procedure—were well-meant, but are too narrow. The triennial rulemaking procedure's effectiveness further suffers from a cumbersome application process, the need for frequent renewal even when an exemption is granted, the narrow application of each exemption to a tightly-defined class of works, and the fact that it does not apply to the tools most users need in order to actually take advantage of an exemption. Additionally, courts have been limited in their ability to address the harms caused by § 1201. While some caselaw has attempted to make this tie to the traditional copyright balance explicit,[171] cases that present different facts or that are filed in different jurisdictions may not yield similar results, creating harmful uncertainty for creators, consumers, innovators and researchers.[172] For all of these reasons, legislative reform is needed.

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[170] Samuelson, *supra* note 13, at 547.

[171] *See* Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1203-04 (Fed. Cir. 2004) (describing the requirement for a relationship to exist between an access to a work and some infringement of a right actually protected by the Copyright Act in order to find a violation of § 1201).

[172] *Cf.* Universal City Studios, Inc. v. Corley, 273 F.3d 429, 443 (2d. Cir. 2001) ("[Appellants] contend that subsection 1201(c)(1), which provides that nothing in this section shall affect rights, remedies, limitations or defenses to copyright infringement, including fair use, under this title, can be read to allow the circumvention of encryption technology protecting copyrighted material when the material will be put to 'fair uses' exempt from copyright liability. We disagree that subsection 1201(c)(1) permits such a reading."); RealNetworks, Inc. v. DVD Copy Control Ass'n., Inc., 641 F. Supp. 2d 913, 942 ("Fair use is prohibited in the access-control provision of section (a) . . . ."); Memorandum & Order at 39,

A. Section 1201 departs from the balance within traditional copyright law.

From the time § 1201 was first proposed and passed, numerous commentators worried that its expansion of copyright owner control was too great for its intended purpose and predicted unintended consequences such those described above. For example, Professor Pamela Samuelson, shortly after passage of the DMCA, commented that its anticircumvention provisions are "unpredictable, overbroad, inconsistent, and complex . . . [and] are likely to be harmful to innovation and competition in the digital economy sector, and harmful to the public's broader interests in being able to make fair and other noninfringing uses of copyrighted works."[173] Legislators also voiced concern; for example, Congressman Bliley stated in the legislative record that the implicit access right resulting from § 1201 "could well prove to be the legal foundation for a society in which information becomes available only on a 'pay-per-use' basis."[174]

A significant number of these concerns stemmed from the anticircumvention provisions' mismatch with traditional copyright law. Since the Copyright Act of 1790, careful consideration has been dedicated to balancing the interests of rights-holders and the public. Limitations to copyright law such as fair use, the first sale doctrine, the merger doctrine, and the useful article doctrine act as important safety valves that ensure balance between protection for rights-owners and public access to works.

RealNetworks, Inc. v. DVD Copy Control Assoc., Inc., C 08-04548 MHP, (N.D. Cal. 2009) ("while it may well be fair use for an individual consumer to store a backup copy of a personally-owned DVD on that individual's computer, a federal law has nonetheless made it illegal to manufacture or traffic in a device or tool that permits a consumer to make such copies.").

[173] Samuelson, *supra* note 13, at 562-63. Professor Samuelson has gone on to describe that TPMs "can as easily prevent the copying and distribution of public-domain works as copyrighted works… control private performances and displays of digital content… can thwart the exercise of fair use rights and other copyright privileges… [and] be used to compel users to view content they would prefer to avoid (such as commercials and FBI warning notices), thus exceeding copyright's bounds." Pamela Samuelson, *DRM {and, or, vs.} the law*, COMMUNICATIONS OF THE ACM, Apr. 2003, Vol. 46 No. 4 at 42.

[174] 144 Cong. Rec. H7094 (Aug. 4, 1998) (statement of Rep. Bliley).

The anticircumvention provisions, however, depart from this model in important ways: by creating general prohibitions on circumvention and circumvention tools, while relying largely on insufficient, specific exceptions as limitations, they move the law from the flexible, traditional copyright regime to an inflexible, overly limited regime that causes the harms outlined above in Part III. Commentators have frequently criticized this shift. Professor Dan Burk comments that while the anticircumvention measures of the DMCA are "frequently mentioned in connection with copyright, these prohibitions on circumvention of technical protections are entirely separate from the exclusive rights under copyright."[175] In fact, some commentators have dubbed the anticircumvention right a "paracopyright" because the protections of this regime are separate from, and extend beyond, those permitted under copyright.[176] Professor Burk further notes that "the anticircumvention provisions of the DMCA extend protection far beyond any exclusive right granted in the protected work. Indeed, they likely extend protection beyond any right that could lawfully be granted by Congress under the Copyright Clause of the U.S. Constitution, causing some commentators to question the constitutionality of the statute."[177]

The overall effect of § 1201's mismatch with traditional copyright law has been to upset copyright's careful balance when digital works are at issue. In the words of Professor Christina Bohannon, "rather than merely providing additional penalties for piracy of digitized works (penalties that would piggyback on the protection afforded by traditional copyright law), the DMCA penalizes uses that have never been prohibited—that have in fact been encouraged—by traditional copyright law. As such, the DMCA fails to achieve the balance that copyright law historically has sought to achieve, and it is private-interest legislation."[178]

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[175] Burk, *supra* note 13, at 1107.

[176] *See* H.R. REP. NO. 105-551, at 24 (1998) (quoting a letter endorsed by sixty-two copyright professors characterizing the DMCA anticircumvention provisions as "paracopyright").

[177] Burk, *supra* note 13, at 1107.

[178] Christina Bohannan, *Reclaiming Copyright*, 23 CARDOZO ARTS & ENT. L.J. 567, 591 (2006).

As we described in Part III above, § 1201's divergence from copyright law has indeed caused some of the negative consequences predicted by commentators. In the pre-DMCA world, artists could rely on fair use when repurposing works; consumers could time-shift media, make back-up copies and rely on their right to import foreign works for personal use; and researchers and innovators could reverse engineer and distribute disruptive ideas or technologies without fear of liability. In the post-DMCA world, however, artists cannot access TPM-locked source material without using illegal tools and fearing circumvention liability; consumers are denied tools to make a wide range of fair uses; researchers fear liability for publishing important security work; and innovators are sued for developing useful consumer tools and competing with established players.[179]

At the same time, § 1201 has not delivered its hoped-for benefits. Despite the enactment of the DMCA, the copyright industries still consider unauthorized large-scale copying of works to be a major concern.[180] The bad actors responsible for this infringing activity still engage in circumvention of TPMs, and will continue to break security measures in the face of legal ramifications.[181] There has also been criticism[182] of the copyright industries' hope that § 1201 helps to "keep honest people honest," especially because the measures taken by the industry have harmed people engaging in legitimate

[179] *See, e.g.*, Davidson & Assocs. v. Jung, 422 F.3d 630 (8th Cir. 2005) (addressing the BnetD open source alternative to Blizzard's Battle.net service); Sony Computer Entm't, Inc. v. Connectix, Corp., 203 F.3d 596 (9th Cir. 2000) (addressing Connectix's software emulation program to allow users to play Sony Playstation games on their personal computers).

[180] *See supra* note 10.

[181] *See id.*; Content Protection in the Digital Age: the Broadcast Flag, High-Definition Radio, and the Analog Hole: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Property of the H. Comm. on the Judiciary 54, 109th Cong. (2005) (statement of Dan Glickman, Chairman and CEO, Motion Picture Ass'n of America) ("We understand that committed pirates will break any security measures we can devise and these pirates will have to be dealt with by way of criminal and civil legal remedies.").

[182] *See* Freedom to Tinker, http://www.freedom-to-tinker.com/blog/felten/keeping-honest-people-honest (March 6, 2003, 6:50 am) ("The first problem with 'keeping honest people honest' is that it's an oxymoron. . . . Nothing needs to be done to *keep* honest people honest, just as nothing needs to be done to keep tall people tall. . . . To the extent that 'keeping honest people honest' involves any analytical thinking, it reflects a choice to build a weak but conspicuous security mechanism, so that people know when they are acting outside the system designer's desires. . . . [I]t's cheap and easy to build a 'keep out' sign. If that's all you want—if all you want is to help honest people keep track of their obligations—then simple, noncoercive technology works fine.").

activities.[183] Further exacerbating these harms, the public has yet to experience the full benefits of § 1201's intended incentives for copyright holders to release media in digital formats. While works are available in some forms of media, consumer choice has remained limited. Professor Jessica Litman, in criticizing the anticircumvention provisions, notes that "[i]nstead of making copyright owners more willing to release their works online in digital formats, they have become even more reluctant to allow consumers access to digital copies unless they can control what consumers do with those copies."[184]

Overall, § 1201 goes too far in protecting copyright owners who choose to use TPMs at the expense of the public, upsetting traditional copyright law's careful balance. And while Congress did build in exemptions to liability in an attempt to avoid some of the harms enumerated above, those exemptions have proved to be inadequate safeguards.

B. Section 1201's narrow exemptions from liability are insufficient safeguards

Congress did include a set of specific exemptions to anticircumvention liability, codified at § 1201(d)-(j), intended to prevent some of the predicted harms.[185] Though well-intentioned, these specific exemptions have proven too narrow and limited to safeguard against the statute's negative ramifications. First, the exemptions are very limited in scope, each covering only narrowly defined classes of works or uses. Second,

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[183] *See, e.g.,* Ali Matin, *Digital Rights Management (DRM) In Online Music Stores: DRM-Encumbered Music Downloads' Inevitable Demise as a Result of the Negative Effects of Heavy-Handed Copyright Law*, 28 LOY. L.A. ENT. L. REV. 265, 290 (2007-2008) ("Some executives in the entertainment industry have acknowledged that DRM protections do not prevent piracy, but such protections are necessary to 'keep honest people honest' by reminding them not to pirate content. . . . DRM-laden songs only serve to punish the honest by restricting their legitimately purchased music. If the music industry wishes to promote honesty, it should punish pirates, not legitimate music purchasers.").

[184] Jessica Litman, *Jessica Litman on the DMCA's harm to consumers*, TELEREAD, at http://www.teleread.org/2004/02/25/jessica-litman-on-the-dmcas-harm-to-consumers/.

[185] *See, e.g.*, H.R. REP. NO. 105-551, pt. 2, 27, 42-46 (1998) (describing the creation of an exemption "recognizing the importance of the field of encryption research to electronic commerce" and an exemption to "promote reverse engineering by permitting the circumvention of access control technologies for the sole purpose of achieving software interoperability," among other exemptions).

the exemptions are limited in number and address only a very small number of potential lawful uses. As such, they fall far short of preventing the harms identified above.

At times, the exemptions are extremely limited. For example, the § 1201(d) exemption for libraries and educational institutions allows circumvention of a TPM for the sole purpose of determining whether to acquire a copy of that work.[186] Such an exemption grants the equivalent of a "test-drive" before buying, and apparently no more. Given the many valuable lawful uses—including fair uses and specifically exempted uses under § 108, § 110, and the like—engaged in by libraries and educational institutions, this exemption is woefully inadequate. Moreover, it is limited to § 1201(a)(1) and does not reflect the fact that a library or educational institution would likely require a circumvention tool in order to make such a use,[187] making the exemption useless for any library or educational facility without an expert cryptographer on its staff.

The ineffectiveness of the § 1201(g) exception for encryption research and tools has been repeatedly demonstrated by the struggles of researchers such as Professor Felten. As a threshold matter, § 1201(g) is limited to those "engaged in a legitimate course of study, []employed, or . . . appropriately trained or experienced, in the field of encryption technology," submitting researchers to an uncertain standard that could leave out the many informally trained "white hat" hackers who make valuable contributions to the field. Further, it requires researchers to attempt to obtain authorization from the copyright holder prior to circumventing; it also puts limits on the dissemination of research. Each of these is a trap for the unwary and creates uncertainty for researchers, who may be unable to tell if they will be protected. For example, rather than allowing such encryption research to be freely shared, the exception is rescinded if the research is

[186] 17 U.S.C. § 1201 (d)(1) (2006). This statute provision also requires that the copy "not be retained longer than necessary to make such good faith determination" and "not be used for any other purpose." 17 U.S.C. § 1201(d)(1)(A), (B) (2006).

[187] The provision statute only refers to "[a] nonprofit library, archive[], or educational institution which gains access" without indicating how such an entity is to gain access in the first place. 17 U.S.C. § 1201 (d)(1) (2006). Indeed, the provision also indicates specifically that this exemption does not extend to circumvention devices or tools. 17 U.S.C. § 1201(d)(4) (2006).

communicated in a manner that "facilitates infringement."[188] Since any dissemination of information that would advance the state of knowledge could potentially facilitate infringement, researchers can find this exemption difficult to rely on.[189] Unsurprisingly, as described above, some researchers have declined to publish the results of their encryption, security, and DRM research for fear of incurring liability under the DMCA. Some foreign researchers have even received advice to avoid the United States or to relocate academic conferences because of the perceived DMCA threat.[190]

Congress also sought to protect reverse engineering, in § 1201(f). Unfortunately, as with the encryption research exemption, the reverse-engineering exception is overly narrow, and has failed to adequately counter harms to innovation and free competition. First, while the rulings in *Sega* and *Connectix* offered broad protection to many types of reverse engineering under the fair use doctrine, § 1201(f) only permits reverse engineering to enable interoperability between two computer programs. This has been interpreted to mean[191] that interoperability of the type created in the *Sega* and *Connectix* cases—between a platform and content—is not covered by the exemption.[192] Second, § 1201(f) requires that the "sole purpose" of protected reverse engineering must be "identifying and analyzing those elements of the program that are necessary to achieve interoperability of an independently created computer program." This can set a very high bar for reverse engineers, as any other possible purpose can create uncertainty. For example, in *Universal City Studios, Inc. v. Reimerdes*, the defendant had difficulties

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[188] 17 U.S.C. § 1201(g)(3)(A) (2006) (describing the need to consider whether information was "disseminated in a manner reasonably calculated to advance the state of knowledge or development of encryption technology, versus whether it was disseminated in a manner that facilitates infringement").

[189] *See supra* Section (b) of Part IV; *Unintended Consequences*, *supra* note 6, at 6.

[190] *See, e.g.*, *Unintended Consequences*, *supra* note 6, at 6.

[191] *See* Perzanowski, *supra* note 13, at 1590 ("disparity in the treatment of these two classes of interoperable technologies . . . relies on a distinction between program interoperability and data interoperability. Both distinctions are the product of factual oversimplifications, and neither supports exempting one class of interoperable technologies while subjecting the other to DMCA liability.").

[192] The *Reimerdes* court rejected the argument that "interoperability between computers running the Linux operating system and DVDs" was sufficient to satisfy the reverse-engineering exception's requirement of interoperability between programs. *See* Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 320 (S.D.N.Y. 2000).

proving that the sole purpose of his reverse-engineering effort was for interoperability.[193] Though he testified that he created DeCSS solely to play DVDs on Linux, DeCSS was developed on Windows, which meant it could be run on Windows machines to play protected DVDs.[194]

Given these limitations, a strict interpretation of § 1201(f) can virtually eliminate reverse engineering as a defense, as evidenced in the *Blizzard* case, discussed above. Section 1201 states that in order to qualify for the interoperability defense, the alleged infringer would have to show, among other factors, that the alleged reverse engineering that enabled the circumvention did not also constitute infringement of the underlying work.[195] The Eighth Circuit held this to mean that, even if the reverse engineering itself did not infringe any copyrights, subsequent use of the interoperable circumvention tool by third parties for allegedly infringing purposes is enough to disqualify a § 1201(f) defense.[196] The court found that because the BnetD platform was unable to verify the authenticity of any given Blizzard game CD that used it, illegal games could be played on the server and thus, the server was not eligible for protection under § 1201(f).[197] Despite the questionable nature of this ruling, it has not been challenged or limited by other courts. Under this reasoning, innovators cannot rely on the protections of § 1201(f) unless they can confidently predict that their devices or services will not be used in any infringing way—regardless of an innovator's intent, and regardless of any noninfringing use made possible by the innovation. This places a very heavy burden upon innovators who seek the protection of § 1201(f), for they must disprove any nefarious purpose that

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[193] *Id.*

[194] In addition to this reasoning, the court also imputed to Mr. Johansen that he "fully expected that the use of DeCSS would not be confined to Linux machines." *Id.*

[195] Davidson & Assocs. v. Jung, 422 F.3d 630, 642 (8th Cir. 2005).

[196] *Id.* at 641-42.

[197] *Id.* The developers of BnetD offered, as a concession, to include the proper authentication code that would permit their program to validate and work only with lawfully acquired copies of Blizzard games, though this proved insufficient for Blizzard in the end. *See* Howard Wen, *Battle.net Goes to War*, SALON, Apr. 18, 2002, http://www.salon.com/technology/feature/2002/04/18/BnetD/index.html (describing how such a concession would require Blizzard's cooperation to provide access to their licensing servers, and is not something the BnetD team should be legally obligated to do).

any other individual might have. Based on these cases and the limitations inherent to § 1201(f), innovators cannot rely on its protection.

The remaining codified exceptions, such as those for security testing and protection of personally identifying information, are also limited in scope. More generally, § 1201's framework represents a major shift from copyright law's inherently flexible system to a system of blanket prohibitions, with narrow carve-outs for certain uses. Such a framework is unlikely ever to sufficiently anticipate and protect lawful uses.

Finally, in addition to these explicit exemptions, the savings clause, which states that "[n]othing in [§ 1201] shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under this title," at first appears to make an allowance for fair use and other traditional copyright limitations.[198] However, in one of the first major cases brought under the anticircumvention provisions, the Second Circuit held that the savings clause does not provide this protection.[199] Instead, the Second Circuit stated that it cannot "be read to allow the circumvention of encryption technology protecting copyrighted material when the material will be put to 'fair uses' exempt from copyright liability" and that it only "clarifies that the DMCA targets the circumvention of digital walls guarding copyrighted material (and trafficking in circumvention tools), but does not concern itself with the use of those materials after circumvention has occurred."[200] This precedent has been influential.[201] Further, even if courts were to

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[198] 17 U.S.C. § 1201(c)(1) (2006).

[199] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 443 (2d Cir. 2001) (stating that § 1201(c)(1) cannot "be read to allow the circumvention of encryption technology protecting copyrighted material when the material will be put to 'fair uses' exempt from copyright liability" and that it only "clarifies that the DMCA targets the *circumvention* of digital walls guarding copyrighted material (and trafficking in circumvention tools), but does not concern itself with the *use* of those materials after circumvention has occurred") (emphasis in original). Professor Bohannan has aptly summarized this construction by stating that "the DMCA penalizes uses that have never been prohibited—that have in fact been encouraged—by traditional copyright law." Bohannan, *supra* note 178, at 591 (referring to LAWRENCE LESSIG, FREE CULTURE 160 (2004) (stating that "the [DMCA] extends the law . . . even if the subject it regulates . . . is beyond the reach of the law)).

[200] *Corley*, 273 F.3d at 443.

[201] *See, e.g.*, Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 549 (6th Cir. 2004) (borrowing the *Corley* court's language, "[b]acking with legal sanctions 'the efforts of copyright owners to

allow fair use as a defense to circumvention, the lack of availability of tools for circumvention would severely limit users' practical ability to make fair uses.

C. The § 1201(a)(1)(B) triennial rulemaking is insufficient to address harms caused by § 1201

Congress also attempted to create a backstop against harms caused by § 1201 by establishing a triennial rulemaking, done under the auspices of the Copyright Office, that considers and issues limited additional exceptions to liability where harm has been established.[202] The legislature characterized the goal of the triennial rulemakings as a "fail safe mechanism" that responds when the marketplace "diminish[es] otherwise lawful access" to copyrighted works.[203] Like the specific exemptions, however, the triennial rulemaking is a step in the right direction, but is far too limited in scope to address the harms caused by the statute's overly broad language.

First, the proceeding places a tremendous burden upon the exemption seeker from the very first step. To seek an exemption, two conditions must be met. The adverse effects suffered by the exemption seeker must be either occurring or likely to occur within the next three years, and the exemption must be limited to a particular class of works.[204] In addition, the Copyright Office may narrow the definition of what qualifies

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protect their works from piracy behind digital walls,'" to describe Congress's purpose in enacting the DMCA (citing *Corley*, 273 F.3d at 435)); RealNetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913, 943-44 (N.D. Cal. 2009) (finding "[i]n accord with . . . *Corley* . . . that the fair use of the copyrighted material by end users is not a defense to, and plays no role in determining, liability under the DMCA"); 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1097 (N.D. Cal. 2004) (describing that, similar to the argument in *Corley*, "[i]t is the technology itself at issue, not the uses to which the copyrighted material may be put"); I.M.S. Inquiry Management Systems, Ltd. v. Berkshire Info. Systems, Inc., 307 F. Supp. 2d 521 (S.D.N.Y. 2004) (stating that under the DMCA, "a cause of action . . . does not accrue upon unauthorized and injurious access *alone*; rather, the DMCA 'targets the *circumvention* of digital walls guarding copyrighted material'" (citing *Corley*, 237 F.3d at 443) (emphasis in original)). The Federal Circuit in *Skylink*, on the other hand, discussed the Second Circuit's reasoning in *Corley*, agreeing on the focus of § 1201(a)(2) and (b)(1) to prevent access to a work, and permit access to but prevent copying of the work, respectively, but instead chose to abide by "longstanding principles of copyright law" in finding that there must be a nexus between access and copyright protection. Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1199, 1203-04 (Fed. Cir. 2004).

[202] 17 U.S.C. § 1201(a)(1)(C)-(D) (2006).

[203] H.R. REP. NO. 105-551, pt. 2, at 36 (1998).

[204] 17 U.S.C. § 1201 (a)(1)(C) (2006).

as a relevant class by limiting either the intended users or the intended uses of a work covered by the class.[205] This means that even where two users experience factually similar challenges that provide similar reasons for an exemption, one user, e.g., an institutionally supported library, may succeed in obtaining an exemption, and the other, e.g., an individual user, may fail.[206] Further burdening applicants, the Copyright Office has set a higher burden of proof for an adverse effect than strictly required by § 1201.[207]

Additionally, even if an exemption is granted, it must be re-applied for de novo every three years.[208] This places an enormous burden on those who need exemptions and casts a pall of uncertainty over the exemptions that are granted, as it may be difficult or impossible to rely on an exemption remaining over the long term.

Further, the triennial rulemaking procedure has an additional critical flaw: exemptions granted under it do not cover the access control circumvention tools outlined in § 1201(a)(2) or the copy control circumvention tools described in § 1201(b).[209] Therefore, only where exempted users have the sophisticated technological know-how required to circumvent a technological measure without a circumvention tool can they actually make exempted uses. This can turn a granted exemption into little more than an empty promise.

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[205] Christopher Moseng, *The Failures and Possible Redemption of the DMCA Anticircumvention Rulemaking Provision*, 12 J. TECH. L. & POL'Y 333, 351 (2007) .

[206] *Id.*

[207] *Id.* at 346 (describing the test as a showing of a substantial adverse effect instead of a substantial showing of an adverse effect).

[208] 17 U.S.C. § 1201(a)(1)(C) (2006) ("during each succeeding 3-year period, the Librarian of Congress . . . shall make the determination in a rulemaking proceeding . . . of whether persons who are users of a copyrighted work are, or are likely to be in the succeeding 3-year period, adversely affected by the prohibition . . . in their ability to make noninfringing uses").

[209] Lipton, *supra* note 166, at 135 ("Even for those works that are exempted from the DMCA, the anti-trafficking provisions still apply and effectively restrict the availability of devices that can circumvent DRM . . . [and] [a]s a result, the average person cannot engage in fair use, even though fair use is statutorily allowed.").

Most fundamentally, the structure of the rulemaking procedure runs counter to the principles of traditional copyright law. Safety valves such as fair use and the idea/expression distinction are designed for post hoc judicial review, not prospective determination. The triennial rulemaking, however, departs from this ex post framework and replaces it with a system that requires ex ante authorization from the Copyright Office, imposing a heavy procedural burden on those who wish to make lawful uses of copyrighted works. For example, when an artist creates a parody by compiling multiple movie scenes, traditional copyright law grants him the freedom to make such a fair use of the movies, and to risk being challenged later. Only where the use is indeed challenged will a court make a determination on fair use. The triennial rulemaking procedure, on the other hand, requires the artist to wait as long as three years for the next rulemaking session, to navigate the thicket of bureaucracy involved with advocating for this particular exemption, and to meet the difficult burden of proving that he would suffer a substantial adverse effect without an exemption.[210] Finally, if an exemption is granted, the artist must either rely on his own technical expertise, or be left without a tool that allows him to actually complete the circumvention and obtain access to the source material.

Given these burdens, and the limited nature of the exemptions it can provide, the triennial rulemaking is insufficient to meet its goal of providing a "fail safe mechanism" that protects against overbreadth,[211] and broader legislative reform is needed.

In summary, the well-meant exemptions built into § 1201 are insufficient. As noted by Professor David Nimmer, "[t]he user safeguards so proudly heralded as securing balance between owner and user interests, on inspection, largely fail to achieve their stated goals."[212] It is time to update the statute to address these shortcomings, and to finally secure the "balance between owner and user interests" promised for § 1201.

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[210] 17 U.S.C. § 1201(a)(1)(B) (2006).

[211] H.R. REP. NO. 105-551, pt. 2, at 36 (1998).

[212] David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 PENN. L. REV. 673, 739 (2000).

D. Caselaw does not provide sufficient certainty to alleviate the chilling effects caused by Section 1201

As predicted by Professor Pamela Samuelson, the lack of flexibility, adaptability, and fairness in the statute has sometimes led courts to "thrash to reach appropriate results" when interpreting § 1201.[213] Although some courts have found room to allow circumvention where the underlying use was lawful under copyright law, different jurisdictions sometimes have taken different approaches. Overall, courts have been at best inconsistent in deciding to protect the interests of follow-on creators, consumers, and innovators in § 1201 cases, causing uncertainty that—in light of the high cost and inconvenience of litigation—prevents creators, innovators, and consumers from making socially valuable uses of works behind TPMs.[214] As such, reforming § 1201 can best be addressed by legislative means.

For example, the Second Circuit adopted a strict interpretation of § 1201 liability in *Universal City Studios v. Corley*, finding the defense of fair use to be invalid against § 1201.[215] Similarly, as described further in the examples above, courts in the Ninth Circuit have dismissed fair use claims based on customer time-shifting and backup copying. In *321 Studios*, the Northern District of California reasoned that the DMCA could preclude a user from copying a non-copyrighted work from a CSS-protected DVD, because there were other, non-circumventing alternatives such as "simply access[ing] it from a non-CSS encrypted DVD or . . . access[ing] and copy[ing] this public domain material in a non-digital form."[216] Similarly, the *RealNetworks v. Streambox* court rejected fair use protections for Streambox's VCR product, which allowed the time-shifting of streaming content, and the *RealNetworks v. DVD Copy Control Association*

[213] Samuelson, *supra* note 13, at 546.

[214] *Id.*

[215] Universal City Studios, Inc. v. Corley, 273 F.3d 429, 459 (2d. Cir. 2001) ("They are barred from trafficking in a decryption code that enables unauthorized access to copyrighted materials.").

[216] 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1102 (N.D. Cal. 2004).

court rejected the fair use defense proffered for RealNetworks' RealDVD product, which allowed consumers to make back-up copies of DVDs.

On the other hand, in *Chamberlain v. Skylink*, the Federal Circuit rejected the idea that circumvention liability is wholly beyond copyright law. It held that there is a "critical nexus between access and protection," and that § 1201 "prohibits only forms of access that bear a reasonable relationship to the protections that the Copyright Act otherwise affords copyright owners."[217] As such, the Federal Circuit further held that copyright owners must prove that a challenged circumvention either "infringes or facilitates infringing a right protected by the Copyright Act," and announced a multi-part test for stating a claim under § 1201 that requires infringement due to the circumvention.[218] The Federal Circuit reiterated these principles in *Storage Technology Corporation v. Custom Hardware Engineering & Consulting*,[219] and the *Skylink* decision has been followed by several courts,[220] suggesting that it may become influential over time. Similarly, the Sixth Circuit in *Lexmark v. Static Control*, rejected a § 1201 claim where the underlying works were either unencrypted, unlikely to be copyrightable, or both, and where one work functioned as a "lock out code."[221]

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[217] Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1204 (Fed. Cir. 2004). Factual limitations within these cases requiring a nexus between the § 1201 and copyright law leave open questions as to the boundaries of the nexus requirement. In *Lexmark*, Judge Merritt pointed out in his concurring opinion that there is risk of others "creat[ing] monopolies of manufactured goods for themselves just by tweaking the facts of this case." Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 551 (6th Cir. 2004) (Merritt, J., concurring). It is not clearly defined just how strong a nexus the DMCA must have with Copyright law in order to establish liability. In *Skylink*, the court noted that Chamberlain never imposed "any restrictions on a consumer's ability to buy a replacement transmitter or additional transmitter." *Skylink*, 292 F. Supp. 2d at 1044. Thus, it is unclear how *Skylink* would apply to fact situations where there is an express or implied limitation on interoperability.

[218] *Skylink,* 381 F.3d at 1203.

[219] Storage Tech. Corp. v. Custom Hardware Eng'g & Consulting, Inc., 421 F.3d 1307, 1318 (Fed. Cir. 2005).

[220] Nordstrom Consulting, Inc. v. M&S Techs., Inc., 2008 U.S. Dist. LEXIS 17259, *23-*24 (N.D. Ill. 2008); Agfa Monotype Corp. v. Adobe Sys., 404 F. Supp. 2d 1030, 1036-37 (N.D. Ill. 2005); Ticketmaster L.L.C. v. RMG Techs., Inc., 507 F. Supp. 2d 1096 (C.D. Cal. 2007); MDY Indus., LLC v. Blizzard Entm't, Inc., 616 F. Supp. 2d 958 (D. Ariz. 2009); Apple, Inc. v. Psystar Corp., 2009 U.S. Dist. LEXIS 106142 (N.D. Cal. Nov. 13, 2009); Microsoft Corp. v. Silver Star Micro, Inc., 2008 U.S. Dist. LEXIS 1526 (N.D. Ga. Jan. 9, 2008).

[221] Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 550 (6th Cir. 2004).

The *Skylink* and *Lexmark* cases, then, helpfully connect liability for circumvention to actual copyright infringement. To the extent the reasoning in these cases grows in influence over time, it may help alleviate some of the worst effects of overreaching claims under § 1201. At the same time, the differing approaches taken in cases such as *Corley*, *Streambox*, *321 Studios* and *DVD Copy Control Ass'n* have also remained influential and leave would-be innovators or other lawful users with uncertainty that is likely to continue to have a chilling effect. Further, even when courts have applied the *Skylink* factors, some have done so narrowly and have still found a valid claim, even when the underlying copyright claim may be questionable or the plaintiff's purpose is to control competition or user experience.[222] Given this uncertainty, legislative reform is the best method of assuring consistent and fair recalibration of the § 1201 regime.

V. Updating § 1201 to Restore Copyright's Balance, Protect Creators and Innovators, and Protect Copyright Holders

In the years since the DMCA's passage, § 1201's harmful effects on copyright's core goal to "promot[e] Progress" have become unfortunately clear. It is in need of an update to restore the balance. Because the language of § 1201 limits courts' ability to mitigate harm, and because its stated exemptions and limitations have proven far too narrow to preserve copyright's protections for follow-on creators, innovators, competitors, and consumers, any workable revision must build in more general protection for lawful uses. In addition to bringing § 1201 back into line with copyright law, this approach would comport more closely with the intent of Congress to protect digital media without affecting fair use and other lawful uses[223] than the statute, as drafted and

[222] *See* MDY Indus., LLC v. Blizzard Entm't, Inc., 2008 U.S. Dist. LEXIS 53988 (D. Ariz. July 14, 2008) (denying summary judgment regarding § 1201(a)(2), (b)(1) in case involving software that enabled users to automate their characters in the online video game, World of Warcraft); Ticketmaster L.L.C. v. RMG Techs., Inc., 507 F. Supp. 2d 1096 (C.D. Cal. 2007) (granting preliminary injunction against defendant for likelihood of success on claims regarding § 1201(a)(2), (b)(1) in case involving an application that enabled automated ticket purchasing on the Ticketmaster website).

[223] *See, e.g.*, H.R. REP. NO. 105-551, pt. 1, at 18 (1998) ("So, an individual would not be able to circumvent in order to gain unauthorized access to a work, but would be able to do so in order to make fair use of a work which he or she has acquired lawfully."); *id.* at 20 ("[The savings clause] provides that section 1201 shall not have any effect on rights, remedies, limitations, or defenses to copyright infringement, including

as interpreted by the courts, does today. As Congressman Bliley stated during the debates around the DMCA, "[c]opyright law is not just about protecting information. It's just as much about affording reasonable access to it as a means of keeping our democracy healthy and doing what the Constitution says copyright law is all about: promoting 'Progress in Science and the useful Arts.' If this bill ceases to strike that balance, it will no longer deserve Congress's or the public's support."[224]

Any reform that truly restores that balance, and restores credibility to the anticircumvention provisions, must incorporate two key elements:

(1) circumvention liability should be eliminated for noninfringing uses; and

(2) the prohibition on tools must be reformed to allow those making lawful uses the practical ability to circumvent.

Reforms that meet these goals would realign § 1201 with longstanding copyright law principles—including post hoc review and limitations on liability—that are insufficiently reflected in the anticircumvention provisions today. At the same time, as further discussed below, these reforms allow for longstanding copyright protections—especially those against secondary liability for copyright infringement—to support the additional protections provided to copyright holders by § 1201. Accordingly, we propose the following reforms.

A. Protecting circumvention undertaken for lawful purposes

First, to remove the harms that result from circumvention liability that reaches beyond the rights granted by copyright law, users must be given the right to circumvent TPMs for lawful, noninfringing uses of a work. We propose amending § 1201(a)(1) as follows:

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fair use, under Title 17. This provision is intended to ensure that none of the provisions in section 1201 affect the existing legal regime established in the Copyright Act and case law interpreting that statute."); H.R. REP. NO. 105-551, pt. 2, at 36 (1998) (describing the "fail safe mechanism" of the triennial rulemakings for protecting lawful uses).

[224] 144 Cong. Rec. H7094 (Aug. 4th, 1998) (statement of Rep. Bliley).

"(F) Notwithstanding the prohibition contained in subparagraph (A), it shall not be a violation of this section to circumvent a technological measure in connection with access to, or the use of, a work if such circumvention is for the purpose of engaging in noninfringing use of a work."

Allowing circumventions for the purpose of making noninfringing uses would cure the problems caused by the overly narrow specific exemptions that presently exist. The reform adds a safety valve to the broadness of the statute's language, and ensures that users making lawful or noninfringing uses do not unjustly suffer liability from the DMCA's anticircumvention provisions.

At the same time, this reform preserves the accountability § 1201 creates for those who circumvent TPMs. It achieves this by placing importance on the *purpose* of a circumvention, as Professor Samuelson has advised, stating the importance of "distinguish[ing] between circumvention aimed at getting unauthorized access to a work and circumvention aimed at making noninfringing uses of a lawfully obtained copy."[225] As such, the additional cause of action § 1201 provides for circumvention is preserved, and can be used against those who circumvent to infringe.

B. Removing the significant barrier to lawful use created by the blanket ban on tools

Second, to fully remedy the harms caused by the unintended consequences of § 1201 and to restore balance to copyright law, lawful users must have access to the means with which to circumvent TPMs for noninfringing uses. Removing circumvention liability for lawful uses will be ineffective if the present blanket ban on circumvention tools remains in place. As discussed more fully above, a lawful user often will not have the knowledge or skill to circumvent a technical protection measure without expert help, rendering any limitation on liability that covers only the act of circumvention practically meaningless. It is a non-trivial task to circumvent an advanced TPM, and many

[225] Samuelson, *supra* note 13, at 539.

individuals would not be able to take advantage of the safety valve created by allowing circumvention for lawful uses without the availability of specialized tools.[226] The remaining two reforms both address this need. We propose amending both § 1201(a)(2) and § 1201(b)(1) by adding the following section to each:

> "(D) Notwithstanding the prohibition contained in this paragraph, it shall not be a violation of this section to manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof capable of enabling substantial noninfringing use of a work protected under this title."

These two reforms are critical to the success of the reform as a whole: if liability for making and distributing such tools remains, then this reform will be limited by the same restrictions that, as discussed *supra*, reduce the effectiveness of safety measures such as the triennial rulemaking.

The standard for allowing a tool must be sufficiently protective to disallow tools created for the purpose of facilitating infringement, but sufficiently generalized to allow innovators to develop useful tools without being chilled by fears of liability. As such, this reform is drawn from the longstanding and well-developed copyright jurisprudence around secondary liability for infringement. The standard articulated by the Supreme Court in *Universal Studios v. Sony*—that a product must be capable of substantial noninfringing uses—is both analogous and appropriate, and has supported innovation while allowing copyright holders to pursue secondary infringers for more than 25 years.[227] As with other types of tools that allow for lawful uses of copyrighted works—

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[226] For example, Professor Jacqueline Lipton describes how fair use activities can hinge on the availability of circumvention technology. Lipton, *supra* note 166, at 116 (explaining that "the loss of circumvention technology because of aggressive DMCA enforcement creates an effective ban on the activities of fair users").

[227] *See* Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984). *See also* von Lohmann, supra note 69, at 854 ("In [*Sony*], the Supreme Court held that a technology vendor is not liable for secondary copyright infringement so long as the technology in question is 'capable of substantial noninfringing uses.' This rule gives innovators a bit of breathing room—they need not prove that every use

for example, photocopiers, hard drives, the VCR considered by the *Sony* court, and numerous others—the possibility that some bad actors may use circumvention tools for unlawful purposes does not justify a complete ban. The elimination of tools outright "empowers those who produce digital works of authorship to set the terms of public access . . . creat[ing] a grave risk that today's publishers . . . may not exercise this power to advance the public welfare,"[228] a fear borne out by the lawsuits brought against consumer companies such as 321 Studios. Without reform, § 1201's anti-tool provisions will simply continue to thwart all lawful uses—including those exempted under the triennial rulemaking. With reform, the anti-tool provisions will still be available against bad actors, but their harmful effects will be alleviated.

C. Preserving the core goals of § 1201

While our proposed reforms mitigate the unintended consequences of § 1201's overly broad prohibitions and overly narrow exceptions, they maintain the integrity of § 1201's additional protections for copyright holders who choose to use TPMs, preserving Congress's core goals in enacting the anticircumvention provisions. Section 1201's additional causes of action—beyond the direct and secondary copyright claims already available under copyright law—remain in place to be used against those who circumvent to infringe, or who traffic in circumvention tools for copyright infringement. We discuss these attributes of the reforms in more detail below.

1. Infringers remain separately liable for acts of circumvention

First, we propose reforming § 1201(a)(1) only for circumventions undertaken for the purpose of making a lawful use of the underlying copyrighted work. Those who circumvent to infringe would still be subject to the full weight of the additional remedies available under §§ 1203 and 1204, as appropriate. As such, rights-holders' ability to

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would qualify as a fair use, nor even that the primary use would qualify as fair, so long as they can point to some significant fair use for the technology.").

[228] Glynn. S. Lunney, Jr., *The Death of Copyright: Digital Technology, Private Copying, and the Digital Millennium Copyright Act*, 87 VA. L. REV. 813, 820 (2001).

protect or police the unauthorized copying of their works is preserved, and bad actors remain liable for their actions. Those who engage in illegal copying, free-riding, and file-sharing through circumvention of TPMs face the same penalties they would face under the present statute. The proposed reform thus creates a safety valve that allows honest users to be separated out from bad actors, while leaving § 1201's core protections in place.

Further, tying liability to the purpose of the circumvention is unlikely to make a significant difference in circumventions made for the purpose of infringement. Those who intend to infringe are unlikely to be deterred by the additional cause of action provided by the anticircumvention provisions. This is evidenced by the unfortunate amount of large-scale copying, as pointed to by the copyright industries, that continues to occur despite the anticircumvention provisions.[229] Finally, as is the case now, copyright holders can choose TPMs that reflect their business models and coordinate user behavior.[230]

2. The anti-trafficking provisions remain available for copyright holders

Second, our proposed reforms to the anti-trafficking provisions § 1201(a)(2) and § 1201(b) also retain liability for bad actors, bringing these provisions into line with Congress's intent to draw a line between "legitimate and non-legitimate uses of decoding devices, and to account for devices which serve legitimate purposes."[231] Unfortunately, by focusing on whether the tool is designed for circumvention alone, rather than focusing on whether it is designed for circumvention for unlawful purposes, Congress crafted provisions that capture tools crafted for legitimate and non-legitimate purposes alike.

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[229] *See supra* note 10.

[230] *See, e.g.*, D. Bergemann et al., *Flexibility as an Instrument in Digital Rights Management*, Cowles Foundation Discussion Papers No. 1505, Cowles Foundation (April 2005), *available at* http://ideas.repec.org/p/cwl/cwldpp/1505.html.

[231] H.R. REP. NO. 105-551, pt. 1, at 10 (1998).

By reforming the anti-tool provisions to reflect the *Sony* Court's standard, the proposed reform both aligns with this Congressional intent and preserves liability for tool manufacturers who distribute tools that would not pass muster under secondary liability rules for copyright infringement. This approach addresses the problems created by § 1201's overbroad prohibitions on tools, and aligns with Congress's desire to "protect copyright owners, and simultaneously allow the development of technology."[232] Allowing for a tool and its distribution to be analyzed according to whether it enables substantial noninfringing uses, rather than under the "primary design" standard currently found in § 1201, should mitigate the problems created by disallowing tools intended for lawful purposes.[233] Moreover, using the *Sony* Court's "staple article of commerce" standard—which has been used for decades in both copyright and patent cases to separate secondarily infringing products from noninfringing products[234]—to distinguish between lawful and unlawful circumvention tools, should provide much better guidance for copyright holders and innovators alike.

3. The reforms retain liability for bad actors, while recognizing that Section 1201 has not sufficiently prevented large-scale copying

While additional liability for circumventing TPMs provides an extra measure of protection for copyright holders, the approach presently reflected in the anticircumvention provisions is unbalanced and in hindsight, has not prevented digital works from being copied by large-scale infringers and other bad actors. This is perhaps to be expected, as those bent on copyright infringement simply break the locks placed on works via TPMs. No protection mechanism is perfect, and defeating any security system

[232] Id. at 18

[233] *See, e.g.*, RealNetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913 (N.D. Cal. 2009); 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1097 (N.D. Cal. 2004); United States v. Elcom Ltd., 203 F. Supp. 2d 1111 (N.D. Cal. 2002); RealNetworks, Inc. v. Streambox, Inc., No. 2:99CV02070, 2000 WL 127311 (W.D. Wash. Jan. 18, 2000).

[234] Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 442 (1984) ("The staple article of commerce doctrine must strike a balance between a copyright holder's legitimate demand for effective—not merely symbolic—protection of the statutory monopoly, and the rights of others freely to engage in substantially unrelated areas of commerce.").

is simply a matter of time, effort, and ingenuity.[235] Indeed, some experts have commented that any anti-copying regime based upon TPMs is doomed to fail.[236] For this reason, technical protection measures alone cannot solve the problems created by bad actors engaging in illegal copying. Given this unfortunate fact, it would be misguided to leave in place the aspects of the anticircumvention provisions that harm lawful users, simply in an attempt to "keep honest people honest." Rather, by reforming § 1201 to focus its firepower on those who *do* intend to infringe, we can preserve the extra protections it provides for copyright owners while mitigating the harms to lawful users.

4. The proposed reforms would meet international obligations

Section 1201 presently far exceeds the international obligations created by the WIPO treaty, and our proposed reforms ensure that the U.S. will still remain in compliance with WIPO.[237] Prior to the passage of the DMCA, the United States had already met most of the requirements within the WIPO treaty. The only provision that needed statutory implementation required protection of the integrity of rights management information;[238] this requirement was implemented at § 1202.[239] Our proposed reform leaves § 1202 untouched, and as described above, retains the additional liability for circumvention and distributing circumvention tools set out in § 1201 while reforming these provisions to allow for noninfringing use. As such, the reforms remedy the overbreadth of the original statute while remaining in compliance with the WIPO treaty.

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[235] NATIONAL RESEARCH COUNCIL (U.S.) COMMITTEE ON INTELLECTUAL PROPERTY RIGHTS AND THE EMERGING INFORMATION INFRASTRUCTURE, THE DIGITAL DILEMMA: INTELLECTUAL PROPERTY IN THE INFORMATION AGE 13 (2000).

[236] *See, e.g.*, von Lohmann, 24 LOY L.A. ENT. L. REV. 635, 636 (2004) ("Trends in digital distribution technologies, moreover, indicate that any regulatory regime focused on TPMs as a solution to this problem may be doomed to fail.").

[237] Samuelson, *supra* note 13, at 521 ("The DMCA was largely unnecessary to implement the WIPO Copyright Treaty because U.S. law already complied with all but one minor provision of that treaty.").

[238] *See* Pamela Samuelson, *Big Media Beaten Back* at 67, WIRED, Mar. 1997. *See also* WIPO Copyright Treaty, *supra* note 17, at art. 12.

[239] 17 U.S.C. § 1202 (2006).

VI. Conclusion

The anticircumvention provisions of the DMCA are overbroad, have had numerous unintended consequences for creators, consumers, educators, innovators and the public generally, and have not solved the problems Congress targeted in creating them. Congress should enact the reforms proposed in this Report in order to remedy these unintended consequences and restore balance to copyright law, protecting the rights of copyright owners while supporting the public's interest in access to copyrighted works, diversity of expression, research into and development of innovative products, and marketplace competition.

Appendix A

SECTION 3. LAWFUL CIRCUMVENTION OF COPYRIGHT PROTECTION SYSTEMS

(a) CIRCUMVENTION OF COPYRIGHT PROTECTION SYSTEMS AND CIRCUMVENTION DEVICES. —Section 1201 of title 17, United States Code, is amended—

(1) in subsection (a),

(a) in paragraph (1), by adding at the end the following:

"(F) Notwithstanding the prohibition contained in subparagraph (A), it shall not be a violation of this section to circumvent a technological measure in connection with access to, or the use of, a work if such circumvention is for the purpose of engaging in noninfringing use of a work protected under this title."

(b) in paragraph (2), by adding at the end the following:

"(D) Notwithstanding the prohibition contained in this paragraph, it shall not be a violation of this section to manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof capable of enabling substantial noninfringing use of a work protected under this title."

(2) in subsection (b),

(a) in paragraph (1), by adding at the end the following:

"(D) Notwithstanding the prohibition contained in this paragraph, it shall not be a violation of this section to manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof capable of enabling substantial noninfringing use of a work protected under this title."