The DMCA and Original Equipment Manufacturers: Let Consumers Decide

Margaret M. Dolan

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"With regard to monopolies they are justly classed among the greatest nuisances [sic] in Government. But is it clear that as encouragements to literary works and ingenious discoveries, they are not too valuable to be wholly renounced?"1

INTRODUCTION

Commentators are aflutter over the use of the Digital Millennium Copyright Act (DMCA) to protect original equipment manufacturers (OEMs) and their aftermarket goods.2 Congress enacted the DMCA to protect digitally transmitted works from being descrambled and copied.3 While some companies have used the law in its intended way, OEMs have tried to adapt the law to protect copyrighted works embedded in replacement products, much to the chagrin of scholars and analysts.4 Critics point to the legislative history of the Act,5 copyright policies,6 and antitrust law7 to support their argument that OEMs should not be permitted to apply the DMCA to their goods. Courts have also rejected these attempts by OEMs, although for different and sometimes curious reasons.8 But more importantly, critics argue, Congress should amend the DMCA to clearly deny such companies refuge under the Act.9

This Comment examines the background of the DMCA and its application. Part II introduces the Act's purpose and history as well as

2. See, e.g., Zohar Efroni, A Momentary Lapse of Reason: Digital Copyright, the DMCA and a Dose of Common Sense, 28 Colum. J.L. & Arts 249 (2005) (asserting original equipment manufacturers should not be protected under the DMCA but noting some courts have left doors open for them); see also Marcus Howell, The Misapplication of the DMCA to the Aftermarket, 11 B.U. J. Sci. & Tech. L. 128 (2005).
3. Howell, supra note 2, at 128.
4. Id. at 129.
5. Id. at 138–40.
its judicial application to both traditional and unexpected works. Part III addresses the arguments that the DMCA should not apply in these aftermarket cases. It argues that, as written, the DMCA should protect such products both because the plain language of the statute provides OEMs a cause of action, and because there are exceptions to cover many of the scenarios feared by naysayers. Further, Part III examines the inconsistencies of appellate decisions and suggests a uniform application of the DMCA. Finally, Part IV explores the impact of such an approach. It illustrates that allowing OEMs protection will not adversely affect consumers in the drastic way many predict. The law should presume that consumers will make informed, rational decisions, and the market will regulate itself.

II. BACKGROUND

Congress enacted the DMCA to promote the dissemination of copyrighted works over electronic media. The circuits courts have applied the law in varying ways depending on the type of work and the jurisdiction. In Universal City Studios v. Corley, the Second Circuit found a DMCA violation when hackers decrypted DVDs so users could copy them. But in Lexmark International, Inc. v. Static Control Components and Chamberlain Group, Inc. v. Skylink Technologies, Inc., the Sixth Circuit and Federal Circuit, respectively, declined to grant relief to nontraditional copyrighted works. Each court used different facts and a different legal analysis to preclude manufacturers from using the DMCA to stop a competitor from selling interoperable products.

This Part discusses the adoption of the DMCA and examines its various provisions. Next, it provides an introduction to original equipment and aftermarket-goods producers. It also presents three cases illustrating both the traditional and contested applications of the

10. See infra notes 14-162 and accompanying text.
11. See infra notes 163-244 and accompanying text.
12. See infra notes 245-310 and accompanying text.
13. See infra notes 316-363 and accompanying text.
17. Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 529 (6th Cir. 2004); Chamberlain, 381 F.3d at 1204.
18. Lexmark, 387 F.3d at 551; Chamberlain, 381 F.3d at 1204.
19. See infra notes 23-41 and accompanying text.
20. See infra notes 42–53 and accompanying text.
Finally, this Part highlights the various points of contention among scholars and courts that have led many to call for an amendment to the DMCA.22

A. The Digital Millennium Copyright Act

In today’s marketplace, many copyrighted works are produced and distributed in digital form.23 Authors protect works such as CDs, DVDs, and MP3s through encryption or other means to prevent piracy and copying.24 But “technically savvy consumers or copyright pirates” have found ways to disable or deconstruct these protections.25 Thus, Congress enacted the DMCA to give copyright holders a right to enforce their technological protections.26 Further, the DMCA ensured that U.S. copyright law complied with the World Intellectual Property Organization Copyright Treaty (WCT), which requires “adequate legal protection and effective legal remedies against the circumvention of effective technological measures used by authors to protect their copyrighted works.”27 Under the DMCA, copyright holders can “lock” their works and pursue remedies against those who either unlock the works or distribute “keys” without permission.28 The copyright owner’s rights under the DMCA go beyond the normal infringement rights that prevent unauthorized copying,29 but courts have deemed the rights new “causes of action for liability” rather than new property rights.30

The DMCA has a number of subparts, which include access provisions and trafficking provisions.31 The access provision, Section 1201(a), makes it illegal to “circumvent a technological measure that effectively controls access to a [copyrighted work].”32 The anti-trafficking provision, Section 1201(b), prohibits manufacturing, import-

21. See infra notes 54–98 and accompanying text.
22. See infra notes 99–162 and accompanying text.
23. Howell, supra note 2, at 129.
24. Id. at 129–30.
25. Id. at 130.
27. McCardle, supra note 7, at 1004.
29. Howell, supra note 2, at 130; see also 17 U.S.C. § 106.
31. McCardle, supra note 7, at 1005.
ing, or otherwise trafficking in devices that are designed to circumvent technological measures protecting a copyright holder’s rights.\textsuperscript{33}

The statute also provides a number of exemptions from liability.\textsuperscript{34} The reverse-engineering exception in Section 1201(f) states that a person who “‘lawfully obtain[s] the right to use a copy of a computer program’ may circumvent any access controls for the ‘sole purpose’ of achieving interoperability with an ‘independently created computer program.’”\textsuperscript{35} This Section allows others to “create tools for bypassing the protection measure to allow . . . programs to communicate with each other.”\textsuperscript{36} The words “independently created” in the statute are important in the context of aftermarket equipment, as competitors must often copy portions of existing software, rather than create them from scratch, to create interoperable products.\textsuperscript{37}

Further, the DMCA allows the Librarian of Congress to exempt particular works from protection.\textsuperscript{38} The exemptions are determined and reassessed every three years, according to various factors related to fair use.\textsuperscript{39} Additionally, the exemptions apply only to the “anti-access anti-circumvention provision” and not the “anti-trafficking and anti-copying” subparts.\textsuperscript{40} Because they are narrowly drafted, these exemptions have not had much effect on the DMCA’s practical application.\textsuperscript{41}

\begin{itemize}
\item \textsuperscript{33} 17 U.S.C. § 1201(b).
\item \textsuperscript{35} \textit{Id.} at 65 (alterations in original) (quoting 17 U.S.C. § 1201(f)).
\item \textsuperscript{36} \textit{Id.} at 81.
\item \textsuperscript{37} \textit{See, e.g., Lexmark Int'l, Inc. v. Static Control Components, Inc., 253 F. Supp. 2d 943, 971 (E.D. Ky. 2003), vacated by 387 F.3d 522 (6th Cir. 2004) (explaining that an exact copy of the plaintiff's computer program does not constitute an independently created program).}
\item \textsuperscript{38} 17 U.S.C. § 1201(a)(1)(C).
\end{itemize}

The Librarian considers several factors:

(i) The availability for use of copyrighted works; (ii) The availability for use of works for nonprofit, archival, preservation, and educational purposes; (iii) The impact that the prohibition on circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research; (iv) The effect of circumvention of technological measures on the market for or value of copyrighted works; and (v) Such other factors as the Librarian considers appropriate.

\textit{Id.} (quoting 17 U.S.C. § 1201(a)(1)(C)).

\textsuperscript{40} McCardle, \textit{supra} note 7, at 1024.

\textsuperscript{41} Barker, \textit{supra} note 39, at 55.
B. Original Equipment Manufacturers and the Aftermarket

Original equipment manufacturers create initial goods such as printers, automobiles, and garage door openers. Original equipment often uses aftermarket products as replacement parts or accessories. In the United States, the aftermarket constitutes a significant part of the economy. Aftermarket goods tie into the DMCA because they often must communicate with the original equipment, typically through computer software. To enable this communication, competitors reverse-engineer the original equipment and write code to allow interoperability. One example of this is an ink cartridge that talks to the printer, informing it of whether the cartridge is the correct brand or running out of ink. Software contained in the cartridge must interact with software contained in the printer in order to function. The Copyright Act does not protect useful or functional items, but it does protect computer source code and object code. Thus, many OEMs are able to copyright their embedded programs.

Aftermarket goods are different from typical copyrighted works in that the embedded programs are not sold independently, unlike DVDs or other creative works. Interoperable products have copyrighted works that are "merely incidental" to the primary product. Further, the good itself is functional, rather than being a mere vehicle for copyright delivery like a disc or game cartridge.

42. See Kitch, supra note 28, at 5 (explaining how OEMs can gain monopolies on the aftermarket supplements to original equipment like automobiles); see also Jacqueline Lipton, The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability, 62 WASH. & LEE L. REV. 487, 496-98 (2005) (discussing interoperable replacement parts).
43. Howell, supra note 2, at 131–32. Examples of such aftermarket goods are windshield wipers for a car or inkjet cartridges for a printer. Id.
44. Id. at 131 (citing Brief of Amicus Curiae Consumers Union Supporting Skylink Technologies, Inc.'s Opposition to the Chamberlain Group, Inc.'s Motion for Summary Judgment at 6, Chamberlain Group, Inc. v. Skylink Techs., Inc., 292 F. Supp. 2d 1023 (N.D. Ill. 2003) (No. 02 C 6376)).
45. Id. at 132–33.
46. Id. at 133.
47. Id.
48. Lipton, supra note 42, at 496–97.
49. Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc., 797 F.2d 1222, 1233 (3d Cir. 1986). "A 'useful article' is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information." 17 U.S.C. § 101 (2000).
50. See infra note 196.
51. Howell, supra note 2, at 132.
52. Lipton, supra note 42, at 525.
53. Howell, supra note 2, at 132.
C. Corley

Universal City Studios, Inc. v. Corley\(^\text{54}\) is an example of the way many critics expected the DMCA to protect copyrighted works from decryption and copying.\(^\text{55}\) Motion picture makers changed the form of film distribution in the 1990s from analog videotapes to digital DVDs.\(^\text{56}\) Film studios then became concerned that an educated consumer could copy the DVDs, so they encrypted the content using the "Content Scramble System" or CSS.\(^\text{57}\) A Norwegian computer programmer named Jon Johansen wrote software to decrypt CSS, ostensibly to allow users to view DVDs on Linux rather than Microsoft operating systems.\(^\text{58}\) Johansen placed the object code (code used by the computer to execute the program) for the software on the internet, where hacker Eric Corley discovered it and posted the source code (readable by users and easily copied) on his own website, along with an article detailing CSS decryption.\(^\text{59}\) The plaintiff movie studios\(^\text{60}\) sued Corley under the DMCA for trafficking devices designed to circumvent encryption measures.\(^\text{61}\)

Corley's defense focused primarily on the constitutionality of the DMCA. Specifically, he argued that the decryption software constituted speech and that the restriction on that speech was not content neutral.\(^\text{62}\) The Second Circuit held that the software, although written in code and requiring computer execution, was speech for First Amendment purposes, but still upheld the constitutionality of the Act.\(^\text{63}\) The court rejected the defendant's argument that the purchaser of the DVD has the copyright owner's permission to decrypt it.\(^\text{64}\) The court ultimately held Corley liable under the DMCA.\(^\text{65}\)

\(^{54}\) 273 F.3d 429 (2d Cir. 2001).
\(^{55}\) Higgs, supra note 34, at 65–66.
\(^{56}\) Corley, 273 F.3d at 436.
\(^{57}\) Id.
\(^{58}\) Id. at 437.
\(^{59}\) Id. at 438–39.
\(^{60}\) The plaintiffs in the case were Universal City Studios, Inc., Paramount Pictures Corp., Metro-Goldwyn-Mayer Studios, Inc., Tristar Pictures, Inc., Columbia Pictures Industries, Inc., Time Warner Entertainment Co., L.P., Disney Enterprises, Inc., and Twentieth Century Fox Film Corp. Id. at 429.
\(^{61}\) Id. at 441.
\(^{62}\) Corley, 273 F.3d at 442.
\(^{63}\) Id. at 447.
\(^{64}\) Id. at 444.
\(^{65}\) Id. at 459–60.
D. Lexmark and Chamberlain

After Corley led to a number of victories for copyright holders,66 OEMs began attempting to use the DMCA to protect their copyrighted computer programs.67 In *Lexmark International, Inc. v. Static Control Components, Inc.*, a printer and toner cartridge manufacturer sued for violation of the DMCA.68 Lexmark inserted microchips in its toner cartridges that performed a “handshake” with the printer that allowed the printer to function.69 Lexmark needed this handshake protection because it offered customers a discount on the initial printer purchase if the buyers promised to use only Lexmark toner cartridges.70 Accordingly, the microchip in the toner cartridge informed the printer that the user was complying with the agreement by using a Lexmark product, and the printer would function.71

Defendant Static Control Components (SCC) created a microchip that copied Lexmark’s chip.72 SCC sold the chip to generic toner manufacturers and advertised that it “breaks Lexmark’s ‘secret code.’”73 Lexmark filed a suit alleging, *inter alia*, that SCC violated the DMCA by distributing a product designed to circumvent the controls on Lexmark’s copyrighted programs.74

The district court granted a preliminary injunction, finding Lexmark had a likelihood of success on its DMCA claims because the SCC microchips were created to circumvent encryption, and the plain language of the statute awarded DMCA protection for all copyrighted works.75 The Sixth Circuit reversed, holding that the DMCA applied only to technological measures that effectively control access to a copyrighted work.76 The court noted that Lexmark did not *effectively* control access because any user who purchased the toner cartridge could access the microchip.77 Thus, a user could copy the object code

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68. 387 F.3d 522, 529 (6th Cir. 2004).
69. *Id.* at 530.
70. *Id.*
71. *Id.*
72. *Id.*
73. *Id.*
74. *Lexmark*, 387 F.3d at 531.
76. *Lexmark*, 387 F.3d at 546.
77. *Id.*
and translate it into source code. Further, the court drew a distinction between cases like Corley where the software (CSS) protects the work (motion picture) and the software’s execution generates an additional copyrighted work, and those like Lexmark where the protected software itself does not create any works. Finally, the court pointed to congressional intent, noting that nothing in the legislative history indicated an intent to protect consumer goods such as ball point pen cartridges, printer cartridges, and garage door openers.

Chamberlain presented a similar claim brought under the DMCA by an OEM seeking to protect aftermarket goods. Chamberlain manufactured and sold various garage door openers. One issue with conventional openers was that would-be criminals could intercept the code sent from the remote to the opener, copy it, and later use it to break into a home. In response, Chamberlain created a “rolling code system,” which continuously changed the code used to open the door.

Skylink created a competing transmitter which allowed users to circumvent the rolling code security and operate Chamberlain openers. To use a Skylink transmitter, the user programmed the Chamberlain opener to recognize it. Also, the Skylink transmitter code was not rolling—unlike Chamberlain’s. Chamberlain sued under the DMCA, alleging that Skylink’s disabling of the rolling code feature meant a burglar could intercept the code and later use it to operate a Chamberlain opener. Thus, it argued Skylink was trafficking in devices solely designed to circumvent technological measures that protected the copyrighted opener programs.

The court rejected Chamberlain’s DMCA claims. First, it held that any circumvention of a technological measure must be related to

79. Lexmark, 387 F.3d at 548.
80. Id. at 549.
82. Id. at 1183.
83. Id.
84. Id. at 1184.
85. Id. at 1183.
86. Id. at 1185.
87. Chamberlain, 381 F.3d at 1184.
88. Id. at 1185.
89. Id.
90. Id. at 1197–1204.
some copyright protection to qualify as a DMCA violation. It contrasted the Chamberlain situation with other cases in which the circumvention led to or facilitated reproduction or distribution, which are rights protected under the Copyright Act. The court was not persuaded by Chamberlain’s statutory argument, which noted that Section 1201(a)(2) prevents access while Section 1201(b)(1) prohibits facilitating access that can lead to copying, thus seeming to indicate that Section 1201(a)(2) protects a new “copyright”—that of access.

Second, the court analyzed how the question of authority related to circumvention. The court pointed to the DMCA provision which prohibits circumvention in order to prevent unauthorized access. It noted Chamberlain could not prevent purchasers of its copyrighted computer programs from accessing the software. Thus, the court reasoned that legitimate purchasers of a copyrighted work obtain the rights to certain uses of the work. The court therefore determined that purchasers had the requisite authority to circumvent the rolling code encryption.

E. The Problem

Critics have attacked attempts to use the DMCA to protect OEMs’ aftermarket goods for various reasons. Many point to the legislative intent behind the Act and to the general policies underlying intellectual property law. Additionally, commentators note the confusion among the circuits regarding the application of the DMCA in areas of user authority and infringement. Finally, and most significantly,

91. Id. at 1199. Chamberlain did not assert that Skylink infringed its traditional copyrights in any way. Id. at 1185.
93. Chamberlain, 381 F.3d at 1199; see also Efroni, supra note 2, at 309.
94. Chamberlain, 381 F.3d at 1202.
95. Id.; see also 17 U.S.C. § 1201(a).
96. Chamberlain, 381 F.3d at 1202.
97. Id. at 1203.
98. Id. at 1203–04.
99. See, e.g., Howell, supra note 2, at 138–40 (arguing that legislative history shows Congress did not intend to protect OEMs); see also Stacy L. Dogan & Joseph P. Liu, Copyright Law and Subject Matter Specificity: The Case of Computer Software, 61 N.Y.U. ANN. Surv. Am. L. 203, 226 (2005) (“While such a narrow interpretation of the DMCA may be supported by the literal text of the statute, the use of the DMCA for these purposes was clearly outside the DMCA’s intended scope.”); McCardle, supra note 7, at 1020–21 (discussing the potential for monopolies on aftermarket goods if OEMs obtain the right to use the DMCA).
101. Petition for Writ of Certiorari, supra note 78, at 10–11.
102. See Kitch, supra note 28, at 9–10.
they are concerned with preventing anti-competitive monopolies by OEMs.  

1. Should the DMCA Apply to OEMs?

An important threshold question is whether OEMs may impose liability upon competitors under the DMCA. Commentators firmly believe that Congress did not intend to protect such extended monopolies. Many people are concerned that the exceptions Congress wrote into the statute are not enough, and OEMs can still run rampant. Further, they point to general theories of intellectual property law that generally disfavor monopolies. Finally, many identify copyright doctrines which should preclude OEM relief.

a. Legislative Intent and Statutory Interpretation

Critics argue that the legislative history and remarks associated with the DMCA show that Congress did not intend to protect aftermarket goods. One commentator points to Congress's cautious approach toward the legislation, which was ultimately passed only to ensure compliance with WCT policies. Further, Congress "delayed the effective date of Section 1201(a) for two years." Others note Congress explicitly stated its intention that the DMCA does not "affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under [the copyright act]." Thus, Congress did not intend to create a new right under which manufacturers can seek refuge. Analysts highlight the legislation's stated purpose to "curtail piracy of intellectual property, particularly over the Internet." And while WCT compliance was one concern, persistent lobbying by the owners of copyrights of digital works like mo-

103. See, e.g., McCardle, supra note 7, at 1020–21.
104. Howell, supra note 2, at 139–40.
105. McCardle, supra note 7, at 1022.
106. See, e.g., Howell, supra note 2, at 136.
107. See, e.g., id. at 137 (arguing that both the merger and copyright misuse doctrines should apply to prevent OEMs from successfully using the DMCA to protect their works).
108. Id. at 138–40.
110. Howell, supra note 2, at 139.
111. Lipton, supra note 42, at 541 (alterations in original) (quoting 17 U.S.C. § 1201(c)(1) (2000)).
113. Higgs, supra note 34, at 80 (pointing out that the DMCA's purpose is "to make digital networks safe places to disseminate and exploit copyrighted materials," and that it was drafted
tion pictures and music caused Congress to take action.114 Such commentators argue that nowhere in the lengthy legislative history did Congress mention or imply any intent to protect aftermarket goods.115

Further, critics point to the various exemptions as evidence of congressional intent to refuse aftermarket producers DMCA rights.116 The interoperability exemption of Section 1201(f) could indicate legislative foresight that software creators might attempt to protect their embedded works.117 Congress apparently wanted to allow software companies to continue to innovate and create programs that interact with existing components.118 Additionally, analysts note that certain entities are exempt from liability based on educational or nonprofit status and suggest that the Act was not intended to stop the free flow of ideas among students, scholars, and the government.119

b. General Principles of IP

General intellectual property law suggests aftermarket manufacturers should seek protection in the patent system and cease attempts to obtain perpetual monopolies.120 The primary purpose of patent and copyright law is "[t]o promote the Progress of Science and useful Arts."121 The laws provide innovators with a "limited monopoly" as an incentive to further create and invent.122 This reward ultimately requires the author or inventor to dedicate the work to the public upon the monopoly's expiration.123

Some believe aftermarket producers should protect their works with patents rather than copyrights.124 Patents give inventors significant monopolies over the rights to make, use, or sell certain goods.125 But patents are costly and their protection is brief—twenty years from their filing date.126 Copyright protection is less expensive, easier to

"to protect copyright owners, and simultaneously allow the development of technology" (quoting S. REP. No. 105-190, at 1, 29)).
116. Id. at 140–41.
117. Id.
118. Id. at 141.
119. Id. at 140.
120. Id. at 138.
122. Howell, supra note 2, at 136–37 (citing United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1140 (N.D. Cal. 2002)).
123. Id.
124. See id. at 138.
acquire, and provides rights for a longer amount of time. But copyrights extend only to "original works of authorship fixed in any tangible medium" and do not protect functional items or devices.

Further, intellectual property owners cannot extend their rights fraudulently. Various provisions of the Patent Act prevent inventors from exploiting their monopolies beyond the statutory period. Inventors may not obtain patents on items in public use or on sale more than one year prior to the application date, because that would give that inventor additional time in which to dominate the market. The idea/expression merger doctrine in copyright law also prevents authors from monopolizing a certain expression when it is the only possible way to communicate an idea.

One writer notes that the DMCA allows aftermarket good manufacturers to obtain a "super-patent" or "super-monopoly" because it combines protections under both the patent and copyright laws. He notes that the protection extends to devices, but provides the longer copyright protection and does not impose patent law's requirements of novelty and nonobviousness, thus making it easier to obtain. Others call the rights obtained under the DMCA "paracopyright" because they are independent of traditional copyrights. Therefore, one could read the DMCA in light of these overarching goals to protect only creative works, rather than simple computer programs.

2. User Authority

Circuit courts disagree over whether a user's purchase provides the authority necessary to preclude the application of the DMCA. In Corley, the defendant argued that a DVD purchaser "has the 'authority of the copyright owner' to view the DVD, and therefore is exempted from the DMCA ... when the buyer circumvents an

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127. Id. Copyright protection extends for the life of the author plus seventy years, or in the case of a work made for hire, ninety-five years from publication or 120 years from creation, whichever is shorter. 17 U.S.C. § 302 (2000).
128. 17 U.S.C. § 102; see also Kitch, supra note 28, at 5.
129. See, e.g., Gen. Elec. Co. v. United States, 654 F.2d 55, 61 (Ct. Cl. 1981) (noting a policy behind the patent on-sale bar is to prevent inventors from exploiting their monopolies "beyond the statutorily authorized 17-year period").
130. Id.
133. Kitch, supra note 28, at 5.
134. Id.
135. Higgs, supra note 34, at 63 (citing 3 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 12A.18[B] (2003)).
136. See Howell, supra note 2, at 138.
137. Petition for Writ of Certiorari, supra note 78, at 10.
encryption technology."138 But the court rejected this argument, stating that buying a DVD gives the consumer the copyright holder's permission to use the DVD but not to decrypt it.139

The Federal Circuit applied different reasoning in Chamberlain.140 Chamberlain argued that consumers who purchase garage door openers have the copyright holder's permission to use the software when operating the product, but not to access the software through decryption.141 The court would not separate such actions, however, holding that "[c]onsumers who purchase a product containing a copy of embedded software have the inherent legal right to use that copy of the software."142 It noted that because the sales were unrestricted, consumers had implied permission to use the Chamberlain software and were therefore authorized to use the Skylink remotes.143 In fact, the district court judge explained that "consumers have a reasonable expectation that they can replace the original product without violating federal law."144

One commentator suggests that the "first sale" doctrine should apply in these cases.145 This doctrine "provides that copyright holders are limited in the extent to which they can control after-market uses of a copyright work after the first sale of the work."146 A copyright owner can profit from the first sale of his work, but cannot control future sales nor require royalties from the original purchaser.147 Courts could apply this doctrine in the area of aftermarket goods by establishing that once the initial sale of the embedded software is made to a consumer, the manufacturer can no longer control its use—barring infringement.148 Thus, when a consumer purchases a good containing software that interoperates with replacement parts, the extent of his rights is unclear.149

139. Id.
141. Id.
142. Id.
144. Lipton, supra note 42, at 512 (quoting Chamberlain Group, Inc. v. Skylink Techs., Inc., 292 F. Supp. 2d 1023, 1046 (N.D. Ill. 2003), aff'd, 381 F.3d 1178 (Fed. Cir. 2004), cert. denied, 544 U.S. 923 (2005)).
145. Id. at 537–39.
146. Id. at 537 (citing 17 U.S.C. § 109(a) (2000)).
147. Id.
148. Id. at 538.
149. Id. at 513.
3. Proof of Infringement

The circuit courts are also in conflict about the extent to which infringement should play a role in DMCA causes of action. The Chamberlain court held that the DMCA protects access to a work only when it is linked to protection from piracy. It pointed to the congressional statement that the DMCA does not create a new property right, but was enacted to prevent facilitation of infringement.

But the Chamberlain holding seems to contradict the plain language of the statute, which does not explicitly require allegations of copyright infringement. It also "does not necessarily reflect the actual drafting of the DMCA, nor does it represent past judicial interpretations of the DMCA." The DMCA merely requires a circumvention of a technological measure which controls access, but makes no reference to a showing of infringement. This provision, as interpreted by the Chamberlain court, might not comply with the United States' obligation under the WCT, which requires protection for copyright holders from circumvention of technological security measures. Given the plain language of the statute, should courts require a showing of infringement to trigger DMCA protections?

4. Potential Impact

One of the biggest concerns with allowing aftermarket goods protection under the DMCA is the potential effect it would have on consumers and the free market economy. Critics point out that, as written, the DMCA protects all copyrighted works, whether the work is the focus of the purchase or whether it is of "minimal significance to a larger product." Some fear that manufacturers could insert insignificant computer programs in all goods, thus preventing competitors from creating replacement parts without violating the DMCA. The example most often cited is an automobile in which a manufacturer could create monopolies on replacement goods like "oil filters, wind-
shield wipers, tires, [and] batteries." Manufacturers would then be able to create tying arrangements that might violate antitrust laws. In any event, some critics argue that whether this "constraint on subsequent uses of a product" is illegal or not should be determined through contract and competition laws rather than through the DMCA.

III. Analysis

Analysis of the legislative history, general principles of intellectual property, and the statutory requirements does not necessarily lead to the conclusion that aftermarket goods should be refused protection. Congress did not explicitly state its intention to exclude such products from the statute and, in fact, created exceptions which indicate the goods were covered. Further, Congress allows intellectual property owners substantial monopolies or exclusive rights in other areas.

Finally, although courts have thus far ruled against OEMs, their reasoning conflicts as to what constitutes circumvention authority and whether infringement is a necessary component of a cause of action, and this leaves the door open for companies to find relief under the DMCA in the future.

A. The DMCA Should Apply to OEMs

Much of the DMCA discussion is related to whether OEMs should be allowed to seek relief under the statute. Various portions of the legislative history indicate that Congress considered OEMs and intended to protect them to some extent. Statutory analysis leads to a conclusion that embedded computer programs—if copyrightable—should be protected. Additionally, the general policies of intellectual

160. Id. at 1021–22 (explaining how this could also affect manufacturers of replacement household goods like "coils, hoses, and pipes," "lamps and light bulbs," "remote controls and batteries," and "ball point pens and ink refills"); see also Howell, supra note 2, at 135–36 (citing the ink cartridge industry as an example of a low price initial purchase followed by forced purchase of expensive aftermarket goods); Lipton, supra note 42, at 489 (discussing, as an example, the impact on consumers' ability to purchase replacement remote controls for televisions).


163. Lipton, supra note 42, at 497.

164. See infra notes 170–214 and accompanying text.

165. See infra notes 215–244 and accompanying text.

166. See, e.g., McCardle, supra note 7, at 1018–19; see also Efroni, supra note 2.

167. See infra notes 170–214 and accompanying text.
property law do not preclude OEM use of the DMCA.\textsuperscript{168} Thus, courts should extend the DMCA cause of action to these OEM devices just as they have for traditional copyrighted works.\textsuperscript{169}

1. Legislative History and Statutory Interpretation Show Congressional Acknowledgment of OEM Protection

The legislative silence regarding protection for aftermarket goods can be interpreted differently than it is by those who claim victory for generic manufacturers.\textsuperscript{170} In some of its discussions, Congress specifically referred to the protection of computer programs\textsuperscript{171} and the question of interoperability.\textsuperscript{172} Congress noted that it expected that the reverse-engineering exception would allow continued innovation.\textsuperscript{173} These comments show that Congress contemplated the effects on various types of copyrighted materials and made a conscious choice to protect "work[s] protected under [the Copyright Act]"\textsuperscript{174} without reference to the particular class of work.

Further, various current exemptions show that Congress considered the effect of the DMCA on the aftermarket.\textsuperscript{175} First, the Act provides for the Librarian of Congress (LOC) to exclude certain classes of works from liability under subparagraph (A).\textsuperscript{176} The LOC makes such determinations based on recommendations from the Register of Copyrights.\textsuperscript{177} The exemptions are assessed every three years.\textsuperscript{178} This exemption is an adequate safeguard for the anti-access provision because it allows flexibility for unforeseen consequences. One writer argues that courts, rather than the LOC, should make the exemption decisions because they are better equipped for extensive discovery and factual analysis.\textsuperscript{179} But the Register of Copyrights is certainly in a position to understand the effects of various exemptions.\textsuperscript{180} It is logi-

\textsuperscript{168} See infra notes 215–244 and accompanying text.
\textsuperscript{169} See, e.g., Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).
\textsuperscript{170} See, e.g., Howell, supra note 2, at 133–39 (suggesting that Congress's silence should be interpreted as an intent to preclude OEM protection).
\textsuperscript{171} S. Rep. No. 105-190, at 10 (1998) (noting that the WCT specifically recognized protection of computer programs under the Berne Convention).
\textsuperscript{172} Id. at 13 (discussing the purpose of the reverse-engineering exception of § 1201(f)).
\textsuperscript{173} Id. ("The purpose of this section is to foster competition and innovation in the computer and software industry.").
\textsuperscript{175} See 17 U.S.C. § 1201(a)(1)(D), (F).
\textsuperscript{176} 17 U.S.C. § 1201(a)(1)(D).
\textsuperscript{177} Barker, supra note 39, at 53.
\textsuperscript{178} McCardle, supra note 7, at 1025.
\textsuperscript{179} Id.
\textsuperscript{180} See, e.g., 17 U.S.C. § 409 (detailing the information the Register of Copyrights examines for each application).
cal to empower the agency that determines copyright allowance to determine whether there are classes of protected works which do not warrant DMCA safeguards. Because the Copyright Office sees or has access to all applications, it can determine the status of various kinds of works, including trivial computer programs. This provides confidence and clarity for potential litigants.\(^{181}\)

The LOC exception applies only to the anti-access provision.\(^{182}\) Thus, aftermarket manufacturers who create interoperable goods and are sued under the anti-trafficking provision cannot be exempted under Section 1201(a)(1)(D).\(^{183}\) Accordingly, Congress should amend the DMCA to provide a similar exemption under the trafficking portion of the Act.\(^{184}\)

The reverse-engineering exception shows Congress understood the Act’s potential implications.\(^{185}\) Congress wanted to ensure software developers would continue to create interoperable programs, so it created Section 1201(f) to protect independently created works produced for interoperability.\(^{186}\) Some argue the exception is too narrow be-

\(^{181}\) See Howell, supra note 2, at 146 (noting that predictability is an essential part of the solution to resolving the DMCA conflict). Some argue that because the LOC exemptions change every three years, there is a lack of predictability. See, e.g., McCardle, supra note 7, at 1025. But clear statutory delineation seems preferable to inconsistent case-by-case analysis.

\(^{182}\) 17 U.S.C. § 1201(a)(1)(C). The relevant provision reads as follows:

During the 2-year period described in subparagraph (A), and during each succeeding 3-year period, the Librarian of Congress, upon the recommendation of the Register of Copyrights, who shall consult with the Assistant Secretary for Communications and Information of the Department of Commerce and report and comment on his or her views in making such recommendation, shall make the determination in a rulemaking proceeding for purposes of subparagraph (B) 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 under subparagraph (B) in their ability to make noninfringing uses under this title of a particular class of copyrighted works.

Id.

\(^{183}\) McCardle, supra note 7, at 1024–25.

\(^{184}\) Id. at 1026–27.

\(^{185}\) See 17 U.S.C. § 1201(f)(1). The relevant provision reads as follows:

Notwithstanding the provisions of subsection (a)(1)(A), a person who has lawfully obtained the right to use a copy of a computer program may 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 of an independently created computer program with other programs, and that have not previously been readily available to the person engaging in the circumvention, to the extent any such acts of identification and analysis do not constitute infringement under this title.

Id.

\(^{186}\) Howell, supra note 2, at 141 (citing Brief of Amicus Curiae Consumers Union Support- ing Skylink Technologies, Inc.’s Opposition to the Chamberlain Group, Inc.’s Motion for Summary Judgment at 10, Chamberlain Group, Inc. v. Skylink Techs., Inc., 292 F. Supp. 2d 1023 (N.D. Ill. 2003) (No. 02 C 6376)).
cause it only exempts works created "independently," and many interoperable works need to directly copy the original work.\textsuperscript{187} But the exception's existence shows a deliberate intent to exclude certain goods.\textsuperscript{188} If Congress had intended that aftermarket producers would not be protected under the general DMCA provisions, the 1201(f) exemption would be superfluous. Where it is evident Congress wanted to exempt or protect a certain class of goods, courts should honor that intent.\textsuperscript{189}

The plain language of the DMCA protects embedded computer programs in aftermarket goods.\textsuperscript{190} The statute refers to "a work protected under this title,"\textsuperscript{191} meaning it applies to works as defined in Section 102.\textsuperscript{192} As previously noted, a computer source code is protected as a "literary work" to the extent it is nonfunctional.\textsuperscript{193} Courts should abide by the plain language of the statute.\textsuperscript{194} Where an embedded program is protected by the Copyright Act, it should also have DMCA protection.\textsuperscript{195}

In both \textit{Lexmark} and \textit{Chamberlain}, the OEMs registered their programs with the Copyright Office.\textsuperscript{196} Registration within five years of first publication is prima facie evidence of the copyright's validity.\textsuperscript{197} Accordingly, the programs' copyrights should have been presumed valid. Thus, the embedded programs qualified as "work[s] protected under this title."\textsuperscript{198}

\begin{itemize}
  \item \textsuperscript{187} Howell, \textit{supra} note 2, at 141–42.
  \item \textsuperscript{188} See S. Rep. No. 105-190, at 13 (1998).
  \item \textsuperscript{189} See \textit{Barnhart v. Sigmon Coal Co.}, 534 U.S. 438, 452–53 (2002).
  \item \textsuperscript{190} See 17 U.S.C. § 1201(a)(1)(A) ("No person shall circumvent a technological measure that effectively controls access to a work protected under this title."); see also \textit{Kitch, supra} note 28, at 12 ("[A] careful review of the language of the statute and [the \textit{Chamberlain} and \textit{Lexmark}] decisions indicates that, if done properly, the super-monopoly is still a viable weapon.").
  \item \textsuperscript{191} 17 U.S.C. § 1201(a)(1)(A).
  \item \textsuperscript{192} 17 U.S.C. § 102.
  \item \textsuperscript{193} Id.; see also \textit{Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.}, 797 F.2d 1222, 1233–34 (3d Cir. 1986) (explaining that creative aspects of computer programs may be copyrightable).
  \item \textsuperscript{194} See \textit{Kitch, supra} note 28, at 10 ("[T]he \textit{Chamberlain} decision . . . ignores the plain language of § 1201(a)(2) . . ."); see also \textit{Barnhart}, 534 U.S. at 450 ("As in all statutory construction cases, we begin with the language of the statute.").
  \item \textsuperscript{195} Cf. \textit{McCardle, supra} note 7, at 1020 ("As currently drafted, the DMCA is too widely drawn because the anti-circumvention provisions give added protection to all works protected by the Copyright Act.").
  \item \textsuperscript{196} \textit{Lexmark Int'l, Inc. v. Static Control Components, Inc.}, 387 F.3d 522, 530 (6th Cir. 2004) ("Lexmark obtained Certificates of Registration from the Copyright Office for both programs."); \textit{Chamberlain Group, Inc. v. Skylink Techs., Inc.}, 381 F.3d 1178, 1185 n.4 (Fed. Cir. 2004), \textit{cert. denied}, 544 U.S. 923 (2005) ("According to Chamberlain, the transmitter program is registered with the United States Copyright Office as No. TX5-533-065, and the computer program in the receiver is registered with the United States Copyright Office as No. TX5-549-995.").
  \item \textsuperscript{197} 17 U.S.C. § 410(c).
  \item \textsuperscript{198} 17 U.S.C. § 1201(a)(1)(A).
\end{itemize}
Further, courts describe the DMCA as providing a new cause of action rather than a new property right. Specifically, the Act purports not to "affect rights, remedies, limitations, or defenses to copyright infringement." The DMCA is simply helping copyright owners protect rights they already enjoy. Where the work is registered with the Copyright Office, it has obtained the rights under Section 106. Thus, the DMCA should help copyright owners like Lexmark and Chamberlain enforce their rights.

Various commentators have suggested drawing a line where the copyrighted work is not independently marketable as a creative product. One suggests a presumption against DMCA protection for "mixed goods" that combine functional products and copyrighted programs. The presumption would not apply to products which are mainly copyrighted works ensconced in a storage medium. Therefore, a garage door opener with a small embedded copyrighted program would begin with a presumption against protection. This presumption could be overcome by examining consumer expectations, marketability of the good without the program, and registration with the Copyright Office.

This suggestion is inadvisable because it replaces a bright-line test with blurred judgments. As written, the DMCA protects all copyrighted works, provided they meet the other statutory requirements. Revising the code to institute presumptions against mixed-good manufacturers creates ambiguity and uncertainty. Potential plaintiffs will not know in advance whether they must overcome a presumption or whether their copyrighted work is sufficiently "independent" so as to begin litigation with DMCA protection. Further, potential defendants cannot be sure whether they will be liable. This uncertainty can create higher priced goods as manufacturers at-

199. Chamberlain, 381 F.3d at 1197.
201. Chamberlain, 381 F.3d at 1197.
202. See 17 U.S.C. § 106 (giving copyright owners the exclusive rights to reproduce, distribute, publicly perform, publicly display, and make derivative works).
203. Lipton, supra note 42, at 523; see also Howell, supra note 2, at 132 (explaining that aftermarket goods are not sold separately as are traditional copyrighted works).
204. Lipton, supra note 42, at 526–28.
205. Id. at 525.
206. Id. at 524.
207. Id.
tempt to protect themselves from future litigation,\textsuperscript{211} and may frighten manufacturers who are potentially free from DMCA liability into ceasing production.\textsuperscript{212}

This Comment contends that Congress does not need to amend the DMCA to provide adequate protection for OEMs, other copyright holders, and consumers. If Congress does wish, however, to exempt certain works from liability, any amendment should specifically detail those works.\textsuperscript{213} This would help settle the issue, should Congress decide this is the proper course of action.\textsuperscript{214}

2. IP Policy Does Not Preclude OEM Protection

Exclusivity and limited monopolies are generally disfavored.\textsuperscript{215} But intellectual property law allows inventors and authors some market dominance to further scientific and creative production.\textsuperscript{216} If OEMs can gain DMCA protection over their embedded works, they are effectively receiving over seventy years of protection for the entire device.\textsuperscript{217} While this concerns many critics,\textsuperscript{218} perhaps it may actually further the progress of science and the arts. Where competitors can copy embedded codes, they do not need to create new works or new inventions.\textsuperscript{219} The generic manufacturer can simply lift the code or "turn it off" and ride the coattails of the primary manufacturer.\textsuperscript{220} While this may promote economic competition, it does not promote scientific innovation.\textsuperscript{221} When secondary manufacturers are forced to independently create their own programs and related mechanical

\textsuperscript{211} Id. at 146.
\textsuperscript{212} Id. at 135–36.
\textsuperscript{213} Various provisions of the Copyright Act already use this specific delineation of works. See, e.g., 17 U.S.C. § 102 (detailing the types of works which are copyrightable subject matter, and specifically excluding protection for an "idea, procedure, process, system, method of operation, concept, principle, or discovery").
\textsuperscript{214} See McCardle, supra note 7, at 1032.
\textsuperscript{215} Howell, supra note 2, at 136–37.
\textsuperscript{216} Id.
\textsuperscript{217} See 17 U.S.C. § 302(a), (c) (protection extends for the life of the author plus seventy years, or if a work made for hire, then ninety-five years from publication or 120 years from creation, whichever is shorter); see also Kitch, supra note 28, at 5.
\textsuperscript{218} See, e.g., Howell, supra note 2, at 138; see also McCardle, supra note 7, at 1018–19 (arguing Lexmark will frighten manufacturers into not creating new goods for fear of litigation).
\textsuperscript{219} See Howell, supra note 2, at 150 (suggesting an amendment to the reverse-engineering exception to allow for "wholesale copying" in order to make devices interoperable).
\textsuperscript{220} See id. at 141 (pointing out that developing interoperable software often requires copying portions of the code).
\textsuperscript{221} McCardle, supra note 7, at 1031.
parts, they are actually adding to the pool of knowledge. In this creative process, they may stumble upon better ways to program or make the product and benefit society more than when they simply mimic competitors.

Additionally, while financial incentive is not the primary purpose of intellectual property law, Congress does provide some encouragement to innovate. Similarly, Congress drafted the DMCA to include all copyrighted works. Thus, it implicitly endorsed granting programmers general copyrights to encourage their further creation and writing. If manufacturers cannot obtain protection for their intellectual property, they may stop creating new goods. Where primary producers know a competitor can simply copy their protected code and reap the benefits, they might not be willing to invest in research and development. Protecting the works under the DMCA helps keep OEMs inventing and creating new goods.

DMCA protection is less intrusive than granting patent protection for the duration of copyright protection. Patents prevent others from making, using, or selling a protected invention. Thus, if a company had patent protection over its toner cartridges, no other manufacturer could create the same type of cartridge—even independently. Currently, the DMCA effectively gives these producers copyright protection over the entire device. But DMCA protection only extends to access and traditional copyrights and not to independent creation of a similar code. Thus, a secondary manufacturer can independently develop software to either create its own toner cartridge or to interact

222. See Kitch, supra note 28, at 10 (suggesting OEMs should write inefficient programs to nullify competitors' arguments that the OEM's program is the only way to achieve the result, and force those competitors to develop different programs).

223. See infra notes 316–363 and accompanying text.

224. See generally Eldred v. Ashcroft, 537 U.S. 186 (2003) (noting that Congress enacted the Copyright Term Extension Act to provide income for authors to continue to create new works, among other things).

225. See, e.g., 17 U.S.C. § 1201(a)(1)(A) (2000) ("No person shall circumvent a technological measure that effectively controls access to a work protected under this title." (emphasis added)).

226. But see McCardle, supra note 7, at 1020 ("[U]sing the DMCA for the purpose of creating a monopoly runs directly contrary to Congress's goal of monopoly prevention in antitrust law.").

227. But see id. at 1022 (arguing that OEMs will spend the money initially because the monopoly on aftermarket parts will guarantee sales).

228. But see id.

229. See infra notes 347–357 and accompanying text.


with the primary good. This interoperability strategy is protected under the reverse-engineering exception.\textsuperscript{234} Further, the protection, while significantly long lasting, is not perpetual.\textsuperscript{235} If Congress is willing to grant such protection to other copyrighted works, then computer programs—as literary works—must receive similar relief.\textsuperscript{236}

Finally, where OEMs attempt to monopolize the only method of accomplishing a result, the merger doctrine will protect the public's interest.\textsuperscript{237} Ideas are not copyrightable.\textsuperscript{238} Where there is only one way to convey that idea, it is said that the idea and expression merge, creating uncopyrightable material.\textsuperscript{239} In some cases, the OEM’s embedded program is the only method of producing the desired result.\textsuperscript{240} The technological measures used to secure components from interoperability are known as "lock-out" codes.\textsuperscript{241} These lock-out codes are often more functional than creative or use key information that protects interoperability.\textsuperscript{242} Thus, where the only way to achieve the handshake between a toner cartridge and the printer is the lock-out code, the merger doctrine will likely apply.\textsuperscript{243} These built-in protections under copyright jurisprudence will protect the market, so no special interpretation of the DMCA is required.\textsuperscript{244}

\begin{footnotes}
\footnotetext[234]{See 17 U.S.C. § 1201(f)(1) (2000). The relevant provision states as follows:
Notwithstanding the provisions of subsection (a)(1)(A), a person who has lawfully obtained the right to use a copy of a computer program may 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 of an independently created computer program with other programs, and that have not previously been readily available to the person engaging in the circumvention, to the extent any such acts of identification and analysis do not constitute infringement under this title.}
\footnotetext[235]{Id.}
\footnotetext[236]{See supra note 217.}
\footnotetext[237]{See 17 U.S.C. § 101 (defining literary works as “works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied”).}
\footnotetext[238]{Howell, supra note 2, at 137.}
\footnotetext[239]{See Kregos v. Associated Press, 937 F.2d 700, 705 (2d Cir. 1991) (explaining that only expressions of ideas are copyrightable).}
\footnotetext[239a]{Id. ("[E]ven expression is not protected in those instances where there is only one or so few ways of expressing an idea that protection of the expression would effectively accord protection to the idea itself.").}
\footnotetext[240]{Howell, supra note 2, at 142.}
\footnotetext[241]{Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 536 (6th Cir. 2004).}
\footnotetext[242]{Id.}
\footnotetext[243]{Efroni, supra note 2, at 267.}
\footnotetext[244]{But see Matthew J. Leary, Welding the Hood Shut: The Copyrightability of Operational Outputs and the Software Aftermarket in Maintenance and Operations, 85 B.U. L. Rev. 1389, 1432 (2005) ("If the merger doctrine prevents copyrightability, the DMCA would not apply, but if it is only a defense to infringement, it will provide no defense

\end{footnotes}
B. The Copyright Owner Maintains Authority to Authorize Circumvention

The circuits are conflicted about whether users can authorize decryption under the DMCA. The statute prohibits unauthorized circumvention of technological protections. Presumably, the authorization must come from the copyright holder who encrypted the work. Chamberlain did not grant consumers or competitors explicit authorization to access the embedded code. But the court held that because the sale was unconditional, consumers had implied authorization to bypass the encryption.

The Corley court rejected similar logic. It insisted that the DMCA provision requiring authority to circumvent a work must be read in conjunction with the provision being alleged by the plaintiff in the particular case. The court noted that one could not sell devices designed for circumvention where circumvention means decrypting a measure without authority.

The purchaser of a copy of a copyrighted work obtains the right to "use" that copy. The copy owner may, of course, read a novel or view a painting. But ownership of a copy and ownership of a copy-
right are distinct.\textsuperscript{254} The copyright owner maintains the rights inherent in creation.\textsuperscript{255} Thus, a reader may not copy a novel or adapt the novel into a screenplay (a derivative work) without the copyright holder's permission. Courts have not found any implied license to violate these copyrights in the mere purchase of a work.\textsuperscript{256} Accordingly, purchasing a digital copyrighted work gives the buyer the right to "use" it.\textsuperscript{257} A consumer may read an e-book, listen to a CD, or watch a DVD.\textsuperscript{258} The copyright holder maintains all rights bestowed on it by the Copyright Act, including, presumably, rights under the DMCA.\textsuperscript{259} The DMCA prohibits the disabling of any technology that protects the copyright.\textsuperscript{260} The purchaser of the work may not detract from the copyright holder's rights, including DMCA rights of access.\textsuperscript{261} Therefore, a copy owner may not decrypt any of the works unless exempted.\textsuperscript{262}

While courts have not found implied licenses for consumers to violate copyrights in traditional works, perhaps there is more room for such an interpretation in the context of mechanical goods with ancillary computer programs. Arguably, consumers have less notice that they are buying a copyrighted work.\textsuperscript{263} Purchasers know a novel is copyrightable but probably do not think about the copyrightability of embedded source code.\textsuperscript{264} Competitors \textit{do} understand the inner workings of such devices.\textsuperscript{265} They know that copyrighted code is present and often deliberately copy or bypass the code to create inter-

\textsuperscript{254} 17 U.S.C. § 202 ("Transfer of ownership of any material object, including the copy or phonorecord in which the work is first fixed, does not of itself convey any rights in the copyrighted work embodied in the object... ").
\textsuperscript{255} 17 U.S.C. § 106 (giving copyright owners the exclusive rights to reproduce, distribute, create derivative works, publicly perform, and publicly display the work).
\textsuperscript{256} See, e.g., Red Baron—Franklin Park, Inc. v. Taito Corp., 883 F.2d 275, 281 (4th Cir. 1989) ("[T]he transfer of ownership in a particular copy of a work does not affect Producers' Section 106(4) exclusive rights to do and to authorize public performances." (quoting Columbia Pictures Indust., Inc. v. Aveco, Inc. 800 F.2d 59, 64 (3d Cir. 1986))).
\textsuperscript{258} See, e.g., Universal City Studios, Inc. v. Corley, 273 F.3d 429, 444 (2d Cir. 2001) (noting that a consumer who buys a DVD may view it but not decrypt it); see also United States v. Elcom Ltd., 203 F. Supp. 2d 1111, 1118 (N.D. Cal. 2002) (explaining that an e-book buyer may read it but may not e-mail or copy it).
\textsuperscript{259} See 17 U.S.C. §§ 202, 1201.
\textsuperscript{260} 17 U.S.C. § 1201.
\textsuperscript{262} See, e.g., 17 U.S.C. § 1201(f).
\textsuperscript{263} Lipton, \textit{supra} note 42, at 524 ("A purchaser of a toner cartridge or garage-door-opening device may not see software as integral to their purchasing needs.").
\textsuperscript{264} \textit{Id.}
\textsuperscript{265} See \textit{S. REP. NO.} 105-190, at 13 (1998) (noting that software developers currently develop interoperable products).
Accordingly, aftermarket manufacturers should not be able to use lack of notice as an excuse for violating the DMCA. They know they do not have the authority of the copyright holder to bypass the technological protections. Applying this logic to Chamberlain, and assuming the consumers there did not have authority to bypass the opener code, Skylink violated the DMCA when it sold devices designed for circumvention.

One way for manufacturers to overcome the potential lack of notice for consumers is through the use of shrinkwrap licenses. These licenses provide buyers with notice of conditions imposed by the manufacturer. Examples include licenses on computer software restricting future resale and agreements to abide by a price discrimination structure. Such licenses have generally been upheld as viable contracts. Lexmark included such a license on its printer cartridges, contracting with consumers that in exchange for a discounted initial printer price, buyers would purchase only Lexmark brand cartridges. As the Sixth Circuit did not discuss the question of authority in its decision, these licenses are presumably valid as providing appropriate notice to consumers. Thus, OEMs should include these licenses in order to prevent future courts from finding implied unconditional sales. Then, neither the aftermarket producer nor the consumer has explicit or implicit authority to circumvent the protections.

Finally, critics have suggested application of the first sale doctrine in these cases. After a primary producer sells a copyrighted work, even one embedded in a device, it cannot control the future sale or use of that work. But the first sale doctrine protects only future

266. Howell, supra note 2, at 141–42.
267. Id.
269. But see id. at 1187.
271. ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1450 (7th Cir. 1996).
272. Id.
273. Id. at 1449.
275. See generally Lexmark, 387 F.3d 522.
278. Lipton, supra note 42, at 537–39.
279. 17 U.S.C. § 109(a) ("Notwithstanding the provisions of section 106(3), the owner of a particular copy or phonorecord lawfully made under this title ... is entitled, without the author-
sales, rather than actions which potentially violate other copyrights. The DMCA arguably created an additional right of access, preventing circumvention without permission. So while a purchaser of a garage door opener could resell the system to another, he cannot copy the computer code and sell it. Further, under the DMCA, he cannot decrypt the code in order to access it. Thus, the first sale doctrine is inapplicable as it protects only distribution rights.

C. Infringement Is Not a Requirement of a DMCA Claim

As noted above, courts also disagree about the necessity of an infringement claim in DMCA suits. The plain language of the statute seems to indicate that copyright infringement is not a required element of a DMCA cause of action. The prohibitions in Sections 1201(a)(1) and (a)(2) relate to accessing a work, while Section 1201(b) forbids the sale of mechanisms which bypass measures protecting copyright owners' rights. An important canon of statutory construction instructs courts to interpret statutes in pari materia: the language should be read in the context of the whole statute and its surrounding clauses. Here, it is significant that one portion of the statute specifically refers to "copyright owners' rights" while another portion does
Interpreting the statute as a whole shows that Congress must have intended to leave copying out of Section 1201(a). Accordingly, plaintiffs whose works are decrypted should be able to pursue claims whether or not they can show infringement.

Legislative history shows that Congress drafted the separate subsections of the Act to protect separate rights. Congress noted that although 1201(a)(2) and 1201(b) both relate to prohibitions on selling circumvention devices, they deal with discrete rights. Specifically, one section protects access while the other preserves traditional copyrights. Congress explained, "[t]he two sections are not interchangeable, and many devices will be subject to challenge only under one of the subsections." Further, Congress described the purpose of 1201(b) when it stated, "[u]nlike subsection (a), which prohibits the circumvention of access control technologies, subsection (b) does not, by itself, prohibit the circumvention of effective technological copyright protection measures." Congress went on to clarify that subsection (b) requires a connection to rights protected under the Copyright Act. Thus, legislative history seems to indicate Congress did indeed create a new right of access distinct from copyrights protected under the remainder of the Copyright Act.

Many, including the court in Chamberlain, point to statutory language that suggests the DMCA is not creating a new right for copyright holders. The court took issue with Chamberlain's interpretation because it would "deny all access to the public." One might argue, however, that access is related to other rights protected under the Copyright Act. For instance, decrypting a "pay-per-view" movie without the owner's permission is illegally accessing the work...
and arguably violating the copyright owner's right to distribution.\textsuperscript{301} Accordingly, protecting the copyright holder’s right to prevent access in turn facilitates the protection of its other rights.\textsuperscript{302} Under that interpretation, Congress's protection of access does not violate its promise to leave other Copyright Act protections and rights undisturbed.

Additionally, there is a question as to why Congress needed to enact the DMCA if it requires a connection to infringement actions. Because Section 1201(b) explicitly relates to infringement, it should have been enough to introduce an additional cause of action against traffickers such as the defendant in \textit{Lexmark}, who both circumvent a technological measure and copy the work.\textsuperscript{303} In fact, Congress noted that “[t]he device limitation in 1201(b) enforces the longstanding prohibitions on infringements.”\textsuperscript{304} But Congress went a step further and prohibited access that “was never before made unlawful.”\textsuperscript{305} When Congress stated that “[i]t is anticipated that most acts of circumventing a technological copyright protection measure will occur in the course of conduct which itself implicates the copyright owners [sic] rights under [the Copyright Act],”\textsuperscript{306} it implicitly recognized that some circumventions would not include infringement, but would still be protected. Therefore, the anti-circumvention provisions create new protections, purposefully disconnected from the requirement of showing a violation of traditional copyrights.

Finally, without protection from mere unauthorized access, the U.S. is potentially not in compliance with the WCT.\textsuperscript{307} The WCT required that the United States “provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty.”\textsuperscript{308} Congress believed it was necessary to enact legislation to protect against circumvention in order to comply with the Treaty.\textsuperscript{309} Thus, attaching a requirement of infringement allegations may put U.S. compliance in question.\textsuperscript{310}

\begin{thebibliography}{99}
\bibitem{301} See Petition for Writ of Certiorari, supra note 78, at 10.
\bibitem{303} See \textit{Lexmark Int'l, Inc. v. Static Control Components, Inc.}, 387 F.3d 522, 530–31 (6th Cir. 2004).
\bibitem{305} \textit{Id.}
\bibitem{306} \textit{Id.} at 29.
\bibitem{307} Petition for Writ of Certiorari, supra note 78, at 10.
\bibitem{309} \textit{McCardle}, supra note 7, at 1004.
\bibitem{310} Petition for Writ of Certiorari, supra note 78, at 12.
\end{thebibliography}
IV. IMPACT

If manufacturers can find protection for these strategies under the
DMCA, commentators argue that consumers will suffer for numerous
reasons. First, with competitors unable to participate in the
aftermarket-goods arena, consumers have only one purchase op-

tion. Second, analysts predict that innovation will slow as monopo-
listic companies stop improving products and operations efficiency
because they have a captive market. They also predict that when
competitors lose sales they will not be able to invest in product deve-
lopment. Finally, there is concern that smaller corporations may
halt legitimate activity in fear of dominant organizations’ legal
power. This Part assesses these worries and offers that the impact
on consumers’ wallets might be smaller than imagined.

A. Locking-In May Not Negatively Affect Pricing

An OEM that successfully prevents competitors from creating in-
teroperable aftermarket goods will be the sole supplier for that re-
placement item. Consumers will be forced to purchase the
aftermarket substitutes from that OEM. Because consumers have
only one choice for their replacement parts, scholars believe that typi-
cal economic factors will not regulate prices. Additionally, given its
monopoly, an OEM could discount the primary good to encourage
sales and then charge extortionate amounts for the replacement
goods.

Where the cost to buy new equipment is higher than that for the
replacement good, consumers become “locked in” to a specific brand
or manufacturer. This is currently the case with some patented

311. McCardle, supra note 7, at 1021.
312. See id. at 1022.
313. See id. at 1018–19; see also Howell, supra note 2, at 135.
314. McCardle, supra note 7, at 1018–19.
315. See infra notes 316–363 and accompanying text.
316. McCardle, supra note 7, at 1021.
317. Id. ("Consumers ... would be forced to purchase these goods from only one source and
to pay the increased prices that manufacturers demand.").
318. 2A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 403a (2d ed. 2002)
("Monopoly exists when one firm controls all or the bulk of a product's output, and no other
firm can enter the market or expand output at comparable costs." (citation omitted)).
319. McCardle, supra note 7, at 1021; see also Howell, supra note 2, at 134 ("[A]ny manufac-
turer could reduce the cost of their original product and 'make up the difference' by selling all of
their replacement parts at a significant markup." (citation omitted)).
320. Higgs, supra note 34, at 68.
goods,\textsuperscript{321} including many razor blades. Consumers must buy replacement cartridges from the original manufacturer because the patentee can legally exclude aftermarket competition.\textsuperscript{322}

As some experts note, this "locking-in" is generally not "the 'monopoly' that concerns antitrust."\textsuperscript{323} They assert that the requirement of buying only certain branded replacement parts is typically taken into consideration in the initial pricing.\textsuperscript{324} For example, in the case of Chrysler automobiles, which require Chrysler transmissions, "well-informed customers will attribute high prices in Chrysler transmissions to the cost of owning a Chrysler. If Chrysler competes with Ford, General Motors, and others, it will lose sales to them."\textsuperscript{325} These commentators suggest that rather than looking at the aftermarket good itself, such as a Chrysler transmission, one must examine the entire package as the applicable market; that is, a Chrysler automobile with its accompanying parts.\textsuperscript{326} The market becomes the combination of the initial good with its lifetime parts and service. Thus, Chrysler is not really a monopoly, because it competes with other auto companies at first purchase.

Similarly, with ink cartridges and garage door openers, informed consumers will force the market to remain competitive.\textsuperscript{327} Where
consumers are not willing to pledge themselves to one brand for aftermarket replacement goods, they will shop for other original equipment. In fact, courts have noted this effect in finding that vertical self-integration is a violation of antitrust law only if that product is the best on the market. Otherwise, consumers will not remain loyal and will search for another brand.

Thus, allowing OEMs to protect their aftermarket interfaces will not create an anti-competitive market. Assuming there are other printer manufacturers, consumers may simply avoid purchasing Lexmark printers. Even if all printer manufacturers use the DMCA to force consumers to purchase their particular brand of toner, competition in the overall printer/toner package market will force price regulation. And where consumers are unhappy with any forced purchasing, demand will create other opportunities such as entrepreneurial manufacturers who make printers that can use any aftermarket toner.

Berkey Photo, Inc. v. Eastman Kodak Co. suggests one potential wrinkle that could arise where one printer/ink combination, such as Lexmark’s, is the superior product. In that case, consumers could

328. Meninsky, supra note 327, at 609.
329. Michael J. Meurer, Vertical Restraints and Intellectual Property Law: Beyond Antitrust, 87 MINN. L. REV. 1871, 1871 n.4 (2003) ("[R]estraints that affect competitors are classified as horizontal, and restraints that affect users or suppliers are classified as vertical.").
330. Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 291 (2d Cir. 1979) (stating that a firm can only achieve monopoly power through vertical integration where its product is preferred or superior).
331. See John A. Rothchild, Economic Analysis of Technological Protection Measures, 84 OR. L. REV. 489, 491 n.4 (2005) (citing Robert P. Merges, The End of Friction? Property Rights and Contract in the "Newtonian" World of On-Line Commerce, 12 BERKELEY TECH. L.J. 115, 127 (1997) ("The low transaction costs in this market make search and negotiation quite easy, which means an alternative source for a given piece of content will almost always exist, thus reducing the chance that a party will have to accept onerous terms.").
333. See 3A AREEDA & HOVENKAMP, supra note 323, ¶ 762a.
334. See id.
335. See Rothchild, supra note 331, at 491 n.4 (citing Pamela Samuelson, Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised, 14 BERKELEY TECH. L.J. 519, 566 (1999) ("If one information provider tightly locks up his content, a competing provider may see a business opportunity in supplying a less tightly restricted copy to customers who might otherwise buy from the first provider.").
336. 603 F.2d 263, 291 (2d Cir. 1979) In that case, Kodak introduced a new camera that would work with only its film. Id. at 277–78. A competitor sued alleging an antitrust violation because consumers who bought either the new film or camera were forced to buy the other due to exclusive interoperability. Id. at 278. The court noted that a new product would not harm competition unless that product was actually superior to those on the market. Id. at 287.
be reluctant to change brands to obtain more favorable pricing, creating an effective monopoly.\footnote{337} Nothing in \textit{Lexmark} indicates that consumers favor Lexmark printers over other brands, at least significantly, so that does not appear to be a problem in these situations.\footnote{338}

Permitting OEMs this protection also provides them the opportunity to engage in price discrimination.\footnote{339} Price discrimination exists where a seller charges various customers different prices based on each user's valuation of the item.\footnote{340} This can be beneficial in that it allows the vendor to sell the product for less to those who cannot otherwise afford it, at the expense of wealthier buyers.\footnote{341} Lexmark engaged in this type of price discrimination in its toner purchase agreement.\footnote{342} Users could pay more initially for the printer and buy any brand of replacement toner or receive a discount on the initial purchase, but promise to buy only Lexmark toner.\footnote{343} Similarly, OEMs may use such purchase agreements to facilitate multi-level pricing and keep their businesses competitive.\footnote{344}

Finally, even if courts deny DMCA protection, OEMs may continue to make it difficult for aftermarket producers to compete—just as in \textit{Berkey Photo}—by constantly changing the code necessary for interoperability.\footnote{345} Where it takes aftermarket competitors months or years to develop interoperable software, the OEM will continue to dominate the market.\footnote{346} Of course, OEMs cannot change their formula so often that store shelf inventory is obsolete, but certainly there is some balance that would allow them to exclude competition and retain retail favor.

\textbf{B. Companies Will Continue to Innovate}

Commentators argue that such monopolies will "stifle innovation."\footnote{347} The innovation at issue is that of both the generic manufac-

\footnotesize{\begin{itemize}
  \item \footnote{337}{Id.}
  \item \footnote{338}{See \textit{Lexmark Int'l, Inc. v. Static Control Components, Inc.}, 387 F.3d 522, 530 (6th Cir. 2004).}
  \item \footnote{339}{Rothchild, \textit{supra} note 331, at 505–06; see also Ginsburg, \textit{supra} note 100, at 26, 30.}
  \item \footnote{340}{Rothchild, \textit{supra} note 331, at 506.}
  \item \footnote{341}{Id.}
  \item \footnote{342}{See \textit{Lexmark}, 387 F.3d at 530.}
  \item \footnote{343}{Id.}
  \item \footnote{344}{Rothchild, \textit{supra} note 331, at 506 (noting though that price discrimination is only effective where manufacturers can avert arbitrage).}
  \item \footnote{345}{See 3A \textit{AREEDA & HOVENKAMP}, \textit{supra} note 323, ¶ 776a.}
  \item \footnote{346}{See \textit{id.}}
  \item \footnote{347}{Howell, \textit{supra} note 2, at 135.}
\end{itemize}}
turers as well as the monopolistic corporations. First, critics contend that because competitors cannot circumvent these embedded software programs, they will cease trying to find newer, cheaper ways to make and improve aftermarket goods. These generic competitors, however, are generally not market innovators; their model is to copy products that already exist. They may be somewhat innovative in production efficiencies, giving them a more affordable cost. But larger companies like Lexmark probably make the ink cartridges just as cheaply, using brand equity to increase prices. Thus, the fear that smaller companies will not innovate is real, but that is already the case. Additionally, these smaller operations may still attempt to create and sell better goods, provided they do not violate DMCA-protected interfaces. Thus, consumers who own non-Lexmark printers (or any printers that do not restrict the replacement ink) may buy these better products.

Most importantly, critics assert that companies with monopolies will slow their research and development efforts because they have a captive market and no competition. Their theory is that once a manufacturer like Lexmark has consumers wedded to its product, it can afford to sit back on its laurels and wait for the money to roll in. This hypothesis is not necessarily correct. Antitrust analysts note that stifling a company's sales generally impairs innovation. That is, where a company is restricted from profiting on its brands or edgy products, it will cease to create new ones. In this way, where laws do

348. Id. at 135–36.
349. Id. at 134–35; see also Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 553 (6th Cir. 2004) (Merritt, J., concurring) (“Giving authors monopolies over manufactured goods . . . would stifle progress by stamping out competition from manufacturers who may be able to design better or less expensive replacement parts like toner cartridges.”); Howell, supra note 2, at 134–35 (“[B]ecause some aftermarket products do more than mimic the functionality of the original product, control over the aftermarket may stifle legitimate innovation.”).
350. See Howell, supra note 2, at 142 (“[R]everse engineering for purposes of interoperability often requires indiscriminate copying of significant parts, if not all, of copyrighted software . . . .”)
351. Id.; see also Rothchild, supra note 331, at 507–08 (asserting that technological protections harm competition and innovation by preventing reverse engineering).
352. Lexmark, 387 F.3d at 553 (Merritt, J., concurring).
353. See, e.g., Higgs, supra note 34, at 67–68 (“These manufacturers sell primary products at or below cost in order to attract customers, then inflate the prices of aftermarket goods or services to make their primary sales profitable.”).
354. See Howell, supra note 2, at 134–35 (noting that some aftermarket goods actually perform original functions).
355. McCardle, supra note 7, at 1022.
356. See id.
357. 3A AREEDA & HOVENKAMP, supra note 323, ¶ 776c4 (“[R]educing the profit from an innovation tends to reduce the flow of innovations.”).
not protect against interoperable competitor inks, Lexmark will stop innovating because it cannot reap the benefits of new designs. But where Lexmark can earn income from its toner, it will continue to streamline design and efficiency to keep consumers interested. Thus, allowing Lexmark to profit from its ink cartridges through use of the DMCA will actually promote further innovation.

C. Uncertainty in the Law Should Be Rectified

Finally, this Comment agrees with critics who argue that the ambiguity in the law must be remedied.358 Given the current uncertainty, aftermarket competitors might be timid about continuing to manufacture.359 OEMs may issue cease-and-desist letters to intimidate competitors and coerce them into stopping production of questionable products, or at least into charging more for their goods in anticipation of litigation.360 Some courts, however, have awarded damages to defendants where plaintiffs intentionally misrepresented that the DMCA applied.361

This vagueness, however, does not necessarily call for a decision in favor of generic manufacturers. Courts should allow OEMs to protect their property with the DMCA. While many contend that smaller companies will be confused and will not know whether they can legally continue creating interoperable products, the law should still be enforced.362 Accordingly, it is important to further analyze and assess the true impact of OEM causes of action under the DMCA to determine whether the apprehended effect on the market will be realized.363

358. Howell, supra note 2, at 135 ("Due to inconsistent application of the statute, aftermarket manufacturers and their consumers may bow to legal pressure because they are unsure of their rights.").

359. Id.

360. Id. at 135–36 ("[I]t is possible that the costs of aftermarket products are already artificially inflated simply because there is uncertainty whether or not the DMCA applies to the aftermarket."); see also Lexmark Int’l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 552 (6th Cir. 2004) (Merritt, J., concurring) (noting that smaller companies may surrender simply due to high costs of litigation and discovery); Meurer, supra note 329, at 1881–82 ("[A] patent or copyright infringement claim gives the IP owner significant strategic advantages because of the threat of preliminary and permanent injunction, fee-shifting, and treble damages for willful infringement. Furthermore, IP rights can be asserted against innocent strangers . . . who might be vulnerable to an opportunistic IP suit.").


362. Howell, supra note 2, at 135.

363. See David Nimmer, A Riff on Fair Use in the Digital Millennium Copyright Act, 148 U. PA. L. REV. 673, 740 (2000) (explaining that many industries may fail to develop the locking
V. CONCLUSION

Congress enacted the DMCA to protect digital copyrighted works from piracy.\textsuperscript{364} The legislation prohibits circumvention of technological measures used to protect a copyrighted work.\textsuperscript{365} Courts have applied the law in its traditional manner in cases like Corley, which held a hacker liable for assisting the decryption of DVDs.\textsuperscript{366}

Other plaintiffs have experienced greater difficulty when trying to seek relief under the DMCA’s provisions.\textsuperscript{367} These litigants attempted to prevent competitors from accessing—and in one case copying—copyrighted and encrypted computer programs in their competing aftermarket goods.\textsuperscript{368} Analysts have expressed outrage at these attempts, pointing to legislative intent, intellectual property themes, and public policy as reasons to quash these suits by OEMs.\textsuperscript{369} But close analysis reveals that the issues are not so firmly one-sided. The legislature made provisions for situations like reverse engineering and other special exemptions, showing they fully anticipated some effect on aftermarket goods.\textsuperscript{370} Further, intellectual property law often rewards inventors and creators with some exclusivity in exchange for furthering science and the arts.\textsuperscript{371} Thus, OEMs have some viable arguments for protection.

The circuits are also in disagreement over the interpretation of the DMCA.\textsuperscript{372} Courts differ on the question of whether a user can authorize circumvention, or whether the author or copyright owner maintains this control.\textsuperscript{373} Because ownership of a copyrighted work does not typically transfer copyrights to that owner, it is reasonable to apply similar rules in this case.\textsuperscript{374} Additionally, courts must determine whether a DMCA cause of action requires an accompanying infringement claim. Based on the text of the Act and the comments of its drafters, the DMCA appears to have created an additional copyright technology or that consumers may force them to cease using it via market forces; thus, it will be many years before the impact of the DMCA is known). \textit{But see Ginsburg, supra note 100, at 36 ("Based on the track record so far, § 1201 appears to be performing largely as Congress had envisioned and should not be overhauled or replaced.").}

\begin{thebibliography}{99}
\bibitem{364} See supra notes 23–41 and accompanying text.
\bibitem{365} See id.
\bibitem{366} Universal City Studios, Inc. v. Corley, 273 F.3d 429, 459–60 (2d Cir. 2001).
\bibitem{367} See supra notes 66–98 and accompanying text.
\bibitem{368} See id.
\bibitem{369} See supra notes 99–162 and accompanying text.
\bibitem{370} See supra notes 175–189 and accompanying text.
\bibitem{371} See supra note 216 and accompanying text.
\bibitem{372} See supra notes 245–310 and accompanying text.
\bibitem{373} Id.
\bibitem{374} Id.
\end{thebibliography}
of access apart from infringement. In any case, conflict among the circuits must be resolved so future potential litigants will know their rights and liabilities.

The full impact of protection of linked aftermarket goods is not currently known, and it may take years or decades to assess. While many argue OEM protection creates anticompetitive monopolies, some economists put their faith in informed consumers and market forces. Ultimately, the courts must rule definitively so uncertainties are diminished and OEMs, competitors, and consumers can proceed in their best interests.

Margaret M. Dolan*

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375. Id.
377. See supra notes 316–357 and accompanying text.
378. See supra notes 358–363 and accompanying text.

* J.D. Candidate 2007, DePaul University College of Law; B.S. 1999, Northwestern University. I would like to thank Kevin Dolan for his constant support and understanding.