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The Digital Millennium Copyright Act’s Prohibition on Modification Chips:
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By: Lauren Roncoroni

I. Introduction

Today the video game industry is rivaling the size of the motion picture industry and surpassing the music industry in terms of overall revenue. Unlike the film industry, which has a hundred year old history from the late 1880s, the video game industry has perhaps become the fastest growing sector in the entertainment industry and has done so in a relatively short period of time.¹

We live in a society where the digital media market is a very influential force considering that the projected revenues for the global video game market are expected to reach $82 Billion (USD) by 2017.² This is a growth of $15 Billion (USD) from the $67 Billion (USD) in revenue for the same market in 2012.³ It can be affirmatively stated that this market is growing at a rapid rate.⁴ Any changes or new regulations in said market will have impacts on both the consumers and purchasers. ⁵ By these numbers alone, it can be demonstrated that the population of video game and system developers as well as consumers are a prevalent and extremely influential force in the market.⁶

³ Id.
⁴ Id.
⁵ Id.
⁶ Id.
In the past, the societal norm was to head down to the local GameStop or a similar brick and mortar store to purchase the newest video game releases.\(^7\) Developments in both technology and the internet changed the culture of access to video games.\(^8\) Owing to technological advances, the ease with which consumers are able to make reproductions of video games has increased rapidly.\(^9\) Therefore, any digitized materials became easily reproducible if these materials did not contain protection measures.\(^10\) Video game and console developers began to worry about the impact of piracy on their bottom line and the marketability as a whole.\(^11\) This was something that this sector had not had to worry about in the days of gaming systems that ran on cartridges rather than discs and downloads.\(^12\)

Alongside increasingly advanced technological releases, consumers began to demand cutting-edge graphics and effects to persuade purchases.\(^13\) To implement these demands, companies have had to balloon development budgets in order to have more developers, create hand-crafted effects, and have celebrity voice-overs.\(^14\) These new additions are expensed all in the hopes that it will be an “AAA” videogame and be extremely profitable, much like a Hollywood blockbuster film.\(^15\) If the game makes it to AAA status, it will be enough to recoup

\(^7\) Greenspan at 72.
\(^8\) Id.
\(^9\) United States v Reichert, 747 F.3d 445, 448 (6th Cir. 2014).
\(^10\) Id.
\(^11\) Id.
\(^12\) Id. at 458 (citing Lexmark Int’l, Inc. v. Static Control Components, Inc., 387 F.3d 522 (6th Cir. 2004). In Lexmark, the Sixth Circuit held that a modification chips that allowed for third party printer cartridges to be operable in a Lexmark printer was not in violation of Lexmark’s copyright protections.
\(^14\) Id.
\(^15\) Id.
their development costs and sway a critical market into purchasing this creative endeavor. 16 In this changing market where big budgets are nearly required to develop a blockbuster video game, protection of game developers’ copyrighted materials is essential in ensuring their companies’ survival to the next generation of advances.17

As the format of video games were transformed into easily reproducible configurations, video game producers began encrypting these games with a protective code that prevented users from playing unauthorized reproductions on their preferred gaming system.18 This protective code is known as a “Technological Protection Measure”, and the console is programmed to only recognize those video games that contain this specific coding sequence.19

However, users have developed a strategy for bypassing such Technological Protection Measures by way of a modification chip implanted in a game console.20 These modification chips are designed to be hardwired into the game console itself rather than on the unauthorized reproduction.21 They allow the console to recognize a game without a technological protection

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16 Id.
17 Id. For example, the videogame “Destiny” was released on September 9, 2014 by a powerhouse in the development in the gaming industry, Activision. The game had a whopping $500 million budget. However, this budget is also being used to develop sequels provided the game is successful. Despite this, astronomical budgets for big-name developers are the norm rather than the exception. Games such as Grand Theft Auto V were developed on a $265 million budget. Much like the pharmaceutical industries, these developers are expending huge numbers on already successful franchises and promising first releases in the hopes that consumers will continue to purchase the sequels and spin-offs.
18 747 F.3d at 448.
19 Id.
20 Id. at 449.
21 Id. For a modification chip to be installed in the game console, a specialized chip specific to the console must be created, the console opened up, and the chip hardwired into the circuit board in exactly the right position such that the technological copyright protection measures are inoperable and bypassed.
Modification chips bypass the system developer's encryption coding found in the original in order to play media that would be otherwise inoperable. As a further explanation, "mod chips are computer chips that, when wired to a ... console, circumvent the authentication system and allow the system to play unauthorized software." When inserted into a game console, the purpose of these modification chips is to bypass any technological protection measures in place to protect the copyright of the developers.

It has been argued that modification chips are most frequently used to bypass technological protection measures in order to play illegally reproduced, copyrighted content such as video games and DVDs. For example, four Xbox console retailers plead guilty in May 2005 to selling illegally modified Xbox consoles (complete with circumvention technologies) in their store and marketing them as "Super Xboxes". These retailers were outfitting the consoles with a modification chip as well as new software. Thus, the retailers created a product which would allow purchasers’ to save illegally reproduced copies of the video games to the hard drive of the “Super Xboxes” in order to evade technological protection measures in place to protect copyrights.

Furthermore, the Acting Assistant Attorney General John C. Richter of the

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23 Id. (quoting “Mod chips are computer chips that circumvent the technological copyright protection measures in PlayStation consoles and allow users to play unauthorized and illegal copies of PlayStation video games. A counterfeit, unlicensed ‘burnt’ game disc will not play in an unmodified PlayStation console [], but if a mod chip is installed in a PlayStation console, the counterfeit, unlicensed burnt game disc will play.”).
25 Id.
27 Id.
28 Id.
29 Id.
Criminal Division stated that “[t]he commercial manufacture and sale of circumvention devices like the Super Xbox serves only one purpose: facilitation of large scale piracy, […] such piracy and the resulting illegal windfall or these few come at the expense of the many Americans who labor to keep our nation at the forefront of technological advance.”

The encryption code contained on a copyrighted video game is the key to allowing the console to make the material playable to the user, prohibiting unauthorized access. This unauthorized content is inoperable on the console because the encryption code contained in the original is not copied alongside the rest of the content when an unauthorized reproduction is made. Therefore, when the user attempts to use the reproduced content, the gaming system can no longer read the coding in the reproduction. Effectively, the user has been "locked out" from playing the reproduction because the "key" because the technological protection measure, was not also reproduced.

Although modification chips can be used to infringe a copyright, there are numerous other non-infringing uses that could be prohibited depending on how the circumvention provisions of the Digital Millennium Copyright Act is applied in the jurisdiction.

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30 Id. (quoting Acting Assistant Attorney General John C. Richter of the Criminal Division regarding the impact of piracy of copyrighted materials).
31 Universal City Studios v. Corley, 273 F.3d 429, 452 (2d Cir. 2001). In Corley, CSS was an encryption code that only allowed for DVD players to operate disks that contained said CSS code. Defendants developed a circumvention measure, DeCSS, which allowed DVD players and other platforms to operate unlicensed versions of the copyrighted content.
32 Id.
33 457 F.Supp.2d at 960.
34 MDY Indus., LLC v Blizzard Entm't, 629 F.3d 928, 954 (9th Cir. 2010) (citing Lexmark Int'l v. Static Control Components, 387 F.3d 522, 547 (6th Cir. 2004)).
35 Reichert, 747 F.3d at 460 (Donald, J., dissenting).
Examples of such alternative uses are as follows: creating a back-up copy of a copyrighted work which was legally purchased by the user, allowing for the interoperability of an independently created game with the console for which it was coded to operate on, and allowing for interoperability between an outdated video game and a current game console.\textsuperscript{36} Furthermore, reverse engineering of a technological protection measure may be employed to achieve interoperability between computer programs.\textsuperscript{37} However, reverse engineering may be used only for the purpose of achieving interoperability and nothing more.\textsuperscript{38}

In order to understand the reasoning behind each of the arguments set forth in this Comment, it is imperative to discuss the basic principles of copyright law; therefore, an overview of the fundamentals of copyright law can be located in Section II.

The necessity of the Digital Millennium Copyright Act will be discussed in Section III of this Comment. In order to implement copyright protections in a technologically advancing society and comply with the World Intellectual Property Organization Copyright Treaty, the principles of the Digital Millennium Copyright Act were necessary to continue to afford video game developers the protections provided for by the drafters of the Constitution in Const. art. I, §8, cl. 8.\textsuperscript{39}

\textsuperscript{36} Universal City Studios v. Corley, 273 F.3d 429, 441 (2d Cir. 2001).
\textsuperscript{37} Id.
\textsuperscript{38} Id.
Section IV of this writing explains that the anti-circumvention provisions of the Digital Millennium Copyright Act, with particular emphasis on the provisions that most seriously impact modification chips. This section explains that although the Digital Millennium Copyright Act allows for certain types of traditional copyright infringement by way of reverse engineering, interoperability, and archiving efforts, developing modification chips through reverse engineering and achieving interoperability with said modification chips for legal uses has not been specifically provided for in the current exceptions to the anti-circumvention provisions found in the Digital Millennium Copyright Act.

Section V examines a circuit split regarding the statutory construction of the aforementioned anti-circumvention provisions. In Section V, Sub-section A, the advocates of the narrow construction of the statute argue that so long as the end-use of the circumvention technology is a legal use, it cannot be deemed an infringement of the copyright or a violation of the Digital Millennium Copyright Act. By contrast, the reasoning of the broad construction circuits can be found in Section V, Subsection B. The broad construction circuits contend that the anti-circumvention provisions of the Digital Millennium Copyright Act provide for a wholesale ban on the practice of installing modification chips into gaming consoles regardless of the legality of the end-use.

Section VI argues that the narrow construction of the anti-circumvention provision best fits our current societal needs in the United States. By applying the narrow construction, use of modification chips would be allowed for legal end-uses.
Considering that 53% of game developers self-identify as “independent”, these developers are an important facet of the game development industry.\textsuperscript{40} Therefore, continuing with the running example of the independent game developer that uses a modification chip to run his copyrightable work of authorship on his/her preferred game operating system, the independent designer has a means to create on a multitude of operating systems. Without such allowances, there would be a chilling effect on the output of creative works, albeit on a small subsection of the population; however, to weather a chilling effect on progress in the arts is in direct contravention of the Copyright Clause. Applying the narrow construction is a mere temporary measure because it would render the detection and prosecution of modification chip users with illegal end-uses far more difficult. Therefore, it is necessary for both Congress and game developers to create a means to allow for independent designers to use the platform without bypassing technological protection measures which circumvents the argument regarding the legality of modification chips.

In order for the reader to understand the various statutory constructions of the anti-circumvention provisions discussed, it is beneficial to balance both the interests of the copyright holder and potential creators. One Commentator argued that “it is possible to ‘par[e] back speech-chilling copyright holder control while continuing to provide ample remuneration for market-based authors and media firms dedicated to producing original expressions.’"\textsuperscript{41} In accordance with this perspective, it is imperative that copyright protection interests are balanced

\textsuperscript{40} Andrew Groen, Why Game Developers Are Flocking to Sony and Fleeing from Microsoft, WIRED, (Apr. 8, 2013, 6:30 a.m.) http://www.wired.com/2013/04/sony-indies/.

with the principles of free expression and the First Amendment.\textsuperscript{42} Otherwise, our society runs the risk of chilling speech due to the risk of running aground of copyright protection measures.\textsuperscript{43} Legitimate works may never come to light for fear that they violate copyright provisions.\textsuperscript{44}

II. The Basics of Copyright Protection

Article I, Section 8, Clause 8 of the United States Constitution grants Congress the power "to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."\textsuperscript{45} As such, Congress is granted the power to give protection to original works of authorship which are protected by copyrights.\textsuperscript{46} Copyright protection is granted when there is an original work of authorship fixed in a tangible medium of expression.\textsuperscript{47} Copyright protection is premised on the basis that in exchange for creating their works, the author receives control over its use.\textsuperscript{48}

The following are listed in the Copyright Act as works of authorship: literary works, dramatic works, musical works, pantomimes and choreographic works, pictorial, graphic and sculptural works, motion pictures and other audiovisual works, sound recording, architectural works.\textsuperscript{49} However, copyright protection does not extend to ideas, procedures, processes, and systems, methods of operation, concepts, and principles or discover.\textsuperscript{50}

\textsuperscript{42} Id. at 171 (quoting Melville B. Nimmer, \textit{Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press?}, 17 UCLA L. Rev. 1180, 1192 (1972)).
\textsuperscript{43} Derek Khanna, \textit{Reflection on the House Republican Study Committee Copyright Report}, 32 Cardozo Arts & Ent LJ 11, 40 (2013).
\textsuperscript{44} Id.
\textsuperscript{45} Const. art. I §8 cl. 8.
\textsuperscript{46} \textit{Oracle Am., Inc. v. Google Inc.}, 750 F.3d 1339, 1353 (Fed. Cir. 2014).
\textsuperscript{47} Id.
\textsuperscript{49} 17 U.S.C.S. § 102(a).
\textsuperscript{50} \textit{Lexmark Int’l Inc. v. Static Control Components, Inc.}, 387 F.3d 522, 533 (6th Cir. 2004).
Furthermore, there are six specific rights granted under the protection of a copyright.51 Those rights include the right to reproduce, right to prepare derivative works, right to distribute reproductions, right to perform the work publicly, right to display the work publicly, and right to digitally transmit the copyrighted content.52

In order to discuss the legality of these modifications chips, it must first be determined that the coding regarding technological protection measures is copyrightable and that use of a modification chip to bypass a technological protection measure is a violation of copyright law.

“The fact that a medium of expression has a functional capacity should not preclude constitutional protection.”53 A technological protection measure is a unique coding sequence which is written into the unique sequences that make games operable.54 Courts have declared that computer coding may contain an original expression of an author's ideas whereby such coding may be protectable as a literary work.55 Furthermore, there are two types of coding: object code and source code.56 The object code is the binary code, written in a language of ones and zeros, which is read by the operating system.57 The source code are the commands that humans are capable of reading.58

52 Id.
54 747 F.3d at 457.
56 Id. at 1355.
57 Id.
58 Id.
III. The Necessity for the Digital Millennium Copyright Act

While the United States Government had already granted copyright protection through the tenants of the Constitution, it was argued that this was not concrete enough for our technologically advanced marketplace. 59

The Digital Millennium Copyright Act itself and the anti-circumvention provisions contained therein were formulated to enhance copyright protections in this “digital age”.60 The Digital Millennium Copyright Act was enacted in order to comply with the provisions agreed to in the World Intellectual Property Organization Treaty (hereinafter WIPO Treaty).61

Before the enactment of the Digital Millennium Copyright Act, copyright holders were powerless and without a remedy against those who merely decrypted the technological protection measures but did not infringe on the copyright outright.62 At the time, there were only causes of action based upon the actual infringement of a copyright rather than the circumvention of a protection measure.63

The WIPO Treaty called for "adequate legal protection and effective legal remedies against circumvention of effective technological measures used by authors in connection with the exercise of their rights."64 The WIPO Treaty forced Congress to recognize that our current

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59 747 F.3d at 448.
60 Universal City Studios v. Corley, 279 F.3d 429, 435 (2d. Cir. 2001).
61 321 Studios v MGM Studios, Inc. 307 F. Supp. 2d. 1085, 1093-94.
62 Reichert, 747 F.3d at 448.
63 Id. (quoting Chamberlain Group, Inc. v. Skylink Technologies, Inc., 381 F.3d 1178, 1195-96 (Fed. Cir. 2004)) "Prior to the DMCA, a copyright owner would have had no cause of action against anyone who circumvented any sort of technological control, but did not infringe [the copyright].".
64 Universal City Studios v. Reimerdes, 111 F.Supp.2d. 294, 316.
provisions were no longer sufficient to address the technological advances and their effect on copyright law.\textsuperscript{65}

IV. The Anti-Circumvention Provisions defined in the Digital Millennium Copyright Act.

As provided for in §1202(a) (2), the anti-circumvention provisions of the Digital Millennium Copyright Act acknowledge the following tenants:

No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that--

(A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under this title;

(B) has only limited commercially significant purpose or use other than to circumvent a technological measure that effectively controls access to a work protected under this title; or

(C) is marketed by that person or another acting in concert with that person with that person's knowledge for use in circumventing a technological measure that effectively controls access to a work protected under this title.\textsuperscript{66}

Section 1202(a) (2) provides a remedy against those who create circumvention technologies rather than the parties who use these technologies to infringe copyrighted materials themselves.\textsuperscript{67}

\textsuperscript{65} 747 F.3d at 448 (citing \textit{Universal City Studios, Inc. v. Corley}, 273 F.3d 429, 435 (2d. Cir. 2001)). The court stated that “due to the ease of digital piracy, copyright owners feared that the ability to pursue only infringers rather than those who ‘picked the lock’ and enabled the infringement to occur in the first place, was inadequate to protect their copyrighted material.”

\textsuperscript{66} Corley, 273 F.3d at 440-41 (quoting 17 U.S.C.S. §1201(a)(2)).

\textsuperscript{67} Reichert, 747 F.3d at 448.
A. The Factors required for §1201(a) (2) (A) claim.

There are six elements required for a violation of §1201(a) (2) (A). These six elements include the following: ownership of a valid copyright of a work, which is effectively controlled by a technological measure, that third parties can now access, without authorization, in a manner which infringes or facilitates infringing a right protected the Copyright Act because of a product that defendant either designed primarily for circumvention, made available despite only limited commercial significance other than circumvention or marketed for use in circumvention of control technological measure.

The purpose of §1201(a) (2) prohibits trafficking where the technology can bypass technological protection measures that control access to copyrighted materials.

Pursuant to the §1201(a) (3) of the Digital Millennium Copyright Act, anti-circumvention technology is a technological measure which effectively controls access to a work. It is considered to control access "if the measure, in the ordinary course of its operation, requires the application of information, or a process, or a treatment, with the authority of the copyright owner, to gain access to the work."

B. Defining a technological protection measure.

In order to protect copyrighted materials, a technological protection measure ensures that the copyrighted content will only be accessed and operable in conjunction with authorized

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68 Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d. 1178.
69 Id.
70 273 F.3d at 441.
71 17 U.S.C.S. §1201(a) (3) (A).
72 Id.
These types of technological protection measures need not be sophisticated, but run the gamut from simple solutions like password protection to high-tech such as encryption coding.  

Furthermore, “Technology manufacturers use [technological protection measures] to limit the functionality of a device or program to a particular use, to implement security measures, to strengthen privacy controls and... to protect intellectual property by preventing unauthorized duplication and/or access.” Such protection measures have become commonplace in the technologically advanced society we live in, and some form of a technological protection measure is found on each piece of technology with which we come into contact.

Although technological protection measures are not only helpful but also necessary for protecting copyrighted materials, an overly restrictive copyright protection measure can impact the consumer’s use of the product.

C. The procedure for carving out an exception to the anti-circumvention provisions found in the Digital Millennium Copyright Act.

Despite the fact that there are such stringent provisions devoted to anti-circumvention measures, the Digital Millennium Copyright Act allows for exceptions to be made to the use of these anti-circumvention technologies.

Upon the recommendation of the Register of Copyrights, the Library of Congress determines whether exceptions to anti-circumvention provisions of the Digital Millennium

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73 747 F.3d at 456.
74 Id.
75 Id.
76 Id.
77 Id. at 457.
78 17 U.S.C.S. §1201(a) (1) (C).
Copyright Act must be carved out.79 This analysis focuses on "whether persons who are users of a copyrighted work are, or are likely to be in the succeeding three year period, adversely affected by the prohibition … in their ability to make non-infringing uses."80

The following factors are determinative of whether a user will be adversely affected: availability for use of copyrighted works, availability for use of works for nonprofit archival, preservation, and educational purposes, impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship or research, effect of circumvention of technological measures on the market for the value of the copyrighted works, such other factors as the Librarian considers appropriate.81

Exceptions to the anti-circumvention provisions already in place include; research encryption, law enforcement, intelligence, and other government activities, and exemption for non-profit libraries, archives, and educational institutions.82 For example, "A nonprofit library, archives or educational institution which gains access to a commercially exploited copyrighted work solely in order to make a good faith determination of whether to acquire that work."83

The most important exception relevant to this analysis is the reverse-engineering exception. Circumvention technology may be employed to bypass technological measures which effectively control access to the copyrighted material when it is done to achieve interoperability.84 These exceptions are further delineated in Universal City Studios v Reimerdes 79 Id. 80 Id. 81 Id. 82 17 U.S.C.S. §1201(d) (1). 83 Id. 84 Universal City Studios v Reimerdes, 111 F.Supp.2d. 294, 320 (S.D.N.Y. 2000).
which states that "one may make information acquired through such efforts available to others, if the person [in question] … provides such information solely for the purpose of enabling interoperability of an independently created computer program with other programs and to the extent doing so does not constitute infringement."\(^85\)

V. Circuits Split Over the Construction of the Anti-Circumvention Provision found in the Digital Millennium Copyright Act

The circuit split is representative of an ongoing debate over statutory construction and the scope of the DMCA’s anti-circumvention provision among scholars and other commentators who question whether certain applications of §1201 have undermined the delicate balance that Congress sought to achieve between strengthening copyright law and preserving consumer rights, promoting technological innovation and protecting First Amendment speech in our increasingly digitized culture.\(^86\)

While this circuit split has existed for several years, it was recently revisited in the Sixth Circuit Case, *United States v Reichert*.\(^87\) The circuit split is based upon an issue of statutory construction.\(^88\) Thus, the circuits have split between a narrow and broad construction of the anti-circumvention provisions found in the Digital Millennium Copyright Act.\(^89\)

In the broad construction of the provision, there is a wholesale violation for circumvention technologies regardless of their end uses; however, if a narrow construction of the

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\(^85\) *Id.* (quoting 17 U.S.C.S. §1201(f) (3)).

\(^86\) *United States v Reichert*, 747 F.3d 445 (6th Cir. 2014).

\(^87\) *Id.*

\(^88\) *Id.* at 458.

\(^89\) *Id.*
statute is employed, then the end use of the anti-circumvention technology plays into whether the technology is in violation of the Digital Millennium Copyright Act.\(^90\)

A. The Narrow Construction of the Anti-Circumvention Provisions found in the Digital Millennium Copyright Act.

Circuits that support the narrow interpretation have found that the anti-circumvention provisions only apply to technologies whose end-use is infringement of copyrighted content.\(^91\) These circuits have held that circumvention technologies designed primarily for uses other than bypassing copyright protections are not violation of the Digital Millennium Copyright Act.\(^92\)

For a defendant to argue the fair use defense provided for in §107 to an anti-circumvention, the jurisdiction in question must apply the narrow construction of the anti-circumvention provisions.\(^93\)

1. The Requirement of an Infringement Nexus for an Anti-circumvention Technology to be Violative of the Digital Millennium Copyright Act.

The narrow statutory construction of the Anti-Circumvention provisions requires an infringement nexus between the anti-circumvention technology and the end-use of said technology.\(^94\) If there is no infringement, then the statutory provisions of the Digital Millennium Copyright Act do not apply.\(^95\)

\(^{90}\) Realnetworks, Inc. v. DVD Copy Control Ass’n, 641 F.Supp.2d 913, 943 (N.D. Cal. 2009).
\(^{91}\) 747 F.3d at 458.
\(^{92}\) Id.
\(^{93}\) Id.
\(^{94}\) Id.
\(^{95}\) Id.
“If such a nexus were not required, the careful balance that Congress sought to achieve between the ‘interests of content creators and information users’ would be upset.” Therefore, the circuits in support of this construction acknowledge that certain creators would be denied rights if not permitted to use anti-circumvention technologies for lawful ends.

Ergo, under this narrow construction, an independent gamer would be afforded the use of a modification chip in order to make his work operable such that the use conformed to the tenants of fair use which are discussed below.

2. Applying a fair-use defense to the anti-circumvention defense in order to safeguard non-infringing uses.

The doctrine of fair use allows an infringer to use of another author’s copyrightable material without the express permission of the author so long as the infringement is reasonable. Therefore, fair-use can be an affirmative against a copyright infringement claim. Ergo, “the problem presented for determination may be viewed either as one of deigning the scope of the copyright proprietor’s monopoly or as one of defining the nature or extent of the use which one may properly make of the copyrighted work of another.”

Because the narrow construction of §1201(a)(2) takes into account the end-use of the technology rather than prohibiting it wholesale, a defendant may assert the defense of fair-use for any anti-circumvention. “With respect to computer programs, ‘fair use doctrine preserves

97 Id.
98 Elizabeth Williams, What Constitutes Fair Use of Letters or Diaries With Respect to Copyright Infringement Action for Purposes of 17 U.S.C.A. §107, 139 A.L.R. Fed. 93.
100 Id.
101 641 F.Supp.2d at 943.
public access to the ideas and functional elements embedded in copyrighted computer software programs.\textsuperscript{102}

Furthermore, the Second Circuit determined that §1201 (c) (1) provides for the application of the defense of fair use.\textsuperscript{103} This is because the Digital Millennium Copyright Act is merely concerned with whether the end-use of the content is violative of its copyright rather than whether the information was obtained with technologies that circumvent copyright protection measures.\textsuperscript{104} Thus, the overall goal is the promotion of the Arts by preventing and prohibiting violations of copyrights rather than condemning the use of an otherwise innocuous creation used in a lawful manner.

Accordingly, there are four factors for the fair use defense that must be considered when determining whether use of the circumventing technologies is a “fair use” or infringing copyright.\textsuperscript{105} The aforementioned four factors are as follows: the purpose and character of the use, the nature of the copyrighted work, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, and the effect of the use upon the potential market for or value of the copyrighted work.\textsuperscript{106}

3. \textbf{Whether the First Amendment would be implicated by prohibiting non-infringing uses of computer coding.}

If the courts were to prohibit the use of circumvention technologies wholesale rather than taking the end-use of the circumventing technology, then the courts are risking running aground

\textsuperscript{102} \textit{Lexmark}, 387 F.3d 522, 537 (quoting \textit{Sony Computer Entm't, Inc. v. Connectix Corp.}, 203 F.3d 596, 603 (9th Cir. 2000).

\textsuperscript{103} \textit{Corley}, 287 F. 3d at 443.

\textsuperscript{104} \textit{Id.}

\textsuperscript{105} 750 F.3d at 1373.

\textsuperscript{106} 287 F. 3d at 443.
of users’ First Amendment rights of freedom of expression.\textsuperscript{107} In order to determine whether such provisions are applicable in determining expression, it must be determined whether computer code can be considered speech at all.

“Copyright protection extends only to expression, not to ideas, systems, processes; and […] ‘those elements of a computer program that are necessarily incidental to its functions are unprotectable.’\textsuperscript{108} As long as the content is not incidental to the function of the program, both object and source code of a computer program could be extended copyright protection.\textsuperscript{109}

4. The legislative history of the Digital Millennium Copyright Act supports the narrowly tailored statutory construction of the anti-circumvention provisions.

The legislative history of the Digital Millennium Copyright Act establishes that the anti-circumvention provisions were not meant to create a prohibition on all circumvention technologies but only those that would be used for copyright infringement would be considered under the ambit of these provisions.\textsuperscript{110}

Furthermore, “the legislative history of the enacted bill makes quite clear that Congress intended to adopt a ‘balanced’ approach to accommodating both piracy and fair use concerns, eschewing the quick fix of simply exempting from the statute all circumventions for fair use.”\textsuperscript{111}

\begin{itemize}
\item \textsuperscript{107} Id. At 444.
\item \textsuperscript{108} 750 F.3d at 1373 (quoting \textit{Computer Assocs. Int’l v. Altai}, 982 F2d 693, 704-05 (2d Cir. 1992)).
\item \textsuperscript{109} Id.
\item \textsuperscript{110} Reichert, 747 F.3d at 458.
\item \textsuperscript{111} Corley, 273 F.3d at 444, n.13 (quoting H.R. Rep. No. 105-551, pt. 2, at 25 (1998)).
\end{itemize}
B. The Broad Construction of the Anti-Circumvention Provisions found in the Digital Millennium Copyright Act.

Circuits that support the broad statutory construction apply the anti-circumvention provision to any circumvention technologies that bypass copyright protection measures regardless of non-infringing end-uses.\textsuperscript{112} Therefore, such broad constructionist circuits would require an independent video game designer to acquire a license from the console developer before bypassing the consoles technological protection measures to operate their independently created work.\textsuperscript{113} Acquiring this type of license could prove out of reach for an independent designer/developer who may be creating this video game with nothing more than an idea, and very few resources to obtain a license.

The broad constructionist circuits, such as the Ninth Circuit, endorse the view that “the DMCA targets the circumvention of digital walls guarding copyrighted material (and trafficking its circumvention tools), but does not concern itself with the use of those materials after circumvention has occurred”.\textsuperscript{114}

As such, the circuits that support a wholesale ban on offering for sale or trafficking in any circumvention technologies which bypass technological protection measures which effectively control the means of access to copyright materials.\textsuperscript{115}

\textsuperscript{112} 321 Studios v. MGM Studios, Inc., 307 F.Supp.2d 1085, 1097 (N.D. Cal. 2004).
\textsuperscript{113} Id.
\textsuperscript{114} 307 F. Supp. 2d. 1085, 1097 (quoting United States v Corley, 273 F.3d at 443). As demonstrated in 321 Studios v MGM Studios, Inc., the legality of the end-use has no bearing on the trafficking of anti-circumvention technologies. In the instant case, defendants were enjoined in a trafficking a decryption code called DeCSS which bypassed the copyright protection measures on DVDs such that an unauthorized reproduction of the materials could be operable on a DVD player. This Court construed the Digital Millennium Copyright Act such that it prohibited any and all circumvention technologies regardless of their end-use; however, the act of circumvention itself was permitted so long as it was determined to be a non-infringing use.
\textsuperscript{115} Reimerdes, 111 F.Supp.2d 294, 319 (S.D.N.Y. 2000). Defendant posted “mirror” links to DeCSS circumvention technology which allows users to bypass the copyright protection
The broad construction of the anti-circumvention provisions found in the Digital Millennium Copyright Act is not concerned with the end-use of the circumvention technology.\textsuperscript{116} Circuits adopting this view reason that any anti-circumvention technology is prohibited unless the user has a license to decrypt the technological protection measure.\textsuperscript{117} Because the end-use does not affect the prohibition on circumvention technologies themselves, a trafficker of DeCSS must obtain a license from the copyright owner in order to decrypt the technological protection measures, the CSS coding, found on the DVDs.\textsuperscript{118}

No matter the legality or illegality of the end-use of the circumvention measure, the end-use is not a defense to bypassing these copyright protection measures.\textsuperscript{119} Furthermore, “the DMCA targets the circumvention of digital walls guarding copyrighted material... but does not concern itself with the use of those [copyrighted] materials after circumvention has occurred.”\textsuperscript{120}

These circuits proffer that a fair use defense does not apply because the Digital Millennium Copyright Act targets only the non-functional aspects of the coding; Courts have decided that if Congress had meant for the fair use defense to apply to such actions, it would have made it clear that the defense is applicable.\textsuperscript{121}

Indeed, as the legislative history demonstrates, the decision not to make fair use a defense to a claim under §1201(a) was quite deliberate.\textsuperscript{122} Because these statutory provisions do not

\textsuperscript{116} Id. at 1096.
\textsuperscript{117} Id.
\textsuperscript{118} Id.
\textsuperscript{119} 307 F. Supp. 2d. 1085, 1097.
\textsuperscript{121} Universal City Studios v. Reimerdes, 111 F.Supp.2d 294, 322 (S.D.N.Y. 2000).
\textsuperscript{122} Id.
specifically provide for a fair use defense, these Courts insist that the only defense for traffickers of circumvention technologies is that said technology was created with the license of the owner.\textsuperscript{123}

A. The Ninth Circuit denies the “Infringement Nexus” requirement that those circuits who uphold the narrow construction require.

The Ninth Circuit declined to adopt the infringement nexus standard because this Court has determined that to do so would neglect the plain language of the Digital Millennium Copyright Act. \textsuperscript{124} This Circuit has determined that those Courts who have adopted the narrow construction of the anti-circumvention legislation have done so as a result of a reliance on public policy rather than on the plain language and text of the statute itself.\textsuperscript{125}

The broad construction only considers the six following factors in determining whether there is a circumvention technology. \textsuperscript{126} Those factors are as follows: the user traffics in a technology or part thereof that is primarily designed, produced or marketed for, or has limited commercially significant use other than circumventing a technological measure that effectively controls access to a copyrighted work.\textsuperscript{127}

For example, in \textit{MDY Indus., LLC v. Blizzard Entm’t., Inc.}, MDY Industries, LLC trafficked a technology named “Glider”, which allows users to use an automated bot to play

\textsuperscript{123} \textit{United City Studios v Corley}, 273 F.3d 429 (2d. Cir. 2001). In the instant situation, a Norwegian teenager decrypted the CSS protection measure coded onto copyrightable DVDs and posted the decryption key online for general use by the public. He argues that he encrypted this technological protection measure so that he could make DVDs compatible with a LINUX operating system; however, the Court would have required him to have a license in order to comply with the anti-circumvention provisions of the Digital Millennium Copyright Act.\textsuperscript{124} \textit{MDY Indus., LLC v. Blizzard Entm’t, Inc.}, 629 F.3d 928, 950 (9th Cir. 2010). \textsuperscript{125} \textit{Id.} at 951. \textsuperscript{126} \textit{Id.} at 953. \textsuperscript{127} \textit{Id.}
through the earlier levels of World of Warcraft such that the user can begin playing at a more advanced level and rather than having to advance themselves level by level.\footnote{Id. at 935. In the cited case, Donnelly was both a software programmer and a World of Warcraft gamer who originally developed this automated bot, Glider, for his own private use. In response to this bot, Blizzard (who develops and maintains World of Warcraft) created their own bot called Warden which detected this third party software and denied players who used this unauthorized software access to the World of Warcraft servers. MDY responded by creating the “Glider Elite” which circumvented Warden; however, they did let their users know that use of Glider Elite was in violation of Blizzard’s Terms of Use.} In reaction to this, Blizzard created a bot named “Warden” which includes a “software module called “scan.dll”, which scans a computer’s RAM prior to allowing the payer to connect to WoW’s servers. If scan.dll detects that a bot is running, such as Glider, it will not allow the payer to connect and play.”\footnote{MDY, 629 F.3d at 942.}

By applying the elements laid out above for a violation of §1201(a), the Ninth Circuit declared that the Glider Bot fulfilled the requirements for a violation because the bot is a technology which is sold by MDY Industries, the bot circumvents the “Warden” technological protection measure put in place by the copyright owner, Blizzard, and the “Warden” controlled accessibility to the World of Warcraft software.\footnote{Id. at 953.}

Because the circuits who uphold the broad construction argument do not require an infringement nexus to find a violation of §1201(a), this trafficking of this bot is in violation of §1201(a); therefore, the anti-circumvention technology is in violation of the Digital Millennium Copyright Act although the bot is not infringing the copyright.\footnote{Id.}

VI. The legality of circumvention technologies should be viewed in light of a narrow interpretation because it is the most efficient way to ensure the balance of interest between copyright protection and first amendment rights.
As stated by the Second Circuit, “just as the inventions at the beginning and middle of the 20th Century presented new First Amendment issues, so does the cyber revolution at the end of that century.”

The statutory construction of §12(a) (2) that best strikes a balance between each side of the debate is a narrow application. The narrow interpretation protects the First Amendment rights of users while the copyright owner is protected from infringing uses... Therefore, a copyright holder’s profits are protected from infringement, and there is no chilling effect on users.

With only the current provisions for interpretation, the relevant portions of the Constitution would be best upheld by a narrow interpretation; therefore, the narrow interpretation only necessarily restricts the First Amendment to those illegal, infringing uses by allowing for a defense of fair use while the application of the provision still encompasses the rights of the copyright owner. Continuing to alter and add exceptions to the Digital Millennium Copyright Act that move in the direction of favoring fair use for non-infringing uses of circumvention technologies would be most beneficial to our society.

1. Significant changes in the Digital Millennium Copyright Act regarding interoperability exceptions can be implemented to counteract the restrictions on creative pursuits of independent game designers.

Every three years, the Library of Congress may re-analyze the exceptions to the anti-circumvention provisions provided for in the Digital Millennium Copyright Act to determine if further carve outs are needed in order to balance the protection of the copyright holders with the individuals’ rights of free expression.

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132 Corley, 287 F.3d at 434.
133 17 U.S.C.S. §1201(a) (1) (C).
While an exception allowing for interoperability between obsolete video games and newer game consoles has been enacted, no such exception has been approved for modification chips.\textsuperscript{134} Modification chips could be used for independently created and coded video games that bypass technological protection measures merely because the creators lack a platform for them to operate on.\textsuperscript{135} While this could present a potential use for copyright infringement, there would be a chilling effect on the creative pursuits of game developers without an exception for interoperability, and such an effect is in contravention of the Copyright Clause.\textsuperscript{136}

Without an exception, game developers are limited in the operating systems on which they may develop their works whereby burgeoning game designers are relegated to writing game codes for computer operating systems because there are no technological protection measures for running this type of user-developed code on a computer operating system. In a world where many gamers are branching out from computer gaming to console gaming, this restriction severely limits the profitability any independent developer may have and chills creative expression.

Thus, if the same code were run on a game console, it would be unrecognizable from an unauthorized reproduction of a copyrighted video game because it did not contain the encryption code that allows for interoperability.

Considering the impact this prohibition has on non-infringing speech, it is imperative that not only the end-use be a determinative factor of circumvention technologies, but also an exception must be carved out which allows for non-infringing uses of circumvention technology.

\textsuperscript{134} \textit{17 U.S.C.S. §1201(a).}
\textsuperscript{135} \textit{17 U.S.C.S. §1201(d) (1).}
\textsuperscript{136} Const. Art. 1, §8, cl. 8.
2. The alternatives to allowing such use of a circumvention technology by way of an exception to §1201(a) (2).

If no exception is enacted through legislation, it is up to both independent creators and larger game to create a symbiotic relationship with one another that avoids litigation. Furthermore, it can be surmised that the sector of independent game creators which would be affected by such an exception is relatively small. It would be a simple task for larger corporations to work with smaller game designers.

Ideally, a cross-licensing venture could be initiated between console developers and independent designers such that the copyright owner of the encryption code licenses the use of technological protection measure to the independent designer such that the game is operable on their system of choice. Independent designers would install the encryption code onto the game designer’s software themselves and would be able to enjoy the independently created game without running the risk of liability.

So long as the designer agrees not to use the game now equipped with the encryption code for commercial purposes, then the encryption code will be implemented for a nominal fee; however, the designer must agree to pay out royalties to the console developers if the game becomes available on the market.

If this alternative were to come to fruition, the legality of modification chips would not be questioned because there would be alternatives for independent game designers to test functionality on a system of their choosing.

Even though the alternative discussed above is difficult to implement and would take tremendous cooperation between both sides, the copyright holders would retain protection in the coding for their ideas and systems, the creator would have adequate opportunity for expression and both parties would avoid costly litigation.
3. **Self-publishing: The current climate between independent game developers and console platforms.**

In a seeming changing of the tides, Microsoft Studios, developers of the Xbox One game console, has recently introduced a self-publishing program for independent game developers called ID@Xbox.\(^{137}\) Similarly, the makers of the Sony PlayStation have also implemented a similar self-publishing system for independent game developers.\(^{138}\) If an independent publisher successfully registers with the platform of their choosing, they will be given not only access to the software to develop the games but also a market in which to advertise and display their works to other users of the platform.\(^{139}\)

These systems will open up the software permitting customers to self-publish games on the console system provided that they abide by some requirements and agree to licensing provisions.\(^{140}\) In addition, this development provides independent game developers with a way to create on the platform of their choosing.\(^{141}\) Not only do developers now have access to the software in order to develop their own works, but they also have a means to offer these games to the public via a live download stream from the console company.\(^{142}\)

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140 *Id.*

141 *Id.*

Self-publishing platforms such as these make development much easier for independent game designers.\textsuperscript{143} In the past, to get a published on a console such as this, developers had to persuade a publisher to represent them. Console developers would not even look at their games, and game developers were forced to purchase expensive development kits to make their games compatible with the system.\textsuperscript{144} As recently as 2006, when the PlayStation3 was released, development kits ran a developer $20,000 USD and the game itself had to pass two approval processes.\textsuperscript{145} Now, indie developers can avoid having a publisher and get a development kit for free.

Currently, the software used for these independent publishing requires that the independent developer be part of a corporation before they will grant a license you to use their software, and an independent developer must meet a series of requirements before becoming a registered developer on the console in question.\textsuperscript{146}

Thus, if you are a home-based developer with an interest in game development on a smaller scale, your best option is to stick to PC and open source development because these platforms are not yet open to everyone.\textsuperscript{147} Despite these misgivings, over one thousand developers were registered as of March 2014 as part of Sony’s self-publishing program.\textsuperscript{148}

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\textsuperscript{143} Paul Suddaby, \textit{Making Indie Games on the Xbox One}, Tuts+, (Nov. 22, 2013).
\textsuperscript{144} \textit{Id.}
\textsuperscript{145} \textit{Id.}
\textsuperscript{146} \textit{Become a Registered Developer}, PlayStation, http://www.playstation.com/en-us/develop/.
\textsuperscript{147} \textit{Id.} In order to become a registered developer for PlayStation, the company requires you to first have a proof of incorporation, an Employer Tax Identification Number from the IRS, and a Static IP address. This platform is also only available to developers in North, South, and Central Americas.
\end{flushleft}
“Without the need for a middleman now, independent developers have one less thing to worry about especially in terms of revenue…, and who knows? A new hit IP might actually emerge.”

While self-publishing and availability of free development kits diminishes significant burdens for independent developers, there are certain legal and economic realities that must be faced when choosing which console to release the game on. Some of the requirements for getting a development and publishing on the platform have been deemed reasonable, but others have come under fire. Although the development kits are shipped out for free, these companies still require the user to pay for Errors and Omissions Insurance which protects against intellectual property infringement. Independent developers must also foot the bill for having the game rated before it is released. While the development kits may be free under the self-publishing programs, there are still other, reasonable, costs which an independent developer may incur.

Since the launch of Microsoft’s ID@Xbox self-publishing program, many in the industry have criticized the company’s parity clause included in the terms and conditions for the publishing agreement. This parity clause requires a developer to release their game either on Xbox first or at the same time as it is released. Many independent developers and hobbyists are operating on limited funds, often coming out of their own pockets.

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150 Tom Phillips, *ID@Xbox Dev Reveals Costs of Xbox One Game*, Eurogamer

151 *Id.*

152 *Id.*


154 *Id.* Head of Xbox, Phil Spencer, has revealed that he believes that Xbox users should feel like a “first-class citizen” when it comes to game releases, and the parity clause helps to ensure that.
or from fundraising campaigns.\textsuperscript{155} It may be impossible to optimize a game for more than one console at a time.\textsuperscript{156}

Microsoft executives have stated that this is not a strictly enforced clause if smaller developers are unable to release on various consoles at the same time.\textsuperscript{157} However, developers are required to ask for special permission to do so.\textsuperscript{158} This seems to have had a chilling effect on the availability of self-published games on multiple consoles.\textsuperscript{159} Thus, many developers have chosen to forego releasing their games on the Xbox platform.\textsuperscript{160} Furthermore, Sony has asserted that self-publishing developers will have the same benefits as a traditional publisher.\textsuperscript{161}

Regardless of the requirements for signing up and the tenants that publishers must agree to, it is a big step for console companies to allow the use of their software for independent game developers.

VII. Conclusion

While both the narrow and broad statutory constructions have been rationalized by Courts, only by applying the anti-circumvention provisions to circumvention technologies can both the interests of the copyright holder and the user be balanced without the consequences of chilling authors’ creative ventures.

\textsuperscript{155} Id.
\textsuperscript{156} Id.
\textsuperscript{157} Id.
\textsuperscript{158} Id.
\textsuperscript{159} Id. As of September 2014, there were 66 independently developed games set to be released on current consoles, but 47 of those 66 games have only scheduled releases for Sony consoles\textsuperscript{160} Radu Haulica, Microsoft More Lenient Regarding Infamous ID@Xbox Launch Parity Clause, Softpedia (Mar. 6, 2015), http://news.softpedia.com/news/Microsoft-More-Lenient-Regarding-Infamous-ID-Xbox-Launch-Parity-Clause-475111.shtml.
The narrow construction of anti-circumvention legislation accounts for non-infringing uses as well as infringing uses that result from bypassing any technological protection measures. Such non-infringing uses are not harmful and are part of an individual’s freedom of expression.

Furthermore, although the coding of the technological protection measures itself can be protected by copyrights, the functional aspects of the coding are not protectable. This tenant leans toward the assumption that the use of functional coding renders this type of expression through the coding of functional, circumvention technologies renders it unprotectable as expression.

The chilling effects of the broad interpretation are demonstrated by the plight of the independent video game developer whereby a wholesale ban on circumvention technologies would pigeonhole a creator to develop software only for platforms that do not require such circumvention measures.

Therefore, expression in code, which could be considered copyrightable, may never be developed as a result of said chilling effect. This effect is in direct conflict with the Constitution’s grant of power to the United States Congress “to promote the Progress of Science and useful Arts”.162

While the legality of the use of modification chips varies from Circuit to Circuit, it may be up to Congress to carve out an exception for legal end-uses. On the other hand, the plight of the independent game developer can be most expeditiously remedied by the self-publishing platforms that are currently being made available to independent game developers rather than waiting for the legislature to carve out an exception to the anti-circumvention provisions in the Digital Millennium Copyright Act.

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162 Art. I, §8, cl. 8.