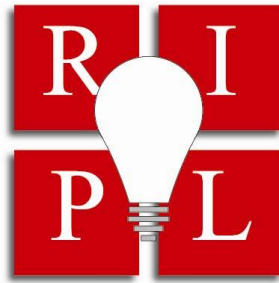


THE JOHN MARSHALL REVIEW OF INTELLECTUAL PROPERTY LAW



THE INVISIBLE DEFENSE AGAINST MUSIC PIRACY

PAIGE CLARK

ABSTRACT

Music piracy has continued to affect the music industry. Specifically, music-streaming service providers that thought they were protected, such as Spotify, have suffered from music piracy as a result of innovative illegal downloading websites. Music pirates have created illegal downloading websites that provide detailed and efficient ways to download and sync music from Spotify without paying for the premium services or membership fees. As a result, illegal downloading has had an adverse impact on various music-streaming service providers' copyrights. To obtain protection and diminish music piracy and liability to music artists and labels, these music-streaming sites should give thought to the music piracy issue and implement effective technological measures to qualify under the DMCA anti-circumvention and safe harbors provisions. This comment discusses the issues music-streaming sites struggle with and proposes a few ways Spotify and other music-streaming sites can possibly meet the DMCA requirements and obtain protection.

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THE INVISIBLE DEFENSE AGAINST MUSIC PIRACY

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THE INVISIBLE DEFENSE AGAINST MUSIC PIRACY

PAIGE CLARK*

I. INTRODUCTION

A. Spotify Linked To A Significant Decline In Music Piracy

Spotify is a music-streaming service that allows users to listen to millions of musical works at no charge.¹ Despite the increase in communications and digital access to music through online technologies like Spotify, the music industry has continuously failed to adequately address the most significant detriment to the music industry: online music piracy. Online music piracy affects the relationship between music rights holders, digital music libraries, and their copyright protections.² Recent reports estimate that as much as 95 percent of music is downloaded illegally, through file sharing websites as well as new technological circumvention and recording websites.³

Spotify utilizes two tiers of services that are available to each of their users: free and premium. If users wish to download and play music on the go while offline, they create a premium account to do so. In order to obtain a premium account, the user must purchase a monthly subscription.

The music-streaming service based in Sweden was linked to a 25 percent drop in music piracy in Sweden in 2009.⁴ The decline has been progressive, although music piracy still runs rampant in the United States. Spotify, a music streaming service, was introduced in America in 2011.⁵ Since then, Spotify has continually been

* © Paige Clark 2016. Juris Doctor Candidate, The John Marshall Law School, 2016; Bachelor of Arts in Political Science, Political Science, Spelman College, 2013. My interests include Intellectual Property and Entertainment law. I would like to thank my family, friends and professors for their love, guidance and support throughout law school. I would also like to thank the staff of The John Marshall Review of Intellectual Property Law for their time and feedback.

¹ Louis Kroeck, *What is Next for Spotify Music Service and The Future of the Music Industry?*, 13 LAW. J., at 5, Dec. 30, 2011. The article was released the same year that Spotify entered the United States. At the introduction of Spotify, users could listen to 15 million different musical works instantly, for free. If you wanted to download, you would need to pay for a subscription.

² See Neil S. Tyler, *Music Piracy and Diminishing Revenues: How Compulsory Licensing For Interactive Webcasters Can Lead The Recording Industry Back to Prominence*, 161 U. PA. L. REV. 2101, 2103 (2013) (discussing how record labels are suffering economically from the effects of music piracy. They are determined to find protection via legislative assistance to protect their business models while still catering to their music consumers. However, this means raising royalty rates and demanding higher shares from marker participants.).

³ *Id.*

⁴ Andrew Coutts, *Spotify Linked to Major Decline in Music Piracy*, DIGITAL TRENDS (September 29, 2011), <http://www.digitaltrends.com/music/spotify-linked-to-major-decline-in-music-piracy/> (discussing Spotify's link to the decrease in music piracy).

⁵ See John Cionci, *Hello America. Spotify here.*, SPOTIFY (July 14, 2011, 11:11 A.M.), <https://news.spotify.com/us/2011/07/14/hello-america-spotify-here/> (talking about the release of Spotify in the United States).

deemed a service provider that curbs online music piracy.⁶ However, recently, illegal downloading websites have been crafted, which provide detailed ways to download and sync music from Spotify without a subscription.⁷ Despite Spotify's success, Spotify and other digital download websites have not been able to stop the rampant spread of online music piracy,⁸ nor have they felt the need to do so, which could potentially qualify Spotify as a contributory or vicarious infringer. To reduce contributory or vicarious liability, however, the Digital Millennium Copyright Act ("DMCA") presently contains anti-circumvention and safe harbor provisions.⁹ Unfortunately, because Spotify is not the copyright holder *per se*, but a licensee, it may not qualify for protection under the DMCA.¹⁰

As technology becomes more advanced and innovative, pirates are finding newer, quicker, and smarter ways to illegally download music.¹¹ Once they find ways to illegally download music, pirates also start to sell their own copies of the downloaded music for illegal profit.¹² This has and will continue to have an adverse impact on music rights holders and digital music libraries' rights if it continues unresolved.

This comment suggests that there are new technology-based works and approaches that will help provide digital music libraries, like Spotify, with added security measures that will help block and prohibit infringers from illegally downloading through circumvention and recording software, while also preventing

⁶ Ernesto, *Music Piracy Continues to Decline Thanks to Spotify*, TORRENTFREAK (September 28, 2011, 10:36 A.M.), <https://torrentfreak.com/music-piracy-continues-to-decline-thanks-to-spotify-110928/>. Streaming services such as Spotify are now the most popular way to consume music. More than 40 percent of the participants in the survey now use a music streaming service, compared to less than 10 percent who say they download music legally.

⁷ *How to Convert Spotify to MP3*, WONDERSHARE (October 7, 2014, 12:45 P.M.), <http://www.wondershare.com/convert-video-audio/convert-spotify-to-mp3.html>. (explaining the three ways someone can obtain music from Spotify through the illegal downloading websites: "1) Wondershare Streaming Audio Recorder that will convert Spotify music to MP3 automatically during recording. 2) Deezify which is an extension of Chrome that enables you to download music from Spotify without limits and ads, and 3) Spoty-mp3.com is an online service that enables you to convert Spotify music to MP3 easily. You enter the website and paste the URL of the Spotify to the blank box in the middle, click the orange *Search* button and the website will analyze the Spotify URL. Then, click the *Download* button to get the Spotify music without hassle.")

⁸ *See Online Piracy in Numbers—Facts and Statistics [Infographic]*, GO-GULF (Nov 1, 2011), <http://www.go-gulf.com/blog/online-piracy/> (detailing that ninety-five percent of music downloaded online is illegal).

⁹ *Digital Millennium Copyright Act*, ELECTRONIC FRONTIER FOUNDATION: DEFENDING YOUR RIGHTS IN THE DIGITAL WORLD (last visited Nov. 25, 2014), <https://www.eff.org/issues/dmca>.

¹⁰ *See* Library of Congress, *Comments of Spotify USA Inc.*, UNITED STATES COPYRIGHT OFFICE (May 23, 2014), http://copyright.gov/docs/musiclicensingstudy/comments/Docket2014_3/Spotify_USA_Inc_MLS_2014.pdf (explaining that Spotify secures the right to reproduce and distribute the musical works embodied in sound recordings either from musical work copyright owners—typically music publishers—through its licensing administrator Harry Fox or pursuant to the statutory license set forth in Section 115 of the Copyright Act).

¹¹ Victor Luckerson, *Spotify and YouTube Are Just Killing Digital Music Sales*, TIME (Jan. 3, 2014), <http://business.time.com/2014/01/03/spotify-and-youtube-are-just-killing-digital-music-sales/>.

¹² *For Students Doing Reports*, RIAA (Oct. 5, 2014), <http://www.riaa.com/faq.php>. Global music piracy causes \$12.5 billion of economic losses every year, 71,060 U.S. jobs lost, a loss of \$2.7 billion in workers' earnings, and a loss of \$422 million in tax revenues, \$291 million in personal income tax and \$131 million in lost corporate income and production taxes.

contributory infringement liability. As a result, the added technology-based works will help save copyright protections in the future while also allowing for continued fair use by end users and service providers, and creativity among new creators.

Part II of this comment provides background and relevant law on the rights that both digital libraries and music rights holders have to the music being played and used. It also analyzes the rights end-users have once musical works enter the public domain. Part III analyzes the current issues in online piracy and applies them to current laws and regulations. Also, cases will be introduced to contradict the findings. Part IV proposes three ways that digital music libraries and music rights holders can preserve their copyrights and economic relationship with one another and the public domain. This will encompass strategies and technologies to catch those who illegally download or record copyrighted music.

II. BACKGROUND

Copyright is implemented through federal statutes and the Constitution. Under the United States Constitution, “Congress has 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.”¹³ Through this power, Congress developed protections for artists, rights holders, digital music libraries, and end users of digital music libraries.¹⁴ Title 17 of the United States Code contains the copyright protection and rights provisions for all parties.¹⁵

Copyright law specifically protects creativity of works, factual or technological based works, and unpublished works.¹⁶ “To qualify for protection under copyright in the United States, a work must be ‘fixed in a tangible medium of expression.’”¹⁷ Any creator can qualify for protection upon the creation of such protected works. However, in order to bring a civil suit for damages, the creator of the work must register with the United States Copyright Office.¹⁸

¹³ U.S. CONST. art. 1, § 8, cl. 8. Intellectual Property Clause.

¹⁴ Library of Congress, *United States Copyright Office: A Brief Introduction and History*. INFORMATION CIRCULAR: CIRCULAR 1A (Oct. 5, 2014), <http://copyright.gov/circs/circ1a.html>. (explaining that the Constitution gives Congress the power to enact laws establishing a system of copyright in the United States).

¹⁵ 17 U.S.C. § 101, *et seq.* (2011).

¹⁶ Doris Estelle Long, Information Technology and Privacy Group, *Global IP: Challenges and Opportunities in The 21st Century* (2014); 17 U.S.C. § 102. Copyright protects works of artistic and literary expression, including books, poems, pamphlets and other writings, musical compositions, cinematographic works, drawings, paintings, sculpture, photographic works, illustrations and dramatic works. Copyright also protects computer programs, databases, maps and architectural works.

¹⁷ *Id.* at 4.

¹⁸ 17 U.S.C. § 411(a)(2011).

Except for an action brought for a violation of the rights of the author under section 106A(a), and subject to the provisions of subsection (b), no civil action for infringement of the copyright in any United States work shall be instituted until preregistration or registration of the copyright claim has been made in accordance with this title. In any case, however, where the deposit, application, and fee required for registration have been delivered to the Copyright Office in proper form and registration has been refused, the applicant is entitled to institute a civil

A. Copyright Protection for Music Artists

When a musical artist creates a song, copyright begins at that moment: the moment of fixation.¹⁹ The moment of fixation is when the music and lyrics have been “set down on paper, recorded, or stored on a computer.”²⁰ Artists and rights holders are protected without registration of the copyright, unless they request certain remedies and damages.²¹ There are two protections that music rights holders are able to obtain through copyright law²²: copyright of the recorded performance “composition” and copyright in the sound recording.²³

Music rights holders possess exclusive rights within 17 U.S.C. § 106 and therefore are authorized to manage their copyrighted works in a variety of ways.²⁴

action for infringement if notice thereof, with a copy of the complaint, is served on the Register of Copyrights.

Id.

¹⁹ United States Copyright Office, *Copyright Registration of Musical Compositions and Sound Recordings*, CIRCULAR 56A (Feb. 2002), <http://copyright.gov/circs/circ56a.pdf>. Fixation of a sound recording is a series of musical, spoken or other sounds. The author of a sound recording is the performer whose performance is fixed, or the record producer who processes the sounds and fixes them in the final recording, or both.

²⁰ Jon M. Garon, *Copyright Basics for Musicians*, GALLAGHER, CALLAHAN & GARTRELL (Mar. 2009), <http://www.gcglaw.com/resources/entertainment/music-copyright.html>.

²¹ 17 U.S.C. § 504 (2011).

A) In General. Except as otherwise provided by this title, an infringer of copyright is liable for either—1) the copyright owner’s actual damages and any additional profits of the infringer, as provided by subsection b); or 2) statutory damages, as provided by subsection c).

Id.

²² Jon M. Garon, *Copyright Basics for Musicians*, GALLAGHER, CALLAHAN & GARTRELL (Mar. 2009), <http://www.gcglaw.com/resources/entertainment/music-copyright.html>. Music publishing companies manage copyright in composition, sound recordings managed by record labels.

²³ 17 U.S.C. § 114(b)(2011).

The exclusive right of the owner of copyright in a sound recording under clause (1) of section 106 is limited to the right to duplicate the sound recording in the form of phonorecords or copies that directly or indirectly recapture the actual sounds fixed in the recording. The exclusive right of the owner of copyright in a sound recording under clause (2) of section 106 is limited to the right to prepare a derivative work in which the actual sounds fixed in the sound recording are rearranged, remixed, or otherwise altered in sequence or quality. The exclusive rights of the owner of copyright in a sound recording under clauses (1) and (2) of section 106 do not extend to the making or duplication of another sound recordings that consists entirely of an independent fixation of other sounds, even though such sounds imitate or simulate those in the copyrighted sound recording. The exclusive rights of the owner of copyright in a sound recording under clauses (1), (2), and (3) of section 106 do not apply to sound recordings included in educational television and radio programs (as defined in section 397 of title 47) distributed or transmitted by or through public broadcasting entities (as defined by section 118(f)): *Provided*, that copies or phonorecords of said programs are not commercially distributed by or through public broadcasting entities to the general public.

Id.

²⁴ 17 U.S.C. § 106 (2011).

- 1) To reproduce the copyrighted work in copies or phonorecords;
- 2) To prepare derivative works based upon the copyrighted work;

However, they are also subject to limitations and exceptions. These limitations and exceptions create a balance between the need to protect creators, freedom of expression, and the users' need to access the information.²⁵

Specifically when dealing with digital music libraries and the public who legally utilize them, there are provisions that make it hard for an artist or music rights holder to claim infringement. The Fair Use doctrine as well as reproduction rights of libraries and archives limit music rights holders' exclusive rights.²⁶ Digital music libraries and the public are entitled to claim fair use if they can satisfy four factors.²⁷ If digital music libraries satisfy these four factors, they have fair use of music holders' copyrights under the license and therefore would not be liable for contributory or vicarious copyright infringement. The factors to determine fair use are:

- 1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; 2) the nature of the copyrighted work; 3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and 4) the effect of the use upon the potential market for or value of the copyrighted work.²⁸

Thus, digital music libraries that adhere to these rules make fair use of the music-rights holders' copyrighted materials. Also, the public has the right to listen to reproductions via the digital music library if legally reproduced as a result of this statute, placing a limit on the extent of music-rights holder's authority.²⁹

-
- 3) To distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
 - 4) In the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly;
 - 5) In the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly; and
 - 6) In the case of sound recordings, to perform the copyrighted work publicly by means of a digital audio transmission.

Id.

²⁵ *What are copyright limitations and exceptions?*, IFLA (Feb. 26, 2013), <http://www.ifla.org/node/5851>.

²⁶ *Fair Use in the United States*, COPYRIGHT CLEARANCE CENTER (2014), https://www.copyright.com/content/cc3/en/toolbar/education/get-the-facts/exceptions_and_limitations/Fair_Use_in_the_United_States.html (explaining that fair use recognizes that certain types of use of other people's copyright protected works does not require the copyright holder's authorization. It is also used as a legal defense if an owner claims copyright infringement.).

²⁷ 17 U.S.C. § 107 (2011).

²⁸ *Id.* Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright.

²⁹ 17 U.S.C. § 108 (2011). It is legal for the public to listen to the music according to the rules and regulations of the digital music library aka website.

B. Copyright Protection of Digital Music Libraries

Digital Music Libraries are protected under Title 17 of the United States Code.³⁰ It is not an infringement of copyright for a library or archive to reproduce if:³¹

- 1) the reproduction or distribution is made without any purpose of direct or indirect commercial advantage; 2) the collections of the library or archives are (i) open to the public, or (ii) available not only to researchers affiliated with the library or archives or with the institution of which it is a part, but also to other persons doing research in a specialized field; and 3) the reproduction or distribution of the work includes a notice of copyright that appears on the copy or phonorecord that is reproduced under the provisions of this section, or includes a legend stating that the work may be protected by copyright if no such notice can be found on the copy or phonorecord that is reproduced under the provisions of this section.³²

This provision details the type of protections that are given to digital music libraries. However, problems arise with regard to the management of music rights holders' copyrights through music licensing,³³ and the consistency of the access that is given to their end users according to that right.³⁴ It is the sole responsibility of digital library archives to manage the access to the online copyrighted works.³⁵ With this responsibility many problems begin to arise. Particularly, digital music libraries may or may not be knowledgeable of when they have users that are illegally utilizing their services to download music for free or facilitating illegal downloading software. This illegal downloading software creates a myriad of problems for the agreements

³⁰ 17 U.S.C. § 108 (2011).

³¹ *Id.* The statute reads:

Limitations on exclusive rights: Reproduction by libraries and archives. a) Except as otherwise provided in this title and notwithstanding the provisions of section 106, it is not an infringement of copyright for a library or archives, or any of its employees acting within the scope of their employment, to reproduce no more than one copy or phonorecord of a work, except as provided in subsections b) and c), or to distribute such copy or phonorecord, under the conditions specified by this section.

Id.

³² 17 U.S.C. § 108 (2011). It is especially important for music libraries to note that, with the exception of subsections b) and c), the provisions of § 108 do not apply to musical works.

³³ Marshall Brain, *How Music Licensing Works*, HOWSTUFFWORKS (Oct. 9, 2014, 6:24 P.M.), <http://entertainment.howstuffworks.com/music-licensing2.htm>. Music licensing gives rights to use music. This is made possible by the protection that U.S. copyright law provides for artists. If you want to use a song for any reason, you have to obtain rights from the publisher, and possibly from the label as well. Those with copyrights to music can license that music in any way they choose.

³⁴ Mary Levering, *Intellectual Property Rights in Musical Works*, LIBRARY OF CONGRESS (2000). Managing rights in online copyrighted works is the right and responsibility of rights holders and their agents, e.g., authors, publishers, and others in the distribution chain; managing "access" to those works in a way that consistently respects rights holders' rights, and is also responsive to the needs and privileges of scholars and other users, is the responsibility of digital libraries and archives who store online copyrighted works and provide users with access to them. Managing access is more challenging in the online world than in the analog world.

³⁵ *Id.*

that digital music libraries have between artists and music rights holders, their copyright protection and their economic prosperity.³⁶ Illegal users have found a plethora of ways to circumvent the process of a legal download through creating illegal downloading software websites and recording software that bypass the authentication stage. After circumvention, illegal users can simply use the URL to download the work as an MP3 without further security checks.³⁷ Thus, digital music libraries find themselves seriously threatened.

C. Digital Millennium Copyright Act of 1998

The Digital Millennium Copyright Act of 1998 (“DMCA”) was created to address a number of significant copyright-related issues and implemented legislation from the 1996 World Intellectual Property Organization treaties.³⁸ Within the DMCA exists a title that relates specifically to online service providers for copyright infringement when engaging in certain types of activities, called Online Copyright Infringement Liability Limitation.³⁹ This title encourages copyright owners to make their works available in digital form, and to adopt technological self-help measures to protect their interest in controlling access and use of these digital works.⁴⁰ A party

³⁶ Mike Ortega, *Paddling Against the Current: Why the DMCA’s Safe Harbor Provision is Ineffective Against Music Stream-Ripping*, 11 Rutgers Bus. L.J. 60, 63 (2014). A bigger problem presents itself when we realize that music stream ripping is available to anyone on the Internet. Through the use of certain stream-ripping services available online, users can still pirate music off of legal streaming services that are supposed to serve as safe harbors for artists. There are a number of websites available to the public that offer users a loophole to music streaming systems so that they can download their music for free. A number of developers are also actively making and selling software to help consumers obtain music from online streaming services and keep it stored on their computers.

³⁷ *Sony BMG Music Entm’t v. Tenenbaum*, 660 F.3d 487, 489 (2011). Plaintiffs, the recording companies Sony BMG Music Entertainment, Warner Brothers Records Inc., Artisa Records LLC, Atlantic Recording Corporation, and UMG Recording, Inc. (together, “Sony”), brought action for statutory damages and injunctive relief under the Copyright Act, 17 U.S.C. § 101, *et seq.* Sony argued that the defendant, Joel Tenenbaum, willfully infringed the copyrights of thirty music recordings by using file sharing software to download and distribute those recordings without authorization from the copyright owners. Tenenbaum was found to have willfully infringed each of Sony’s thirty copyrighted works.

³⁸ U.S. COPYRIGHT OFFICE SUMMARY, THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998 (1998). President Clinton signed the Digital Millennium Copyright Act (DMCA) into law on October 28, 1998. The legislation implements two 1996 World Intellectual Property Organization (WIPO) treaties: the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. The DMCA also addresses a number of other significant copyright-related issues.

³⁹ *Id.* at 8-9. Title II of the DMCA adds a new section 512 to the Copyright Act to create four new limitations on liability for copyright infringement by online service providers. The limitations are based on the following four categories of conduct by a service provider found in Section 512(1): 1) Transitory communications; 2) System caching; 3) Storage of information on systems or networks at direction of users; and 4) Information location tools. The failure of a service provider to qualify for any of the limitations in section 512 does not necessarily make it liable for copyright infringement. The copyright owner must still demonstrate that the provider has infringed, and the provider may still avail itself of any of the defenses, such as fair use, that are available to copyright defendants generally. *See* 17 U.S.C. § 512.

⁴⁰ *Id.*

seeking the benefit of the limitations of liability in Title II must qualify as a “service provider.”⁴¹

Within the DMCA, there are anti-circumvention provisions that prohibit others from tampering with information that the copyright owner inserts into their work to assist in exploiting it.⁴² It should be clear that liability for violation of the anti-circumvention provisions is separate from liability for copyright infringement.⁴³ “Section 103 of the DMCA added a new chapter to Title 17 of the U.S. Code that

⁴¹ *Id.* at 9. A party seeking the benefit of the limitations on liability in Title II must qualify as a “service provider.” For purposes of the first limitation, relating to transitory communications, “service provider” is defined in section 512(k)(1)(A) as “an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user’s choosing, without modification to the content of the material as sent or received.” For purposes of the other three limitations, “service provider” is more broadly defined in section 512(k)(1)(B) as “provider of online services or network access, or the operator of facilities therefor.” See 17 U.S.C. § 512.

⁴² Bentley J. Olive, *Anti-Circumvention and Copyright Management Information: Analysis of New Chapter 12 of the Copyright Act*, 1 N.C. J.L. & Tech. 2, 6 (2000). The anti-circumvention provision is drafted narrowly, but it will help to provide protection against unauthorized circumvention of technological protection measures used to protect copyrighted works, including restrictions on the manufacture and distribution of devices and other technological means that are primarily designed or produced to circumvent such protection measures.

⁴³ 17 U.S.C. § 1201(a)-1205 (2011). No person shall circumvent a technological measure that effectively controls access to a work protected under this title. The Prohibition contained in the preceding sentence shall take effect at the end of the 2-year period beginning on the date of the enactment of this chapter. Section 1201 states, in relevant part:

(2) 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’s knowledge for use in circumventing a technological measure that effectively controls access to a work protected under this title³) As used in this subsection- A) to “circumvent a technological measure” means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, by- pass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner; and (B) a technological measure “effectively controls access to a work” 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) Additional Violations. 1) 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 protection afforded by a technological measure that effectively protects a right of a copyright owner under this title in a work or a portion thereof; (B) has only limited commercially significant purpose or use other than to circumvent protection afforded by a technological measure that effectively protects a right of a copyright owner under this title in a work or a portion thereof; or (C) is marketed by that person or another acting in concert with that person’s knowledge for use in circumventing protection afforded by a technological measure that effectively protects a right of a copyright owner under this title in a work or a portion thereof.

Id.

implements the obligation to provide adequate and effective protection against circumvention of technological measures used by copyright owners to protect their works.”⁴⁴ This new section’s goal is to prohibit circumvention of access controls; manufacturing, selling or trafficking in services or devices that enable circumvention of access controls; and manufacturing, selling or trafficking in services or devices that enable circumvention of use controls.⁴⁵

In order to allege a violation under 17 U.S.C. § 1201(a)(2) specifically, a service provider will have to allege that they are in ownership of a valid copyright in a work that is effectively controlled by a technological measure and that such measure has been circumvented.⁴⁶ Furthermore, as a result of the circumvention, third parties can now access the copyrighted work without authorization in a manner that infringes or facilitates infringing a right protected by the Copyright Act, because of a product that the infringer either:

- a) Designed or produced primarily for circumvention; b) made available despite only limited commercial significance other than to circumvent; or c) marketed for use in circumvention of the controlling technological measure.⁴⁷

In order for the digital music libraries to avoid contributory or vicarious liability for the infringing activities of their users, they have to be eligible for the limitation within Section 512(c) of the DMCA.⁴⁸ Within Section 512(c), a service provider is not

⁴⁴ U.S. COPYRIGHT OFFICE SUMMARY, THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998, 3 (1998).

⁴⁵ 17 U.S.C. § 103 (2011).

⁴⁶ Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178 (Fed Cir. 2004). A plaintiff alleging a violation of § 1201(a)(2) must prove:

(1) Ownership of a valid copyright on a work, (2) effectively controlled by a technological measure, which has been circumvented, (3) that third parties can now access (4) without authorization, in a manner that (5) infringes or facilitates infringing a right protected by the Copyright Act, because of a product that (6) the defendant either (i) designed or produced primarily for circumvention; (ii) made available despite only limited commercial significance other than circumvention; or (iii) marketed for use in circumvention of the controlling technological measure. A plaintiff incapable of establishing any one of elements (1) through (5) will have failed to prove a prima facie case. A plaintiff capable of proving elements (1) through (5) need prove only one of (6)(i), (ii), or (iii) to shift the burden back to the defendant. 17 U.S.C. § 1201(a)(2).

At that point, the various affirmative defenses enumerated throughout § 1201 become relevant.

⁴⁷ *Id.*

⁴⁸ U.S. COPYRIGHT OFFICE SUMMARY, THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998, 11 (1998).

Section 512(c) limits the liability of service providers for infringing material on websites (or other information repositories) hosted on their systems. It applies to storage at the direction of a user. In order to be eligible for the limitation, the following conditions must be met: 1) The provider must not have the requisite level of knowledge of the infringing activity, as described below; 2) If the provider has the right and ability to control the infringing activity, it must not receive a financial benefit directly attributable to the infringing activity; 3) Upon receiving proper notification of claimed infringement, the provider must expeditiously take down or block access to the material. In addition, a service provider must have

liable if the provider does not have actual knowledge of the infringement, is not aware of facts or circumstances from which infringing activity is apparent, and upon obtaining such knowledge or awareness, acts expeditiously to remove or disable access to the infringing material.⁴⁹

III. ANALYSIS

In order for Spotify to obtain the protections of the Digital Millennium Copyright Act of 1998 (DMCA), and take further steps to decrease piracy through the act, they must satisfy various requirements.⁵⁰ The first step when analyzing the protections that Spotify can receive from the DMCA is to determine whether Spotify is considered an “online service provider” within the definition of 17 U.S.C. § 512(1).⁵¹ Spotify may argue that it is a service provider defined in § 512(k)(1)(A). Under this limitation, Spotify may express that it is in the business of transitory communications.⁵² On Spotify’s network, the company may define its business as one that transmits and provides connections for its users to the music that it has in its database, without modifying the content of the music or the material that is received by the music copyright owners.⁵³ Based on this definition, Spotify would qualify as a

filed with the Copyright Office a designation of an agent to receive notifications of claimed infringement.

Id.

⁴⁹ *Viacom Int’l, Inc. v. YouTube, Inc.*, 676 F.3d 19, 38-39 (2d Cir. 2012).

The 17 U.S.C.S. § 512(c) safe harbor provides that an eligible service provider must not receive a financial benefit directly attributable to the infringing activity, in a case in which the service provider has the right and ability to control such activity. The right and ability to control infringing activity requires something more than the ability to remove or block access to materials posted on a service provider’s website. However, the safe harbor is only available when the infringement occurs by reason of the storage at the direction of a user of material that resides on a system or network controlled or operated by or for the service provider.

⁵⁰ *DMCA: The Digital Millennium Act*, AMERICAN LIBRARY ASSOCIATION (Oct. 30, 2014, 3:43 P.M.), <http://www.ala.org/advocacy/copyright/dmca>. Divided into five “titles,” the DMCA is a complex act that addresses a number of issues that are of concern to libraries. Among its many provisions, the Act: 1) Imposes rules prohibiting the circumvention of technological protection measures, 2) sets limitations on copyright infringement liability for online service providers, 3) expands an existing exemption for making copies of computer programs, 4) provides a significant updating of the rules and procedures regarding archival preservation, 5) mandates a study of distance education activities in networked environments, 6) mandates a study of the effects of anti-circumvention protection rules on the “first sale” Doctrine. In order to receive these protections, there are many qualifications that must be met.

⁵¹ See 17 U.S.C. § 512(k)(1)(A)(2011) (detailing the specific provision that would be argued for Spotify to be labeled as a “Service Provider”).

⁵² See 17 U.S.C. § 512(a)(2011); 144 Cong Rec H 7074 (discussing a service provider and when they are or are not liable for monetary relief, injunctive relief, equitable relief, and infringement of copyright via a system or network that is controlled or operated by or for the service provider).

⁵³ *Music for Everyone*, SPOTIFY (Oct. 30, 2014 4:11 P.M.), <https://www.spotify.com/us/>. Spotify is a commercial music streaming service providing digital rights management-restricted content from a variety of record labels. Music can be browsed or searched by artist, album, genre, playlist, or record label. On a computer, the link allows users to purchase selected material via partner

“service provider” and gain protections under the DMCA. However, there are two additional provisions that have requirements with which Spotify must comply to determine whether Spotify would be liable for the ubiquitous online piracy that is occurring through illegal downloading websites and the usage of Spotify’s data to illegally obtain music. Those two provisions that provide a reduction in liability are the anti-circumvention and the safe harbor provisions.

A. Anti-Circumvention Intervention

The anti-circumvention provision of the DMCA is in place to provide protection against unauthorized circumvention of technological measures that are used to protect copyrighted works.⁵⁴ In order to receive protection from circumvention and the ability to utilize the remedies afforded, Spotify must have a technological measure in place that is used primarily to protect its servers from circumvention.⁵⁵ “A technological measure effectively controls access to a work 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.”⁵⁶ In order to download from Spotify and sync music to your computer or mobile device to listen while offline, the user must have a premium account.⁵⁷ To qualify for a premium account, one must create a username, password and provide payment information.⁵⁸ The user will subsequently receive a free 30-day trial with this premium account.⁵⁹ Once the free trial ends, Spotify will automatically bill the

retailers. They stream and only connect with their users. They do not modify the songs that are on their database. These are copyright musical works that are received from record labels.

⁵⁴ 17 U.S.C.S. § 1201(a)(1)(2011). This section of the Copyright Act deals with violations regarding circumvention of technological measures. No person shall circumvent a technological measure that effectively controls access to a work protected under this title. This protection took place in 1998. Circumvention requires descrambling, decrypting, avoiding, bypassing, removing, deactivating or impairing a technological measure qua technological measure. Note that: A cause of action under the DMCA does not accrue upon unauthorized and injurious access alone; rather, the DMCA “targets the circumvention of digital walls guarding copyrighted material.” *Universal City Studios v. Corley*, 273 F.3d 429 (2d Cir. 2001).

⁵⁵ *Id.*

⁵⁶ 17 USCS § 1201(a)(3)(B)(2011).

⁵⁷ *Spotify Premium*, FOR DUMMIES: A WILLEY BRAND (Oct. 30, 2014, 7:50 P.M.), <http://www.dummies.com/how-to/content/spotify-premium.html>. Spotify Premium is purchased for \$10 a month. As a premium user, you get a chance to listen to releases before other subscribers. You also get no ads, no time restrictions, and international access. Only those users who have a premium account are privileged to sync music from Spotify to their computers for offline listening. Another incentive to the premium account is that the listener gets to listen to a large proportion of tracks at a higher fidelity; this means that the user can experience brilliant-quality sound, exactly the way music should be heard. Lastly, with the premium account, you can listen to your music throughout different parts of the house.

⁵⁸ *How to Get Spotify Premium*, SPOTIFY (Oct. 28, 2014, 3:27 P.M.), <http://www.spotify.com/Get-Spotify-Premium>. To get a premium account, one must first create a Spotify account. You can create a Spotify-specific account or log in with your Facebook account.

⁵⁹ *See Id.* (Explaining that you get a month of premium for free when you sign up as long as you have never used a trial on your account before. Click the “Upgrade” button at the top of the Spotify page to start the free trial process. Lastly you enter your payment information with either a credit card or PayPal account).

user's account.⁶⁰ The user will then have immediate access to the premium benefits upon logging into her account. Benefits include downloading copyrighted music to the user's own devices for offline enjoyment.⁶¹ Spotify maintains that the application of technological measures such as username, password and payment information requirements is enough to receive protection under the anti-circumvention provision. However, upon potential suit between Spotify and illegal downloading website creators, also known as pirates, pirates can argue that Spotify does not effectively control access to the copyrighted work. As exemplified in other digital rights cases, infringers can prove copyright holders are vicariously liable by arguing that they do not satisfy the technological measure requirement under the DMCA.

In *MDY Industry, LLC v. Blizzard Entertainment, Inc.*, Blizzard alleged MDY, Michael Donnelly, violated the DMCA because of the services, devices, and technological products designed to circumvent the technological measures that Blizzard put in place to control access to copyrighted work and to protect its rights as the copyright owner of World of Warcraft (WoW).⁶² Specifically, Blizzard alleged MDY was liable for copyright infringement and tort law claims for selling software that contributed to the break of Blizzard's End User License Agreement (EULA) and Terms of Use governing the World of Warcraft software. However, the Court held that Blizzard did not prevent users from gaining access to the literal codes and therefore there was not a technological measure because they did not pass the six-part test laid out within 17 U.S.C.S. § 1201(a)(2).⁶³ Similarly, pirates could rebut Spotify's claims by revealing that the measures in place do not effectively control ownership of the music copyright, nor were their technological measures of username, password and payment information designed or produced *primarily* for circumvention further alleging that those measures are just used for commercial gain.⁶⁴

Without having an effective technological measure as defined by 17 U.S.C.S § 1201(a)(3)(B), Spotify will not be able to obtain protection under the anti-circumvention provision and pirates may try to contend that Spotify should also be liable for vicarious copyright liability.⁶⁵ By contending that Spotify is vicariously

⁶⁰ *Id.* If the user wants, they can either Upgrade their account to premium after the thirty day trial or go back to having a regular Spotify account where one could still listen to the music for free but cannot download or get any other benefits that a premium account would give.

⁶¹ *Spotify Premium, FOR DUMMIES: A WILEY BRAND* (Oct. 30, 2014, 7:50 P.M.) <http://www.dummies.com/how-to/content/spotify-premium.html>. (Detailing a Spotify Premium user's benefit, which includes listening to music offline).

⁶² *MDY Indus., LLC v. Blizzard Entm't, Inc.*, 616 F. Supp. 2d 958, 968 (D. Ariz. 2009).

⁶³ 17 U.S.C. § 1201(a)(2)(2011). A plaintiff alleging a violation of § 1201(a)(2) must prove: (1) ownership of a valid *copyright* on a work, (2) effectively controlled by a *technological measure*, which has been circumvented, (3) that third parties can now *access* (4) *without authorization*, in a manner that (5) infringes or facilitates infringing a right *protected* by the Copyright Act, because of a product that (6) the defendant either (i) *designed or produced* primarily for circumvention; (ii) made available despite only *limited commercial significance* other than circumvention; or (iii) *marketed* for use in circumvention of the controlling technological measure. *Id.* (emphasis added)

⁶⁴ *Id.*

⁶⁵ *Fonovisa, Inc. v. Cherry Auction, Inc.*, 76 F.3d 259, 262 (9th Cir. 1996). A defendant is vicariously liable for the actions of a primary infringer where the defendant (1) has the right and ability to control the infringer's conduct, and (2) receives a direct financial benefit from the infringement. Within *Cherry Auction, Inc.*, the Defendant was found liable for swap meet organizer

liable a pirate may limit his own liability and potentially force Spotify to settle or not bring infringement claims. Vicarious liability, also known as contributory liability, is when a party is liable for the resulting acts of infringement by third parties when the party distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement.⁶⁶

Recently, there has been disagreement as to how broadly the anti-circumvention provisions should apply and how to prove liability.⁶⁷ “The statute’s basic *incoherence* and *incompatibility* with prior copyright law makes it pretty difficult for a court to know whether it is applying the statute in a way that Congress intended or not.”⁶⁸ The DMCA could create a new statutory era, which would make copyright concepts in the past irrelevant, and could also diminish the fair use doctrine that is in place,⁶⁹ which gives Spotify its protection to use the copyrighted work. In *Facebook, Inc. v. Power Ventures, Inc.*, Facebook alleged that Power Ventures Inc., a third-party platform, collected user information from Facebook and displayed it on its own website. Facebook claimed violations of CAN-SPAM Act, the Computer Fraud and Abuse Act, and the California Comprehensive Computer Data Access and Fraud Act.⁷⁰ According to Facebook, Power Ventures Inc. made copies of Facebook’s website during the process of extracting user information. Facebook argued that this process caused both direct and indirect copyright infringement and a violation of the DMCA. However, the Ninth Circuit in *Facebook, Inc. v. Power Ventures, Inc.* also noted that, with the DMCA provision, service providers may be limited in using the provisions afforded through the Copyright Act to control unwanted access to their systems.⁷¹

who had right and ability to control vendor sales, received attendance fees, and had increased attendance due to presence of infringing vendors. The Court explains that knowledge of infringing conduct is not a requirement.

⁶⁶ *Id.* at 262.

⁶⁷ Stephen McJohn, *Top Tens in 2010: Copyright and Trade Secret Cases*, 9 Nw. J. Tech. & Intell. Prop. 5, 332 (2011). Notably, *MDY Industries v. Blizzard Entertainment* explicitly rejected that trend (that only circumvention that supports copyright infringement is prohibited and therefore the offering of circumvention services that do not lead to copyright infringement is not prohibited), holding that the provisions create a new anti-circumvention right, distinct from copyright infringement. *MDY* creates a distinct split among the circuits on how broadly the anti-circumvention provisions apply.

⁶⁸ Tim Armstrong, *DMCA: Fifth Circuit inches closer to “fair circumvention” defense*, INFO/LAW (Jul. 26, 2010, 2:48 P.M.), <https://blogs.law.harvard.edu/infolaw/2010/07/26/dmca-fifth-circuit-inches-closer-to-fair-circumvention-defense/>. One response is to cast the rest of copyright aside and make a clean break: to declare that the DMCA ushered in a new statutory era in which prior copyright concepts are irrelevant. This is basically the approach the courts took in the earliest wave of DMCA cases. The other is more difficult, alternative for the courts is to try to harmonize the DMCA with the rest of copyright law and make them coexist.

⁶⁹ *Universal City Studios v. Reimerdes*, 111 F. Supp 2d 294, 322 (S.D.N.Y. 2000). DMCA appeared to penalize conduct (such as fair use) that was clearly lawful under copyright, the court said, in essence, copyright doesn’t matter. Courts also claimed that if congress had meant the fair use defense to apply to such actions, it would have said so. Furthermore, the Court said that in order to construe the DMCA, one does not need to look outside the DMCA itself.

⁷⁰ *Facebook, Inc. v. Power Ventures, Inc.*, 2009 U.S. Dist. LEXIS 42367 (N.D. Cal. May 11, 2009).

⁷¹ *Id.* Power Ventures argued that Facebook’s DMCA claim was insufficient using the same arguments listed above. They also argued that the unauthorized use requirement was not met because the users are controlling the access (via Power Ventures site) to their own content on the Facebook website. However, the Terms of Use negate this argument because users are barred from

This opinion could lead to the ultimate destruction of copyright protection. If the anti-circumvention provision encompassed more options to obtain protection from infringers, it may align with the Copyright Act more closely. However, if Congress did not intend for the protections these provisions give to align with one another, it may cause, instead of solve, problems for copyright owners.

Based on this analysis, despite the circuit split, Spotify is more likely than not protected under the anti-circumvention provision because it is a service provider that has taken proper technological measures to prevent circumvention. However, there are possible opportunities for Spotify to increase the certainty of protection and avoid any possible liability that a party might argue exists.

B. DMCA Safe Harbor Provision may not Protect Spotify from Torrential Downpour of Liability.

The term “safe harbor” is a nautical metaphor, indicating a place where a ship will be safe from stormy weather.⁷² Being outside of the safe harbor means your safety is not assured.⁷³ The DMCA safe harbor provision is the ultimate protection of copyrighted work from the massive piracy issue happening online. However, the strenuous requirements for protection have served as blockades for many service providers simply because of their knowledge of infringement, and their ineffective efforts to stop it.⁷⁴ Traditionally, the safe harbor provisions were created to protect Internet service providers. Many commentators have presently questioned whether the provision also applies to streaming services.

Spotify may not qualify or have the ability to gain the privileges of the safe harbor protections offered through the DMCA. Qualification for a safe harbor as a transitory digital network communication is subject to several conditions including:

using automated programs to access the Facebook website. While users may have the copyright rights to their own content, Facebook placed conditions on that access. After Power Ventures informed Facebook that it intended to continue their service without using Facebook Connect, Facebook implemented specific technical measures to block Power Ventures' access. Power Ventures then attempted to circumvent those technological measures. As all of the elements of a DMCA claim have been correctly pleaded and supported in the FAC, the motion to dismiss the DMCA claim was denied.

⁷² *Chapter 3: Copyright of Digital Information*, PROTECTION OF DIGITAL INFORMATION (Oct. 30, 2014, 10:48 P.M.), <http://digital-law-online.info/lpdi10/treatise33.html>. Each safe harbor substantially limits the liability for copyright infringement. Each is separate, and if you fall within any one, your liability is limited. And even if you do not meet the requirements of one of the safe harbors, that is not an indication that you are infringing a copyright.

⁷³ *Id.* Even though the DMCA became law in 1998, there have been very few court cases that interpret its language. The best guidance can be found in the congressional reports that accompanied its passage. Furthermore, a service provider can still be found to have infringed a copyright, even within the safe harbor (vicarious liability).

⁷⁴ See Susan Stith, *The Digital Millennium Copyright Act (DMCA): Seeking Safe Harbor in a Sea of Troubles*, THE NATIONAL LAW REVIEW (Mar. 31, 2014), <http://www.natlawreview.com/article/digital-millennium-copyright-act-dmca-seeking-safe-harbor-sea-troubles> (explaining that ISPs are not liable for infringing activity unless they had actual knowledge or the awareness of facts or circumstances demonstrating infringing activity and failed to remove or block access to the material).

(1) data transmission occurs through an automated technical process without selection of the material by the service provider, (2) the service provider does not determine the recipients of the material, (3) intermediate or transient copies stored on the service provider's system or network must not be accessible other than to the designated recipients, and such copies must not be retained on the system longer than is reasonably necessary, and (4) the service provider must not have modified the content of the transmitted material.⁷⁵

The DMCA safe harbor provision may not apply to Spotify because of its ability to control the infringing activity that is taking place on its network.⁷⁶ The immediate and transient copies of music are being illegally downloaded via illegal downloading software.⁷⁷ Spotify is also knowledgeable about online music piracy of its licensed copyrighted works. However, it is not expeditiously implementing reasonable steps to stop infringers or forcing them to remove illegal websites—showing an apparent lack of concern for the problem.⁷⁸

There is another circuit split related to the DMCA between the Ninth Circuit and the Second Circuit.⁷⁹ The Ninth Circuit espouses that if a service provider were to have the ability to control infringing acts, it would then place them outside the protection of the safe harbor provision.⁸⁰ Whereas the Second Circuit explains that the service provider would have the ability to control infringing acts, if it has a

⁷⁵ 17 U.S.C. § 512(a)(2011). (1) the transmission of the material was initiated by or at the direction of a person other than the service provider; (2) the transmission, routing, provision of connections, or storage is carried out through an automatic technical process without selection of the material by the service provider; (3) the service provider does not select the recipients of the material except as an automatic response to the request of another person; (4) no copy of the material made by the service provider in the course of such intermediate or transient storage is maintained on the system or network in a manner ordinarily accessible to anyone other than anticipated recipients, and no such copy is maintained on the system or network in a manner ordinarily accessible to such anticipated recipients for a longer period than is reasonably necessary for the transmission, routing, or provision of connections; and (5) the material is transmitted through the system or network without modification of its content.

⁷⁶ *How to Get Spotify Premium*, SPOTIFY (Oct. 28, 2014, 3:27 P.M.), <http://www.spotify.com/Get-Spotify-Premium>. Spotify asks that users create an account and details that in order to download from their network, you need to have a Premium account. These measures may not be enough to curb online piracy.

⁷⁷ *How to Convert Spotify to MP3*, WONDERSHARE (October 7, 2014, 12:45 P.M.), <http://www.wondershare.com/convert-video-audio/convert-spotify-to-mp3.html>.

⁷⁸ Mike Ortega, *Paddling Against the Current: Why the DMCA's Safe Harbor Provision is Ineffective Against Music Stream-Ripping*, 11 Rutgers Bus. L.J. 60, 63 (2014). Although this method of obtaining music should violate the streaming service's user policy, a streaming service such as Spotify does not consider the risk of exposing music to stream-ripping as big of a problem as other issues like achieving profitability, establishing long-term financial viability and managing to compete with other services in the field.

⁷⁹ Rick Sanders, *DMCA Circuit Split Averted: New Rule but the Holding Remains the Same*, THE IP BREAKDOWN, (Mar. 24, 2013, 3:35 P.M.), <http://ipbreakdown.com/blog/dmca-circuit-split-averted-new-rule-but-the-holding-remains-the-same/>.

⁸⁰ *Id.*

substantial influence on the activities of its users.⁸¹ However, there is also disagreement, because if the service provider has willful ignorance of the infringing acts and knows it can control the activities of its users, yet is not doing so, they defeat the knowledge prong of the safe harbor requirement, which would block them from gaining protection under the safe harbor provision.⁸²

The various provisions that the DMCA has in place have not only harmed the future of copyright, but have also opened up many service providers to irreparable harm and contributory liability. Spotify more than likely won't obtain protection under the safe harbor provision, although it is considered a transitory communication within the definition of the statute.⁸³ However, this does not necessarily mean that Spotify does not have a basis of protection from copyright infringement, nor do they lack a defense as to a charge of vicarious liability. Therefore, due to the circuit split, the future of copyright is uncertain. With the disagreement between the DMCA and current Copyright law in terms of protections available, Spotify is between a rock and a hard place.

The provisions that are in place through the DMCA make it difficult for Spotify to obtain protection from vicarious liability. After analyzing the anti-circumvention and safe harbor provisions of the DMCA, Spotify may need to find new ways to combat online music piracy and possibly remove the circuit split and disagreement that exists amongst the courts, and provide a life preserver to the future of copyright protection.

IV. PROPOSAL

Despite threats of piracy, Spotify is continually growing, and offering new and innovative ways for people to listen to music.⁸⁴ With the threat of consistent and abundant options of piracy,⁸⁵ and the lack of protection that Spotify receives under the DMCA provisions, the music streaming service opens itself up to a potentially

⁸¹ *Id.* The Second Circuit criticism that it's interpretation of the "ability to control" prong conflates that prong with the knowledge requirement. And so, strips out the entire portion of its old opinion, which it previously held that "ability to control" requires the ability to stop specific instances of infringement. The have a test which is: "to exert substantial influence on the activities of others, something more than just the general ability to stop uploads or remove material."

⁸² *IO Group, Inc. v. Veoh Networks, Inc.*, 586 F. Supp. 2d 1132 (N.D. Cal. 2008).

⁸³ 17 U.S.C. § 512(a)(2011).

⁸⁴ Paul Sloan, *Spotify: Growing like mad, yet so far to go*, CNET (Mar. 12, 2013, 6:00 AM), <http://www.cnet.com/news/spotify-growing-like-mad-yet-so-far-to-go/>. Spotify reached over 23 million users in the year of 2013 and is continually growing. Over the past year, it has doubled to 20the number of countries in which it is available. Spotify has not cut deals with automakers as well, ensuring the music-streaming service is available with some new vehicles as well as seeking partnerships with ISPs and wireless companies to find ways to bundle its service.

⁸⁵ *Who Music Theft Hurts*, RIAA: REPRESENTING MUSIC (Nov. 16, 2014, 3:45 P.M.), http://www.riaa.com/physicalpiracy.php?content_selector=piracy_details_online. While downloading one song may not feel that serious of a crime, the accumulative impact of millions of songs downloaded illegally—and without any compensation to all the people who helped to create that song and bring it to fans—is devastating. One credible study by the Institute for Policy Innovation pegs the annual harm at \$12.5 billion dollars in losses to the U.S. economy as well as more than 70,000 lost jobs and \$2 billion in lost wages to American workers.

massive amount of liability to music rights holders and artists.⁸⁶ As a result, Spotify potentially will not thrive economically and may eventually lose rights to certain music, causing the service to join other failed music streaming sites, like Napster.⁸⁷ However, this comment proposes three ways that Spotify can provide protection of its services and copyright privileges while continuing to increase the economic ability of its digital music library.

In order for Spotify to obtain protection under the DMCA, it has to have a technological measure in place that would provide prevention of circumventing the site's security measures.⁸⁸ However, Spotify's measures under a premium account are not enough to satisfy this element of DMCA protection.⁸⁹ There are three ways that this comment proposes Spotify can meet the DMCA standard of having a technological measure specifically in place to prevent circumvention. The first is to incorporate "tamperproof hardware" onto Spotify's servers in order to provide secure data storage.⁹⁰ The second is code obfuscation, which protects a secret in the software's code,⁹¹ and the third is to implement routine statistical audits of users and

⁸⁶ *Taylor Swift's Battle Against Spotify Heats Up: Her Label Fires Back*, PEOPLE (Nov. 13, 2014, 6:25 P.M.), <http://www.people.com/article/taylor-swift-spotify-debate>. Taylor Swift pulled her catalog from Spotify's music streaming service. She felt like having her music on a streaming site did not show the value in the art that she calls her music. This is because of piracy that music is not treated with value. "Music is art, and art is important and rare . . . important, rare things are valuable. Valuable things should be paid for." Spotify recognizes that piracy is depreciating the value of music, yet they are not incorporating extra measures to protect against piracy.

⁸⁷ *Napster Shut Down*, ABC NEWS (Jul. 27, 2001), <http://abcnews.go.com/Technology/story?id=119627>. A federal judge in San Francisco shut down the popular swapping website—saying the online company encourages "wholesale infringement" against music industry copyrights. U.S. District Court Judge Marilyn Patel noted that 70 million people were expected to be using Napster by year's end unless the service was halted. Napster had cost the music industry more than \$300 million in lost sales because 20 million people worldwide song-swapped [and illegally downloaded music] via Napster.

⁸⁸ 17 U.S.C. § 1201(a)(3)(A)-(B)(2011). A technological measure effectively controls access to a work 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. To "circumvent a technological measure" means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, by-pass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner; and 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.

⁸⁹ *Spotify Premium, FOR DUMMIES: A WILEY BRAND* (Oct. 30, 2014, 7:50 P.M.), <http://www.dummies.com/how-to/content/spotify-premium.html>. Spotify Premium is purchased for \$10 a month. Under a Premium account, the user has to confirm they have an account, have to enter in a password and then they will be able to download the song legally to their music list.

⁹⁰ See Ginger Myles, *V2N1: Preventing Piracy within the Video Game Industry*, IDMA (Mar. 11, 2013, 2:45 PM), http://idmaa.org/?post_type=journalarticle&p=695 (discussing that video game producers also acknowledge the issue surrounding piracy as well. Video game piracy includes illegal copying, counterfeiting, and distribution. Video game producers and researchers feel like the best chance for protecting video game industry is to try to devise a combination of software and hardware protection techniques stealthy enough to deter hackers. The article provides solutions to increase revenue and maintain the safety of copyright. The hardware aspect for video game producers is the console itself, whereas if dealing with a music database, the hardware protection would be placed on Spotify's servers.).

⁹¹ *Id.*

the music they download within the database.⁹² The use of all three technological measures will provide a more robust and sturdy technological block that will increase the effectiveness of preventing piracy of Spotify's data.

"Tamperproof hardware" is not an entirely new concept; it has been incorporated in video game consoles to block and prevent further piracy of video game software.⁹³ "[This privacy prevention technique] involves securing part or parts of the computer's hardware (like a computer chip) from being observed by a hacker, creating what is called a secure context or secure data storage."⁹⁴ As a result, the attacker or pirate is prevented from observing the behavior of the software, which means that he cannot identify the correct portions of the software to remove.⁹⁵ Although this adds an additional cost to the operation of the software and the database itself, this is a viable option for Spotify to utilize on its database servers to protect the database from pirates circumventing the secure data that is in place, preventing illegal downloading. However, it may not be a viable option due to the cost of creating the hardware and implementing the hardware into all of Spotify's servers. This may cause the need to increase subscription costs and other fees to maintain that hardware. Furthermore, because hardware is rarely copyrightable, this tamperproof hardware will be incorporated with added software to the server computers, that Spotify will be able to copyright, providing the ultimate technological measure.

A. Intelligently Unintelligible: Code Obfuscation

"Code obfuscation is a technique used to protect a secret in the software's code. The secret can vary from the design of the software, special algorithms embedded within the software, or important data such as cryptographic keys."⁹⁶ Code obfuscation is a process that contains decoys to obstruct reverse engineering or

⁹² *Statistical Sampling*, SALES AND USE TAX DEPARTMENT CALIFORNIA STATE BOARD OF EQUALIZATION (Jan. 2000), http://www.mtc.gov/uploadedFiles/Multistate_Tax_Commission/Audit_Program/Resource/Chapter%2013%20Statistical%20Sampling.pdf.

⁹³ Ginger Myles, *V2N1: Preventing Piracy within the Video Game Industry*, IDMA (Mar. 11, 2013, 2:45 PM), http://idmaa.org/?post_type=journalarticle&p=695.

⁹⁴ *Id.* at 2. One of the ways a hacker violates tamperproof hardware is by "modding" it. Modding is the process of adding special chips to a game console that modifies or disables the console's security mechanisms; this is one of the most popular ways to attack the Xbox and PlayStation2. As a matter of fact, Microsoft has taken action to prevent modded consoles from engaging in Xbox Live online play. When an Xbox Live user logs on, their system is checked for the presence of mod chips. If mod chips are detected, the unit's serial number is recorded, and the device is permanently banned from the network.

⁹⁵ *Id.*

⁹⁶ *Id.* The software that is put in place as a code obfuscation must be stealthy and not alert the attacker to the location of the failure-inducing code, or that there is a falsified code present. This can be accomplished by separating the detection and response mechanisms in both space and time.

circumvention of security measures.⁹⁷ Code obfuscation can often provide a critical technical layer of protection over and above legal protections.⁹⁸

Code obfuscation works by transforming—yet preserving—the original functionality of software code in order to make it more difficult to read, understand, reverse engineer, and potentially circumvent technological measures that are in place.⁹⁹ “The idea is to make the software so hard to read that it then becomes more costly for the attacker and more difficult for them to recreate a version that provides for [illegal downloading] of that material.”¹⁰⁰ There are three general classifications of code obfuscation: layout obfuscations that alter information that is unnecessary to the execution of the application such as identifier names and source code formatting, data obfuscations that alter data structures used by the program, and control flow obfuscations that can be used to disguise the true control flow of the application.¹⁰¹

Out of the three general classifications of code obfuscations, Spotify would benefit from the control flow obfuscations.¹⁰² This comment proposes that Spotify insert dead or irrelevant code into the software in order to disguise the flow of downloading music from its database. The “spaghetti-like” irrelevant codes are a complex and tangled control structure that would confuse pirates on what part of the code they need to circumvent in order to illegally download music from Spotify.¹⁰³ Pirates would have to first search Spotify’s code and then engage in an economically draining game of trial and error, which can effectively hinder and even stop them from creating circumvention software.

Lastly, this comment proposes that Spotify incorporate statistical auditing software specifically designed to catch infringement and block it from continuing.¹⁰⁴ The statistical audit would determine who is accessing the database the most. Spotify’s Analysis Team would run an audit and look at the various IP addresses that are accessing Spotify. The team would then eliminate those who have a legal

⁹⁷ SYMPOSIUM REVIEW: INNOVATION, SOFTWARE, AND REVERSE ENGINEERING, 18 Santa Clara Computer & High Tech. L.J. 121, 131. The issues of digital rights management and anti-reverse engineering structures also were raised, together with the idea of code obfuscation.

⁹⁸ IP1-IP1-4 Business Law Monographs § 4.01, 28. As with any trade secret [or copyright], a protection plan must be firmly in place when dealing with computer software development and marketing.

⁹⁹ Ginger Myles, *V2N1: Preventing Piracy within the Video Game Industry*, IDMA (Mar. 11, 2013, 2:45 PM), http://idmaa.org/?post_type=journalarticle&p=695.

¹⁰⁰ *Id.*

¹⁰¹ Ian Phillips, *Obfuscated Code*, INTERNATIONAL OBFUSCATED C CODE CONTEST (1988). http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Obfuscated_code.html. “Writing and reading obfuscated source code can be a brain teaser for [pirates]. [Different] types of obfuscations include simple keyword substitution, use or non-use of whitespace to create artistic effects, and self-generating or heavily compressed programs.”

¹⁰² *Control Flow Obfuscation*, MICROSOFT (2001), [http://msdn.microsoft.com/enUS/library/ms227229\(v=vs.80\).aspx](http://msdn.microsoft.com/enUS/library/ms227229(v=vs.80).aspx). Control Flow obfuscations produces spaghetti logic that can be very difficult for a cracker to analyze.

¹⁰³ *Id.*

¹⁰⁴ *The Standards of Field Work*, AUDIT SAMPLING (2006), <http://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-00350.pdf>. Audit sampling is the application of an audit procedure to less than 100 percent of the items within an account balance or class of transactions for the purpose of evaluating some characteristic of the balance or class. Statistical sampling helps the auditor to design an efficient sample, measure the sufficiency of the audit evidence obtained and to evaluate the sample results. Statistical sampling can provide sufficient audit evidence.

premium account from the database search, and those who access Spotify from mobile apps such as iPads, iPhones, and other mobile devices. Next, the team would categorize the database by usage of songs. ISPs show the number of times one has accessed Spotify. This categorization will show the outliers that access Spotify at an unusual amount. Once outliers are found, the audit would trigger an alert within the software and will cause a block, preventing access by turning off the user's ability to download the URL link. Furthermore, the software would automatically send out warning letters to the owner of the ISP, explaining that they will be liable for copyright infringement if there is continued illegal use. The statistical audit software would incorporate the alert system, automatic scanning of usage database, and trigger notice to both Spotify and to the pirate. This creative software would have the ability to be copyright protected, which would help prevent piracy.

V. CONCLUSION

Currently, Spotify does not qualify for protection under the DMCA. With the heightened standard for the DMCA, which also does not align with actual Copyright Law, the future for copyright is fading into the background. However, with the current system and protections available, Spotify may be able to qualify for DMCA protection. To qualify, Spotify can incorporate the added hardware and software that runs statistics and offers concealment of the relevant codes within Spotify's data that are used to download music legally. The software has been used for video games, but it may serve as a proficient defense against infringement blockers on music streaming databases like Spotify. This could further improve economic stability of Spotify and help maintain an economically healthy relationship with the music-rights holders. Piracy has become an epidemic among music streaming websites but this hardware/software implementation can provide a solution that, if correctly implemented, could expose and eliminate complications—allowing music streaming websites to flourish.

The future for Copyright law protection for music streaming websites—through the DMCA—looks promising. In order to succeed, digital music sites have to implement creative strategies and solutions to curb piracy through technological measures.