

# ANTI-CIRCUMVENTION OF COMPETITION: AVOIDING CONFLICT BETWEEN THE DMCA AND ANTITRUST

JACOB ADAM SCHROEDER\*

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\* J.D., The George Washington University Law School, May 2009; B.S. Computer Engineering, Purdue University, May 2005. Jacob is currently an associate at Finnegan in Washington, DC. Prior to law school, Jacob worked as a software engineer at Cisco Systems, Inc., in their Voice Technology Group. This piece was awarded the “2009 Writing Competition Winner” by the Intellectual Property Section of the Virginia State Bar. The views expressed herein are only those of the author and do not necessarily reflect the views of the firm Finnegan, Henderson, Farabow, Garrett and Dunner, LLP or any of its clients.

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Overprotecting intellectual property is as harmful as underprotecting it. Creativity is impossible without a rich public domain. Nothing today, likely nothing since we tamed fire, is genuinely new: Culture, like science and technology, grows by accretion, each new creator building on the works of those who came before. Overprotection stifles the very creative forces it's supposed to nurture.

Judge Kozinski<sup>1</sup>

## I. INTRODUCTION

Imagine you are a tech-savvy entrepreneur. You have watched as global access to the Internet has increased over 360% in the last nine years.<sup>2</sup> In addition to widespread availability, Internet service is getting cheaper every day.<sup>3</sup> For example, as of October 2009, iPhone users pay \$30/month for unlimited Internet access.<sup>4</sup> Despite the increased availability and affordability of data networks, a recent survey of San Diego cellular phone users discovered the average user paid over \$3 per minute for voice calls.<sup>5</sup> This does not even factor in costs associated with long distances fees for international phone calls.<sup>6</sup>

Voice over Internet Protocol (“VoIP”) technology could be the sleeping giant in the future of voice communications. VoIP technology permits phone calls between two users on the Internet irrespective of location, similar to email

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<sup>1</sup> *White v. Samsung Elecs. Am., Inc.*, 989 F.2d 1512, 1513 (9th Cir. 1993) (Kozinski, J., dissenting).

<sup>2</sup> World Internet Usage Statistics News and World Population Stats, <http://www.internetworldstats.com/stats.htm> (last visited Feb. 7, 2010).

<sup>3</sup> INFORMATION AND COMMUNICATIONS TECHNOLOGY, OECD COMMUNICATIONS OUTLOOK 2009 265 (2009), available at <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9309031E.PDF>.

<sup>4</sup> See iPhone 3G: AT&T wireless services, <http://www.wireless.att.com/businesscenter/iPhone3G/index.jsp> (last visited Feb. 14, 2010); Posting of Jose Feroso to Wired: Gadget Lab, <http://blog.wired.com/gadgets/2008/06/iphone-3g-activ.html> (June 9, 2008, 17:31 EST).

<sup>5</sup> David Lazarus, *Talk Isn't Cheap? For Cellphone Users, Not Talking is Costly Too*, L.A. TIMES, Mar. 8, 2009, at B1, available at <http://www.latimes.com/business/la-fi-lazarus8-2009mar08,0,4417313.column>.

<sup>6</sup> See International Long Distance Dialing—Calling Abroad From the U.S., <http://www.wireless.att.com/learn/international/long-distance/in-the-us.jsp> (last visited Feb. 7, 2010) (showing additional per-minute international rates, often more than \$1 per minute).

or instant messaging.<sup>7</sup> For internet users with unlimited data plans, VoIP allows them to take advantage of the bandwidth they are already receiving. Phone calls could be placed to practically anywhere in the world for free, or pennies per minute, as opposed to the outrageous costs through traditional phone lines.<sup>8</sup> Just as it costs the same to send an email to Walvis Bay, Namibia as it does to your friend down the street, the same could hold true for a voice call.

Let's say your idea is to develop a VoIP application for the iPhone. Your application will utilize the iPhone's always-on Internet connection to route phone calls through AT&T's 3G data network. Rather than using your voice plan minutes to call Mom, if you have a strong 3G connection you can call Mom for free using VoIP. In that case, there is a problem: AT&T owns the data network and views VoIP as a direct competitor to its voice service. Every minute of a VoIP call through AT&T's data network is one minute of voice call revenue it is losing. Jim Cicconi, senior Vice President of legal affairs for AT&T stated, "[w]e absolutely expect our vendors . . . not to facilitate the services of our competitors."<sup>9</sup> It should come to no surprise then, that Apple Inc. ("Apple"), one of AT&T's vendors, will not permit VoIP applications on the iPhone, at least not so long as those applications use AT&T's data network.<sup>10</sup> What's more, if you try to install your application without Apple's permission, Apple can claim that you are liable under the Digital Millennium Copyright Act ("DMCA").<sup>11</sup>

Anticompetitive use of the DMCA conflicts with the antitrust laws and thus must stop. Courts should narrowly tailor liability under the DMCA, construing it as a shield for copyright infringement, rather than a sword for anti-competitive behavior. The antitrust laws may provide some relief for consumers and provide the courts with a tool to reduce abuse of the DMCA. Part II of

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<sup>7</sup> *Make Free International Calls Without Hinderling Your Pocket*, TMCNET.COM, Jan. 18, 2010, <http://callcenterinfo.tmcnet.com/news/2010/01/18/4576587.htm>.

<sup>8</sup> Eric A. Taub, *Talk Is Cheap, if You Ask*, N.Y. TIMES, Apr. 30, 2009, at B6, available at <http://www.nytimes.com/2009/04/30/technology/personaltech/30basics.html?emc=eta>.

<sup>9</sup> Scott M. Fulton III, *Should AT&T Be Obligated to Enable Skype for the iPhone?*, Apr. 6, 2009, <http://www.betanews.com/article/Should-ATT-be-obliged-to-enable-Skype-for-the-iPhone/1239030900> (quoting Leslie Cauley, *Skype's iPhone Limits Irk Some Consumer Advocates*, USA TODAY, Apr. 2, 2009, at 3B).

<sup>10</sup> See Posting of Brad Tuttle to Time.com, <http://money.blogs.time.com/2009/08/26/the-people-vs-cell-phone-tyranny-a-case-for-lower-monthly-bills/> (Aug. 26, 2009, 7:49 EST).

<sup>11</sup> Digital Millennium Copyright Act, Pub. L. 105-304, 112 Stat. 2860 (1998) (amending sections of Title 17 of the United States Code); Fred von Lohmann, *Apple Says iPhone Jailbreaking Is Illegal*, ELECTRONIC FRONTIER FOUNDATION, Feb. 12, 2009, <http://www.eff.org/deeplinks/2009/02/apple-says-jailbreaking-illegal>.

this article discusses the background of telephony, cellular technology, and Apple's iPhone. It also provides a discussion of copyright law and antitrust law before discussing the recent battle occurring behind the scenes at the United States Copyright Office. Part III first determines the scope of protection claimed by Apple under the DMCA. Part III then analyzes the antitrust implications of Apple's claimed scope of protection. Part IV concludes with some suggestions on how to combat anticompetitive abuse of the DMCA.

## II. DISCUSSION

This Part will first provide a technical background on telephony technology and the Apple iPhone. Next, this Part will discuss copyright law, antitrust law, and the intersection of the two. Finally, this Part will conclude with a discussion of Apple's recent position on the legal protections afforded the iPhone under the Copyright Act and DMCA as expressed to the Librarian of Congress.

### A. *Case Study: Apple's Prohibition on VoIP Applications*

#### 1. Telecommunication Technology

Modern telecommunications technology includes cellular phones and VoIP. While these two technologies operate quite differently from one another under the hood, both have evolved from the landline system we grew up using. Understanding the evolution of modern telecommunications technology from the landline system will highlight the current issues involving VoIP on the iPhone.

##### a. *Plain Old Telephone System ("POTS")*

Alexander Graham Bell sent the first voice transmission over a wire in 1876, just over 133 years ago.<sup>12</sup> This initial configuration connected two devices together with one physical wire.<sup>13</sup> With this setup, one person only could talk

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<sup>12</sup> JONATHAN DAVIDSON ET AL., *VOICE OVER IP FUNDAMENTALS* 5 (2d ed. 2007); Maggie Holland, *Today in History: The First Telephone Call*, IT PRO, Mar. 10, 2009, <http://www.itpro.co.uk/610140/today-in-history-the-first-telephone-call>.

<sup>13</sup> DAVIDSON, *supra* note 12, at 5.

while the other could just listen.<sup>14</sup> Over time, this simple design evolved into the POTS.<sup>15</sup>

Although the POTS has improved slowly over time, one thing has remained constant: a dedicated path must exist between each end of the communications channel and remain open throughout the duration of the phone call.<sup>16</sup> This network architecture is characteristic of circuit switched networks.<sup>17</sup> For example, a sixty-minute phone call from New York to San Francisco will tie up a channel between those two cities for sixty minutes.<sup>18</sup> At the end of the phone call, the telephone company knows it must bill somebody for that sixty-minute, long-distance phone call.<sup>19</sup> Hence, this circuit-switched architecture benefits telephone companies by making it easy to bill the consumer.<sup>20</sup> The telephone company knows both the duration of the phone call and the distance between both ends because it had to allocate a dedicated path between the two end points.<sup>21</sup>

However, several limitations exist due to this circuit switched architecture. First, laying telephone cable from the phone company to each individual person desiring phone service is expensive.<sup>22</sup> Second, those who have ever lived out in the country know what can happen during severe weather; when a tele-

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<sup>14</sup> *Id.*

<sup>15</sup> *See id.*

<sup>16</sup> *See id.* at 5–7. Here, I am referring to the copper phone cable that runs between the phone company and each house with a phone line. What happens between phone companies is another matter.

<sup>17</sup> *See id.*

<sup>18</sup> *See id.*

<sup>19</sup> *See* MATTHEW STAFFORD, SIGNALING AND SWITCHING FOR PACKET TELEPHONY 207–08 (2004).

<sup>20</sup> *See id.*

<sup>21</sup> *See id.*; DAVIDSON, *supra* note 12, at 5.

<sup>22</sup> The expense of providing a dedicated wire connection, be it copper or fiber-optics, to each individual customer is in the billions. *See* Ken Belson, *Phone Line Alchemy: Copper into Fiber*, N.Y. TIMES, Oct. 11, 2004, at C1 (discussing added expense of providing a dedicated wire to each individual house). This type of capital investment, while required for a circuit switched network such as landline phone service, is not required at all to provide a packet-switched broadband network such as cellular service. *See also* Dr. Lawrence G. Roberts, *The Evolution of Packet Switching*, Nov. 1978, available at <http://www.packet.cc/files/ev-packet-sw.html> (discussing inefficiency of circuit switched networks when compared to packet switched networks and stating “[t]he economic advantage of dynamic-allocation over pre-allocation will soon become so fundamental and clear in all areas of communications, including voice, that it is not hard to project the same radical transition of technology will occur in voice communications as has occurred in data communications”).

phone pole falls down, service is disrupted for everybody whose telephone call would be routed through that particular cable.<sup>23</sup> The break in the dedicated channel terminates any calls in progress and prevents any future channels from reopening.<sup>24</sup> Finally, there is limited competition because one company in each area is granted a monopoly, although regulated, to provide telephone service as a utility.<sup>25</sup>

*b. Voice over IP*

VoIP refers to technology that permits phone calls, or more generally voice communications, over a data network, such as the Internet.<sup>26</sup> VoIP was first implemented in 1995 by the Israeli company VocalTec.<sup>27</sup> This technology permits a consumer with Internet access to place phone calls over the Internet at little to no cost, a considerable savings over traditional telephone calls, especially over long-distance telephone calls.<sup>28</sup> Further, subscribers of VoIP service can even use their regular POTS to place calls over the Internet, so they do not have to speak into a computer using a cumbersome microphone and headset.<sup>29</sup>

The Internet is a packet switched network, meaning that all data is broken down into small pieces, called packets, and sent on its way to the destination.<sup>30</sup> Each packet is routed independently to the destination, so each may end up taking a different path from one end to the other.<sup>31</sup> A real-world example might involve 100 people in New York City who have an all-expenses-paid trip to San Francisco. Chances are that they will not all take the same route. Some may choose to fly, others to drive, and some may even take a train. Even the people who do choose to fly may fly on different airlines and connect through different cities. If there is bad weather in a particular area, itineraries can be

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<sup>23</sup> See Greg Eckstrom, *When Severe Weather Hits . . . Do You Know What to Do?*, BOONE NEWS REPUBLICAN, [http://www.amestrib.com/articles/2009/04/11/ames\\_tribune/news/doc49dffbed054cf343676949.txt](http://www.amestrib.com/articles/2009/04/11/ames_tribune/news/doc49dffbed054cf343676949.txt) (last visited Feb. 11, 2010).

<sup>24</sup> See *id.*

<sup>25</sup> See *The Natural Monopoly Thesis*, in ICT REGULATION TOOLKIT § 3.1.2, <http://www.ictregulationtoolkit.org/en/Section.2478.html> (last visited Feb. 7, 2010).

<sup>26</sup> See RICHARD SWALE, VOICE OVER IP: SYSTEMS AND SOLUTIONS 1 (2001).

<sup>27</sup> ROBERTA BRAGG ET AL., NETWORK SECURITY: THE COMPLETE REFERENCE 413 (2004).

<sup>28</sup> *Id.*; Taub, *supra* note 8.

<sup>29</sup> Taub, *supra* note 8.

<sup>30</sup> ANDREW G. BLANK, TCP/IP FOUNDATIONS 9 (2004).

<sup>31</sup> *Id.*

redirected around any disruptions.<sup>32</sup> In the end, all 100 people will end up in San Francisco, just as with the Internet, all data packets will reach the final destination.<sup>33</sup>

This network architecture lends itself to many advantages over traditional circuit-switched POTS.<sup>34</sup> For example, if there is a network disruption between point A to point Z, the data simply can take a different route without dropping any calls in progress.<sup>35</sup> This makes the data transmission network more resilient.<sup>36</sup> In the POTS world, a downed telephone pole would instantly cut any phone calls in progress even if an alternate path were available.<sup>37</sup> Practical advantages include cheaper phone service, the ability to provide advanced call features, and greater efficiencies.<sup>38</sup> These advantages are especially apparent when one considers that approximately 73% of the people in the United States already have access to the Internet, which they need to communicate over VoIP.<sup>39</sup>

The packet-switched nature of VOIP is what makes it so cost effective.<sup>40</sup> Most broadband Internet plans today include unlimited Internet access.<sup>41</sup> This means that a consumer pays the same per month whether he downloads 500 GB a month from his friend in China or whether he only downloads 50 KB a month from his friend down the street.<sup>42</sup> The Internet does not discriminate in price on

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<sup>32</sup> See *id.* at 9–10.

<sup>33</sup> See *id.*

<sup>34</sup> TED WALLINGFORD, SWITCHING TO VOIP 6 (2005). There are also several disadvantages as well, including susceptibility to power outages, security risks, difficulty in determining location for emergency calls, etc. See Fred Hapgood, *Voice of Reason*, CSO, Mar. 2005, at 43, 45, available at <http://books.google.com/books?id=918EAAAAMBAJ&pg=PA45>.

<sup>35</sup> See BLANK, *supra* note 30, at 8–10.

<sup>36</sup> See *id.*

<sup>37</sup> See *id.* at 8.

<sup>38</sup> Phil Hochmuth, *Customers Find Different VoIP Benefits*, NETWORK WORLD, Feb. 14, 2005, <http://www.networkworld.com/news/2005/021405voicecon.html>.

<sup>39</sup> America Internet Usage Statistics, Population and Telecom Reports, <http://www.internetworldstats.com/stats2.htm> (last visited Feb. 7, 2010).

<sup>40</sup> See Hapgood, *supra* note 34, at 45; Roberts, *supra* note 22.

<sup>41</sup> *But see Internet Providers Shift to Metered Usage Billing*, REDORBIT, Apr. 16, 2009, [http://www.redorbit.com/news/technology/1672154/internet\\_providers\\_shift\\_to\\_metered\\_usage\\_billing/](http://www.redorbit.com/news/technology/1672154/internet_providers_shift_to_metered_usage_billing/) (last visited Feb. 10, 2010) (discussing attempts by some Internet service providers to charge by bandwidth consumed).

<sup>42</sup> See *id.*



where the data goes.<sup>43</sup> In fact, the network is, in a sense, not that smart.<sup>44</sup> Rather, the data network only considers each packet's next hop.<sup>45</sup> It is not until the packets show up at the other end that they are put together in the correct order and the content and type can be determined.<sup>46</sup> A ten-minute file download looks the same to "the Internet" as does a ten-minute VoIP phone call. A user with an Internet connection is therefore able to make pure VoIP phone calls at no additional cost.<sup>47</sup>

*c. Cellular Technology: Convergence of Voice and Data*

The initial conception of cellular technology dates back to AT&T's Bell Laboratories in 1947.<sup>48</sup> Although the idea was born in the late 1940s, it took nearly fifty years for cellular technology to finally take off in the late 1990s.<sup>49</sup> A cellular phone works by communicating with the nearest cell tower over radio waves.<sup>50</sup> When the cellular phone moves away from that tower and closer to another, any ongoing communications are automatically routed through that closer cell tower without an interruption in service.<sup>51</sup> First generation cellular phone service ("1G") carried only analog voice communications and utilized a circuit-switched architecture.<sup>52</sup> Second generation service ("2G") came along offering digital voice as way to increase voice capacity.<sup>53</sup> These more efficient digital 2G systems also included limited data facilities.<sup>54</sup>

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<sup>43</sup> See LILLIAN GOLENIIEWSKI, TELECOMMUNICATIONS ESSENTIALS 96–97 (2d ed. 2007). This makes sense when you consider that your internet bill does not fluctuate from month to month depending on how many out of state emails you send.

<sup>44</sup> See *id.*

<sup>45</sup> *Id.*

<sup>46</sup> BLANK, *supra* note 30, at 8–9.

<sup>47</sup> See Skype—Calling Costs—Calling Rates, <http://www.skype.com/prices/> (last visited at Feb. 7, 2010) (showing virtually unlimited VoIP calls at no cost).

<sup>48</sup> CLINT SMITH & DANIEL COLLINS, 3G WIRELESS NETWORKS 27 (2d ed. 2007); IAN POOLE, CELLULAR COMMUNICATIONS EXPLAINED 4 (2006)).

<sup>49</sup> See POOLE, *supra* note 48, at 8.

<sup>50</sup> See generally *id.* at 51–66 (discussing the basic architecture common to cellular telecommunications systems).

<sup>51</sup> *Id.* at 58–59.

<sup>52</sup> SMITH & COLLINS, *supra* note 48, at 25–27; G.S.V. RADHA KRISHNA RAO & G. RADHAMANI, WIMAX: A WIRELESS TECHNOLOGY REVOLUTION 44, Fig. 2.4 (2007).

<sup>53</sup> *Id.* at 41, 46.

<sup>54</sup> See POOLE, *supra* note 48, at 12.

Seeing both the leveling off of voice traffic revenues and the opportunities for increased data traffic, cellular providers began developing the high-speed data third generation (“3G”) systems prevalent today.<sup>55</sup> In the 3G world, data is available at all times and at high speeds.<sup>56</sup> With the introduction of 3G, cellular networks moved from a completely circuit-switched network to a hybrid circuit-switched and packet-switched network.<sup>57</sup> 3G networks still carry voice communications over the circuit-switched network.<sup>58</sup> They provide data service, however, over a packet-switched network infrastructure much like the Internet.<sup>59</sup> In fact, cellular data network networks connect directly to the Internet through Internet Protocol (“IP”) routers.<sup>60</sup> This transition to a packet-switched data network greatly increased efficiency.<sup>61</sup> The end result is simple; 3G cellular networks that offer two services: (1) digital voice (circuit-switched); and (2) a data network directly connected to the Internet (packet-switched).

## 2. Locking Down the iPhone

Apple’s iPhone has revolutionized the market for mobile phones.<sup>62</sup> For years, cellular phone manufacturers have attempted to combine the functionality of a personal computer with the portability of a cellular phone.<sup>63</sup> The iPhone, like a personal computer, can run a variety of user-installable software programs.<sup>64</sup> Apple has placed some restrictions on the programs that can be installed, and developers have found ways around these.<sup>65</sup> This section will discuss Apple’s iPhone, its App Store, and what it means to “jailbreak” an iPhone.

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<sup>55</sup> *Id.*

<sup>56</sup> ADAM ENGST & GLENN FLEISHMAN, *THE WIRELESS NETWORKING STARTER KIT* 39–40 (2d ed. 2004).

<sup>57</sup> SAMUEL C. YANG, *3G CDMA2000 WIRELESS SYSTEM ENGINEERING* 187, 189 (2004).

<sup>58</sup> *Id.* at 189.

<sup>59</sup> *Id.* at 189–91.

<sup>60</sup> *Id.* at 190.

<sup>61</sup> POOLE, *supra* note 48, at 12.

<sup>62</sup> Mitch Wagner, *How iPhone 3.0 May Revolutionize The Smartphone Industry*, INFO. WEEK, Mar. 23, 2009), [http://www.informationweek.com/news/personal\\_tech/iphone/showArticle.jhtml?articleID=215901446](http://www.informationweek.com/news/personal_tech/iphone/showArticle.jhtml?articleID=215901446).

<sup>63</sup> See Stephanie Miles, *Handspring to Transform PDA into a Cell Phone*, CNET NEWS, Sept. 19, 2005, <http://news.cnet.com/2100-1040-245920.html> (describing one such effort).

<sup>64</sup> See Apple—iPhone—Download thousands of iPhone applications, <http://www.apple.com/iphone/apps-for-iphone/> (last visited Mar. 9, 2010).

<sup>65</sup> Jenna Wortham, *Even Google Is Blocked With Apps for iPhone*, N.Y. TIMES, July 28, 2009, available at <http://www.nytimes.com/2009/07/29/technology/companies/29apps.html>.

a. *Apple's iPhone*

In June 2007, Apple introduced the first generation iPhone. Just over a year later, in July 2008, Apple released a follow-up model, offering faster data-transfer speeds over 3G networks.<sup>66</sup> The iPhone has been a huge hit in the marketplace. In terms of revenue, Apple went from sitting on the sidelines of the mobile phone market to now claiming to be the third-largest mobile phone maker in the world, all within the last 2 years.<sup>67</sup>

Part of the reason for this success was due to the partnership between Apple and AT&T. AT&T is currently the exclusive wireless carrier for the iPhone in the United States.<sup>68</sup> AT&T subsidizes a consumer's iPhone purchases in exchange for a 2-year service contract commitment.<sup>69</sup> In March 2009, however, Apple and AT&T began selling the iPhone at an unsubsidized contract-free price, starting at \$599.<sup>70</sup> Although this permits users to buy the iPhone from Apple or AT&T and use it on another GSM network, the phone still is only sold through Apple or AT&T.<sup>71</sup> In April 2009, AT&T reportedly expressed an intent to extend its contract with Apple to be the exclusive provider of the iPhone through 2011.<sup>72</sup>

Because of its agreement with Apple, AT&T remains the number one provider of cellular communications and has widened its lead over the second largest wireless company, Verizon Wireless.<sup>73</sup> No doubt Verizon is envious of this relationship. In fact, Apple first approached Verizon to be the exclusive

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<sup>66</sup> Daniel Lyons, *There's Gold in Them iPhones; Some Kid in His Bedroom Can Make a Million Bucks Just by Writing a Little Application for the Apple Phone*, NEWSWEEK, Dec. 22, 2008, at 20, available at <http://www.newsweek.com/id/174266>.

<sup>67</sup> *Id.*

<sup>68</sup> W. David Gardner, *AT&T Revenues Influenced by Strong iPhone Sales*, INFORMATIONWEEK, Jan. 28, 2009, <http://www.informationweek.com/news/telecom/business/showArticle.jhtml;jsessionid=OV0GDNBEJBNPLQE1GHPCKHWATMY32JVN?articleID=212903154>.

<sup>69</sup> See Rita Chang, *Apple Puts Coal in Stocking for Would-be iPhone Gifters*, ADVERTISING AGE, Jan. 19, 2009, at 3.

<sup>70</sup> Tom Krazit, *Apple Joins AT&T with No-contract iPhones*, CNET, Mar. 27, 2009, [http://news.cnet.com/8301-13579\\_3-10205894-37.html](http://news.cnet.com/8301-13579_3-10205894-37.html).

<sup>71</sup> *Id.*; Eric Savitz, *AT&T: Odds on keeping iPhone exclusive improve, Pacific Crest Says*, BARRONS, Feb. 9, 2010, <http://blogs.barrons.com/techtraderdaily/2010/02/09/att-odds-on-keeping-iphone-exclusive-improve-pacific-crest-says/>.

<sup>72</sup> Marin Perez, *AT&T Wants to Extend iPhone Exclusivity*, INFORMATIONWEEK, Apr. 15, 2009, [http://www.informationweek.com/news/personal\\_tech/iphone/showArticle.jhtml?articleID=216500884](http://www.informationweek.com/news/personal_tech/iphone/showArticle.jhtml?articleID=216500884).

<sup>73</sup> Fortt, *supra* note 69, at 34.

carrier of the iPhone, but Verizon turned Apple's offer down.<sup>74</sup> Verizon has since been in talks with Apple to bring an iPhone-like device back to Verizon.<sup>75</sup> Although AT&T's iPhone subsidies are not cheap, \$450 million in the fourth quarter of 2008, AT&T is hoping to recoup this amount and more in the long term through a gradual increase in subscription and data revenue by iPhone users.<sup>76</sup> So far, AT&T's hopes are coming true. AT&T reported a 51% increase in wireless data-services revenue totaling \$3.2 billion in fourth quarter of 2008 alone, a quarter where most companies were hanging on for dear life in this struggling economy.<sup>77</sup>

*b. Apple's iPhone App Store*

Much of the fun of having an iPhone is being able to download many exciting software applications.<sup>78</sup> Apple's App Store makes it easy for developers to create and sell mobile applications, and its tight integration with iTunes makes it easy for consumers to download them onto their iPhones.<sup>79</sup> Although Apple has not said how much money the App Store has been making, making money is not the point right now.<sup>80</sup> The big picture now is the race to become the dominant mobile-computing platform.<sup>81</sup> Even though most applications on Apple's App Store are free, this market is still expected to reach \$240 billion by

<sup>74</sup> Leslie Cauley, *Verizon Rejected Apple iPhone Deal*, USA TODAY, Jan. 29, 2007, at 1B, available at [http://www.usatoday.com/tech/news/2007-01-28-verizon-iphone\\_x.htm](http://www.usatoday.com/tech/news/2007-01-28-verizon-iphone_x.htm).

<sup>75</sup> Spencer Ante & Arik Hesseldahl, *New Gear from Apple and Verizon Wireless?*, BUSINESS WEEK, Apr. 27, 2009, [http://www.businessweek.com/technology/content/apr2009/tc20090427\\_328264.htm](http://www.businessweek.com/technology/content/apr2009/tc20090427_328264.htm).

<sup>76</sup> Gardner, *supra* note 68.

<sup>77</sup> *Id.*; see INSIGHT FINANCIAL SERVICES, QUARTERLY ECONOMIC UPDATE FOR 2008 (2008), <http://insight-fs.com/common/cms/documents/4th%20Quarter%202008.pdf>; BUREAU OF ECON. ANALYSIS, DEP'T OF COM., REAL GDP DECLINES 6.2 PERCENT IN FOURTH QUARTER, (2009), [http://www.bea.gov/newsreleases/national/gdp/2009/pdf/gdp408p\\_fax.pdf](http://www.bea.gov/newsreleases/national/gdp/2009/pdf/gdp408p_fax.pdf).

<sup>78</sup> Lyons, *supra* note 66.

<sup>79</sup> Marin Perez, *iPhone Pushes Mobile Gaming to \$5.4 Billion*, INFORMATIONWEEK, Mar. 5, 2009, [http://www.informationweek.com/news/personal\\_tech/iphone/showArticle.jhtml?articleID=215800842](http://www.informationweek.com/news/personal_tech/iphone/showArticle.jhtml?articleID=215800842).

<sup>80</sup> *Id.*; see Posting by Yakari Iwatani Kane to Wall St. J. Blogs, <http://blogs.wsj.com/digits/2009/07/02/just-how-successful-is-the-iphone-app-store/tab/article/>, (July 2, 2009, 20:23 EST) (stating Apple refuses to break out details about iPhone and App Store profits and that the App Store business is a facilitator of hardware sales).

<sup>81</sup> See Kane, *supra* note 80.

2012.<sup>82</sup> Also, as of April 2009, Apple has sold nearly one billion iPhone applications.<sup>83</sup>

The model for distribution of an iPhone application is rather simple for developers: apply to be a developer, create an application using Apple's developer tools, submit your application to the App Store, await approval from Apple, set the price for your application, and wait for the money to come in.<sup>84</sup> iPhone Applications on the App Store range from games to guitar tuners to news services to maps.<sup>85</sup> With 27,000 applications available on the App Store,<sup>86</sup> you can probably find any application you would ever dream of running on your iPhone. If for some reason your dream application is missing, simply develop it yourself, put it up on the App Store, and maybe you can make money.<sup>87</sup>

One application you won't find on the App Store, however, is an application implementing VoIP over the cellular data network.<sup>88</sup> But, the App Store provides applications which allow iPhone users to place VoIP calls when connected to the Internet through a Wi-Fi connection.<sup>89</sup> Apple has expressly rejected, however, any application that attempts to permit VoIP calls over the cellular data network.<sup>90</sup> Apple can reject these applications because it controls the

<sup>82</sup> *Mobile Telecoms in the Recession: Boom in the Bust*, THE ECONOMIST, Mar. 7, 2009, at 99.

<sup>83</sup> Jim Dalrymple, *Apple Begins Countdown to 1 Billion iPhone Apps Downloaded*, MACWORLD, <http://www.macworld.com/article/139949/2009/04/onebillion.html> (last visited Feb. 7, 2010).

<sup>84</sup> See <http://developer.apple.com/iPhone/program/> (last visited Feb. 7, 2010); Nicholas Olsen, *iDevelop—Unboxing the iPhone SDK*, GAME DEVELOPER, Jan. 1, 2009, at 22; *Apple Unveils Software for Creating iPhone Programs: Company Also Addresses the Phone's Enterprise-Related Shortcomings*, MACWORLD, May 1, 2008, at 20; see also JOEL ELAD ET AL., STARTING AN IPHONE APPLICATION BUSINESS FOR DUMMIES 179–298 (2009).

<sup>85</sup> Joshua Topolsky, *Best of the Worst: The App Store's Hits and Misses*, July 11, 2008, <http://www.engadget.com/2008/07/11/best-of-the-worst-the-app-stores-hits-and-misses/>.

<sup>86</sup> Frederick Lane, *Apple Faces Challenges in Maintaining App Store*, CIO TODAY, Mar. 10, 2009, [http://www.cio-today.com/news/App-Store-Faces-Challenges/story.xhtml?story\\_id=022001NOYPFW&full\\_skip=1](http://www.cio-today.com/news/App-Store-Faces-Challenges/story.xhtml?story_id=022001NOYPFW&full_skip=1).

<sup>87</sup> Lyons, *supra* note 66.

<sup>88</sup> Amandeep Dhaliwal, *Advocacy Group Says Wireless Operators Violating FCC's Internet Policy Statement*, TOP NEWS, Apr. 5, 2009, <http://topnews.us/content/24743-advocacy-group-says-wireless-operators-violating-fcc-s-internet-policy-statement>.

<sup>89</sup> Jessica Dolcourt, *Skype for iPhone: What's the Point?*, CNET, Apr. 2, 2009, [http://reviews.cnet.com/8301-12261\\_7-10211147-51.html](http://reviews.cnet.com/8301-12261_7-10211147-51.html).

<sup>90</sup> Justin Berka, *VoIP Applications on iPhone a Possibility*, Mar. 18, 2008, <http://arstechnica.com/apple/news/2008/03/VoIP-applications-on-iphone-a-possibility.ars>. Apple has also rejected similar applications such as those permitting tethering the iPhone to a computer. Tethering would allow the computer to use the cellular data connection on the

App Store, which is the only legitimate distribution source of applications for the iPhone.<sup>91</sup>

*c. Jailbreaking the iPhone*

Because the iPhone is a standard piece of consumer electronics, engineers and hackers have been able to “jailbreak” the iPhone to free it from the restrictions Apple has placed on it.<sup>92</sup> For the sake of this article, jailbreaking is distinguished from “unlocking.” Jailbreaking an iPhone permits the installation of iPhone applications outside of Apple’s App Store.<sup>93</sup> Unlocking an iPhone allows the consumer to use the iPhone on any compatible cellular network, not just on AT&T’s network.<sup>94</sup> The process of jailbreaking an iPhone is rather simple from a consumer standpoint, and instructions are easy to find both online and in print.<sup>95</sup> In fact, *Wired Magazine* even printed instructions in their April 2009 issue.<sup>96</sup>

Apple, from a technological standpoint, actively seeks to prevent users from jailbreaking their iPhones in what Steve Jobs referred to as a “constant cat and mouse game.”<sup>97</sup> Apple’s initial response to this behavior was to announce that jailbreaking an iPhone would void its product warranty.<sup>98</sup> Some also fear that Apple may issue firmware<sup>99</sup> updates which, if installed on a jailbroken

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iPhone as an internet connection. See Bill Ray, *iPhone Monopoly-Kicker Starts Charging for Jailbreak Apps*, Mar. 6, 2009, [http://www.theregister.co.uk/2009/03/06/cydia\\_store/](http://www.theregister.co.uk/2009/03/06/cydia_store/).

<sup>91</sup> See Geoff Duncan, *iPhone SDK Looks to Keep Programmers’ Wares in the App Store*, DIGITAL TRENDS, Apr. 3, 2009, <http://news.digitaltrends.com/news-article/19648/iphone-sdk-looks-to-keep-programmers-wares-in-the-app-store>.

<sup>92</sup> Ian Thomson, *Apple iPhone 3.0 Cracked Before Release*, V3.CO.UK, Apr. 3, 2009, <http://www.v3.co.uk/2239771>.

<sup>93</sup> *Id.*

<sup>94</sup> Jacqui Cheng, *Apple’s Fight Against iPhone Unlocks May Result in Expensive Bricks*, Sept. 19, 2007, <http://arstechnica.com/apple/news/2007/09/apples-fight-against-iphone-unlocks-may-result-in-expensive-bricks.ars>. Issues surrounding the unlocking an iPhone may be less relevant going forward now that Apple and AT&T are selling unlocked iPhones at unsubsidized prices. See Krazit, *supra* note 70.

<sup>95</sup> See, e.g., *Jailbreak Your iPhone*, WIRED HOW-TO WIKI, [http://howto.wired.com/wiki/Jailbreak\\_Your\\_iPhone](http://howto.wired.com/wiki/Jailbreak_Your_iPhone) (last visited Mar. 9, 2010).

<sup>96</sup> *Id.*

<sup>97</sup> Cheng, *supra* note 94.

<sup>98</sup> *Id.*

<sup>99</sup> Firmware is a generic term for computer software that runs on a dedicated hardware platform. MERRIAM-WEBSTER ONLINE DICTIONARY,

iPhone, would “brick” or permanently ruin that iPhone.<sup>100</sup> Of course, engineers and hackers quickly developed new ways to jailbreak the phone, hence the “cat and mouse” reference.<sup>101</sup> Users with jailbroken iPhones must still proceed with caution whenever Apple releases new firmware updates or risk turning their \$400 iPhone into a worthless brick.<sup>102</sup> Vendors of jailbreak software, however, issue instructions within a few days of an iPhone firmware update detailing steps to avoid bricking a jailbroken iPhone while still installing the firmware update.<sup>103</sup> Given these potential risks, the process of jailbreaking, nonetheless, has been described as “for dedicated hackers only.”<sup>104</sup>

### B. Copyright

This Section provides a brief discussion of copyright law, copyright protection for computer software, and the Digital Millennium Copyright Act.<sup>105</sup>

#### 1. General Copyright Protections

The United States Copyright Act of 1976<sup>106</sup> gives copyright owners the exclusive right to authorize reproduction and distribution of their copyrighted works.<sup>107</sup> The copyright system in the United States resulted from a balance struck by Congress under authority of the Copyright Clause of the Constitution.<sup>108</sup> This balance is between the competing claims of the private good on the

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<http://www.merriam-webster.com/dictionary/firmware> (last visited Feb. 7, 2010). Here, this would be the software that runs on the iPhone.

<sup>100</sup> Cheng, *supra* note 94.

<sup>101</sup> David Chartier, *Preliminary iPhone 1.1.1 Jailbreak Announced*, Oct. 8, 2007, <http://arstechnica.com/apple/news/2007/10/preliminary-iphone-1-1-1-jailbreak-announced.ars>.

<sup>102</sup> Cheng, *supra* note 94.

<sup>103</sup> See Jennifer Guevin, *Work Begins on iPhone OS 3.0 Jailbreak*, CNET, Mar. 18, 2009, <http://news.cnet.com/work-begins-on-iphone-os-3.0-jailbreak/>; Jesus Diaz, *iPhone 3G Jailbroken*, July 15, 2008, <http://gizmodo.com/5025415/iphone-3g-jailbroken>.

<sup>104</sup> Philip Elmer-DeWitt, *Dubious Achievement: Hackers ‘Jailbreak’ the iPhone 3G*, July 20, 2008, <http://apple20.blogs.fortune.cnn.com/2008/07/20/dubious-achievement-hackers-jailbreak-the-iphone-3g/>.

<sup>105</sup> Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (amending sections of Title 17 of the United States Code).

<sup>106</sup> Copyright Act of 1976, 17 U.S.C. §§ 101–810 (2006).

<sup>107</sup> 17 U.S.C. §§ 106(1), (3).

<sup>108</sup> See U.S. CONST. art. I, § 8, cl. 8.

one hand, encouraging and rewarding the labor of authors, versus the public good on the other, “promoting broad public availability of literature, music, and the other arts.”<sup>109</sup> The Copyright Clause empowers Congress “[t]o 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.”<sup>110</sup> The purpose behind copyright law is to encourage the creation and dissemination of works of authorship.<sup>111</sup>

Although copyright protection grants monopoly rights to authors for life plus seventy years,<sup>112</sup> there are some noticeable limitations to copyright protection.<sup>113</sup> Most important limitation, for this article, is that “[i]n no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of [its] form.”<sup>114</sup> This provision reflects the common law dichotomy between idea and expression, separating patent law from copyright law.<sup>115</sup>

## 2. Copyright Protection for Computer Software

Computer software is entitled to copyright protection as a “literary work.”<sup>116</sup> This protection extends both to the object code (machine readable code) and to the source code (human readable code).<sup>117</sup> Similarly, just as a copyright on a book protects both the precise words and the plot development, a copyright on software protects not just the code, but also nonliteral elements such as look and feel.<sup>118</sup>

As stated above, one cannot obtain a copyright on an idea.<sup>119</sup> While this principle is applicable to software, just as any other work of authorship, the task

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<sup>109</sup> See *Fogerty v. Fantasy, Inc.*, 510 U.S. 517, 526–27 (1994).

<sup>110</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>111</sup> *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (“The sole interest of the United States and the primary object in conferring the monopoly . . . lie in the general benefits derived by the public from the labors of authors.” (quoting *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932))).

<sup>112</sup> 17 U.S.C. § 302 (2006).

<sup>113</sup> See *id.* §§ 107–112.

<sup>114</sup> See *id.* § 102(b).

<sup>115</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 534 (6th Cir. 2004).

<sup>116</sup> *Id.* at 533.

<sup>117</sup> *Id.*

<sup>118</sup> 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §§ 2.04.[C][4] (2009).

<sup>119</sup> 17 U.S.C. § 102(b) (2006).



of separating expression from idea in software is difficult.<sup>120</sup> Indeed, “compared to aesthetic works, computer programs hover even more closely to the elusive boundary line” between expression and idea.<sup>121</sup> Courts use the doctrines of merger and “scenes a faire” “[i]n ascertaining this ‘elusive boundary line.’”<sup>122</sup>

“Where the ‘expression is essential to the statement of the idea’ . . . or where there is only one way or very few ways of expressing the idea, . . . the idea and expression have ‘merged.’”<sup>123</sup> Copyright protection does not extend to these instances because if protection were granted, it “would extend protection to the work’s uncopyrightable ideas as well.”<sup>124</sup> Specifically for computer software, “[i]f the patentable process is embodied inextricably in the line-by-line instructions of the computer program, however, then the process merges with the expression and precludes copyright protection.”<sup>125</sup>

Similarly, “when external factors constrain the choice of expressive vehicle, the doctrine of ‘scenes a faire’—‘scenes,’ in other words, ‘that must be done’—precludes copyright protection.”<sup>126</sup> For computer software, “elements of a program dictated by practical realities . . . may not obtain protection.”<sup>127</sup> Examples of these practical realities include “hardware standards[,] . . . software standards and compatibility requirements, computer manufacturer design standards, target industry practices, and standard computer programming practices.”<sup>128</sup>

### 3. Digital Millennium Copyright Act

In response to the view of the Internet as a grave threat to the value of their digital works, content owners lobbied Congress to “shore up the protections of intellectual property.”<sup>129</sup> With digital storage technologies and personal computers, many copyrightable works were no longer bound to their original

<sup>120</sup> *Lexmark*, 387 F.3d at 534–35.

<sup>121</sup> *Computer Assocs. Int’l, Inc. v. Altai, Inc.*, 982 F.2d 693, 704 (2d Cir. 1992).

<sup>122</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 535 (6th Cir. 2004).

<sup>123</sup> *Id.* at 535 (quoting *Warren Publ’g, Inc. v. Microdos Data Corp.*, 115 F.3d 1509, 1519 n.27 (11th Cir. 1997); *CCC Info. Servs., Inc. v. MacLean Hunter Mkt. Reports, Inc.*, 44 F.3d 61, 68 (2d Cir. 1994)).

<sup>124</sup> *Id.*

<sup>125</sup> *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832, 839–40 (Fed. Cir. 1992).

<sup>126</sup> *Lexmark*, 387 F.3d at 535.

<sup>127</sup> *Id.*

<sup>128</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 535 (6th Cir. 2004).

<sup>129</sup> See LAWRENCE LESSIG, *CODE VERSION 2.0*, at 173 (2d ed. 2006), available at <http://pdf.codev2.cc/Lessig-Codev2.pdf/>.

medium.<sup>130</sup> Not only could perfect digital copies of such works be made, but it was easy to do so.<sup>131</sup> Once these digital copies were made, users could easily distribute them for free over the Internet.<sup>132</sup> Thus, Congress enacted the DMCA in 1998.<sup>133</sup> The DMCA expanded the protection of copyrighted works by making it illegal to circumvent technological protection measures (“TPMs”) that effectively control access to a work of authorship.<sup>134</sup> A TPM can be thought of as a digital fence that someone implements to control either access to a copyrighted work or the use of that work.

The digital rights management (“DRM”) technology that prevents you from making a copy of a DVD on your computer is an example of a TPM.<sup>135</sup> In that situation, special encryption software prevents the computer from making a copy.<sup>136</sup> This means you cannot put your store-bought DVD copy of “The Big Lebowski” in your computer and “drag and drop” the movie file to your hard drive—the computer will simply not allow it. To be clear, prior to the DMCA it was illegal only to infringe a copyright, for example, making a copy of your DVD and selling it for profit.<sup>137</sup> After the DMCA, it is now illegal to circumvent a TPM even if you would not be liable for copyright infringement.<sup>138</sup> This would make it illegal to circumvent the TPM regardless of what you did afterwards, even if you just desired to make a copy of the DVD for a category of use previously protected by “fair use.”<sup>139</sup> Using the digital fence analogy, it is now a crime to use the key to unlock the fence, even if you play by all the rules once inside.<sup>140</sup> While it always has been illegal to infringe a valid copyright, the

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<sup>130</sup> *See id.*

<sup>131</sup> *See id.*

<sup>132</sup> *See* Mark Ward, *Why MP3 Piracy Is Much Bigger than Napster*, BBC NEWS, Feb. 13, 2001, <http://news.bbc.co.uk/2/hi/science/nature/1168087.stm> (describing how once digital copies of music were made, those copies would remain scattered on numerous individually owned computers throughout the Internet long after Napster was shut down).

<sup>133</sup> Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (amending sections of Title 17 of the United States Code).

<sup>134</sup> 17 U.S.C. § 1201(a)(1) (2006).

<sup>135</sup> *See* EMMANUEL GOLDSTEIN, *THE BEST OF 2600*, at 588 (2008) (describing litigation about the DeCSS software which circumvents industry standard DVD encryption).

<sup>136</sup> *See id.*

<sup>137</sup> *See generally* LESSIG, *supra* note 129, at 169–99. (discussing the history of intellectual property and responses to technology and market changes over time).

<sup>138</sup> *Id.* at 186.

<sup>139</sup> *See id.*

<sup>140</sup> *Id.*

DMCA creates liability for circumventing TPM's intended to protect copyrighted works.<sup>141</sup>

Every three years, the Librarian of Congress is required to promulgate regulations exempting classes of copyrighted works from the anti-circumvention provision of the DMCA.<sup>142</sup> If the Librarian of Congress determines that the DMCA is having an adverse effect on non-infringing uses of a certain class of copyrighted work, the Librarian of Congress has authority to exempt those works from the application of the DMCA for a three-year period.<sup>143</sup> An example of a previously exempted class includes unlocking a cellular phone when accomplished only for lawfully connecting to another cellular service provider.<sup>144</sup>

The most recent, fourth triennial rulemaking proceeding is currently ongoing and was due to be completed in 2009.<sup>145</sup> Public hearings were scheduled to take place in May 2009 in both Palo Alto, CA and Washington, DC.<sup>146</sup> During this rulemaking process, the Librarian of Congress will solicit "comments from all interested parties, including representatives of copyright owners, educa-

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<sup>141</sup> *See id.*

<sup>142</sup> 17 U.S.C. § 1201(a)(1)(C) (2006).

<sup>143</sup> *See id.* § 1201(a)(1)(D).

<sup>144</sup> 37 C.F.R. § 201.40 (2009).

<sup>145</sup> Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 74 Fed. Reg. 55,138, 55, 139 (Oct. 27, 2009). However, based on the LexisNexis annotations of 37 C.F.R. § 201.40 as of March 4, 2010, no substantive change to the rule has been yet been promulgated. The latest mention of this rulemaking proceeding in the Federal Register notes:

The Register of Copyrights is conducting the fourth of these triennial rulemaking proceedings and is in the final stages of making her recommendation to the Librarian of Congress. The rulemaking conducted in 2006 identified six classes of works to be subject to exemption from the prohibition on circumvention for the period beginning November 27, 2006, and ending October 27, 2009. Because the Register will not be able to present her recommendation to the Librarian of Congress before October 27, it is necessary to extend the effective dates of the existing regulation identifying those classes of works until the time that the Librarian acts upon the recommendation of the Register. It is anticipated that this extension will be in effect for no more than a few weeks.

Accordingly, the Register of Copyrights recommends to the Librarian of Congress that the existing regulation, codified at 37 CFR 201.40(b), be amended on an interim basis to strike the reference to the October 27, 2009, termination date for the list of classes of works identified in the regulation.

74 Fed. Reg. 55,139 (Oct. 27, 2009).

<sup>146</sup> Notice of Public Hearings: Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 74 Fed. Reg. 10,096 (Mar. 9, 2009).

tional institutions, libraries and archives, scholars, researchers and members of the public.”<sup>147</sup> The Librarian of Congress will then determine “whether noninfringing uses of certain classes of works are, or are likely to be, adversely affected by the” anti-circumvention measures in the DMCA.<sup>148</sup>

### C. *Antitrust*

This Section will briefly discuss the purpose of antitrust law, its origins and development, and finally the antitrust “rule of reason” analysis.

#### 1. Purpose and Rationales

Antitrust is the body of law concerned with protecting consumers from the harmful effects of monopolies and similar abuses of market power.<sup>149</sup> Competition defines capitalist societies and is what drives industries to improve.<sup>150</sup> If a given market lacks competition because Firm A has a monopoly over that market, then Firm A no longer needs to innovate to be the best firm—it already is by default and it will become complacent with its customer base. Consumers in that market must purchase from Firm A, regardless of how poor the product quality or how expensive the product. Firm A, well aware that it is a monopoly, will seek to maximize its profits by raising its prices and dropping its product quality just shy of the point where consumers will leave the market altogether. Why would Firm A want to spend money on improving product quality when it would just eat into its own bottom line? Firm A, is therefore able to charge more for poor-quality products simply because there are no competitors in the market.

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<sup>147</sup> Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 73 Fed. Reg. 58,073 (Oct. 6, 2008).

<sup>148</sup> *Id.*

<sup>149</sup> See generally HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE (West 3d ed 2005).

<sup>150</sup> See *id.*; see generally Herbert Hovenkamp, *Innovation and the Domain of Competition Policy*, 60 ALA. L. REV. 103 (2008) (discussing public rules, including antitrust and intellectual property laws, designed to benefit the public by encouraging competition).

## 2. Origins and Development

United States antitrust law originated primarily from the 1890 Sherman Antitrust Act (“Sherman Act”).<sup>151</sup> Although antitrust law is statutory, Congress gave the courts wide discretion in the development of antitrust law. For example, the Sherman Act is very brief and simply prohibits “[e]very contract, combination . . . , or conspiracy, in restraint of trade or commerce”<sup>152</sup> and makes it illegal for any “person [to] monopolize, or attempt to monopolize, or combine or conspire . . . to monopolize . . . trade or commerce . . . .”<sup>153</sup>

Since the enactment of the Sherman Act, the “Court has treated the Sherman Act as a common-law statute.”<sup>154</sup> This explains why the Sherman Act has been called “the quintessential delegation by the Congress to the courts of the task of fashioning a legal structure to govern conduct.”<sup>155</sup> Indeed, “[j]ust as the common law adapts to modern understanding and greater experience, so too does the Sherman Act’s prohibition on ‘restraint[s] of trade’ evolve to meet the dynamics of present economic conditions.”<sup>156</sup> It is from that delegation that a number of judicially created principles have emerged and it is only by tracing the development of antitrust law that one can truly understand the current state of the law.<sup>157</sup>

## 3. Rule of Reason: Is This a Reasonable Restraint?

The Supreme Court has never taken a literal approach to the Sherman Act’s prohibition on “[e]very contract, combination . . . or conspiracy, in restraint of trade or commerce . . . .”<sup>158</sup> Rather, the Court has repeatedly found the Sherman Act outlaws only unreasonable restraints.<sup>159</sup> Most challenges under section 1 the Sherman Act are therefore analyzed under the aptly named “rule of

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<sup>151</sup> Act of July 2, 1890, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1–7 (current version 15 U.S.C. §§ 1–38 (2006))).

<sup>152</sup> 15 U.S.C. § 1. (2006).

<sup>153</sup> *See id.* § 2.

<sup>154</sup> *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 899 (2007).

<sup>155</sup> *BCB Anesthesia Care, Ltd. v. Passavant Mem’l Area Hosp. Ass’n*, 36 F.3d 664, 666 (7th Cir. 1994).

<sup>156</sup> *Leegin*, 551 U.S. at 899.

<sup>157</sup> *See generally*, THOMAS D. MORGAN, *CASES AND MATERIALS ON MODERN ANTITRUST LAW AND ITS ORIGIN* 1–33 (West 3d ed. 2005).

<sup>158</sup> *Leegin*, 551 U.S. at 886 (quoting 15 U.S.C. § 1).

<sup>159</sup> *Id.*

reason.”<sup>160</sup> Under this rule, courts weigh all the circumstances when deciding whether a restrictive practice imposes an unreasonable competitive restraint.<sup>161</sup> Relevant factors include “‘specific information about the relevant business’ and ‘the restraint’s history, nature, and effect’” and “[w]hether the businesses involved have market power.”<sup>162</sup> The purpose of this standard is to “distinguish[] between restraints with anticompetitive effect[s] that are harmful to the consumer and those restraints stimulating competition” beneficial to the consumer.<sup>163</sup>

#### D. *Copyright and Antitrust: Anticompetitive Uses of DMCA*

There is tension between copyright law and antitrust law. Copyright law is concerned with encouraging innovation and creativity. It reaches this end by giving authors a limited monopoly right over their works of authorship. Antitrust law is also concerned about encouraging innovation, but in addition, it also seeks to protect consumers. Antitrust reaches this end by encouraging competition and preventing monopolies. This Section will first discuss prior attempts to craft a doctrine limiting anticompetitive abuses of copyright. Next, this Section will discuss how courts have in fact used the antitrust laws to reign in abuse of DMCA.

##### 1. **Anti-circumvention Misuse as a Suggestion for Limiting Anticompetitive Abuse of DMCA**

Shortly after DMCA was enacted, Professor Burk foresaw the potential anticompetitive uses of TPM.<sup>164</sup> Burk defines the new anti-circumvention rights provided in DMCA as “paracopyright.”<sup>165</sup> Paracopyright “constitutes a separate

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<sup>160</sup> *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886 (2007).

<sup>161</sup> *Id.*

<sup>162</sup> *See id.* at 885–86 (quoting *State Oil Co. v. Khan*, 522 U.S. 3, 10 (1997)).

<sup>163</sup> *See id.* at 886. A public utility is a restraint of trade thought to benefit consumers. For example, by ensuring that an electric company will be the sole provider of electricity in a community, that electric company will undertake the significant expense of running power lines to each individual house. Restraints of trade can also benefit competition. Vertical integration is often a restraint of trade that will increase competition. For example, if GM decides to buy out a radio supplier, thus vertically integrating its operations, GM may be able to reduce the cost of a car radio. By reducing the price on radios, the cost of a GM car decreases and helps GM compete with other car manufacturers such as Ford.

<sup>164</sup> Dan L. Burk, *Anticircumvention Misuse*, 50 UCLA L. REV. 1095 *passim* (2003).

<sup>165</sup> *Id.* at 1096.

set of rights, quite distinct from any copyright in the underlying content.”<sup>166</sup> These rights allow the “control of uncopyrighted materials, and confer upon content owners [an] exclusive right to control not only [the] access to . . . protected works, but also [the] ancillary technologies related to content protection.”<sup>167</sup> Because paracopyright is ripe for anticompetitive abuse, Burk suggests extending the misuse doctrine of patent misuse and copyright misuse to apply to paracopyright.<sup>168</sup> Burk calls this new doctrine “anticircumvention misuse.”<sup>169</sup>

Courts have been reluctant to adopt Burk’s proposed anti-circumvention misuse doctrine, at least by name.<sup>170</sup> Whereas patent and copyright are widely recognized as a form of property, paracopyright is not.<sup>171</sup> For example, in *Chamberlain Group, Inc. v. Skylink Technologies, Inc.*, the Federal Circuit held that the “DMCA does not create a new property right,” but nonetheless found “plaintiffs alleging DMCA liability to protect their property rights are not exempt from other bodies of law.”<sup>172</sup> The court therefore limited the application of DMCA’s anti-circumvention provisions to avoid a conflict with the antitrust laws.<sup>173</sup> Courts, reluctant to adopt a new doctrine when existing law suffices, have used antitrust laws to curtail the abuse of DMCA.<sup>174</sup>

## 2. Common Law Development of Limitations on Anticompetitive Uses of DMCA

In *Chamberlain*, the Federal Circuit concluded that the anti-circumvention provisions of DMCA only prohibit circumvention of TPMs that

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<sup>166</sup> *Id.*

<sup>167</sup> *Id.*

<sup>168</sup> *Id.* at 1096–97.

<sup>169</sup> *Id.* at 1132.

<sup>170</sup> As least as of March 9, 2010, no federal court has yet used the term “anti-circumvention misuse” or “anticircumvention misuse.”

<sup>171</sup> *See Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1201 (Fed. Cir. 2004) (“Even were we to assume arguendo that the DMCA’s anticircumvention provisions created a new property right, Chamberlain’s attempt to infer such an exemption from copyright misuse and antitrust liability would still be wrong.”).

<sup>172</sup> *Id.* at 1202–04 (“Congress chose to create new causes of action for circumvention and for trafficking in circumvention devices. Congress did not choose to create new property rights.”).

<sup>173</sup> *See id.* at 1201–02.

<sup>174</sup> *See id.* at 1201 (“The DMCA, as part of the Copyright Act, does not limit the scope of the antitrust laws, either explicitly or implicitly.”).

bear a reasonable relationship to the protections afforded under the Copyright Act.<sup>175</sup> Otherwise DMCA would limit the scope of the antitrust laws.<sup>176</sup> In *Lexmark International, Inc. v. Static Control Components, Inc.*,<sup>177</sup> the Sixth Circuit focused on the “effectively controls access” language of DMCA to permit the circumvention of TPM when the underlying copyrighted software was otherwise readily accessible.<sup>178</sup> The antitrust laws were on the mind of the judges in *Lexmark* as well.<sup>179</sup>

a. Chamberlain Group v. Skylink Technologies

The technology at issue in *Chamberlain* was garage door openers (“GDOs”) and wireless GDO transmitters.<sup>180</sup> Chamberlain is a distributor of GDOs.<sup>181</sup> Chamberlain also sells replacement GDO transmitters, which operate Chamberlain GDOs.<sup>182</sup> Skylink made a universal GDO transmitter that would also operate Chamberlain GDOs.<sup>183</sup> Chamberlain alleged that Skylink’s transmitter circumvented TPMs protecting a copyrighted computer program in the Chamberlain GDOs.<sup>184</sup> This circumvention, according to Chamberlain, was a violation of DMCA and Skylink should have been held liable.<sup>185</sup>

The key to the court’s holding in *Chamberlain* was that consumers who purchased Chamberlain’s GDOs were authorized to access the GDO software.<sup>186</sup> The court drew a comparison to home burglar alarms.<sup>187</sup> A homeowner would not violate DMCA by typing in the code to disable a burglar alarm—even though this would circumvent the TPM (key code) which allowed the user to access the “disable alarm” software.<sup>188</sup> That use was authorized by the burglar

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<sup>175</sup> *Id.* at 1202.

<sup>176</sup> *See id.*

<sup>177</sup> 387 F.3d 522 (6th Cir. 2004).

<sup>178</sup> *See id.* at 547.

<sup>179</sup> *See id.* at 553.

<sup>180</sup> *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1183 (Fed. Cir. 2004).

<sup>181</sup> *Id.*

<sup>182</sup> *Id.*

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> *Id.*

<sup>186</sup> *See Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1200–01 (Fed. Cir. 2004).

<sup>187</sup> *Id.* at 1201.

<sup>188</sup> *See id.*



alarm company. The alarm system was designed and sold so that a homeowner could disable the alarm when he came home. Similarly, a purchaser of the Chamberlain GDO was authorized to access the GDO software, permitting the users to open and close their garage doors.<sup>189</sup> Indeed, “[c]onsumers who purchase a product containing a copy of embedded software have the inherent legal right to use that copy of the software.”<sup>190</sup> The *Chamberlain* court distinguished defendants whose accused products enabled copying and those like Skylink whose product enabled only legitimate uses of copyrighted software.<sup>191</sup>

Under *Chamberlain*, copyright owners will have a higher burden in establishing liability under DMCA. A copyright owner seeking to impose liability for circumvention under DMCA must demonstrate a reasonable relationship between the circumvention at issue and the exclusive rights granted under the Copyright Act.<sup>192</sup> To hold otherwise would “allow virtually any company to attempt to leverage its sales into aftermarket monopolies—a practice that both the antitrust laws and the doctrine of copyright misuse normally prohibit.”<sup>193</sup> Because repeal of the antitrust laws by implication is not favored, the *Chamberlain* court held the “DMCA, as part of the Copyright Act, does not limit the scope of the antitrust laws, either explicitly or implicitly.”<sup>194</sup>

*b.* Lexmark v. Static Control Components

The technology at issue in *Lexmark* was replacement printer toner cartridges.<sup>195</sup> Lexmark makes laser printers and also sells replacement toner cartridges.<sup>196</sup> To prevent third parties from refilling Lexmark’s toner cartridges, Lexmark included a microchip containing special software (“toner software”) on each of its toner cartridges.<sup>197</sup> This toner software performed a “secret handshake” with the software located on the printer (“printer software”).<sup>198</sup> If this secret handshake process failed, the printer would not operate, blocking con-

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<sup>189</sup> See *id.* at 1202.

<sup>190</sup> *Id.*

<sup>191</sup> Chamberlain Group, Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1198 (Fed. Cir. 2004).

<sup>192</sup> *Id.* at 1202.

<sup>193</sup> *Id.* at 1201 (citations omitted).

<sup>194</sup> *Id.*

<sup>195</sup> See *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 529 (6th Cir. 2004).

<sup>196</sup> See *id.*

<sup>197</sup> See *id.*

<sup>198</sup> *Id.* at 530.

sumers from using toner cartridges not authorized by Lexmark.<sup>199</sup> Static Control Components (“SCC”) sold its own microchip that permitted consumers to satisfy Lexmark’s “secret handshake.”<sup>200</sup> SCC sold these chips to third party toner cartridge manufacturers, which permitted them to replace Lexmark’s microchip with SCC’s.<sup>201</sup> Lexmark alleged that SCC was infringing copyrights on both its toner and printer software and that SCC was also liable under the DMCA.<sup>202</sup>

The Sixth Circuit first held Lexmark’s toner software was insufficiently creative to deserve copyright protection.<sup>203</sup> The court found that the toner software was primarily a lock-out device, and while “a computer program may be protectable in the abstract,” it is “not generally entitled to protection when used necessarily as a lock-out device.”<sup>204</sup> SCC therefore could not be held liable for either copyright infringement of this lock-out software or under the DMCA.<sup>205</sup>

The Sixth Circuit then held the DMCA was not violated for circumventions to access the printer software.<sup>206</sup> DMCA liability was not imposed because the consumer’s purchase of the printer permitted access to the printer software.<sup>207</sup> Lexmark alleged that SCC’s chip circumvented the TPM controlling access to the printer software when it satisfied the secret handshake.<sup>208</sup> Using similar reasoning to that in *Chamberlain*, the court in *Lexmark* found it was not the secret handshake that “controls access” to the printer software, but rather it was the purchase of a Lexmark printer.<sup>209</sup> Because anyone who purchases a Lexmark printer could read the literal object code of the printer software from the printer memory, no circumvention was required to access the printer software.<sup>210</sup> Like the *Chamberlain* court, the *Lexmark* court compared this situation to the physical world:

Just as one would not say that a lock on the back door of a house “controls access” to a house whose front door does not contain a lock and just as one would not say that a lock on any door of a house “controls access” to the

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<sup>199</sup> *Id.*

<sup>200</sup> *Id.* at 530–31.

<sup>201</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 530 (6th Cir. 2004).

<sup>202</sup> *Id.* at 531.

<sup>203</sup> *See id.* at 544.

<sup>204</sup> *Id.*

<sup>205</sup> *Id.* at 551.

<sup>206</sup> *Id.* at 549–50.

<sup>207</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 550 (6th Cir. 2004).

<sup>208</sup> *Id.* at 546.

<sup>209</sup> *Id.* at 546–47.

<sup>210</sup> *Id.*

house after its purchaser receives the key to the lock, it does not make sense to say that this provision of the DMCA applies to otherwise-readily-accessible copyrighted works.<sup>211</sup>

Liability under DMCA attaches when somebody circumvents a TPM that “effectively” controls access.<sup>212</sup> The TPM alleged by Lexmark did not “effectively” control access, therefore, no liability attaches to its circumvention.<sup>213</sup>

There are two key implications of *Lexmark* for copyright owners. First, copyright owners will not be able to assert copyright protection for software serving primarily as lock-out codes.<sup>214</sup> Second, the sale of consumer electronics can effectively allow access to the programs stored on those goods.<sup>215</sup> The court reached this step because “[a]nyone who buys a Lexmark printer may read the literal code of the [printer software] directly from the printer memory.”<sup>216</sup> While anyone technically “may” be able to do this, it is unlikely that many are actually “able” to do this. Nonetheless, the Sixth Circuit found this reading of DMCA consistent with Congress’s intent.<sup>217</sup>

### ***E. Recent Developments Before the Library of Congress***

Apple’s stance on the legality of jailbreaking an iPhone has only recently surfaced in light of the 2009 triennial rulemaking proceeding under the DMCA.<sup>218</sup> On December 2, 2008, the Electronic Frontier Foundation (“EFF”) filed a proposal with the Librarian of Congress to recognize an exemption to the DMCA that would permit jailbreaking to allow iPhone owners to use applications on their phones that are unavailable from Apple’s store.<sup>219</sup> This would include, for example, consumers wishing to jailbreak their iPhones in order to install a VoIP application.<sup>220</sup> In response, Apple filed comments urging the Li-

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<sup>211</sup> *Id.* at 547.

<sup>212</sup> *Id.*

<sup>213</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 549 (6th Cir. 2004).

<sup>214</sup> *See id.* at 544.

<sup>215</sup> *See id.* at 549–50.

<sup>216</sup> *Id.* at 547.

<sup>217</sup> *See id.* at 549.

<sup>218</sup> *See supra* Part II.B.3.

<sup>219</sup> von Lohmann, *supra* note 11; Comment of the Electronic Frontier Foundation, *In the Matter of Exception to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, No. RM 2008-8 (U.S. Copyright Office Feb. 2, 2009), available at <http://www.copyright.gov/1201/2008/responses/electronic-frontier-foundation-50.pdf> [hereinafter *EFF Comments*].

<sup>220</sup> *See EFF Comments, supra* note 219, at 5.

brarian of Congress to reject EFF's proposed exemption.<sup>221</sup> Jailbreaking an iPhone, according to Apple, constitutes both copyright infringement and a violation of the DMCA.<sup>222</sup>

While it's anybody's guess as to which exemptions the Librarian of Congress will ultimately grant, the rest of this article will analyze the merits of Apple's asserted position regarding the DMCA and the resulting antitrust concerns. The sole discretion to make an exemption rests with the Librarian of Congress.<sup>223</sup> In response to the triennial rulemaking proceeding, the Librarian received nineteen comments proposing exemptions, and fifty-six comments in response to the proposed exemptions.<sup>224</sup> The complicated issues raised in just this one proposed exemption with the iPhone demonstrate the challenges facing the Librarian of Congress, otherwise tasked to set policy and direct programs to "make [the Library's] resources available and useful to the Congress and the American people and to sustain and preserve a universal collection of knowledge and creativity for future generations."<sup>225</sup>

### III. ANALYSIS

Now that a technological and legal framework has been set, this Part will first analyze the position Apple advanced before the Librarian of Congress. This Part will then analyze the legal implications of these assertions. Finally, this Part will examine whether Apple's claims bear a reasonable relationship to the protections of the Copyright Act and whether there are any antitrust concerns raised by this position.

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<sup>221</sup> See Responsive Comment of Apple Inc. In Opposition to Proposed Exemption 5A and 11A (Class #1), *In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, No. RM 2008-8 (U.S. Copyright Office Feb. 2, 2009), available at <http://www.copyright.gov/1201/2008/responses/apple-inc-31.pdf> [hereinafter *Apple Comments*] (copy of Apple's comments filed with the Librarian of Congress).

<sup>222</sup> See *id.* at 2.

<sup>223</sup> See *supra* Part II.B.3.

<sup>224</sup> U.S. Copyright Office, Comments, *Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, <http://www.copyright.gov/1201/2008/index.html>; U.S. Copyright Office, Responses to Comments, *Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, <http://www.copyright.gov/1201/2008/responses/index.html>.

<sup>225</sup> Library of Congress, *The Mission of the Library of Congress*, <http://www.loc.gov/about/mission.html> (last visited Feb. 9, 2010).

### A. *Apple's Position*

Apple expressed its views on the legal protections afforded the iPhone under the Copyright Act and the DMCA in responsive comments filed with the Librarian of Congress.<sup>226</sup> Apple filed these comments in opposition to comments filed by the EFF.<sup>227</sup> EFF's proposal urged the Librarian of Congress to recognize an exemption from DMCA liability to permit jailbreaking an iPhone for the purpose of installing software applications not available through Apple's App Store.<sup>228</sup> Although Apple's comments give insight into Apple's position, there are two limitations. First, Apple filed these comments with the Librarian of Congress, not the courts.<sup>229</sup> Second, the Librarian of Congress applies a different standard to create exemptions under the DMCA than a court would apply to impose liability under copyright infringement or the DMCA.<sup>230</sup> Apple alleges that jailbreaking an iPhone infringes two copyrights and violates DMCA's anti-circumvention provisions.<sup>231</sup>

#### 1. **The iPhone's Bootloader and Operating System Are Protected by Copyright Law**

Apple asserts copyright protection for two key pieces of software relating to the iPhone, the bootloader and the operating system ("OS").<sup>232</sup> The bootloader is a small computer program stored in memory that is automatically read and executed when the iPhone is first powered on.<sup>233</sup> The bootloader performs initial hardware tests before handing operation over to the OS, the core software of the iPhone.<sup>234</sup> The OS is the key operational component of the iPhone and handles everything from the operation of the hardware to the making and receiving of phone calls, to executing applications on the iPhone.<sup>235</sup>

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<sup>226</sup> See generally *Apple Comments*, *supra* note 221 (copy of Apple's comments filed with the Librarian of Congress).

<sup>227</sup> See *id.*

<sup>228</sup> See *EFF Comments*, *supra* note 219, at 6.

<sup>229</sup> See *Apple Comments*, *supra* note 221.

<sup>230</sup> See *supra* Part II.B.3.

<sup>231</sup> *Apple Comments*, *supra* note 219, at 2.

<sup>232</sup> *Id.* at 7.

<sup>233</sup> *Id.*

<sup>234</sup> *Id.*

<sup>235</sup> *Id.*

The iPhone contains several TPMs protecting the copyrighted bootloader and OS.<sup>236</sup> First, upon power up, a microchip verifies that the bootloader originated from Apple and has not been modified (“bootloader verification”).<sup>237</sup> Next, the bootloader performs a similar verification on the OS (“OS verification”) to ensure it originated from Apple and has not been modified since.<sup>238</sup> Finally, the OS performs a similar verification on all application programs (“application verification”) loaded onto the iPhone to confirm that they have been accepted by Apple.<sup>239</sup>

## 2. Jailbreaking Triggers Copyright Infringement and Liability Under the DMCA

A consumer wishing to install an application on the iPhone without going through the App Store must make several modifications to the iPhone software. First, the consumer must modify the OS so that it skips the application verification.<sup>240</sup> In order to make this modification, the consumer must also modify the bootloader to disable the OS verification.<sup>241</sup> This step is necessary so that the bootloader will load the modified OS.<sup>242</sup> Because the bootloader will have been modified, the consumer must finally evade the bootloader verification on the microchip.<sup>243</sup> Similarly, this step is required to trick the microchip into loading the modified bootloader upon iPhone power up as if it were unmodified.<sup>244</sup>

Apple alleges that these modifications result in copyright infringement and a violation of DMCA.<sup>245</sup> The most popular jailbreak software for the iPhone replaces the original bootloader and OS with modified versions that bypass the verification steps.<sup>246</sup> Apple argues that distributing modified versions of their copyrighted software constitutes infringement of Apple’s reproduction and de-

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<sup>236</sup> *Id.* at 8.

<sup>237</sup> *Apple Comments, supra* note 221, at 8.

<sup>238</sup> *Id.*

<sup>239</sup> *Id.*

<sup>240</sup> *Id.* at 12.

<sup>241</sup> *Id.*

<sup>242</sup> *Id.*

<sup>243</sup> *Apple Comments, supra* note 221, at 12.

<sup>244</sup> *Id.*

<sup>245</sup> *Id.* at 2.

<sup>246</sup> *Id.* at 12.

rivative works rights.<sup>247</sup> Furthermore, Apple contends that these modifications result in a violation of DMCA's anti-circumvention provisions.<sup>248</sup> Jailbreaking an iPhone involves the circumvention of a series of verification steps implemented on the iPhone to protect "Apple's key copyrighted computer programs in the iPhone."<sup>249</sup> Therefore, in order to jailbreak an iPhone, Apple's TPMs must be circumvented.<sup>250</sup> This circumvention forms the basis of Apple's DMCA claim. Thus, according to Apple, any consumer who jailbreaks an iPhone is liable both for copyright infringement and a violation of the DMCA.<sup>251</sup>

### **B. Legal Analysis of Apple's Position**

While the courts have not yet adopted Professor Burk's anti-circumvention misuse,<sup>252</sup> the Federal Circuit in *Chamberlain* and the Sixth Circuit in *Lexmark* have been skeptical to find liability under the DMCA when there is an underlying anticompetitive rationale.<sup>253</sup> This Section will analyze the current situation involving AT&T and Apple using the *Chamberlain* and *Lexmark* courts' rationales to determine whether they can be used to limit anticompetitive abuses of DMCA.

#### **1. Apple's Asserted DMCA Claim Does Not Bear a Reasonable Relationship to Copyright Protections**

*Chamberlain* and *Lexmark* may shed some light on the feasibility of Apple's copyright infringement and DMCA claims.<sup>254</sup> The thrust of the holding in *Chamberlain* was that the DMCA only provides legal protection when it bears a reasonable relationship to copyright protections.<sup>255</sup> The *Lexmark* court went a step further when it held that software serving primarily as a lock-out code is not entitled to protection under the Copyright Act.<sup>256</sup> Apple asserts that permitting iPhone jailbreaking results in copyright infringement, potential dam-

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<sup>247</sup> *Id.*

<sup>248</sup> *Id.*

<sup>249</sup> *Apple Comments*, *supra* note 221, at 2.

<sup>250</sup> *Id.*

<sup>251</sup> *See id.*

<sup>252</sup> *See supra* Part II.D.1.

<sup>253</sup> *See supra* Part II.D.2.

<sup>254</sup> *See id.*

<sup>255</sup> *See id.*

<sup>256</sup> *See supra* Part II.D.2.b.

age to the device, and adverse effects on the functioning of the device.<sup>257</sup> These arguments are not persuasive.

Apple claims jailbreaking infringes the copyright in the firmware and operating system of the iPhone.<sup>258</sup> To begin with, copyright protection for software hovers ever more closely to the elusive boundary line between expression and a mere a functional idea.<sup>259</sup> In *Lexmark*, the court found that Lexmark’s toner software served primarily as a lock-out device and was not entitled to protection under the copyright laws.<sup>260</sup> Copyright law protects forms of expression as opposed to ideas or procedures.<sup>261</sup> The “quantum of originality” in the toner program was found to be de minimis and insufficient to justify copyright protection as an original work of authorship.<sup>262</sup> Judge Merritt, in his concurrence, warned that “in the future[,] companies . . . cannot use the DMCA in conjunction with copyright law to create monopolies of manufactured goods for themselves just by tweaking the facts of this case: by, for example, creating a [program] that is more complex and ‘creative’ than the one here.”<sup>263</sup>

Here, the software verification steps prohibiting users from installing applications not approved by Apple are certainly more complex than the lock-out codes used in *Lexmark*.<sup>264</sup> Although the implementation is more technologically complex, the software verification performs the same function as a lock-out device.<sup>265</sup> Creating a “chain of trust” between the hardware, the firmware, and the OS seems to reside particularly close to the idea side of the idea-expression boundary. This idea of creating a chain of trust has been taught for some time in computer science classes and texts.<sup>266</sup> Standard computer programming practices suggest few ways of expressing this idea and the doctrines of merger and scenes a faire suggest these software steps cross the idea-

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<sup>257</sup> See *Apple Comments*, *supra* note 221, at 12 n.33.

<sup>258</sup> *Apple Comments*, *supra* note 221, at 2.

<sup>259</sup> See *supra* Part II.B.2.

<sup>260</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 544 (6th Cir. 2004).

<sup>261</sup> See *supra* Part II.B.1.

<sup>262</sup> See *Lexmark*, 387 F.3d at 540.

<sup>263</sup> *Id.* at 551 (Merritt, J., concurring).

<sup>264</sup> Compare *supra* Part III.A.2, with *Lexmark*, 387 F.3d at 530.

<sup>265</sup> See *supra* Part III.A.2; *Lexmark*, 387 F.3d at 530.

<sup>266</sup> See, e.g., SIANI PEARSON & BORIS BALACHEFF, TRUSTED COMPUTER PLATFORMS 235–36 (Prentice Hall PTR 2003); DAVID G. MESSERSCHMITT, UNDERSTANDING NETWORKED APPLICATIONS 393 (David Clark ed., Morgan Kaufmann Publishers 2000).



expression line and are uncopyrightable ideas.<sup>267</sup> But looking at the rationale behind *Lexmark*, the case here is even more compelling.

Judge Merritt, again in his *Lexmark* concurrence, said the key question should be focused on the purpose of the circumvention.<sup>268</sup> In *Lexmark*, the circumvention of TPMs in the toner software was not utilized to reap any benefit from the toner software.<sup>269</sup> Rather, the circumvention was achieved “only for the purpose of making SCC’s competing toner cartridges work with printers manufactured by Lexmark.”<sup>270</sup> Similarly, in *Chamberlain*, the circumvention was achieved for the purpose of making a competing universal garage door opener.<sup>271</sup>

Here, developers and consumers are not seeking to jailbreak the iPhone to exploit any benefit from its bootloader or operating system.<sup>272</sup> Rather, the circumvention is proposed only for the purpose of permitting applications, such as VoIP, to work on the iPhone.<sup>273</sup> Although modifications to the firmware and the operating system are required to disable verification steps, these modifications are carried out for compatibility alone.<sup>274</sup> A user installing a VoIP application on the iPhone reaps no benefit from any alleged copyrightable expression protected in the iPhone software aside from the benefit they received upon purchasing the iPhone.<sup>275</sup> As the *Chamberlain* court taught, “[c]onsumers who purchase a product containing a copy of embedded software,” such as the iPhone, “have the inherent legal right to use that copy of the software.”<sup>276</sup>

Apple also claims these TPMs prevent damage to the device and adverse effects on the functioning of the device.<sup>277</sup> First, these purposes are not at all related to the purposes of copyright protection. Recall, copyright protects a

<sup>267</sup> See, e.g., PEARSON & BALACHEFF, *supra* note 266, at 235–36.

<sup>268</sup> *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 552 (6th Cir. 2004) (Merritt, J., concurring) (“The key question is the ‘purpose’ of the circumvention technology.”).

<sup>269</sup> See *id.*

<sup>270</sup> *Id.*

<sup>271</sup> See *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1183 (Fed. Cir. 2004).

<sup>272</sup> See *supra* Part II.E.

<sup>273</sup> See *Lexmark*, 387 F.3d at 552.

<sup>274</sup> Compare *supra* Part III.A.2, with *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 552 (6th Cir. 2004) (Merritt, J., concurring).

<sup>275</sup> See *Chamberlain*, 381 F.3d at 1204 (“The Copyright Act authorized Chamberlain’s customers to use the copy of Chamberlain’s copyrighted software embedded in the GDOs that they purchased.”).

<sup>276</sup> *Id.* at 1202.

<sup>277</sup> *Apple Comments*, *supra* note 221, at 2.

fixed expression of an idea and its purpose is to encourage the creation and disclosure of works of authorship.<sup>278</sup> Copyright is not intended to protect the proper functioning of an electronic device.<sup>279</sup> Second, any user who jailbreaks an iPhone voids their iPhone's warranty.<sup>280</sup> Those users, therefore, accept the risk that doing so will break that phone. Apple should not engage in such paternalism as to subject these willing consumers and developers to the wrath of copyright infringement and the DMCA. Apple's stated purpose for urging protection under the DMCA is weak at best and is primarily unrelated to the purposes of the Copyright Act.<sup>281</sup>

## 2. Apple's Asserted DMCA Claims Raise Potential Antitrust Concerns

The courts in *Chamberlain* and *Lexmark* were also concerned about expanding protection under DMCA in a manner that would conflict with the antitrust laws.<sup>282</sup> While a full-fledged antitrust analysis is beyond the scope of this paper, an antitrust analysis under the rule of reason must consider all the circumstances.<sup>283</sup> Further, the courts in *Chamberlain* and *Lexmark*, while expressing their antitrust concerns, also did not conduct a full rule of reason analysis.<sup>284</sup> Rather, both courts acknowledged that an anticompetitive motivation was underlying the plaintiffs' invocation of the DMCA as a sword against competitors, as opposed to a shield from copyright infringement.<sup>285</sup> An analysis of all the circumstances will shed light on whether Apple has a more sinister motive for preventing unauthorized applications on the iPhone.

Under a rule of reason analysis, all of a case's circumstances are weighed in deciding whether this practice should be prohibited for imposing an

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<sup>278</sup> See *supra* Part II.B.

<sup>279</sup> See *id.*

<sup>280</sup> See *supra* Part II.A.2.c.

<sup>281</sup> See *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1204 (Fed. Cir. 2004) (“[C]opyright owner seeking to impose liability on an accused circumventor must demonstrate a reasonable relationship between the circumvention at issue and a use relating to a property right for which the Copyright Act permits the copyright owner to withhold authorization—as well as notice that authorization was withheld.”).

<sup>282</sup> See *supra* Part II.D.2.

<sup>283</sup> See *supra* Part II.C.3.

<sup>284</sup> See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 552 (6th Cir. 2004) (Merritt, J., concurring); *Chamberlain*, 381 F.3d at 1201.

<sup>285</sup> *Chamberlain*, 381 F.3d at 1200–03.

unreasonable restraint on competition.<sup>286</sup> For the sake of this analysis, it will be assumed that AT&T and Apple have explicitly agreed, or at least tacitly colluded, to the iPhone's restriction on VoIP applications.<sup>287</sup> Recall, the purpose of this analysis is to determine if this restraint limits competition and is harmful to the consumer or if it will stimulate competition and prove beneficial to the consumer.<sup>288</sup>

AT&T is the exclusive carrier for the iPhone and is also the largest provider of cellular service in the United States.<sup>289</sup> AT&T's current billing model for wireless service provides two streams of revenue—one for each component of cellular service. Cellular service has two components: voice and data. AT&T charges consumers a flat rate for a certain number of voice “minutes.”<sup>290</sup> For example, consumers can pay \$39.99 a month for 450 voice minutes, or \$59.99 a month for 900 voice minutes.<sup>291</sup> If the user goes over their minute allotment for the month, they are charged steep fees for each additional minute.<sup>292</sup> Data for the iPhone, however, is billed at a flat rate for unlimited data. For example, iPhone users pay \$30 per month for unlimited data.<sup>293</sup>

The iPhone has the capability to eliminate the need for traditional voice service, relying exclusively on cellular data service. Currently, voice service on the iPhone is required in order to make phone calls. AT&T earns money for every minute of every phone call that utilizes their voice network.<sup>294</sup> VoIP applications could be written, notwithstanding, which will direct phone calls through AT&T's data network.<sup>295</sup> Recall, AT&T sells “unlimited” access to its data network for a monthly fee.<sup>296</sup> If voice calls were routed through the data network, a consumer could utilize their unlimited data plan to make unlimited

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<sup>286</sup> See *supra* Part II.C.3.

<sup>287</sup> A search for evidence of an explicit agreement turned up nothing. If no agreement exists, however, why else would Apple permit iPhone VoIP applications over WiFi but not over 3G data networks? This restriction stands only to benefit AT&T, not Apple.

<sup>288</sup> See *supra* Part II.C.3.

<sup>289</sup> See *supra* Part II.A.2.a.

<sup>290</sup> See Individual Cell Phone Plans, <http://www.wireless.att.com/cell-phone-service/cell-phone-plans/individual-cell-phone-plans.jsp> (last visited Feb. 11, 2010).

<sup>291</sup> See *id.*

<sup>292</sup> See Nation 450 w/Rollover Minutes cell phone plan, [http://www.wireless.att.com/cell-phone-service/cell-phone-plan-details/?q\\_sku=sku3830290&q\\_planCategory=cat1370011](http://www.wireless.att.com/cell-phone-service/cell-phone-plan-details/?q_sku=sku3830290&q_planCategory=cat1370011) (last visited Feb. 14, 2010).

<sup>293</sup> See Feroso, *supra* note 4.

<sup>294</sup> See Individual Cell Phone Plans, *supra* note 290.

<sup>295</sup> See *supra* Part II.A.1.b.

<sup>296</sup> See Feroso, *supra* note 4.

phone calls each month for a flat fee.<sup>297</sup> This would eliminate the need for true voice services from AT&T.

If VoIP applications on the iPhone were permitted access to AT&T's data network, AT&T could lose its entire voice service revenue stream from the iPhone. This stems from the inherent differences between a packet switched network and a circuit switched network.<sup>298</sup> As stated earlier, cellular voice service is circuit switched whereas cellular data service is packet switched.<sup>299</sup> For a circuit switched network like voice services, the communications channel must be open from end to end through the duration of the conversation.<sup>300</sup> AT&T can easily keep track of who a customer calls, where they are, and how long they are connected.<sup>301</sup> This is how AT&T currently bills users for each minute of every phone call. In a packet switched network like data services, the packets are released through the network and each packet knows only the next intermediate hop along the way to the end destination.<sup>302</sup> AT&T's billing service keeps track of the amount of data sent through the network and nothing else. AT&T is unable to determine which of those data packets are voice communications as opposed to a webpage, let alone who a customer called and how long they talked.<sup>303</sup> Therefore, if all voice communications were routed over AT&T's data networks, AT&T would lose the ability to charge per minute fees on phone calls.<sup>304</sup>

AT&T can sleep easy now; Apple forbids VoIP applications on the iPhone from accessing AT&T's data network.<sup>305</sup> As stated above, it is unclear whether AT&T and Apple have expressly agreed on this restraint. Apple controls the only means of distributing applications on the iPhone.<sup>306</sup> Apple also rejects any application which would permit VoIP applications to access AT&T's data service.<sup>307</sup> There is no way for a consumer to use VoIP software over AT&T's data service unless they jailbreak their iPhone.<sup>308</sup> As an additional dis-

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<sup>297</sup> See *supra* Part II.A.1.b–c.

<sup>298</sup> See *supra* Part II.A.1.a–b.

<sup>299</sup> *Id.*

<sup>300</sup> See *supra* Part II.A.1.a.

<sup>301</sup> See *supra* Part II.A.1.c.

<sup>302</sup> See *supra* Part II.A.1.b.

<sup>303</sup> See *id.*

<sup>304</sup> See *supra* Part II.

<sup>305</sup> See *supra* Part II.A.2.b.

<sup>306</sup> *Id.*

<sup>307</sup> *Id.*

<sup>308</sup> See *supra* Part II.A.2.c.

incentive for consumers to jailbreak the iPhone and thereby cut into AT&T's profits, Apple now asserts additional legal protections.<sup>309</sup> Apple claims that jail-breaking an iPhone is copyright infringement and a violation of DMCA.<sup>310</sup> As if consumers were not afraid enough of turning their several hundred dollar phone into a worthless brick, now they must also fear legal consequences as well.

The reason AT&T would want Apple to block VoIP applications is clear: VoIP applications on the iPhone would directly compete with AT&T's voice service. Not only that, but VoIP applications would compete with AT&T using AT&T's own data network.<sup>311</sup> AT&T certainly feels pressure from other cellular providers to sell an unlimited data package. This is common practice in both the cellular data market and the home Internet market.<sup>312</sup> AT&T is not keen on the idea of providing unlimited data, without restrictions, when a consumer could use that data network to compete with AT&T along a different front: the voice market.

### 3. The Current Practice of Prohibiting VoIP Applications on the iPhone Is Motivated by Anticompetitive Desires

In conclusion, the preceding analysis suggests a far more sinister motivation for Apple to restrict the functionality of VoIP applications on the iPhone. Apple is likely acting simply to protect the bottom line of AT&T. Apple is left standing alone to wield the DMCA as a sword to protect AT&T's market share in the voice services market. First, this sinister motivation undercuts Apple's assertion that it really needs the DMCA to shore up defenses from copyright infringement.<sup>313</sup> Second, considering all the circumstances, it appears as though Apple has no real motivation to block VoIP applications unless AT&T requires it to do so.<sup>314</sup> Apple should stand up to AT&T and encourage competition in the voice communications market. If Apple is unable to do this, the courts should step in to protect the consumer and refuse to permit this anticompetitive practice and the abuse of the DMCA.

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<sup>309</sup> See *supra* Part III.A.

<sup>310</sup> *Id.*

<sup>311</sup> See *supra* Part II.A.

<sup>312</sup> But see Rob Pegoraro, *Broadband Caps Can Cost You*, WASH. POST, May 1, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/05/01/AR2009050101065.html>.

<sup>313</sup> See *supra* Part III.B.1.

<sup>314</sup> See *supra* Part III.B.2.

#### IV. CONCLUSION

Anticompetitive use of the DMCA conflicts with the antitrust laws and must stop. In 2008, AT&T, Embarq, Qwest, and Verizon lost over eight million consumer voice lines while Cablevision, Charter, Comcast, Cox, Mediacom, and Time Warner Cable added over four million VoIP lines.<sup>315</sup> The battle for voice service is just getting started.<sup>316</sup> Apple and AT&T have worked together to prohibit iPhone VoIP applications from accessing AT&T's data network. The result is a conspiracy in restraint of trade. A user seeking to use their iPhone and AT&T data service with their VoIP service is technologically prohibited. In addition, Apple asserts that users who jailbreak their iPhone to get around this technological fence will be liable for copyright infringement and for violating the DMCA. This particular situation with the iPhone and AT&T is just one example. A similar dispute is unfolding in Europe involving Deutsche Telekom, Telefónica, and Vodafone Group.<sup>317</sup>

When companies find a way to abuse current legal protections for their advantage, they will do so until stopped. The broad scope of the DMCA has the potential for continued anticompetitive abuse. Courts should narrowly tailor the DMCA to prohibit only forms of access that bear a reasonable relationship to the protections that the Copyright Act otherwise provides to copyright owners. The antitrust laws and their common law development may also serve as a tool to protect the consumer interest in maintaining a competitive environment. The DMCA was intended to work as a shield to protect against copyright infringement, not a sword to protect monopolistic market shares.

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<sup>315</sup> Steve Taylor & Larry Hettick, *The Implications of Skype's Free Software Application for the iPhone and iPod Touch*, NETWORK WORLD, Apr. 13, 2009, <http://www.networkworld.com/newsletters/converg/2009/041309converge1.html?hpg1=bn>.

<sup>316</sup> *See id.*

<sup>317</sup> *See* Archibald Preuschat, *T-Mobile Threatens Skype Use: European Carrier Says Internet-Phone Service Violates iPhone Contracts*, WALL ST. J., Apr. 3, 2009, <http://online.wsj.com/article/SB123868309907582515.html>.