

UC Irvine

UC Irvine Previously Published Works

Title

Is Apple Playing Fair? Navigating the iPod DRM Controversy

Permalink

<https://escholarship.org/uc/item/6nq2g1b0>

Journal

NORTHWESTERN JOURNAL OF TECHNOLOGY & INTELLECTUAL PROP, 5

Authors

Arewa, OB
Sharpe, NF

Publication Date

2007

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Is Apple Playing Fair?

Navigating the iPod FairPlay DRM Controversy

By Nicola F. Sharpe* and Olufunmilayo B. Arewa**

I. INTRODUCTION

¶1 On April 2, 2007, Apple Inc. and EMI Music held a joint press conference in London that may be the harbinger of significant changes in the digital music arena.¹ This press conference, whose attendees included EMI Group CEO Eric Nicoli and Apple CEO Steve Jobs, unfolded in an environment of significant technological and commercial changes in the music industry. The shift to the digital era has been a turbulent one for many players in the music industry, particularly as a result of the widespread distribution of unauthorized digital music files and the concurrent significant decline in record industry sales.² The Apple-EMI agreement permits Apple to sell EMI Music's entire digital music catalog without digital rights management (DRM),³ which represents a significant shift from the previous policy of the major record companies. Such companies have until this point typically required that music distributed in digital form include DRM restrictions on use and copying.⁴

¶2 The Apple-EMI announcement should be considered in light of the recent developments in the broader digital music market.⁵ Apple has in many respects played a pivotal role in those developments, transforming itself from a technology company to an entertainment company with its core strength in the sale and distribution of digital

* Visiting Assistant Professor, Northwestern University School of Law. B.A. Cornell University; J.D., M.B.A., Yale University. Email: n-sharpe@law.northwestern.edu.

** Associate Professor, Northwestern University School of Law. A.B., Harvard College; M.A., Ph.D., University of California, Berkeley (Anthropology); A.M., University of Michigan (Applied Economics); J.D., Harvard Law School. The authors would like to thank Paul Heald, Steve Ramirez, Max Schanzenbach, and Jamelle Sharpe for their comments and for inspiring us to expand this project. Any errors, of course, are ours alone. Email: o-arewa@law.northwestern.edu. © 2007 Nicola F. Sharpe and Olufunmilayo B. Arewa.

¹ EMI Group Press Release, EMI Music Launches DRM-Free Superior Sound Quality Downloads Across Its Entire Digital Repertoire, Apr. 2, 2007, <http://www.emigroup.com/Press/2007/press18.htm>; Apple Inc. Press Release, Apple Unveils Higher Quality DRM-Free Music on the iTunes Store, Apr. 2, 2007, <http://www.apple.com/pr/library/2007/04/02itunes.html>.

² See Nicola F. Sharpe & Olufunmilayo B. Arewa, *Interoperability, Antitrust and Consumer Welfare: Is the Apple iPod Changing its Tune?* (2007) (manuscript on file with authors).

³ See EMI Group Press Release, *supra* note 1; see also *infra* notes 26 to 32 and accompanying text.

⁴ With a few notable exceptions, such as Sony Rootkit software, which was anticopying software installed on certain Sony CDs that also secretly collected security information from computers playing the CD, music content contained on physical CDs has generally not been subject to DRM or other protective measures to prevent copying. See Sharpe & Arewa, *supra* note 2.

⁵ See *infra* notes 115-128 and accompanying text.

music.⁶ Apple derives its strength from the iPod portable digital music player, which is currently the world's dominant digital music device.⁷ Apple has also become one of the largest sellers of musical content in the U.S.⁸ Although Apple has now agreed to distribute music from the EMI catalog without DRM, many believe the technological choices that Apple has made in the past surrounding DRM technology have laid the foundation for Apple's market dominance.⁹ Until now, Apple has facilitated its market dominance by deliberately limiting interoperability with non-Apple devices and non-Apple online music stores for iPod device and iTunes Music Store ("iTMS") users.¹⁰ From a technology perspective, this bundling¹¹ of the iPod with iTMS has been made easier by virtue of Apple's FairPlay DRM, which limits usage of music purchased from iTMS.¹² Apple's bundling of the iPod and iTMS, which together form a network, has led to lawsuits against Apple alleging antitrust violations ranging from tying to attempted monopolization; some foreign jurisdictions have gone so far as to threaten to ban certain Apple technologies on consumer protection grounds.¹³ This type of legal pressure has likely played a role in Apple's decision to sell digital music without DRM in partnership with EMI.¹⁴

¶3

The technological choices that Apple has made in developing the iPod and iTMS raise difficult questions about the emergence of new technologies, the development of markets for innovative products, and how existing legal frameworks, including intellectual property and antitrust laws, should deal with new technologies and new

⁶ See Sharpe & Arewa, *supra* note 2.

⁷ *Id.*

⁸ Nick Wingfield & Ethan Smith, *Music's New Gatekeepers*, WALL ST. J., Mar. 9, 2007, at W1 (noting that Apple is now one of the largest sellers of music in the U.S.).

⁹ See Sharpe & Arewa, *supra* note 2.

¹⁰ The iPod controversy highlights potential ambiguities in uses and understandings of the term interoperability, particularly with respect to consumer devices. Interoperability may refer to technological possibility, which might exist if any potential consumer could make a device interoperable. Under this view of interoperability, devices might be characterized as interoperable despite the fact that only technologically sophisticated consumers are able to interconnect the devices. Alternatively, interoperability may refer to devices that are "plug and play," where even technologically unsophisticated users are easily able to interconnect devices. These differences in uses and understandings of the term interoperability are evident in the iPod/iTMS controversy, where Steve Jobs sees Apple's products as already interoperable with those of competitors. In contrast, the lawsuits against Apple and assertions from European regulators make different assumptions about what constitutes an interoperable device. The understandings of the term interoperability by plaintiffs in lawsuits and European regulators are based on assumptions about what should constitute an interoperable device, based at least in part on both the ability of users of average technological sophistication as well as the number of intermediate steps that might be required to interconnect devices. Discussions of interoperability in this article reflect the varied uses of the term in different contexts but do not always identify the specific derivation or explicitly identify the assumptions made about interoperability in particular instances. For further discussion of this point, see Sharpe & Arewa, *supra* note 2.

¹¹ While economists and some U.S. courts at times use the term "bundling" and the term "tying" separately, this article will use the terms interchangeably. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 103 (2007), available at <http://www.usdoj.gov/atr/public/hearings/ip/222655.pdf> (noting that the term bundling "typically refers to a sale in which products are sold only in fixed proportions," whereas the term tying is typically used when the portions are not fixed. "Case law in the United States sometimes uses the terms 'tying' and 'bundling' interchangeably." (citations omitted)).

¹² Sharpe & Arewa, *supra* note 2.

¹³ *Id.*

¹⁴ *Id.*

innovations. To address these questions, this Article examines the iPod/iTunes network and argues that while innovation, intellectual property laws, and network effects may in part explain Apple's market dominance, consumer welfare should be taken into account in legal assessments of the iPod/iTMS bundle, as well as the competitive market consequences of Apple's bundling. Specifically, where new technologies once increased the choices available to consumers, growing recognition exists today that such technologies may now unnecessarily constrain consumer choices.¹⁵

¶4

This Article lays out the topography of the Apple FairPlay controversy, looking closely at the business and market environment within which the iPod/iTMS network arose. This Article does not seek to draw conclusions about the legal status of the iPod/iTMS network under existing laws. Rather, it outlines some ways in which existing legal frameworks may be applied to the structures and behaviors associated with companies' development of technological and business innovations. Part II discusses the iPod device, the iPod/iTMS bundle, and the broader business, technology and cultural context within which the iPod and iTMS were deployed. Part III analyzes the antitrust allegations against Apple and examines Apple's behavior and success in light of the network effects produced by the iPod/iTMS bundle. In conclusion, Part IV identifies some questions courts should contemplate when considering the competitive concerns raised by issues connected to technology choices such as those relating to FairPlay DRM in the context of networks such as iPod/iTMS.

II. THE APPLE IPOD AS A BUSINESS, CULTURAL AND TECHNOLOGICAL PHENOMENON

A. *The Apple iPod Success*

¶5

The iPod is an extremely successful product that has generated significant revenue, visibility, and positive publicity for its creator Apple Inc.¹⁶ The iPod has become a pervasive product in the digital era. Over one hundred million iPods have been sold,¹⁷ which demonstrates the success of the device as a cultural, business, and technological phenomenon.¹⁸ The iPod also reflects Apple's facility in business, marketing, and product design.¹⁹ The success of the iPod was, however, by no means inevitable. Apple did not have a first-mover advantage, yet it quickly garnered market share and emerged as the dominant player in the market for digital music, digital video, and digital media players. Since its launch, the iPod has become the dominant digital music player with a market share in excess of 70%.²⁰ Apple recently changed its name from Apple Computer, Inc. to Apple Inc., which represents its recognition that its future business

¹⁵ Carlisle George & Navin Chandak, *Issues and Challenges in Securing Interoperability of DRM Systems in the Digital Music Market*, 20 INT'L REV. L. COMP. & TECH. 271, 272 (2006) (noting the existence of multiple incompatible digital music file formats today).

¹⁶ See STEVEN LEVY, *THE PERFECT THING: HOW THE IPOD SHUFFLES COMMERCE, CULTURE, AND COOLNESS 2* (2006) (noting that the term success falls far short of describing the iPod phenomenon).

¹⁷ Apple Inc. Press Release, 100 Million iPods Sold, <http://www.apple.com/pr/library/2007/04/09ipod.html>.

¹⁸ See Sharpe & Arewa, *supra* note 2.

¹⁹ Jessie Scanlon, *Apple Sets the Design Standard*, BUS. WK. ONLINE, Jan. 7, 2007, available at 2007 WLNR 341835.

²⁰ Apple Financial Results Conference Call, Jan. 17, 2007, 2:00 PM PST at 3:35-4:03, available at <http://www.apple.com/quicktime/qtv/earningsq107> (noting that Apple iPod market share in the U.S. for MP3 players was reported to be 72% by NPD with faster growth in international markets).

endeavors are unlikely to be limited to computers.²¹ The success of the iPod is also at the root of potential legal problems for Apple. Many of these potential problems relate to Apple's technology choices about interoperability with respect to the iPod/iTMS network that have served to restrict consumer choices in important ways.²²

B. The Apple iPod Problem

¶16

In a number of areas, the digital era has given consumers a broader range of choices. The range of choices that the iPod gives consumers is a key element in it becoming the first digital music player to experience large-scale success.²³ The iPod offers consumers alternative ways to experience music.²⁴ The iPod/iTMS network, however, has been deliberately constructed to restrict interoperability with other devices and online music stores.²⁵ Prior to the EMI announcement, Apple restricted consumer choices through the use of DRM and technological protection measures (TPM) for digital music purchased from iTMS.²⁶ TPM are technologies intended to promote authorized use of digital works that play a role in DRM systems.²⁷ DRM technologies have become prominent in the digital era as copyright owners have attempted to control access to and uses of their works through technological measures such as encryption.²⁸ The concerns of copyright owners in the digital era led to the passage of the Digital Millennium Copyright Act (DMCA),²⁹ which imposes legal restrictions on circumventing DRM.³⁰ While such restrictions do not prevent DRM from being hacked,³¹ they give copyright owners a potential legal weapon that may be used in a variety of ways, including anticompetitively.³²

²¹ See Apple Inc., Current Report (Form 8-K) (Feb. 21, 2007), *available at* http://www.sec.gov/Archives/edgar/data/320193/000110465907012760/a07-5119_18k.htm (noting that Apple amended its bylaws on February 14, 2007 to reflect the Company's recent name change to Apple Inc.).

²² Sharpe & Arewa, *supra* note 2.

²³ Paul Thurrott, *With iPod Success, Apple Takes "Network Effect" from Microsoft*, WindowsIT Pro, Nov. 1, 2004, <http://www.windowsitpro.com/Article/ArticleID/44376/44376.html?Ad=1> (noting the success of the Apple player, despite the relative advantages of other players with respect to price, storage, and battery life).

²⁴ See generally LEVY, *supra* note 16.

²⁵ Sharpe & Arewa, *supra* note 2.

²⁶ *Id.*

²⁷ See Ian Kerr, *If Left to Their Own Devices . . . How DRM and Anti-Circumvention Laws Can Be Used to Hack Privacy*, in *IN THE PUBLIC INTEREST: THE FUTURE OF CANADIAN COPYRIGHT LAW* 167, 167-71 (Michael Geist ed., 2005), *available at* <http://iankerr.ca/content/view/22/70> (noting legislative reforms that use the law to further enable DRM and facilitate its implementation as a primary means of enforcing digital copyright).

²⁸ *Id.* at 171. This article does not discuss many significant issues raised in discussions of DRM and TPM, including issues relating to privacy and questions of control. See, e.g., Julie E. Cohen, *DRM and Privacy*, 18 BERKELEY TECH. L.J. 575 (2003); Julie E. Cohen, *A Right to Read Anonymously*, 28 CONN. L. REV. 981 (1996).

²⁹ Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (Oct. 28, 1998) (codified in scattered sections of title 17 of the United States Code).

³⁰ *Id.* at § 1201(b); see also Glynn S. Lunney, Jr., *The Death of Copyright: Digital Technology, Private Copying, and the Digital Millennium Copyright Act*, 87 VA. L. REV. 813, 830-45 (2001).

³¹ Sharpe & Arewa, *supra* note 2.

³² Jacqueline Lipton, *The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability*, 62 WASH. & L. REV. 487, 489-90 (2005) (discussing some implications of the Digital Millennium Copyright Act for commercial competition in cases where producers of printer cartridges try to

¶17 Apple uses FairPlay DRM to control redistribution of the digital music purchased through iTunes.³³ FairPlay enables Apple to administer specified usage rights for iTunes music purchases.³⁴ Prior to the EMI announcement, all music sold through iTunes used FairPlay DRM, which is a variant of Advanced Audio Coding (AAC) technology, for playback on the iPod and computers.³⁵ Through FairPlay DRM, Apple has effectively limited interoperability between iTunes and non-iPod players and the iPod player and digital music stores other than iTunes.³⁶ Apple has actively tried to prevent others from creating interoperable products, as is evident in the Apple response to RealNetworks Harmony technology.³⁷

¶18 Apple's use of DRM has led to accusations against Apple that FairPlay is an anticompetitive constraint on consumer choice.³⁸ Such constraints reflect significant areas where the iPod limits consumers to fewer choices than some commentators feel should be offered, particular with regard to the ability of consumers to play digital music purchased from music stores other than iTunes on their iPod devices.³⁹ The interoperability restrictions have made Apple the subject of increasing criticism, threats of legal action, and actual legal action connected to interoperability restrictions associated with FairPlay DRM.⁴⁰ The adoption of interoperable solutions in the digital music arena is thus made more difficult on account of both current legal frameworks and the business strategies of dominant market players.⁴¹

¶19 The iPod business model and Apple's use of FairPlay DRM raise a number of potential legal questions, including how existing legal frameworks such as intellectual property and antitrust laws can be adapted to the business and technology models of the digital era.⁴² Further, Apple's adoption of FairPlay DRM limits consumer choices. Such limitations are ironic since the iPod's success has in part been based on the choices it has offered consumers with respect to their consumption of music. The choices the iPod has given music consumers in the digital era are a clear contrast to those offered by existing

suppress competition using the provisions of the DMCA); Dan L. Burk, *Anticircumvention Misuse*, 50 UCLA L. REV. 1095, 1110-14 (2003) (discussing uses of the DMCA intended to suppress competition).

³³ See Adam L. Penenberg, *Digital Rights Management: How Apple, Microsoft, and Sony Cash in on Piracy Prevention*, SLATE, Nov. 14, 2005, <http://www.slate.com/id/2130300> (noting that a song purchased on iTunes is kept on the purchaser's hard drive as an encrypted file that is unlocked with a random encryption key supplied by Apple and that Apple limits how consumers can use the file; also, noting that consumers cannot distribute the digital file over the Internet or play it on anything other than iTunes or an iPod, but that consumers can burn unlimited CDs and load the song on up to five computers and an unlimited number of iPods).

³⁴ Sharpe & Arewa, *supra* note 2; George & Chandak, *supra* note 15, at 274-75 (describing the iTunes rights model).

³⁵ See AAC Audio, <http://www.apple.com/quicktime/technologies/aac> (noting that all music sold in iTunes uses AAC technology); Sharpe & Arewa, *supra* note 2.

³⁶ Sharpe & Arewa, *supra* note 2.

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ George & Chandak, *supra* note 15, at 282 ("The strong legal protection enjoyed by DRM systems currently deters any commercial circumvention devices to aid consumers.").

⁴² This article will focus on the nature of the Apple iPod/iTunes network while considering the antitrust allegations against Apple. It will not focus to any significant degree on issues relating to intellectual property.

players in the music industry. The iPod's success is thus based in part on its solution to the problems faced by the music industry in the digital era.

C. The Problem the iPod Solved

¶10 The digital era created problems for existing music industry business models and the role of the traditional recording industry as an intermediary.⁴³ Prior to the digital era, the recording industry exercised control over both the creation and distribution sides of the recording industry. On the creative side, the music industry exercised significant control over music creation and distribution.⁴⁴ Much of the power of the music industry derived from the importance of music distribution for musical artists.⁴⁵ Through its control of distribution, the music industry was thus able to exercise significant power over the artists whose music it distributed.⁴⁶ On the consumer side, the recording industry constrained consumer choices through a bundling model.⁴⁷ As a result of bundling music on CDs and the limited ability of consumers to obtain individual songs from such CDs,⁴⁸ consumers were required to purchase unwanted music in order to obtain the music they desired.⁴⁹

¶11 The creation of digital formats such as the MP3 compression standard,⁵⁰ combined with the distribution mechanism of the Internet, has revolutionized the creation, distribution, and consumption of music.⁵¹ Digital music has reduced the ability of the recording industry to control distribution and creation. Digital technology enables artists and consumers to make choices that previous industry business models may have denied them.⁵² The convergence of digital music formats and Internet distribution enabled consumers to unbundle their music purchases.⁵³ Much of this unbundling was

⁴³ Sharpe & Arewa, *supra* note 2.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ See Kevin Zhu & Brian MacQuarrie, *The Economics of Digital Bundling: The Impact of Digitization and Bundling on the Music Industry*, 46 COMM. ACM 264, 264 (2003), http://web.gsm.uci.edu/kzhu/PDFfiles/Papers_Abstract/CACM_DigitalBundling_p264-zhu_published.pdf (“Bundling can be very effective as both a profit-maximizing tool and as a competitive weapon . . .”).

⁴⁸ Sharpe & Arewa, *supra* note 2.

⁴⁹ LEVY, *supra* note 16, at 44 (noting that with the advent of the CD, which “ripped the needle across the surface of the LP age,” artists had a full hour to fill with no natural breaking point when the listener could flip over a record, which resulted in extra space being filled with second-rate offerings).

⁵⁰ David Hesmondhalgh, *Digitalisation, Copyright and the Music Industries*, in UNPACKING DIGITAL DYNAMICS: PARTICIPATION, CONTROL AND EXCLUSION (Peter Golding, & Graham Murdock eds., 2006), available at <http://www.cresc.ac.uk/publications/documents/wp30.pdf> (discussing MP3 compression standards).

⁵¹ Tom McCourt, *Collecting Music in the Digital Realm*, 28 POPULAR MUSIC & SOC’Y 249, 250 (2005) (“[P]opularity of MP3 files and related formats . . . indicates that access and convenience are increasingly more important than artifact and sound quality.”).

⁵² Jesse Bockstedt, Robert J. Kauffman & Frederick J. Riggins, *The Move to Artist-Led Online Music Distribution: Explaining Structural Changes in the Digital Music Market*, PROC. 38TH HAW. INT’L CONFERENCE SYS. SCI. 1, 7 (2005), available at http://misrc.umn.edu/workingpapers/fullpapers/2004/0422_091204.pdf (“Digital music providers act as product/service providers by dealing directly with the end customer. The emerging digital music market supports dramatically reduced production and distribution costs.”).

⁵³ Zhu & MacQuarrie, *supra* note 47, at 265 (“Recently, however, digital formats have forcibly unbundled the CD. Online, consumers can now purchase custom CDs containing only songs they wish to purchase,

accomplished through the use of peer-to-peer (“P2P”) file sharing networks such as Napster, whose users increased from zero in June 1999 to 20 million in July 2000.⁵⁴ P2P file sharing emerged as the recording industry was experiencing a significant decline in music sales.⁵⁵ Although the recording industry has tended to place the blame for declining record sales on illegal downloads,⁵⁶ other studies suggest a range of potential factors,⁵⁷ including saturation in the CD market,⁵⁸ P2P downloads, and other factors.⁵⁹

¶12

The recording industry and its principal lobbying arm, the Recording Industry Association of America (RIAA),⁶⁰ have managed to develop a comprehensive litigation strategy for dealing with the implications of unauthorized digital downloads.⁶¹ This litigation strategy and the prevention of unauthorized digital downloads on which it is based have contributed to the shape of business models in the digital era, although innovative business models in this area have largely come from outside of the traditional music business players.⁶² The recording industry has consequently not developed effective business strategies for confronting the implications of the digital era.⁶³ Its failure to adjust to the business realities of the digital era left room for companies such as Apple to develop business models that created legal means by which consumers could purchase digital music. The interactions between technology players and content owners in the digital era underscore the ways in which the music industry has been slow to adjust to the conceptual and business realities of digital music and its broader implications.⁶⁴ In contrast, Apple and other players in the digital music arena created innovative digital era business models. Apple, for example, makes little money from sales of digital downloads

and eventually digital distribution will mean that consumers might desire individual songs rather than albums.”).

⁵⁴ Bockstedt et al., *supra* note 52, at 9.

⁵⁵ Marie Connolly & Alan B. Krueger, *Rockonomics: The Economics of Popular Music* 50-60 (Nat’l Bureau of Econ. Research Working Paper No. 11282, 2005), available at <http://www.irs.princeton.edu/pubs/pdfs/499.pdf> (discussing declining music industry CD sales).

⁵⁶ See RIAA.com, What the RIAA is Doing About Piracy, <http://www.riaa.com/issues/piracy/riaa.asp> (last visited May 25, 2007); Felix Oberholzer-Gee & Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, 115 J. POL. ECON. 1, 2 (2007), available at <http://www.journals.uchicago.edu/cgi-bin/resolve?JPE31618PDF> (noting that the RIAA blames declining record sales on unauthorized file sharing).

⁵⁷ Oberholzer-Gee & Strumpf, *supra* note 56, at 3 (concluding through empirical analysis that file sharing has an effect on music sales that is statistically indistinguishable from zero); Connolly & Kruger, *supra* note 55, at 50-60.

⁵⁸ Hesmondhalgh, *supra* note 50, at 3.

⁵⁹ Ethan Smith, *Sales of Music, Long in Decline, Plunge Sharply*, WALL ST. J., Mar. 21, 2007, at A1 (discussing factors underlying decreasing music sales, including the closing of many retail outlets where music could be purchased).

⁶⁰ LEVY, *supra* note 16, at 23-24 (describing the arguments of the RIAA, the lobbying and legal arm of the recording industry, with respect to digital music).

⁶¹ *Id.* at 27-31 (describing digital era music lawsuits by the RIAA in response to different technologies); Electronic Frontier Foundation, *RIAA v. The People*, <http://www.eff.org/IP/P2P/riaa-v-thepeople.php> (last visited June 6, 2007).

⁶² Smith, *supra* note 59 (discussing the advent of innovative niche record stores).

⁶³ LEVY, *supra* note 16, at 31-32 (describing music industry digital music services, including Pressplay and MusicNet, and describing such services as “pathetic, half-hearted efforts”); Connolly & Kruger, *supra* note 55, at 60-61 (noting the efficiency of P2P distribution networks and the likelihood that the business model for the distribution of music will change dramatically in the future).

⁶⁴ LEVY, *supra* note 16, at 27-50 (illustrating the gulf between technology industry players in the Silicon Valley and music industry players in Hollywood in the digital music era).

on iTunes.⁶⁵ Apple instead makes significant profits from the iPod.⁶⁶ It is probably not an accident that purchases from most other digital music stores cannot easily be played on the iPod.⁶⁷ Apple's strategy of deliberate non-interoperability prevents other digital music players from accessing iTunes and protects Apple's iPod franchise.

¶13 The Apple iPod and iTunes business model helps free consumers from previous recording industry constraints such as CD bundling. At the same time, however, the iPod/iTunes solution for digital downloads imposes a new bundling configuration that limits consumer choices. The constraints imposed by Apple FairPlay DRM are of concern to a range of consumer advocates, particularly in Europe.⁶⁸ The iPod is currently the most successful device that provides alternatives to illegal downloads. As the iPod has increased in popularity, however, the effects of Apple's technology choices on current and prospective Apple competitors and consumers have raised legal questions. Specifically, consumers and government agencies in the U.S. and Europe have challenged Apple's business model on antitrust grounds.⁶⁹

III. APPLE, ANTITRUST ALLEGATIONS, AND NETWORKS

¶14 Antitrust laws seek to protect consumer welfare by preventing anticompetitive practices, such as the illegal use or maintenance of monopoly power. A firm, however, does not necessarily violate the antitrust laws when the monopoly power it possesses is "a consequence of a superior product, business acumen, or historic accident."⁷⁰ For many firms, the chance to extract monopoly rents may provide an incentive to innovate and take risks that stimulate economic development.⁷¹ Accordingly, the Supreme Court has noted that "[t]he mere possession of monopoly power and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system."⁷²

¶15 Apple is the clear market leader in the online digital music space. Apple's position as a market leader therefore raises questions as to whether Apple's success is the result of a superior product or business acumen, the willful maintenance of monopoly power through anticompetitive practices such as unlawful tying facilitated by Apple's FairPlay DRM, the skillful development of technology products, the exercise of intellectual property rights, or some combination of these factors.

⁶⁵ Wingfield & Smith, *supra* note 8 ("Apple isn't under as much pressure to squeeze profits from iTunes because of the money it makes on iPods. In fact, it earns little from iTunes after paying fees for the music and credit-card processing. iTunes typically pays major labels about 72 cents a track, while it pays most independent labels around 62 cents.").

⁶⁶ Sharpe & Arewa, *supra* note 2.

⁶⁷ *Id.*

⁶⁸ An extensive literature exists concerning the implications of DRM generally. See *supra* notes 27-32 and accompanying text.

⁶⁹ See *infra* notes 88-94 and accompanying text.

⁷⁰ *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).

⁷¹ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

⁷² *Id.*

A. The Apple iPod/iTMS Network

¶16 One way to explain Apple's success is through a network lens. Networks are characterized by products that increase in value to consumers to the extent that the products are widely adopted.⁷³ This is known as a "network effect."⁷⁴ Network effects may be direct or indirect.⁷⁵ Telecommunications networks are the most recognizable network subject to direct effects. A telephone becomes more valuable to the owner as more households install telephones, broadening the network of individuals that can be contacted with the device. An indirect network effect, on the other hand, is one where the increased network value results in greater consumer demand for complementary products and greater consumer demand for complementary products increases the value of the network. For example, as more households purchased VCRs, the demand for movies on videocassettes increased,⁷⁶ as did the demand for ancillary business services such as video rentals. Similarly, as more consumers demanded movies on videocassettes the value of VCRs to their owners increased.

¶17 The Apple network is an excellent example of a network with indirect effects. The interconnected nature of various Apple products and services is an important part of Apple's business strategy. Apple's success in advancing this strategy is evident in the effects from the iPod and iTMS network. An iPod's primary function is to provide digital media content, serving as a device for viewing, listening to and storing that content. iPod owners derive benefits from the ease with which the iPod interconnects to a personal computer and iTMS.

¶18 Arguably, users of both the iPod and iTMS have experienced the benefits of network effects. One benefit, interoperability between iTMS and the iPod, allows customers to perform a broad spectrum of tasks using Apple's iTunes software application. iTunes "allow[s] customers to preview, purchase, download, organize, share, and transfer digital content to an iPod" and their computer.⁷⁷ Moreover, as more iPods are sold, third parties develop more add-ons, expansions, and compatible products, further increasing the value of the network.⁷⁸ According to Apple's 2006 Annual Report,

⁷³ See George Priest, *Flawed Efforts to Apply Modern Antitrust Law to Network Industries*, in HIGH STAKES ANTITRUST: THE LAST HURRAH? 117, 118-19 (Robert W. Hahn ed., 2003) (arguing that networks are thus different than a "hard goods industry" where "one consumer's use of the good has little or no impact on the use by any other consumer"); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985).

⁷⁴ Michael Katz & Carl Shapiro, *Antitrust in Software Markets*, Presentation at the Progress and Freedom Foundation Conference 2 (Sept. 22, 1998), available at <http://faculty.haas.berkeley.edu/shapiro/software.pdf> (arguing that "the most notable" characteristic that distinguishes software markets from other markets is that they "often are subject to network effects, whereby the value of a piece of software (e.g., an operating system) rises with the number of other end users who run that same software. These effects arise both because the ability to communicate and share data with others will be greater, and because it is more likely that complementary hardware, software, and wetware (i.e., brain cells) will be available, when there is a large base of users of the software."; also noting that network effects are not limited to software markets but may arise in any market).

⁷⁵ Mark A. Lemley & David MacGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 481 (1998) (suggesting ways in which particular legal rules should and should not be modified to take account of network effects).

⁷⁶ See CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES* 96 (1999).

⁷⁷ Apple Inc., Annual Report (Form 10-K), at 12 (Dec. 29, 2006).

⁷⁸ Apple Computer, Inc., Annual Report (Form 10-K), at 5 (Dec. 3, 2004) ("With the addition of third-party iPod peripherals, the capabilities of certain iPods can be enhanced to include voice recording and photo

“[i]n addition to [Apple’s] iPod accessories, thousands of third-party iPod compatible products are available.”⁷⁹ Apple iPod/iTMS network participants derive greater value as network size increases as evidenced by the growth in the type and number of available offerings.

¶19 Networks have the potential to both enhance and inhibit competition. A successful network may increase the number of choices available to a consumer. At the same time, one company’s proprietary network may produce products that are not interoperable with technology from rivals, or it could exclude competitors entirely. Ultimately, either scenario reduces consumers’ choices. Consequently, networks present unique challenges to antitrust laws. Behaviors that are traditionally viewed as anticompetitive – such as tying, predatory pricing and exclusive dealing – may have persuasive procompetitive justifications when considered from a network perspective.⁸⁰ However, the same behaviors may have pernicious effects, such as delayed innovation, lower output, and higher prices.

¶20 The ability of products to interoperate makes networks more valuable.⁸¹ This is particularly true in the technology arena, where the proliferation of devices, from computers to cellular phones, drives the need for new software applications that will operate on multiple devices.⁸² Proprietary technologies that limit interoperability to products within a network exclude technology from rivals, and may result in a wider range of choices for customers by spurring innovation as competitors develop their own proprietary technologies. In this instance, each player may seek to establish a de facto industry standard and thus is “competing for the market.”⁸³ Similarly, open standards across a market may promote competition by spurring competition for a larger share of the market among firms that use a common standard.⁸⁴ In environments with open standards, consumers can benefit from both the positive externalities within a single

downloading directly from certain digital cameras.”); see also Posting of Christopher Breen to Today@Playlist, <http://playlistmag.com/weblogs/todayatplaylist/2004/12/giftweeksoftware/index.php> (Dec. 8, 2004, 18:29 EST) (discussing numerous third-party applications for the iPod).

⁷⁹ Apple Inc., Annual Report (Form 10-K), at 10 (Dec. 29, 2006) (“In addition to the Company’s own iPod accessories, thousands of third-party iPod compatible products are available, including portable and desktop speaker systems, headphones, car radio solutions, voice recorders, cables and docks, power supplies and chargers, and carrying cases and armbands.”).

⁸⁰ See Max Schanzbach, *Network Effects and Antitrust Law: Predation, Affirmative Defenses, and the Case of U.S. v. Microsoft*, 2002 STAN. TECH. L. REV. 4, ¶ 3, ¶ 47 (2002) (discussing the challenges that technology industries present for antitrust laws, identifying affirmative defenses premised on the existence of network effects that Microsoft neglected to advance during the course of its antitrust case, and noting that “[t]here are a number of pro-competitive reasons for a tie as well, beyond the obvious economies in production and distribution that a tie may produce. First, a tie may control quality. For example, a manufacturer may tie the sale of repair services and parts to the purchase of its machine in order to ensure that it is maintained properly and that the firm’s reputation for quality is protected. Second, a tie may help share the risk of a product purchase or provide information to consumers about product value. Third, a tie may stimulate demand for complementary products. Finally, a tie may aid in price discrimination by measuring the intensity of use.”) (citations omitted).

⁸¹ See U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 11, at 33.

⁸² Janice M. Mueller, *Patent Misuse Through the Capture of Industry Standards*, 17 BERKELEY TECH. L.J. 623, 634-35 (2002).

⁸³ SHAPIRO & VARIAN, *supra* note 76, at 231 (“Precisely because standards reduce lock-in, they shift the locus of competition from an early battle for dominance to a later battle for market share. Instead of competing for the market, companies compete within the market, using the common standard.”).

⁸⁴ *Id.*

network or from other networks and products that interconnect.⁸⁵ Switching costs are lower, thus reducing the extent to which consumers are locked in.⁸⁶ Apple's control over the iPod's and iTunes's interoperability can, and probably has, appreciably increased the value of its network and is central to Apple's alleged antitrust violations.⁸⁷

B. Antitrust Allegations Against Apple

¶21 In recent months, Apple has been the target of lawsuits and threats of legal action due to the iPod/iTunes network's alleged noninteroperability with competitors' products.⁸⁸ France recently enacted a law to implement the European Union Copyright Directive, which the American press has referred to as the "iTunes law."⁸⁹ This law has been characterized as forcing Apple to make its products interoperable with those of other companies,⁹⁰ although the final version of the enacted French law contained a significant exception that enables companies such as Apple to continue to use DRM that restricts interoperability with permission of the applicable rights holders.⁹¹ Additionally, several consumer protection groups from Finland, Norway, France, and Germany recently issued a joint statement declaring that Apple should make music sold through iTunes interoperable with portable digital music players other than the iPod.⁹² The extent to

⁸⁵ *Id.* at 233.

⁸⁶ *Id.*

⁸⁷ *Id.* at 197 (noting that a "network is far more valuable if you can control the ability of others to interconnect with you").

⁸⁸ See Complaint, *Tucker v. Apple Computer, Inc.*, No. C 06-04457 JW, 2006 WL 2430879 (N.D. Cal. July 21, 2006); Slattery v. *Apple Computer, Inc.*, No. C 05-00037 JW, 2005 WL 2204981 (N.D. Cal. Sept. 9, 2005); John Leyden, *Apple faces US iTunes lawsuit*, THE REGISTER, Jan. 3, 2007, http://www.theregister.co.uk/2007/01/03/apple_itunes_lawsuit/ (noting that the U.S. lawsuit "follows similar charges in Europe, brought by a French consumer rights group."); Apple Inc., Quarterly Report (Form 10-Q), at 46-55 (Dec. 30, 2006) (discussing actions against Apple, including *Union Fédérale des Consommateurs - Que Choisir v. Apple Computer France S.à.r.l. and iTunes S.à.r.l.*, a suit filed by a French consumer association in February 2005 against Apple that alleges violations of French consumer law by: "(1) omitting to mention that the iPod is allegedly not compatible with music from online music services other than the iTunes Store and that the music from the iTunes Store is only compatible with the iPod and (2) allegedly tying the sales of iPods to the iTunes Store and vice versa."); Tom Braithwaite & Kevin Allison, *Crunch Time for Apple's Music Icon*, FIN. TIMES, June 14, 2006, at 27, available at <http://search.ft.com/ftArticle?id=060613007896&page=2> (dated June 13, 2006) ("Last week, Norway, Denmark and Sweden said Apple must make music tracks downloaded from iTunes playable on rival devices or get out of their countries. Finland is also looking at intervening.");

⁸⁹ See generally Mikko Välimäki & Ville Oksanen, *DRM Interoperability and Intellectual Property Policy in Europe*, 26 EUR. INTELL. PROP. REV. 562, available at http://www.valimaki.com/org/drm_interoperability_final.pdf (discussing the French iTunes law).

⁹⁰ LOI n° 2006-961 du 1er août 2006 relative au droit d'auteur et aux droits voisins dans la société de l'information (Aug. 6, 2006), available at <http://www.legifrance.gouv.fr/WAspad/UnTexteDeJorf?numjo=MCCX0300082L>.

⁹¹ *French Bend on iTunes Law*, WIRED, June 26, 2006, available at <http://www.wired.com/science/discoveries/news/2006/06/71220> (noting that the compromise text of the law "maintains a Senate loophole that could allow Apple and others to sidestep that requirement by striking new deals with record labels and artists"); *France Softens iTunes Law, but Apple Still Disgruntled*, N.Y. TIMES, June 23, 2006, at C2, available at <http://www.nytimes.com/2006/06/23/technology/23ipod.html?ex=1308715200&en=4c03604b5706e878&ei=5090&partner=rssuserland&emc=rss> (noting that the French National Assembly maintained "a loophole introduced last month by senators, which could allow Apple and others to dodge data-sharing demands by striking new deals with record labels and artists").

⁹² The four consumer protection groups are the Consumer Ombudsmen in Finland and Norway, the French

which such actions will lead to restrictions on Apple's European business model and business activities remains unclear and will depend on actions taken by consumer groups and authorities going forward. The threatening allegations made and legal actions filed against Apple highlight the nature of potential claims that might be made against Apple on account of iPod/iTMS bundling.

¶22 In the U.S., two cases filed against Apple in the Northern District of California are currently pending.⁹³ Both complaints allege that Apple has tied its iPod to iTMS by conditioning iPod sales on the purchase of digital content from iTMS, and vice versa.⁹⁴ From an antitrust perspective, Apple's sale of iTMS content to be played on the iPod raises questions of whether an illegal tie actually exists. Can Apple be guilty of unlawful tying when an essential element of that offense is that the sale of one product (the tying product) must be conditioned on the purchase of another (the tied product)?⁹⁵ Is the sale of iTMS digital content truly conditioned on the purchase of an iPod?⁹⁶ Few would argue that an iPod is the only way to enjoy the content purchased from iTMS. The scope of the usage rights that accompany content purchased from iTMS clearly reflects the fact that the iPod is not the only means by which consumers may consume iTMS content.⁹⁷ Many buyers replay digital media purchased online through iTMS and other online stores on their computers. Additionally, FairPlay and other DRM protection measures can be circumvented to make music downloaded from any online media store, including iTMS, playable on a variety of portable digital music players, including the iPod.⁹⁸ In the case of digital music files, for example, a user simply needs to make a copy of the song in a different format, such as MP3, and then transfer the content in that format to their music player of choice.⁹⁹ Such transfers may, however, involve a loss of sound quality in the transferred digital file.

Consumer Organization, UFC Que Choisir, and the Federation of German Consumer Organizations (vzbv). Forbrukerombudet.no, European Consumer Organisations Join Forces in Legal Dispute Over iTunes Music Store, <http://www.forbrukerombudet.no/index.gan?id=11037079> (last visited June 7, 2006); see also John Oats, *France and Germany Join Anti-iTunes Crusade*, THE REGISTER, Jan. 23, 2007, http://www.theregister.co.uk/2007/01/23/itunes_slagged_again ("France and Germany are joining the Scandinavian campaign to make content from iTunes work with players from companies other than Apple.").

⁹³ The first domestic case against Apple was *Charoensak v. Apple Computer, Inc.* (formerly *Slattery v. Apple Computer, Inc.*) which contained allegations of "unlawful tying of music purchased on the iTunes Store with the purchase of iPods and vice versa and unlawful acquisition or maintenance of monopoly market power." Apple Inc., Quarterly Report (Form 10-Q) (Dec. 30, 2006); see also Complaint at ¶¶ 60-71, 72-75, 80-102, *Tucker v. Apple Computer, Inc.*, No. C 06-04457 JW, 2006 WL 2430879 (N.D. Cal. Dec. 20, 2006).

⁹⁴ Complaint at ¶¶ 60-71, *Tucker v. Apple Computer, Inc.*, No. C 06-04457 JW, 2006 WL 2430879 (N.D. Cal. Dec. 20, 2006); *Slattery v. Apple Computer, Inc.*, No. C 05-00037 JW, 2005 WL 2204981, at *2 (N.D. Cal. Sept. 9, 2005).

⁹⁵ See, e.g., *U.S. Steel Corp. v. Fortner Enters.*, 394 U.S. 495, 498-99 (1969); *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5-6 (1958). But cf. *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984).

⁹⁶ This tying allegation highlights tensions between varied uses and understandings of the term interoperability. See *supra* note 10.

⁹⁷ See generally George & Chandak, *supra* note 15.

⁹⁸ *Digital Music Interoperability and Availability: Hearings Before the Subcomm. on the Courts, the Internet and Intellectual Property of the H. Comm. on the Judiciary*, 109th Cong. n.6-7 (2005) (statement of Mark Cooper, Ph.D, Director of Research, Consumer Federation of America), available at <http://judiciary.house.gov/media/pdfs/cooper040605.pdf> [hereinafter *Hearings*] (describing the process a user must go through to transfer music from iTMS to players other than the iPod).

⁹⁹ Siobhan Hughes, *Apple Gets Vote of Confidence for iTunes from Antitrust Chief*, WALL ST. J., Sept. 14,

¶23 At the core of both cases are allegations that Apple used technological protections or restrictions to acquire and maintain monopoly power in the relevant markets. For instance, the *Tucker* Plaintiff alleges that Apple did the following to maintain its monopoly:

(1) actively [modified] the iPod's "core processor," the Portal Player System-On-A-Chip, not to support WMA; (2) actively [modified] the iPod Shuffle's SigmaTel chip not to support WMA; (3) [refused] to pay a nominal licensing fee for WMA; (4) [used] technological restrictions to prevent consumers who purchased [from] rival stores from playing music on their iPods; (5) [sold] music only using Apple's FairPlay DRM, which is incompatible with any digital music player other than iPod; and (6) [used] technological restrictions to prevent users from playing video files purchased from Apple on rival video-enabled music players.¹⁰⁰

¶24 Each allegation circles back to an alleged lack of interoperability between the iPod, iTunes and other products in the relevant markets.¹⁰¹ If Apple did not dominate each relevant market, it would lack the requisite monopoly power to support a tying claim based on music encoded with FairPlay DRM being exclusively interoperable with the iPod. Consequently, Apple might avoid antitrust scrutiny since any prospective plaintiff could not allege that the sale of either the iPod or iTunes is conditioned on the purchase of the other.

¶25 In response to the lawsuits and other criticisms of FairPlay DRM, Steve Jobs argued in a February 2007 open letter that Apple does not overly limit consumer choice. He stated that "it is useful to remember that all iPods play music that is free of any DRM and encoded in 'open' licensable formats such as MP3 and AAC. iPod users can and do acquire their music from many sources, including CDs they own."¹⁰² According to Jobs, the FairPlay DRM is necessary for Apple to ensure compliance with its signed agreements with the record companies.¹⁰³ Apple clearly believes that in light of these contractual obligations, the current usage rights are the "most liberal . . . available in the industry for legally downloaded music."¹⁰⁴

¶26 Jobs's assertions do not necessarily convey in full the reality of the portable digital music player competitive landscape. The vast majority of digital music consumers use the iPod as their primary digital music player and iTunes as their primary online digital

2006, at B5 (quoting the Chief of the Antitrust division at the Department of Justice, Thomas O. Barnett, "consumers can re-record an iTunes song in an MP3 format and play it on other devices; in sum, it is hardly clear that they are locked in."); see Sharpe & Arewa, *supra* note 2 (discussing how such actions may create legal problems to the extent that they involve circumvention of a TPM, which may be illegal).

¹⁰⁰ See *Tucker v. Apple Computer, Inc.*, No. C 06-04457 JW, 2006 WL 2430879, at *19 (N.D. Cal. Dec. 20, 2006) (order denying defendant's motion to dismiss).

¹⁰¹ For a more in depth discussion of the effects of interoperability or compatibility on price competition see generally Katz & Shapiro, *Antitrust in Software Markets*, *supra* note 74.

¹⁰² Steve Jobs, *Thoughts on Music*, Feb. 6, 2007, <http://www.apple.com/hotnews/thoughtsonmusic>.

¹⁰³ See Sharpe & Arewa, *supra* note 2; see also Jobs, *supra* note 102 ("[A] key provision of our agreements with the music companies is that if our DRM system is compromised and their music becomes playable on unauthorized devices, we have only a small number of weeks to fix the problem or they can withdraw their entire music catalog from our iTunes store.").

¹⁰⁴ Jobs, *supra* note 102.

music store.¹⁰⁵ While some tech savvy users may have alternatives, for most others, their own technological limitations¹⁰⁶ may mean that use of Apple's products does not reflect a preference for such products.¹⁰⁷ Instead, it may reflect a lack of choice stemming from high switching costs, one of which is learning alternative downloading methods.¹⁰⁸ For such users, Apple may be the sole available alternative. This lack of choice is of potentially greater significance due to Apple's allegedly monopolistic behavior and alleged monopoly power.

¶27 The lack of iPod and iTunes interoperability with other devices and music stores in the online digital music space and the consequent high switching costs have accelerated the market tipping in Apple's favor.¹⁰⁹ Network effects heighten the possibility that tipping may occur, resulting in a lone, dominant network, and an increased risk of monopolization.¹¹⁰ Tipping raises the possibility that practices such as tying and exclusive dealing, which are often used to outperform rivals, may have pernicious results. One such concern is that "a firm that is dominant in one market may use such practices to tip the market for a related product in its direction, even if its variant of that product is an inferior one."¹¹¹

¶28 One tension evident from the claims against Apple is that Apple may have had incentives to make its network inoperable with other online music sites and other digital media players.¹¹² Specifically, Apple has maintained a closed network and has refused to make its products interoperable with those of its competitors.¹¹³ This refusal reduces the likelihood that any competitor will gain enough of a foothold in any of the relevant

¹⁰⁵ See Sharpe & Arewa, *supra* note 2.

¹⁰⁶ See *Hearings*, *supra* note 98, at n.6-7 (statement of Mark Cooper) ("While iTunes allows consumers to burn purchased protected digital music to a CD – an open platform – it must be pointed out that a consumer would need to install a new program, purchase the song, burn the song to CD, rip the burned CD into a format their current player will understand and then enter all the song information manually – a cumbersome process digital music stores were supposed to make automatic A consumer with an iPod and Windows might have more luck if they followed the steps in Footnote 6, but users with a Mac are out of luck – and won't be able to download that song legally.").

¹⁰⁷ See *Tucker v. Apple Computer, Inc.*, No. C 06-04457 JW, 2006 WL 2430879, at *14 (N.D. Cal. Dec. 20, 2006) ("Plaintiff alleges two theories of antitrust tying: (1) Apple has used technological restrictions to force purchasers of Apple's iPod (tying product) to purchase only Online Music and Online Video from iTunes (tied product); and (2) Apple has used technological restrictions to force purchasers of Online Music and Online Video from iTunes (tying product) to purchase only Apple's iPod (tied product).").

¹⁰⁸ Other costs would include the difficulty of identifying and acquiring the equipment, abandoning a familiar product where users are comfortable with the interface and functionality of the product and loss of any data that is not transferable to the new product. See SHAPIRO & VARIAN, *supra* note 76, at 117 (outlining various categories of switching costs including "[b]rand-specific training" which includes "[l]earning a new system, both direct costs and lost productivity").

¹⁰⁹ Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 105-106 (1994) (describing "tipping" as "the tendency of one system to pull away from its rivals in popularity once it has gained an initial edge.").

¹¹⁰ Katz & Shapiro, *supra* note 74, at 7.

¹¹¹ *Id.*

¹¹² See Carl Shapiro, *Exclusivity in Network Industries*, 7 GEO. MASON. L. REV. 673, 682 (1999) ("[L]ack of compatibility can be the death-knell of a new technology, even if it is superior in some absolute or stand-alone sense. And incumbent firms often have the incentive to exert their intellectual property rights to deny such compatibility to would-be entrants.").

¹¹³ Apple may be retreating from this position. See *infra* note 115-123 and accompanying text (discussing Apple's recent announcement that it has partnered with EMI to offer some songs in DRM-free AAC format); see also Sharpe & Arewa, *supra* note 2.

markets to create a viable alternative network. As a result, Apple products currently dominate the market for portable digital players and digital music and video content.¹¹⁴

¶129 Even without DRM, Apple could continue to limit interoperability because the AAC file format in which iTunes encodes digital music files, by default, is not supported by many digital music players.¹¹⁵ This is important given that Jobs's open letter has borne fruit. In this letter, Jobs suggested that the recording industry "abolish DRMs entirely."¹¹⁶ He also indicated that Apple would be willing to sell DRM-free music through iTMS if the music companies would license Apple to sell music without DRM.¹¹⁷ Jobs noted that this solution would be "clearly the best alternative for consumers, and Apple would embrace it in a heartbeat."¹¹⁸ Not surprisingly, shortly after this letter was released, Apple and EMI jointly announced that Apple would distribute some portion of the EMI catalog without DRM.¹¹⁹ The fact that EMI was the first of the big four music companies to sell music free of DRM is no surprise, since they are known as the recording industry player most eager to license and have thus far had weak online sales.¹²⁰ In May 2007, Apple began distributing higher quality digital audio files in AAC format at 256 kbps, which is twice the rate of current files that are encoded in AAC format at 128 kbps.¹²¹ These DRM-free music files, which will cost \$1.29, or 30 cents more than current iTMS songs, will, according to Apple, have an audio quality indistinguishable from the original recording.¹²² Tracks previously purchased from iTMS are upgradeable to the DRM-free file standard for 30 cents.¹²³ Industry analysts suggest that the other big record labels are taking a wait-and-see attitude in order to evaluate whether the Apple-EMI arrangement is successful before they follow EMI's lead.¹²⁴

¹¹⁴ See SHAPIRO & VARIAN, *supra* note 76, at 180 (noting that rivals to Microsoft's operating systems "[do not] have the critical mass to pose much of a threat").

¹¹⁵ Posting of Jenn K. Lee to anythingbutipod, EMI to Offer DRM-Free Digital Music, <http://anythingbutipod.com> (Apr. 2, 2007, 20:50 EST) ("[F]orgive us for being less than thrilled over the upcoming availability of more expensive music encoded in a format that few players actually support.").

¹¹⁶ Jobs, *supra* note 102.

¹¹⁷ *Id.* ("The third alternative is to abolish DRMs entirely. Imagine a world where every online store sells DRM-free music encoded in open licensable formats. In such a world, any player can play music purchased from any store, and any store can sell music which is playable on all players. This is clearly the best alternative for consumers, and Apple would embrace it in a heartbeat. If the big four music companies would license Apple their music without the requirement that it be protected with a DRM, we would switch to selling only DRM-free music on our iTunes store. Every iPod ever made will play this DRM-free music.").

¹¹⁸ *Id.*

¹¹⁹ Ethan Smith & Nick Wingfield, *EMI to Sell Music Without Anticopying Software – Online-Strategy Shift Breaks with Industry on Combating Piracy*, WALL ST. J., Apr. 2, 2007, at B5 (noting that EMI is "the world's third-largest music company by sales after Universal Music Group and Sony BMG Music Entertainment . . .").

¹²⁰ LEVY, *supra* note 16, at 35 (noting that EMI is known as the most eager of the big four to license, while Universal, with the biggest market share, is known as the "hardliner in the digital music wars"); Hiawatha Bray, *Apple, EMI to Revamp Online Music Offerings*, BOSTON GLOBE, Apr. 2, 2007, available at http://www.boston.com/business/articles/2007/04/02/apple/?p1=MEWell_Pos5 (noting weak EMI online sales).

¹²¹ Apple Inc. Press Release, *supra* note 1.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ Laura Sydell, *EMI Music Goes DRM-Free in a Deal with Apple, All Things Considered*, NAT'L PUB. RADIO, Apr. 2, 2007, <http://www.npr.org/templates/story/story.php?storyId=9293489> ("Analyst James McQuivey, of Forrester Research, thinks EMI's move will allow the other music industry giants to sit back

¶30 Although some have applauded the Apple-EMI arrangement,¹²⁵ others have criticized it on account of the higher price of the DRM-free files, continued use of a largely non-interoperable file format for encoding files, and the fact that consumer personal data is also apparently encoded in the DRM-free digital musical file itself, likely as an anti-piracy measure.¹²⁶ Further, while giving consumers greater choices with respect to DRM, the Apple-EMI arrangement does not necessarily give consumers more options as their purchases may not be interoperable with dominant industry file formats, at least with the ease that has come to characterize Apple products. As a result, some have suggested that Apple's announcement for digital distribution of EMI's catalog in DRM-free AAC format may be a sophisticated stratagem implemented to outmaneuver Apple competitors, including Microsoft.¹²⁷ Thus, the agreement with EMI may give Apple an advantage when it comes to setting the dominant "open" standard for digital music distribution.¹²⁸

IV. CONCLUDING THOUGHTS

¶31 The extent to which Apple is playing fair should be assessed from both a legal and business perspective. Apple's iPod/iTMS bundling practices and the iPod/iTMS network should be assessed in light of their competitive implications. Evaluating the competitive impact of the iPod/iTMS bundle and other technological innovations may be complicated by the potential interaction of intellectual property and antitrust legal frameworks. From an intellectual property perspective, greater attention should be given to the market impact of intellectual property rights and their exercise. This would mean that considerations of intellectual property, particularly in the technology arena, should be

and watch. He says, 'Six months from now, there will be proof as to whether this was the right idea or not.'").

¹²⁵ Norwegian Official Applauds Apple, EMI, MACNN, Apr. 2, 2007, <http://www.macnn.com/articles/07/04/02/norway.applauds.apple.emi>.

¹²⁶ See Posting of Jenn K. Lee to anythingbutipod, *supra* note 115; Rhys Blakely, *Personal Data Found Hidden in iTunes Tracks*, TimesOnline, June 1, 2007, at http://business.timesonline.co.uk/tol/business/industry_sectors/media/article1871173.ece (noting that Apple DRM-free music files have "embedded personal information into music files bought from its iTunes online music store").

¹²⁷ Arik Hesseldahl, *Apple Stokes a Digital Music Standards War*, BUS. WK. ONLINE, Apr. 5, 2007, http://www.businessweek.com/technology/content/apr2007/tc20070404_499334.htm ("Using AAC is brilliant for several reasons. First, for Apple, whose stated market aim is to do everything in its power to sell more of its highly profitable iPods (and beginning in June, presumably profitable iPhones), the choice of AAC means more non-Apple devices will be able to play songs purchased on iTunes. . . . But the real target is Microsoft. What we now have is a good old-fashioned standards war heating up, and it is pitting the old foes Apple and Microsoft against each other once again. Saying Apple has the upper hand is giving Microsoft more credit than it deserves. . . . Apple will no doubt be fine with the longer list of online music rivals, because in its range of priorities, anything that sells more iPods can only be a good thing. With time, practically all music stores will be selling iPod-compatible songs. This will be considered a Richter 10 event at Microsoft. . . . *Think of it: Microsoft labeling its second Zune player as 'compatible with iTunes.'*") (emphasis added). See also Eliot Van Buskirk, *In EMI-iTunes Deal, the Big Loser May Be Microsoft*, WIRED, Apr. 3, 2007, available at http://www.wired.com/entertainment/music/news/2007/04/emihardware_0403 (Apple "has also struck a major blow against Microsoft in a less obvious arena: music encoding standards."); see, e.g., Sharpe & Arewa, *supra* note 2.

¹²⁸ Hesseldahl, *supra* note 127; Sharpe & Arewa, *supra* note 2 (discussing the potential emergence of AAC as the default standard format for digital music).

attuned to any potentially anticompetitive uses of intellectual property rights.¹²⁹ Anticompetitive practices bolstered by intellectual property rights or claims of such rights can potentially give unwarranted market power to holders of intellectual property rights, impose broader social costs and hinder the innovation that intellectual property frameworks are intended to promote.¹³⁰ Further, intellectual property rights can and are exercised in such a way as to have anticompetitive effects.¹³¹

¶32 Apple's products have to date been notable for their ease of use.¹³² Although the influence of the Apple arrangement with EMI remains unclear, during the period in which it has sold music protected by DRM, Apple has refused to extend its customary ease of use to certain iPod and iTunes specific activities. Apple's construction of the iPod/iTunes network reflects a policy of deliberate noninteroperability that makes it more difficult for iPod and iTunes users to use players and online music stores that compete with Apple's devices and products, and thus more difficult for users to leave the iPod/iTunes network.¹³³ This policy lends support to those who argue that Apple's motivations are largely anticompetitive.¹³⁴ Use of DRM protected and unprotected file formats that are not widely used have strengthened the exclusive aspects of the Apple iPod/iTunes network; however, Apple's use of DRM and the AAC file formats does not necessarily enhance consumer welfare.¹³⁵

¶33 Even without DRM and use of the AAC encoding format, the dominance of Apple might limit the market impact of potentially competitive products. If truly competitive products began to emerge, Apple would be required to outperform its competitors based on a superior product and business acumen. Although Apple's performance is at present outstanding by many measures, the current market environment, in which Apple has few effective competitors, may encourage it to become complacent. Further, under the status quo, Apple's successful domination of the market for digital music players and online music downloads has allowed the company to sell and operate a product that may not be inspired to improve in quality as quickly as it might with competitors in the fray. Further, Apple's market power does not exclusively stem from positive network effects, but is in large part wedded to its exercise of proprietary strategies that include a significant

¹²⁹ See, e.g., Olufunmilayo B. Arewa, *Strategic Behaviors and Competition: Intangibles, Intellectual Property and Innovation* (Nw. Univ. Sch. of Law, Research Paper No. 586483, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=586483.

¹³⁰ See, e.g., THE FEDERAL TRADE COMMISSION, TO PROMOTE COMPETITION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 5 (Oct. 2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>; COMMITTEE FOR ECONOMIC DEVELOPMENT, PROMOTING INNOVATION AND ECONOMIC GROWTH 7 (2004), available at http://www.ced.org/docs/report/report_dcc.pdf ("[I]ncentives provided by copyright protection are designed to encourage innovation by creators."); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 993 (1997) (noting that intellectual property is about incentives to invent and create).

¹³¹ See Arewa, *supra* note 129 (discussing strategic and anticompetitive uses of intellectual property rights).

¹³² Sharpe & Arewa, *supra* note 2.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ See Hilary Rosen, *Steve Jobs, Let My Music Go*, THE HUFFINGTON POST, May 9, 2005, <http://www.huffingtonpost.com/theblog/archive/2005/05/steve-jobs-let-.html> (questioning why more consumers are not complaining about Apple's restrictions with respect to purchases from non-iTunes music stores).

exercise of intellectual property rights.¹³⁶ In this way, Apple is not necessarily a “natural” monopoly, but an “unnatural” one.

¶134 Antitrust laws consider how industry specific regulatory goals and objectives influence competition and business conduct in that industry.¹³⁷ In networked industries, courts must consider “the nature of the network and the market in which it operates” when determining whether or not a practice is anticompetitive.¹³⁸ While companies should not necessarily be forced to “open up [their] networks and provide interconnection against [their] will,”¹³⁹ one important factor to consider in antitrust analysis of intellectual property intensive products and services is the influence of any asserted intellectual property rights, the scope of such rights, and the extent to which other less restrictive alternatives may exist. Thus, antitrust agencies and the courts must be cognizant of the scope of the intellectual property rights and any unlawful extension beyond it.¹⁴⁰ While conclusions cannot be drawn *a priori* with respect to any particular case, such factors should be considered in making determinations in cases involving intellectual property intensive products and services.

¶135 Although the legal status of Apple’s bundling practices is presently contested, from a business perspective, Apple may not have learned the lessons of the potential dangers of bundling evident in the recent experiences of the recording industry. Apple ignores such lessons at its peril. Many commentators and industry analyst agree consumers will leave an exclusive network in favor of one that offers an open network compatible with a variety of offerings from various competitors.¹⁴¹ Dr. Mark Cooper, Director of Research for the Consumer Federation of America stated in recent testimony before congress that “consumers demand interoperability, and will pick it when given the choice.”¹⁴² In the same Congressional hearing, Representative Lamar Smith of Texas expressed the following: “[a]s a result of disputes like the one between Apple and Real, some have suggested that efforts to boost digital music interoperability should be encouraged by regulation or legislation. Others have urged Congress to leave the issue to the marketplace and let consumers decide what it best for them.”¹⁴³ Both alternatives are possible outcomes in the Apple FairPlay controversy.

¹³⁶ See Dana Blankenhorn, *How Much Further Can Apple Go*, Dana Blankenhorn and the War Against Oil Blog (Dec. 14, 2006), http://www.danablankenhorn.com/2006/12/how_much_further.html#more (noting the long-standing tendency of Apple to rely on proprietary technology).

¹³⁷ C. Scott Hemphill, *Paying for Delay: Pharmaceutical Patent Settlements as a Regulatory Design Problem*, 81 N.Y.U. L. REV. 1553, 1559 (2006).

¹³⁸ Schanzenbach, *supra* note 80, at ¶ 76 (citing to *United States v. Microsoft*, 87 F. Supp. 2d 30 (2000)).

¹³⁹ Shapiro, *supra* note 112, at 682 (“As a general matter, I am wary of forcing an incumbent to open up its networks and provide interconnection against its will, unless the incumbent had previously made certain ‘openness’ promises in order to establish its network in the first place.”).

¹⁴⁰ See Amakan Delrahim, *Maintaining Flexibility in Antitrust Analysis: Meeting the Challenge of Innovation in the Media and Entertainment Industries*, 28 COLUM. J.L. & ARTS 343, 356 (2005).

¹⁴¹ *Hearings, supra* note 98, at n.6-7 (statement of Mark Cooper) (“If an application developer refuses to interoperate, we believe that developer will ultimately pay the price, because consumers will migrate to interoperable offerings. Applications developers should be allowed to discover the consequences of their bad decisions in the marketplace. We believe consumers demand interoperability, and will pick it when given the choice.”).

¹⁴² *Id.*

¹⁴³ *Hearings, supra* note 98 (statement of Lamar Smith, Chairman, H. Subcomm. on Courts, the Internet, and Intellectual Property).

¶36 This Article suggests ways in which authorities making determinations of whether to take regulatory action in cases such as the Apple iPod/iTMS bundle can frame and view the iPod/iTMS network and Apple business practices within the broader market context. From a legal perspective Apple's use of AAC and FairPlay DRM may not fundamentally controvert existing antitrust laws. Apple's current bundling business strategy, however, may not be sustainable in the long term from a business perspective. Further, in many respects, criticisms of Apple DRM and use of AAC encoding reflect the fact that Apple may be a victim of its own success. Because Apple and its products have come to define an era, some say even the twenty first century,¹⁴⁴ significant expectations exist about the role that Apple should play in relation to important digital era issues. By constraining consumer choices of file formats in a manner that seemingly restricts interoperability and that appears to be inconsistent with its ethos of enabling ease of use, Apple may fail to fulfill the expectations of those who believe Apple to be different, in line with Apple's marketing as the anti-Microsoft or a company that is unlike many of its competitors. Apple likely could enable ease of use through supporting multiple formats, with or without DRM, without significant harm to the iPod franchise. The refusal to do so may strike some as willful blindness,¹⁴⁵ particularly given the historical experience of Apple in the computer market.

¶37 In the past, Apple's Macintosh computer suffered the effects often seen in closed networks. Although it was "highly respected for its design," it eventually lost market share because "it was incompatible with other systems."¹⁴⁶ Only time will tell if the iPod and iTMS will suffer the same fate as the Macintosh computer or follow along the path of the recording industry, whose bundling practices did not adequately prepare it for the changes that occurred in the digital era. History, however, does have a way of repeating itself. Therefore, Apple, once bitten, should be twice shy and consider opening its network and foregoing short-term profits in the interest of long-term success.

¹⁴⁴ LEVY, *supra* note 16, at 1.

¹⁴⁵ Sharpe & Arewa, *supra* note 2.

¹⁴⁶ Maija Pesola, *Music Rivals Look to Bite into Apple*, FIN. TIMES, Nov. 19, 2004, at 13.