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## IS APPLE RIPE FOR THE PICKING? DISSECTING THE LEGAL AND ECONOMIC IMPLICATIONS OF APPLE'S ITUNES MODEL

BY

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#### ABSTRACT

An actual apple fruit serendipitously inspired the company name of a technology giant. Steve Jobs' doting memories of the time he spent in an apple farm was the catalyst to the decision to name the company, Apple Inc. – a simple yet remarkable name. Fast forward to three decades, the company, whose name was based on a fruit, is now the world's largest technology company, with annual revenues in excess of \$60 billion. Nevertheless, Apple Inc.'s success came with a price. The company faces, among many others, an international probe alleging antitrust violations and anti-competitive practice of its iTunes business model of inoperability and incompatibility. iTunes works only with Apple's own portable music players, and Apple's portable music players are directly compatible only with the iTunes service, a practice that many consider a virtual tie-in. Opponents' primary contention is the legal and economic implications of the iTunes business model on competition and efficiency. With the international pressure brought against the company to employ more competitive practices, is Apple Inc. ripe for the picking and shelve its iTunes scheme, a practice that brings billion-dollar in revenues, and if so, are there legal and economic justifications that suggest a better alternative?

## **TABLE OF CONTENTS**

ABSTRACT
TABLE OF CONTENTS
INTRODUCTION1
CHAPTER 1: iTunes – Decrypting FairPlay6
CHAPTER 2: Legal Analysis – Alleging Antitrust and Anti-competition11
CHAPTER 3: Economic Analysis – Achieving Efficiency and Effective
Competition
CONCLUSION
BIBLIOGRAPHY

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#### **INTRODUCTION**

Digital Rights Management ("DRM") is an access control technology that is utilized by hardware manufacturers, publishers, copyright holders and individuals that allows the limitation of use of digital content and devices after sale.<sup>1</sup> DRM prevents the use of digital content that is not desired or intended by the content provider, a technological innovation used by companies such as Amazon, Microsoft, Sony, AT&T, AOL and Apple Inc.<sup>2</sup>

The use of DRM technologies is controversial. Although content providers believe that the use of DRM is an absolute necessity in fighting copyright infringement and ensure revenue streams, opponents such as the Electronic Frontier Foundation (EFF) – a nonprofit organization that aims to promote and protect the digital rights of consumers, argue that there is no evidence to conclusively establish that DRM protects copyright infringement, but only stifles entry of legitimate consumers, innovation and more importantly, competition.<sup>3</sup> Additionally, the Foundation for a Free Information Infrastructure (FFII) – a non-profit organization dedicated to establishing a free market in the information market, has viewed DRM as a trade barrier from a free market perspective.<sup>4</sup>

The music industry has experienced tremendous growth since the explosion of scientific innovations and technological improvements. Apple Inc. ("Apple") has

<sup>&</sup>lt;sup>1</sup> Digital Millennium Copyright Act, 112 Stat. 2863, 17 U.S. Code, 1201-1205

<sup>&</sup>lt;sup>2</sup> Digital Rights Management, accessed May 5, 2012,

http://en.wikipedia.org/wiki/Digital\_rights\_management#cite\_note-0

<sup>&</sup>lt;sup>3</sup> Fred Von Lohman, "Fair Use and Digital Rights Management", Electronic Frontier Foundation, April 2002, http://w2.eff.org/IP/DRM/cfp\_fair\_use\_and\_drm.pdf

<sup>&</sup>lt;sup>4</sup> Free Information Infrastructure (FFI), FAQ, accessed May 5, 2012) http://www.ffii.org/Frequently %20Asked%20Questions%20about%20software%20patents

capitalized on this burgeoning industry by creating its proprietary portable music players, such as the iPod, iPhone and iPad, using its music-downloading platform called iTunes Music Store ("iTunes").<sup>5</sup> iTunes uses a discordant DRM system to prevent copyrighted music from unauthorized sharing.<sup>6</sup> Apple's iTunes platform is equipped with Digital Rights Management systems (DRMs) in order to protect file copying, sharing, re-selling and unauthorized use of the downloaded music file; music purchased and downloaded from iTunes is exclusively compatible with Apple devices i.e. iPod, and hence, is inoperable with other competing technologies and music devices.<sup>7</sup> (This inoperability will be referred to in this paper as the "iTunes model.") The alternative to this practice is DRM-free files, allowing interoperability of iTunes files with other portable music devices, and compatibility of music downloaded from other online music store with the iPod (referred to as "alternative model").<sup>8</sup>

Today, the iTunes Store is the biggest retailer of digital music in the U.S. and has sold over 4 billion songs<sup>9</sup>; it is the number-one music vendor in the United States.<sup>10</sup>

<sup>&</sup>lt;sup>5</sup> Buffy Cranford, "How Apple and iPod Have Changed the Music Industry," Helium, December 19, 2009, accessed May 6, 2012, http://www.helium.com/items/1682235-have-apple-and-the-ipod-changed-the-music-industry-for-better-or-for-worse?page=2

<sup>&</sup>lt;sup>6</sup> PQDVD.com, iPod History and Design, (accessed May 2, 2012) http://www.pqdvd.com/ipod-software-detail.html

<sup>&</sup>lt;sup>7</sup> Li Rui, "Antitrust, Intellectual Property Rights, and the Online Music Industry: An Antitrust Analysis of Apple's Combination of Services and Products," National Law Review, April 20, 2011, accessed May 1, 2012, http://www.natlawreview.com/article/antitrust-intellectual-property-rights-and-online-music-industry-antitrust-analysis-apple-s-#sdendnote10sym

<sup>&</sup>lt;sup>8</sup> Noonan Willow, "Antitrust, Intellectual Property, and the Itunes Ecosystem: A Study of the Antitrust Implications of Apple's Fairplay Technology with A Nod to the Peculiarities of Intellectual Property," 50 IDEA 533, 534 (2010)

<sup>&</sup>lt;sup>9</sup> Press Release, May 26, 2010, "Amazon Ties Wal-Mart as Second-Ranked U.S. Music Retailer, Behind Industry-Leader iTunes, accessed May 1, 2012, <u>http://www.npd.com/press/releases/press\_100526.html</u>

<sup>&</sup>lt;sup>10</sup> Ben Levine, "Apple's iTunes Becomes No. 1 Music Store," April 4, 2008, accessed May 20, 2012 http://newsfactor.com; "iTunes Biggest U.S. Music Seller," BBC News, April 4, 2008, accessed May 20, 2012, http://news.bbc.co.uk/2/hi/7329886.stm

However, many perceive Apple's iTunes model to be anti-competitive.<sup>11</sup> Both the U.S.<sup>12</sup> and E.U.<sup>13</sup> have taken steps to investigate the alleged anti-competitive practices of Apple. Currently, a class action suit with the U.S. District Court alleges that Apple's action is anti-competitive and in violation of antitrust laws.<sup>14</sup> Thus, a continued interest in this issue remains.

The intention of this paper is to analyze the competitive implications of the iTunes model through the application of legal theories and economic models. This paper offers observations on how the field of law and economics relate in the investigation of the factors that affect competition, antitrust and economic efficiency. Further, the paper emphasizes that an application of both the legal theories and economic models in the same context, albeit their differences in mechanisms and approach, is complementary, and thus, ideal in fostering a deeper understanding and strengthening the position on the subject matter.

Specifically, this paper shows that an application of legal theories to Apple's "iTunes model" results to antitrust violation by engaging in unlawful tying scheme, and consequently, impeding competition. An economic analysis takes this inference a step further by positing that the "iTunes model" is economically less efficient. Whinston's model illustrates that the "alternative model" is economically efficient since the alternative espouses efficient competition and improves total welfare: Apple and

<sup>&</sup>lt;sup>11</sup> Mike Elgan, "Is Apple the New Microsoft," ComputerWorld, September 7, 2007 (accessed May 8, 2012), http://www.pcworld.com/article/136949/is apple the new microsoft.html

<sup>&</sup>lt;sup>12</sup> Brad Stone, "Apple is Said to Face Inquiry About Online Music," The New York Time, Technology Section, May 25, 2010, accessed May 16, 2012,

http://www.nytimes.com/2010/05/26/technology/26apple.html?\_r=2&dbk

<sup>&</sup>lt;sup>13</sup> Dan Carlin, "Europe vs. Apple: facing the Music," Bloomberg Business Week, Technology Section, January 31, 2007, accessed May 1, 2012,

http://www.businessweek.com/globalbiz/content/jan2007/gb20070131\_492654.htm

<sup>&</sup>lt;sup>14</sup> Apple iPod Antitrust Litigation, C-05-00037-NW, U.S. District Court for Northern California, https://ipodlawsuit.com

competitor's profits are enhanced; consumer and producer's surplus is increased; and, at least one of the economic actors is better off, and none is worse off (Pareto improvement<sup>15</sup>).

Chapter 1 of this paper begins by providing an overview of iTunes and describing the Digital Rights Management (DRM) technology, and how DRM promotes the goal of antitrust laws – protection of copyright and repressing piracy. The same chapter provides detailed information on the legal basis of DRM in the United States and European Union. Chapter 1 ends with a narrative of Apple's DRM technology, called *FairPlay* and shows how the technology has become controversial in the context of competition and antitrust. Chapter 2 outlines the legal analysis. It conveys the legal complexities of antitrust laws applicable to software and technology matters and how these legal issues relate to *FairPlay*. In particular, Chapter 2 highlights the current, and conceivably, the single most contentious court case alleging Apple's anti-competitive and antitrust practices. Finally, the paper outlines an economic analysis based on Whintson's tying game model in Chapter 3. This last chapter examines the economic efficiency and relays the implications of both the iTunes and the alternative models on efficient competition and the welfare of all economic actors.

Numerous papers in legal journals confront the issue of Apple's alleged antitrust practices. For example, the analyses in Roth (2007), Sharpe (2007), Jozefcyk (2008) and Greenhalgh (2008) discuss the antitrust dilemma and the anti-competitive tendencies of Apple's DRM technology. The authors provide the legal ramifications of iTunes and iPods' interoperability and incompatibility with other portable music devices, which this

<sup>&</sup>lt;sup>15</sup> In economics, Pareto Improvement is an action done in an economy that harms no one and helps at least one party. It suggests that Pareto Improvements will keep adding to the economy until it achieves a Pareto Equilibrium, where no more Pareto Improvements can be made.

paper will highlight in Chapter 2. However, the thrust of these papers is the legal interpretation, and not the application of economic models. And with regards to the economic content of this paper, the basic tying game model developed by Whinston (1990) is adopted, including the observations in Kramer (2004). Overall, this paper is a collection of legal and economic analyses prepared as a single study.

#### **CHAPTER 1: iTunes – Decrypting** *FairPlay*

#### **1.1. Introduction**

Apple, Inc. conceived iTunes in 2001, and was subsequently launched in April of 2003.<sup>16</sup> iTunes is an online store where the public can conveniently purchase digital music on-demand and directly download it on a computer device or portable music player.<sup>17</sup> The concept was the creation of an excellent and easiest "jukebox" software that permits its users to organize their own virtual music library on their computers, equipped with user-friendly and easy-to-use applications. In addition to having the capability to purchase music files from the iTunes virtual store, iTunes lets users bring in songs from their favorite CDs, squeeze them into the MP3 format, store them on their computer's hard drive, and organize their music using powerful search, browse and play list features.<sup>18</sup>

"The introduction of digital media such as the iTunes has raised more concerns because, unlike the case with analog media, digital media files can be copied infinitely without a corresponding loss in quality. As a result, copyright holders have turned to Digital Rights Management (DRM) technologies as a method for protecting their copyrights. DRM gives copyright holders the right to control the making of copies by incorporating technology with use restrictions."<sup>19</sup> (Roth, 2007)

#### **1.2.** DRM in the United States and in European Union

The United States implemented the Digital Millennium Copyright Act (DMCA) in

<sup>&</sup>lt;sup>16</sup> iTunes, accessed April 29, 2012, http://en.wikipedia.org/wiki/ITunes

<sup>&</sup>lt;sup>17</sup> Id.

<sup>&</sup>lt;sup>18</sup> Willow, see note 8

<sup>&</sup>lt;sup>19</sup> Digital Rights Management, see note 2

1998 to comply with two World Intellectual Property Organization (WIPO) treaties.<sup>20</sup> The treaties call for "adequate legal protections and effective legal remedies against the circumvention of effective technological measures."

According to the report of the Berkman Center for Internet and Society of Harvard University, anti-circumvention provisions of the DMCA<sup>21</sup> forbid three specific offenses. First, the DMCA prohibits circumventing DRM that prevents someone from gaining access to a copyrighted work ("access controls"). Second, it prohibits trafficking in devices that can circumvent access controls, and, third, trafficking in circumvention devices for DRM that protects the copyright holder's exclusive rights, like copying and distribution ("copy controls"). In both trafficking instances, the device qualifies if it is primarily designed for, has limited commercially significant purposes aside from, or is marketed for circumvention.<sup>22</sup> None of the typical defenses to infringement apply to DMCA offenses.<sup>23</sup> In an attempt to balance this law with typical copyright exceptions. Congress decided not to prohibit circumvention of copy controls; after all, if the circumvention is not for a legitimate purpose, the individual will be liable for copyright infringement anyway. On the other hand, Congress reasoned that if access to the work is unauthorized, then subsequent legitimate uses should not be an excuse for circumvention.<sup>24</sup>

In Europe, the WIPO Copyright Treaty is implemented by Decision 2000/278/EC of March 16, 2000, approved by the Council of European Union on behalf of the

<sup>&</sup>lt;sup>20</sup> WIPO Copyright Treaty, Dec. 20, 1996, Art. 11, and WIPO Performances and Phonograms Treaty, Dec. 20, 1996, art. 18

<sup>&</sup>lt;sup>21</sup> 17 USC 1201 (1998)

<sup>&</sup>lt;sup>22</sup> Berkman Center for Internet and Society, "iTunes, How Copyright, Contract and Technology Shape Business of Digital Media, p. 36

<sup>&</sup>lt;sup>23</sup> Universal v. Reimerdes, 111 F. Supp. 2d 294, 321-324 (SDNY 2000)

<sup>&</sup>lt;sup>24</sup> Rui, see note 7

European Community. The European Union Directive, which covers the subject of DRM is Directive 2001/29/EC, prohibiting devices for circumventing "technical protection measures" such as the digital rights management.<sup>25</sup> Under the terms of the EUCD,<sup>26</sup> the Member States were required to bring into force all laws, regulations or administrative provisions necessary to comply with the Directive before December 22, 2002.

Article 6(1) and (2) of the EUCD, in very similar terms as the DMCA, mandate that Member States should provide protection against the act of circumvention of technological measures as well as against the trafficking in circumvention devices and services. The Directive also lists discrete, significantly limited exceptions that countries must accommodate as well as optional ones for personal copying. Anti-circumvention protection regarding computer programs and access to services is provided specifically in the Software Directive and the Conditional Access Directive, respectively. Notably, the exceptions in the EUCD do not include reverse engineering, though such an exception exists in the Software Directive. (Berkman Study)

#### **1.3.** FairPlay – Apple's DRM technology

In compliance with Section 1201 of the DMCA, Apple, Inc., as well as other companies engaged in selling music online to provide, develop and utilize sufficient technological know-how to protect the intellectual properties of copyrighted works.

First introduced in April of 2003, Apple's DRM, *FairPlay* encrypts legally purchased music files from the iTunes Music Store to prevent infringement and unlawful sharing of music files.<sup>27</sup> Music sold through iTunes is distinguishable from music sold on

<sup>&</sup>lt;sup>25</sup> Directive 2001/29/EC of the European Parliament and of Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society

<sup>&</sup>lt;sup>26</sup> Directive 2001/29/EC, see note 24

<sup>&</sup>lt;sup>27</sup> FairPlay, accessed May 10, 2012, http://en.wikipedia.org/wiki/FairPlay

other online store i.e. Amazon Music since music on iTunes are AAC (Advanced Audio Coding) files instead of the common MP3 formats or WMA formats<sup>28</sup>, and encrypted with *FairPlay* DRM. The MP3, WMA and AAC formats reduces the file size of the audio, allowing for easy downloading, as well as transferring and playing music files on portable music players. While iTunes files can play on an unlimited number of Apple portable music devices, such as iPods, *FairPlay* DRM restricts the operation of the iTunes digital music files with other portable devices.<sup>29</sup>

*FairPlay* works by encrypting every song purchased from iTunes store through a series of complex coding process. First, a user has to create an iTunes account with Apple's server, creation of which signals both the registration of the user with iTunes, and an authorization to use the user's computer (Personal Computer PC or MacBook) to create a user ID for that computer device. Once authorization is complete, a user can connect the music device iPod to the authorized computer, begin purchasing and downloading music on iTunes music store, and thereafter, transferring the music files to the iPod. An iPod can only play music purchased from the iTunes from the authorized computer after series of decryption using user keys. Accordingly, the user cannot transfer music to an iPod from a computer that is not authorized on the user's iTunes account. (The *FairPlay* encryption system authorizes up to five different computers using a single iTunes account.) Consequently, if a user has a music in his iTunes library that lacks a user key – either the music file was downloaded from another unauthorized or deauthorized computer – such music file will not be transferred and copied to the iPod

<sup>&</sup>lt;sup>28</sup> iTunes, *see* note 26; MP3, WMA and AAC formats are compressive audio files designed to significantly reduce the amount of data necessary to reproduce high-quality versions of the original recording. Marc Saltxman, Acronym Soup: A Quick Guide to MP3, WMA and AAC, SYNC, June 29, 2007, http://syncblog.com/sync/2007/06/acronym-soup--a-html

<sup>&</sup>lt;sup>29</sup> iTunes Support.com, "How Does FairPlay Work," accessed May 2, 2012 http://itunessupport.com/node/177

because of the absence of the user key to decrypt the file. Moreover, a user cannot dock his iPod to an unauthorized computer and transfer music while at the same time retaining music already existing on the iPod. Finally, the iPod will not play music protected with DRM other than *FairPlay* (i.e. Windows Media DRM) since the music file of Windows lacks the necessary *FairPlay* user key.<sup>30</sup>

Apple's DRM music store model results in a case of inoperability between music purchased on iTunes and other portable digital music players, and music purchased on other digital music stores i.e. Microsoft Music Store with Apple portable music devices, such as iPod, iPhone and iPad.<sup>31</sup>

http://www.businessweek.com/debateroom/archives/2007/02/apples internat.html

 <sup>&</sup>lt;sup>30</sup> Howard Wenn, "JHymm Goes Behind Atoms and Apple to Bring DRM-Free Music," OSDIR, Jan. 27, 2005, accessed May 16, 2012, http://osdir.com/Article3823.phtml; also see Willow, note 8
 <sup>31</sup> Arik Hessaldahi, "Apple's International iTunes Controversy," Bloomberg Business Week, Technology Section, February 26, 2007, accessed May 12, 2012,

### CHAPTER 2: Legal Analysis – Alleging Antitrust and Anticompetition

#### 2.1. Introduction

The prospect of a fair and balanced economic competition remains to be the primary role of the existence of antitrust law. Competition and antitrust law is "law the maintains or promotes market competition by regulating anti-competitive practices of companies."<sup>32</sup> Whilst International competition is generally protected through a variety of international agreements and treaties, guided by the World Trade Organization (WTO). In the United States, the Congress enacted the Sherman Act aimed at preserving "economic liberty aimed at preserving unfettered competition as the rule of trade."<sup>33</sup> Enacted in 1980, this Act was passed with the purpose of maintaining equal opportunities for parties to compete in the market; it does so by regulating potentially abusive economic practices and penalizing parties that engage in unfair and anti-competitive business practices. As indicated by the author of the act, Sen. John Sherman, "the purpose of the Act was to protect the consumers by preventing arrangements, designed or which intend, to advance the cost of goods to the consumer."<sup>34</sup>

Perhaps the most notable antitrust case of the recent times is the anti-trust case against Microsoft. In the Microsoft case, the government concluded that the company violated antitrust rules by abusing its monopoly of the operating software system, and consequently, maintaining its market power, eliminating equitable competition, and monopolizing the market for internet browser software.

<sup>&</sup>lt;sup>32</sup> Competition Law, http://en.wikipedia.org/wiki/Competition\_law#cite\_note-Taylor\_2006\_1-0

 <sup>&</sup>lt;sup>33</sup> 15 U.S.C. § 1 (2004) ("Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.")
 <sup>34</sup> Antitrust, What's the Big Deal?

http://ethics.csc.ncsu.edu/commerce/anticompetitive/dominance/microsoft/study.php

Interestingly, the case of Microsoft deals with the similar issue of tying and bundling, which is the very heart of this discussion paper. In Microsoft, the central issue concerns as whether the merging and bundling of Internet Explorer web browser with the Windows operating system hugely contributed to Microsoft's leadership stand in the internet browser market, and whether this bundling restricted competition for other web browsers such as Netscape and/or Firefox. The issue of manipulation of application interfaces also arose – whether Microsoft purposely altered Window's application programming interfaces to exclusively favor Internet Explorer over the other competing browsers. Microsoft argued that the merging of its Windows and Internet Explorer was a consequence of the company's innovation, that in actuality the products are inextricably linked together, and that consumers are ultimately favored; consumers receive the benefits of Internet Explorer without cost. Ultimately, the case was settled in 2004, which required Microsoft to share its application programming interfaces with third-party companies, under strict monitoring of compliance.<sup>35</sup>

The case of Microsoft is of importance in the discussion of the Apple case as both technology firms wrestle with antitrust violation allegations, specifically, the alleged tying and bundling arrangement as anti-competition. The following discussion provides an overview of the current litigation against Apple.

<sup>&</sup>lt;sup>35</sup> ^ <u>"United States of America, Plaintiff, v. Microsoft Corporation, Defendant", Final Judgement</u>, Civil Action No. 98-1232, November 12, 2002. (Archive at <u>http://www.webcitation.org/query?</u> id=1298667420478033)

#### 2.2. Antitrust Class Action Suit

Two significantly similar U.S. cases, *Tucker v. Apple Computers, Inc.* and *Somers v. Apple Computers, Inc.* challenged Apple's DRM *FairPlay* business scheme and claimed that Apple's practice is an unlawful antitrust tying.<sup>36</sup> In *Tucker v. Apple Computers, Inc.,* plaintiff Melanie Tucker filed an antitrust class action suit against Apple alleging that the company engaged in: "(1) unlawful tying or bundling of Online Video and *FairPlay* music files to iPod; (2) unlawful acquisition or maintenance of monopoly power in the digital music player market; and, (3) attempted monopolization of the online music and video markets."<sup>37</sup> Consequently, through disallowing operability of the device and iTunes, it deters the consumer from purchasing music from other online music store. (Jozefcyk, 2009) In December of 2008, the lawsuit was granted class action certification, *In re iPod Antitrust Litigation.* 

In particular, the class action claims that Apple's practice is virtually an unlawful tying arrangement, and therefore, violates federal and state laws. The suit identifies that regular software updates on the iPod prevents the music device from playing music, which are not purchased on iTunes. Further, it alleges that because of this scheme, Apple is given the leverage to price its iPods higher than they otherwise would have been. Apple defended its practice by claiming that the regular software updates are actual improvements to the products, ultimately benefiting consumers, and does not influence the pricing of the product. The case remains pending with the court.<sup>38</sup>

In essence, the crux of the class action suit anchors on the determination of

<sup>&</sup>lt;sup>36</sup> *Tucker v. Apple Computers, Inc.*, http://docs.justia.com/cases/federal/district-courts/california/candce/5:2007cv06507/198939/1

<sup>&</sup>lt;sup>37</sup> *Tucker*, see note 42

<sup>&</sup>lt;sup>38</sup> In re iPod Antitrust Litigation, https://ipodlawsuit.com/FrequentlyAskedQuestions.aspx

whether Apple's scheme is tantamount to a tying arrangement, whether the tying arrangement is lawful, and whether this arrangement bears anti-competitive effects that kills the competition in the marketplace. The first order is to identify the elements of a tying arrangement.

#### 2.3. Tying Arrangement

Tying is simply defined as the practice of "making the sale of one good (the tying good) or service to the de facto customer (or de jure customer) conditional on the purchase of a second distinctive good (the tied good) or service.<sup>39</sup> Additionally, Investopedia describes tying as "an often illegal arrangement, where in order to buy one product, the consumer must purchase another product that exists in a separate market... The distinction between tying illegal and legal is an important one for business to understand."<sup>40</sup> Some examples of tying include cars and tires, copy machines and paper, cameras and films, videogame players and videogame tapes, refrigerators and Freon, mobile phones and mobile phone carriers, and as in the case of Microsoft, operating system and web browser, among others. The final assessment that separates lawful and unlawful tying is harm caused to the consumer, if any, and as indicated by author Roth in his study published in the Fordham Intellectual Property, Media and Entertainment Law, "after a tying arrangement is established, it is necessary to explore whether the tie violates the Sherman Act or any other antitrust laws."

The Courts have reiterated, in the cases of Northern Pacific Railway<sup>41</sup> and

<sup>&</sup>lt;sup>39</sup> Tying (commerce), http://en.wikipedia.org/wiki/Tying\_(commerce)#cite\_note-horizvert-0

<sup>&</sup>lt;sup>40</sup> http://www.investopedia.com/terms/t/tying.asp#axzz1xz5lQNTr

<sup>&</sup>lt;sup>41</sup>N. Pac. Ry. Co. v. United States

International Salt Co.<sup>42</sup> that a tying arrangement requires a showing that:

- (1) two separate products or services are involved;
- (2) sale or agreement to sell one is conditioned on the purchase of the other;
- (3) the seller has sufficient economic power in the market for the tying product to enable it to restrain trade in the market for the tied product; and,
- (4) a not insubstantial amount of interstate commerce in the tied product is affected.

As in Northern Pacific Railway case, the first requirement for a tying arrangement to take place is the existence of two separate products, the tied product and the tying product. Although this test seems obvious, the Courts have laid down a robust test to examine if certain products are separate products, which have been tied by the seller together. Here, the Supreme Court created the "character of the demand" test. This test focuses on the character of demand by consumers for the two products and not on their functionality. Perhaps, the basic question is whether the consumer typically purchases the products separately or together.

#### 2.4. Is iPod/iTunes an Unlawful Tying Arrangement?

The question of iPod/iTunes is core in this research paper. Utilizing the standards of tying arrangement, as set forth in Northern Pacific Railway, the question of tying arrangement in Apple begs the question:

1.) Does the alleged tying of iPod and iTunes include two separate products?

<sup>&</sup>lt;sup>42</sup> Int'l Salt Co. v. United States, 332 U.S. 392, 396 (1947)

- 2.) Is the sale and purchase of iPod conditioned on the sale and purchase of iTunes, and vice versa?
- 3.) Does Apple have the dominant economic power in the portable music device market, sufficient enough to restrain trade in the downloadable music market?
- 4.) Is there substantial amount of interstate commerce in the portable music device affected?

#### a. Does the alleged tying of iPod and iTunes include two separate products?

In the intellectual property infringement case of *Microsoft*, the question of whether the tying arrangement between the products Internet Explorer browser and Windows operating system, of whether both products are considered separate was explored. The tying claim in Microsoft products is not initially obvious; the consumer tie would be evident once the user on a Windows operating system attempts to browse the Internet on another browser. The crux of the Microsoft case, relevant to the Apple's iTunes/iPod tying case is that "courts have found tying arrangement claims even when they arise subsequent to the purchase of a service or product by a consumer.<sup>43</sup> " The tie between Apple's iTunes and iPod may not be initially obvious because a subscription to iTunes does not require an iPod purchase.<sup>44</sup> (Roth, 2007)

Apple sells its iPod and iTunes products separately. The iPod is a line of portable music devices, which consists of the **iPod classic, iPod Touch, iPod nano** and **iPod shuffle.** All four iPod products have varying price points: iPod classis is sold at \$249;

<sup>&</sup>lt;sup>43</sup> See, e.g., Jefferson Parish; Microsoft

<sup>&</sup>lt;sup>44</sup> iTunes, see note 16

iPod Touch at \$299; iPod nano at \$149; and, iPod shuffle at \$49.<sup>45</sup> The storage capacities of these products range from 2GB to 16GB. Since its introduction into the market, the iPod products have gone through multiple design and feature changes. Other players competing in the same portable music device market include the Samsung Galaxy Player, SanDisk Sansa Clip Zip, Microsoft Zune, Sony Walkman, among others.<sup>46</sup> These portable players compete amongst each other based on its design aesthetics, memory capacity (the number of music files it is capable of storing), battery life, compatibility (with other music file formats), accessibility and pricing. The price points for these devices vary from \$150 to as high as \$500.

Whereas, the iTunes is a virtual music store; also used to purchase, download, and organize digital music into a library (playlist).<sup>47</sup> Individual songs (music files) can be purchased on the iTunes Store (and subsequently stored in users' portable device), with prices of \$0.69, \$0.99, or \$1.29.<sup>48</sup> It must be noted that pricing of the music files is based on the record labels determination. In 2009, Apple indicated that it would leave it up to the record labels to determine the pricing of individual songs.<sup>49</sup> However, most new songs would are priced at \$1.29.

Additionally, Apple markets and sells iPod and iTunes separately based on price and product development. iPods are sold on price points based on the four different kinds

<sup>&</sup>lt;sup>45</sup> www.apple.com/ipod

<sup>&</sup>lt;sup>46</sup> www.pcmag.com/reviews/mp3-players

<sup>&</sup>lt;sup>47</sup> Apple Introduces iTunes, http://www.apple.com/pr/library/2001/jan/09itunes.html, accessed September 1, 2012

<sup>&</sup>lt;sup>48</sup> www.apple.com/iTunes

<sup>&</sup>lt;sup>49</sup> Brandon Griggs, Subdued Reactions to Apple's Final Macworld Key Note,

http://edition.cnn.com/2009/TECH/01/06/macworld.keynote/index.html?iref=newssearch, accessed September 1, 2012

if iPods (classic, touch, nano, shuffle) at a price range between \$49 to \$299; whereas, iTunes price ranges, from \$0.69 to \$1.29 is mostly determined by the record labels, and thus, Apple has limited control on determining the iTunes price points. Regardless, both iPod and iTunes dominate the portable music device and downloadable music market. (This will be extensively discussed below, Sufficient Economic Power.) In Eastman Kodak Co., the Supreme Court noted that for two products to be considered distinct, there must be sufficient consumer demand so that it is efficient for a firm to provide each separately.<sup>50</sup> Because the iPod is marketed to a different market, and iTunes is sold for a different purpose, they are distinct and separate products. Apple does not vehemently and explicitly requires its iPod users to purchase the iTunes. If a user wishes to acquire a portable device, he can freely do so and purchase and iPod. However, if the iPod is only capable of playing AAC-secured format, the users freedom to choose other music software is restricted. Accordingly, iTunes becomes the tying product (restricting consumer choice on other devices), while iPod become the tied product. Absent the ACC-format requirement, there will exist no consumer restriction.

> b. Is the sale and purchase of iPod conditioned on the sale and purchase of iTunes, and vice versa?

As discussed above, iPod devices and iTunes are sold separately, with independent marketing based on their target market and price points. In Apple's iTunes Terms and Conditions,<sup>51</sup> there is no explicit requirement that the sale of the iTunes is

<sup>&</sup>lt;sup>50</sup> Eastman Kodak Co. v. Image Technical Serv., Inc., 504 U.S. 451, 642 (1992).(citing Jefferson Parish, 466 U.S. at 21–22)

<sup>&</sup>lt;sup>51</sup> http://static.fsf.org/nosvn/mirrored/apple.com/legal/itunes/us/terms.html

conditioned on the purchase of the iPod. Regardless, if music files purchased on iTunes is only and exclusively playable with an iPod device, then conditional sale is implicit. Although some argue that music downloaded from iTunes store can be played with a user's computer (and thus, not necessarily and exclusively only with an iPod device), it must be noted that the computer must have the iTunes media player software in order to play AAC-format music file, a media player that is also only and exclusively provided by Apple. Essentially, in order to play the music purchased on iTunes, the user will be required to purchase an iPod. And as for the iPod, the user must only play ACC-formatted files, thus restricting other non-AAC files i.e. Microsoft MPs to be played on the iPod device.

Accordingly, the sale and purchase of an iPod is implicitly conditioned on the sale and purchase of the iTunes, and vice versa.

# *c.* Does Apple have the dominant economic power in the portable music device market sufficient enough to restrain trade in the downloadable market?

Apple's iPod has been the leader in the portable music device in the last five years. With a 74% share in the portable audio market, Apple has sold approximately 250 million iPods and continues to increase its sales growth annually, while its iTunes has sold over 500 million songs, further establishing Apple's strong hold in the digital audio industry.<sup>52</sup> When Apple initially introduced the iPod to the market in 2001, Apple's share value was at \$7, and just a decade later, Apple's share is at \$630<sup>53</sup> - an astounding and unprecedented 8,750% increase over the several years, and its share price only continues

<sup>&</sup>lt;sup>52</sup> Johnny Davis, "10 Years of iPod," The Guardian,

http://www.guardian.co.uk/technology/2011/mar/18/death-ipod-apple-music

<sup>&</sup>lt;sup>53</sup> www.apple.com/investors

to increase as Apple injects innovative products in the market, products like iPad, iPhone and AirMac. But undoubtedly, the introduction of the iPod to the market revolutionized Apple's penchant for combining technology and mass appeal.

In the last five years, Apple virtually dominated and crushed the competition, with Apple having 74% of the market, followed by 26% held collectively by its competitors (SanDisk at 7.2%, Microsoft at 1.1% and others at 18%). Clearly, Apple has the economic superiority in the digital audio industry, but does Apple's dominance curtail trade in this market? In Eastman Kodak, the Supreme Court noted that market dominance unfairly restricts trade if the party has the "market power" *visa-a-vie* "the ability to raise price and restrict output." <sup>54</sup> This market power is contingent on the seller's ability to command the market through its dominance. (Roth, 2007)

Similarly, Apple's enormous market share and continuous dominance restricts trade since this dominance allows Apple to unobtrusively restrict consumer's choice due to lack of substitutes in the market. When Apple adjusted its iTunes price from \$.99 to \$1.29 per song, the consumer tolerated the price increase due to lack of substitutes.

# d. Is there substantial amount of interstate commerce in the portable music device affected?

As Apple has sold over 200 million iPod devices, it is evident that the commerce involved in these transactions is not insubstantial. Over the course of ten years, Apple has only exorbitantly multiplied its sales figures resulting from the commerce of its iPod device to both its domestic and international markets. The Court held that "the relevant

<sup>&</sup>lt;sup>54</sup> *Id.* (quoting Fortner Enter. v. U.S. Steel, 394 U.S. 495, 503 (1969)).

figure is the total volume of sales tied by the sales policy under challenge ....<sup>3755</sup> Apple's net sales for its iPod device were \$743 million in 2011, which was a 10% decrease from its 2010 sales. <sup>56</sup> As mentioned above, all four iPod products have varying price points: iPod classis is sold at \$249; iPod Touch at \$299; iPod nano at \$149; and, iPod shuffle at \$49.<sup>57</sup> Should Apple increase the price point of any or all of the iPod device to the slightest minimum amount i.e. \$1.00, it will result to multi-million dollar revenue. Additionally, because Apple iPod is sold via e-commerce, consumers from different geographical locations can easily purchase the product, and thus easily involves crossborder commerce.

Accordingly, a substantial interstate commerce is affected by the sale of the iPod and iTunes.

#### 2.5. Final Antitrust Analysis

As discussed above, the case of Apple's iTunes and iPod is an unlawful tying arrangement. Applying the standards set forth in the Supreme Court's case of Northern Pacific Railway, it is evident that:

- 1.) The iPod and iTunes tying include two separate products;
- The sale and purchase of the iPod is conditioned on the sale and purchase of iTunes, and vice versa;
- 3.) Apple possesses the dominant economic power in the portable music device market, sufficient to restrain trade in the downloadable music

<sup>55</sup> Eastman Kodak, 504 U.S. at 269

<sup>&</sup>lt;sup>56</sup> Apple Annual Report 2011, www.apple.com/investor

<sup>&</sup>lt;sup>57</sup> www.apple.com/ipod

market.

4.) There is substantial amount of interstate commerce in the portable music device that is affected.

Hence, this study finds that continuing Apple's practice of incompatibility and inoperability violates antitrust claims. Should Apple discontinue its unlawful tying arrangement (thus, allowing other device to play AAC encoded music, and allowing iPod to play other file formats) then consumers would have access to substitutes and would not be placed in a position of restricted choice and consumer coercion.

#### **CHAPTER 3:**

Economic Analysis –Achieving Efficiency and Effective Competition

#### 3.1. Introduction

Efficiency is an outcome where it is impossible to enhance the well being of one individual (or increase production of one good) without reducing the well being of another individual (or decreasing the production of another good) (HESS 1993). Further, economic efficiency is as a state of affairs in which resources are used in a manner that maximizes their utility<sup>58</sup> and no entity can derive additional benefits without depriving another entity of something.<sup>59</sup> Absolute economic efficiency, however, is only theoretical. A system cannot actually be completely efficient in the real world because motivations beyond simple "efficiency" are always present. Though no perfect competition exists in reality, an economically efficient system achieves "effective competition" – a market structure with a sufficiently large number of firms producing a siffucuently similar products so that results of perfect competition are approached (HESS 1993).

As noted in Chapter 3, Apple's practices of tying violaes antitrust laws since it espouses anticompetitive practices. More specifically, this anti-competitive practice serves as a barrier of entry of competiing products. Because of Apple's large market share of the portable music device and online music store, competitors such as SanDisck, Microsoft, etc. is virtually barred from entering the competition. However, another issue that is worthy of nothing is Apple's capacity to price discriminate. Consumers of Apple's tie-in products generally pay a higher overall costs since they are the high-volume users, in comparison to low-volume users of competitors.

In this section, this paper investigates, the implication on Apple's profit should

<sup>58</sup> See http://www.businessdictionary.com/definition/economic-efficiency.html

<sup>&</sup>lt;sup>59</sup> For more detailed definitions of economic efficiency, see David D. Friedman, Price Theory: An Intermediate Text, South-Western Publishing Co. (1990); http://en.wikipedia.org/wiki/Economic\_efficiency [hereinfter "Wikipedia - Economic Efficiency"];

http://economics.about.com/od/productivity/f/economic\_eff.html

Apple adopt the alternative to the tying model visa-a-vie untie its iPod and iTunes, where it will be observed that Apple will generate more profit in untying the products. Additionally, untying will promote a more effective competition, and where more firms are competing, prices will be lowered or brought closer to the marginal cost.

In Whinton's tying game model, assume Apple (Firm 1) and a competitor (Firm 2) are active, wherein Apple has the monopoly of the portable digital music player market and supplies a complementary good (iTunes) in the online digital music market. Apple faces competition from a competitor (Firm 2) that produces competing good. Denote *A* a basic good (digital music player); *B* a supplementary good (music);  $B_1$  complementary good supplied by Apple in online digital music market; and,  $B_2$  good produced by Firm 2 – a competitor to Apple. Based on Whinston's model, a one-to-one relationship between goods *A* and *B* is assumed, with both products as complements. (Good *B* has no value if the good is not purchased with good *A*.) In this regard, music from an online music store has no value if not used with a portable digital player; if Apple ties the iPod and iTunes, only music from iTunes has value.

Based on Whinston's model, we will analyze the following two models.

**Tying model:** first, assume the following tying game, Apple commits to tie iTunes (music file purchased on iTunes) and iPod by utilizing its *FairPlay* DRM technology

**Un-tying (alternative model):** Apple offers the goods in the market separately, which is achieved by lack of *FairPlay* DRM, resulting in compatibility of good  $B_1$  with good  $B_2$ . Second, Apple and competitor set their prices.

The consumers are uniformly distributed on the interval [0,1]; consumers demand,

at most, one unit of the system. Accordingly, in the un-tying model, the utility function from purchasing a system A/Bi is: Accordingly, the utility function from purchasing a system A/Bi is:

$$U_{A,Bi} = \boldsymbol{\theta} - t |X - X_i| - P_A - P_B$$

where  $\theta$  represents the maximum valuation for a system, t the disutility from purchasing good or heterogeneity in preferences for online music stores, X the location of the consumer and  $X_i$  the location of good  $B_i$ . (if consumer buys good B from Apple then X = $X_i = 0$ ; if consumer buys good B from the competitor then  $X = X_2 = 1$ ) Thus, if both companies charge the same price for good B, some consumers prefer to buy in the iTunes Music Store whereas others prefer to use competing stores. Finally, demand for good  $B_i$  is positively related with prices for good  $B_j \circ j \neq i$ .

For purposes of simplicity, fixed costs are assumed to be zero for Apple and competitor. Apple does not have to incur large investments, while competitors should invest in either their online music stores i.e. negotiation with record labels, etc. Hence, the firm 2 is always active if it can sell its products. Furthermore, marginal costs for good *A*, *B*<sub>1</sub> and *B*<sub>2</sub> are:  $C_A \ge 0$  and  $C_{B1} = C_{B2} = C_B \ge 0$ . Finally, all consumers buy a system.

#### **3.2. Implications on Profit:**

Based on Whinston's tying game model, as discussed above, the economic issue comes in whether Apple's tying arrangement is efficient by analyzing the implications of tying on profitability and welfare.

As Kramer observes, under tying model competitors cannot be active since consumers do not derive utility from a product that is incompatible with good *A*. If Apple technology i.e. *FairPlay* prevented the consumer from playing music purchased in other online stores on an iPod, only the iTunes Music Store is able to deliver value. Therefore, consumers will not buy good B2 and the demand for the product of Apple by consumer located at X is

$$U_{A,Bi} = \boldsymbol{\theta} - t | X - \boldsymbol{\theta} | - P_A - P_B$$

If all consumers buy an iPod/iTunes Music system, Apple will charge a monopoly price of  $P_m^* = P_A + P_{BI} = \emptyset - t$  while monopoly profits equal  $*_m = \theta - t - C_A - C_B$  (see Appendix A).

In un-tying model, Apple unties its product; music downloaded from other virtual stores has value because it will be compatible with iPod. With this, utility is obtained from good  $B_2$  due to compatibility with good A; and, Apple then faces competitive constraints from good  $B_2$ . Consequently, Apple cannot price  $B_1$  a high price (high price that is charged under tying). Nevertheless, entrance of competitors actually benefits Apple.

Consider a situation where Apple prices good *B* and *A* at:  $P_{BI} = C_B - \varepsilon$  and  $P_A = P_m$ =  $P_{BI}$ . [ $\varepsilon$  is positive, which renders B<sub>1</sub> priced below marginal cost.] Sale of *A* recuperates potential losses. In contrast to a tying game model, not all consumers will purchase the system  $A/B_I$ . Some will choose  $A/B_2$ . Based on Whinston's assumption of

full market coverage, competitors will set prices at  $P_{B2} = \frac{t+2C_B - \varepsilon}{2}$  and will generate

profit at 
$$*_2 = \frac{(t-\varepsilon)^2}{8t} - F_2$$
. Apple sets prices at  $P_{AI} = \theta - t - C_B + \varepsilon$  and  $P_{BI} = C_B - \varepsilon$ .

Apple generates profits by selling system  $A/B_1$ ; customers of Firm 2 will also purchase

product *A* purchasing (as an implication of complementarity) from where Apple also generates profits. Accordingly, profits based on "un-tying" (independent pricing) is

greater than the profits from monopoly because  $\varepsilon \frac{t-\varepsilon}{4t}$  is greater than zero  $(t > \varepsilon)$ .

Hence, although competitors exist, Apple will not tie iTunes with iPod. Apple sells its goods independently because increasing the sales in market *B* also increases the demand for complementary good *A*. Accordingly, selling iTunes and iPods separately, independent of each other, is more profitable. Additonally, untying iTunes encourrages entry of competitors in the market, resulting in in an increased competition. If more firms are competing, competition will bring prices lower or closer to marginal costs. (Mankiw, 2002) Consequently, economic efficiency is achieved in the alternative model scenario.

	Tying (iTunes model)	Un-tying (alternative model)
Apple	$*_{m} = \theta - t - C_{A} - C_{B}$	$*_1 = *_m + \varepsilon \frac{t-\varepsilon}{4t}$
Competitors	0	$*_{2} = \frac{\left(t-\varepsilon\right)^{2}}{8t} - F_{2}$

**Table 1.** Profits for Apple and Competitors based on Whinston's Basic Model (excerpt, Kramer 2004)

Additionally, if market is not fully served, competition in the market for good B results in more benefits because consumers for good  $B_2$  (who wishes not to purchase system A/B1 tying) have a higher value placed on system  $A/B_2$ , which will result in exceeded prices, guaranteeing that they buy the system. Consequently, demand for good A is higher and profits generated by Apple rises. In this case, Apple will un-tie and sells its iTunes and iPod separately.

#### **3.3. Final Efficiency Analysis**

As discussed above, it is efficient for Apple to "untie" because untying fosters "effective competition." As Hess (1994) defines, "effective competition" is market structure with a sufficiently large number of firms producing a siffucuently similar products so that results of perfect competition are approached (HESS 1993). As observed above, untying creates effective competition since it creates incentive for competitors to enter the market. If more firms are competing, competition will bring prices lower or closer to marginal costs. Moreover, it must be noted a large share of Apple's revenue originates from sales of the actual portable device - iPod. Thus, it is detrimental for Apple to stifle competition in the online music market by tying. If Apple unties and creates interoperability with its products with competitors' products, this increases demand for music, consequently increasing the demand for the more profitable sale of iPod.

#### CONCLUSION

In sum, an application of legal theories to Apple's tying scheme shows a likelihood of antitrust violation stemming from anti-competition arguments. Additionally, an application of economic models supports this finding by illustrating that Apple's tying scheme falls short of efficient competition, whereas an untying scheme espouses effective competition and improves consumer choices, and Apple's and competitors' profits. Untying creates incentive for competitors to enter the market, and if more firms are competing, competition will bring prices lower or closer to marginal costs. Consumers gain the benefits of having an integrated product without the restriction on their choice of portable music players.

However, many economists cautioned that tying may not necessarily be the culprit. Lately, some economists have called attention to the important fact that a great deal of actual tying takes place in industries in which there appears to be considerable competition. Technologically dynamic markets seem regularly to give rise to controversies around tying, as evidenced by numerous litigations against technology firms. Dynamism of this market will be hindered by policies that condemn all such tying combinations, failing to distinguish the few instances that may be harmful from the great majority that are not.

There is something to be said when Steve Jobs indicated that allowing the sale of music without antipiracy software would be the "best alternative for consumers."<sup>60</sup> In the final analysis, consumer welfare, *inter alia*, should weigh the heaviest. It is, anyway, the

<sup>&</sup>lt;sup>60</sup> Steven Jobs, *Thoughts on Music*, http://www.apple.com/hotnews/thoughtsonmusic (accessed May 25, 2012)

consumers who plant, cultivate, and most importantly, consume the ripe fruits of the Apple Inc. tree.

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