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Attorneys for Individual and Representative Plaintiff

10 UNITED STATES DISTRICT COURT  
11 NORTHERN DISTRICT OF CALIFORNIA SAN JOSE DIVISION  
12

13 SOMTAI TROY CHAROENSAK and  
14 MARIANA ROSEN, Individually, And On  
15 Behalf Of All Others Similarly Situated,

16 Plaintiffs,

17 vs.

18 APPLE COMPUTER, INC.

19 Defendant.

Case No. C05-00037 JW

**CLASS ACTION**

**DECLARATION OF JOHN PISARKIEWICZ,  
PH.D., IN SUPPORT OF PLAINTIFFS'  
MOTION FOR CLASS CERTIFICATION**

Date: January 22, 2007

The Honorable James Ware

20 I, John Pisarkiewicz, declare as follows:

21 **I. INTRODUCTION**

22 1. I am an economist and Principal Consultant at Nathan Associates, an  
23 economic consulting firm in Arlington, VA. I have an undergraduate degree in mathematics from  
24 St. Louis University and a Ph.D. degree in economics from Vanderbilt University. I taught  
25 economics and statistics full-time for several years at Western Kentucky University. I was  
26 awarded an Economic Policy Fellowship by the Brookings Institution; I took that Fellowship at  
27 the Federal Trade Commission in the Bureau of Economics. I later served as Deputy Assistant  
28 Director for Economic Evidence and as Acting Director of the Office of Policy Planning and

1 Evaluation at the Commission. Since leaving the Commission, I have worked as an economic  
2 consultant in the areas of antitrust, intellectual property, securities, class actions and damages. I  
3 have also continued to teach from time-to-time including courses at the Center for Administrative  
4 Justice and at The George Washington University. I have testified as an expert in a variety of  
5 matters including class certification of consumer classes in California in the El Paso Natural Gas  
6 Pipeline matter and in the Quantum DLT Tape matter. I have submitted a Declaration on class  
7 certification on behalf of consumers in California in the De Beers diamond matter as well. My  
8 resume is attached as Exhibit 1.

9           2. Counsel for the plaintiffs have asked me to opine on two issues: (1)  
10 whether members of a direct purchaser class of U.S. consumers of Apple's iTunes and iPods have  
11 suffered impact on a class-wide basis as a result of Apple's alleged violations of the antitrust  
12 laws; (2) whether methodologies exist to estimate damages on an aggregate, class-wide basis.  
13 According to the Complaint, the class period extends from April 28, 2003 through the present.

14           3. In order to form my opinions, I have reviewed the Second Amended Class  
15 Action Complaint filed in this matter along with other filings such as Apple's Answer and  
16 Affirmative Defenses to the Complaint and Apple's Responses to Plaintiffs' First Set of  
17 Interrogatories and to Plaintiffs' First Set of Request For the Production of Documents. No other  
18 discovery is available from Apple at this stage in the litigation. I have read the deposition  
19 transcript of Somtai Troy Charoensak, a named plaintiff. In addition, I have reviewed or  
20 analyzed a substantial amount of publicly available information and data including Apple's Form  
21 10-K filings for FY 2004, FY 2005 and FY 2006, information available from journals and from  
22 *Consumer Reports*, the *Wall Street Journal* the *New York Times* and the *Financial Times*, and  
23 information and data downloaded from relevant websites including the websites of various  
24 content suppliers and various manufacturers of iPod-like portable digital players often referred to  
25 as MP3 players. In addition, I have reviewed an affidavit from Creative Labs as well as other  
26 information supplied by Creative Labs and by Archos. Both Creative Labs and Archos  
27 manufacture and sell MP3 players. Finally, I have reviewed information from the U.S.

28

1 Department of Justice on Apple and the closing of the digital music investigation. A listing of the  
2 documents I have reviewed is set forth in Exhibit 2.

3 4. For this Declaration, I assume that the allegations in the Complaint are  
4 true, and I do not address the merits of any of the antitrust liability issues related to tying,  
5 monopolization or attempts to monopolize presented in the Complaint. However, I do expect to  
6 address these issues at some future date.

7 5. Based on my analysis to date, and in summary form, I conclude the  
8 following:

- 9 a. Impact or fact of damage is common to class members.
- 10 b. Methodologies do exist to estimate damages on an aggregate, class-  
11 wide basis.

12 6. Below, I set forth an overview of Apple and the online digital music or  
13 media industry and the portable digital recorder/player industry. I then summarize the Complaint  
14 and address the issues of common impact and damage computation.

15 **II. OVERVIEW**

16 *Apple Computer, Inc.*

17 7. Apple Computer, Inc., has recently renamed itself as Apple, Inc.;  
18 worldwide sales of iPods now exceed its sales of desktops and laptop computers combined.<sup>1</sup> In  
19 its last fiscal year, FY 2006 (Apple's fiscal year ends on the last Saturday in September), Apple  
20 posted total worldwide sales of \$19.3 billion of which desktop and laptop computers accounted  
21 for a combined total of \$7.4 billion. iPods, on the other hand, accounted for \$7.7 billion, and  
22 iTunes, another \$1.9 billion. The two together, online music and other digital content plus  
23 portable digital players which can download and play that content, accounted for \$9.6 billion in  
24 sales, approximately 50 percent of total company sales.<sup>2</sup> In the first quarter of FY2007 (October-  
25 December, 2006), Apple reports that its sales of iPods were 50 percent greater in terms of units

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27 <sup>1</sup> In January, 2007, the company was renamed as Apple, Inc. to reflect its increasing focus on  
28 consumer electronics. From "Apple Answers the call with iPhone, TV Box", downloaded from  
CNN.com, January 20, 2007.

<sup>2</sup> All financial statistics taken from Apple Computer, Inc., Form 10-K FY 2006, p. 54.

1 than in the comparable period the year before. Sales of iPods, by themselves, now account for  
2 nearly 50 percent of total company dollar sales.

3 8. Industry commentators acknowledge that today, Apple's iPods command  
4 about 75-85 percent of the MP3 player market. For example, Paul Taylor, reporting for the  
5 *Financial Times*, writes that Apple's "share of the hard drive player market...(is)...82.7  
6 percent".<sup>3</sup> *Consumer Reports* states that "Apple's iPod players still account for more than  
7 (emphasis added) three out of four MP3 players sold".<sup>4</sup> Furthermore, data from NPD Group  
8 show that Apple's market share, in units, for portable digital players, was in the 60-70 percent  
9 range in 2004, and in the 75-80 percent range in 2005 and in 2006. Since iPods are, in general,  
10 more expensive than other MP3 players, Apple's share in dollar sales is even higher. NPD data  
11 show that Apple's dollar share was in the 75-80 percent range in 2004, about 85 percent in 2005,  
12 and in the 85-90 percent range in 2006.<sup>5</sup>

13 9. It is fair to conclude that Apple's iPods dominate the market for portable  
14 digital media players. But Apple has not always enjoyed this position of market dominance.  
15 Apple launched the first iPod in late October, 2001. And for FY 2002, sales of iPods were only  
16 \$143 million and sales of related services and accessories were only \$4 million. Together these  
17 two categories accounted for only 2.6 percent of Apple's sales which were less than \$6 billion  
18 that year.<sup>6</sup> Market share data from CLI show that in January, 2002, three months after Apple's  
19 entry into the MP3 market with iPod, SonicBlue was the market leader with about 40 percent unit  
20 share and a 30 percent dollar share. Apple's unit share was only about 5 percent at this time, but  
21 its dollar share was about 12 percent, reflecting its higher prices.

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26 <sup>3</sup> Paul Taylor, "Apple Remains Unfazed By March of Microsoft's Zune", the *Financial Times*,  
27 December 28, 2006, p.10.

28 <sup>4</sup> "Buying Advice: MP3 players", ConsumerReports.org, downloaded January 17, 2007.

<sup>5</sup> NPD Group, Inc., monthly data, Portable Digital Players, Retail sales, May 2004-May 2006.

<sup>6</sup> Apple Computer Inc., Form 10-K, FY 2004. See Figure 3 in Exhibit 3 attached.

1           10. Exhibit 3, attached, contains several tables and graphs which set forth the  
2 data described above. Table 1 contains sales data for Apple for the period FY 2002-FY 2006.  
3 Table 1 shows the rapid growth in iPod sales and in iTunes sales and the increasing percentage of  
4 Apple's total sales accounted for by these two product categories. Table 2 shows Apple's gross  
5 margin and operating income data for the same five year period. These profit data show that  
6 Apple has become a much more profitable company in recent years which is no doubt due, in  
7 part, to Apple's dominant position in the portable digital media player market.

8           11. **REDACTED**

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**REDACTED**

1 *iTunes*

2 13. What accounts for Apple's spectacular performance in selling iPods?  
3 *Consumer Reports* state that "Apple's success rests in part on its creation of a self-contained  
4 digital entertainment system. iTunes, its content-management software, works seamlessly—only  
5 with iPods...."<sup>7</sup>

6 14. Apple's iTunes, a software application, was introduced in January 2001,  
7 some 10 months before the first iPod. At introduction, iTunes played audio CDs and MP3s,  
8 could create MP3s from audio CDs, could burn collections of MP3s onto audio CDs, and it could  
9 retrieve and store music on consumer digital audio devices and play streaming audio from the  
10 Internet.<sup>8</sup>

11 15. Almost 28 months after the introduction of iTunes, Apple added the iTunes  
12 Music Store (iTMS) to iTunes. The exact date was April 28, 2003, the beginning of the class  
13 period. iTMS began after Apple had signed agreements with all five major record labels to  
14 provide legal digital downloads and sell songs individually and directly to consumers.<sup>9</sup> The  
15 iTMS library or catalog was large since the five record companies accounted for a substantial  
16 share of recorded music sold in the U.S. including most popular music. Apple's iTMS catalog  
17 has grown over time. In August, 2004, Apple announced that iTMS had over 1,000,000 songs  
18 available for downloading in the U.S.<sup>10</sup> That same announcement also stated that Apple has  
19 "more than (a) 70 percent market share of legal downloads for singles and albums".<sup>11</sup>

23 <sup>7</sup> "Buying Advice: MP3 Players", *Consumer Reports.org* downloaded January 17, 2007.

24 <sup>8</sup> John Siracusa, "MacWorld Expo San Francisco, 2001", downloaded from arstechnica.com,  
25 January 21, 2007.

26 <sup>9</sup> The five were EMI, Universal, Warner Bros., Sony Music Entertainment and BMG. Sony and  
27 BMG later formed a joint venture called SonyBMG. Wikipedia, iTunes Store. Data from  
28 Business Wire show that these companies are the source companies for 86 percent of all digital  
tracks downloaded in 2005 and 2006.

<sup>10</sup> "iTunes Music Store Catalog Top One Million Songs", Apple Press Release, August 10, 2004.  
Downloaded from [www.apple.com/pr/library/2004/aug/10itms.html](http://www.apple.com/pr/library/2004/aug/10itms.html) on January 20, 2007.

<sup>11</sup> Ibid.

1           16. Apple's music catalog and its share of legal downloads have continued to  
2 grow. Presently, iTMS has "more than 3.5 million \$0.99 songs, 65, 000 free podcasts, 20,000  
3 audio books, 200 TV shows, and now, movies and iPod games".<sup>12</sup> Steve Jobs recently reported  
4 that Apple has sold more than 2 billion songs on iTunes.<sup>13</sup> Apple's market share of legally  
5 downloaded music and other digital media content was 82 percent in May 2005,<sup>14</sup> and was  
6 reported to be 87 percent in April, 2006.<sup>15</sup>

7           17.

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15           19. This overview shows that Apple has a dominant position in both the digital  
16 media player market and in the legal digital download content market. It also shows that Apple's  
17 dominance in the digital media player market did not begin until after Apple opened its iTunes  
18 Music Store, and that since then, both have grown very rapidly.

19           20. Plaintiffs have alleged that it is the exclusive link between iTMS and iPods  
20 that accounts for Apple's dominance in the iPod or MP3 player market. These data are consistent  
21 with and support that allegation.

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25 <sup>12</sup> From [www.apple.com/iTunes/store/](http://www.apple.com/iTunes/store/) downloaded January 21, 2007.

26 <sup>13</sup> "Apple Answers the Call with iPhone, TV Box", CNN.com reporting on MacWorld, 2007.  
Downloaded January 20, 2007.

27 <sup>14</sup> Graham Skee, "Microsoft Wants To Take a Bite Out of iTunes Market Share", Cnet, June 13,  
2005.

28 <sup>15</sup> "Apple Discusses Growing iPod Market Share", by Jonny Evans, Macworld.co.uk reported at  
itworld.com April 20, 2006, downloaded January 21, 2007.

1 **III. ANTITRUST ALLEGATIONS**

2  
3 21. Plaintiffs allege that an illegal tie exists between iTunes and iPods. iTunes is  
4 the tying good and iPods are the tied good. The allegation is that since Apple has substantial  
5 market power in the online digital media download market, whether legally acquired or not, it has  
6 been able to extend that power, through its iPod products, to the market for portable online digital  
7 media players. Apple has done this by rigging "the otherwise interactive and open AAC Codec  
8 format...such that digital music files purchased from Apple's iTunes online music store...(can)  
9 not be played back on any portable...digital music player other than Apple's iPod".<sup>16</sup>

10 22. In Count II, plaintiffs allege the unlawful acquisition or maintenance of  
11 monopoly power in the market for the legal sales of online digital music files. Here again the  
12 allegation is that Apple has rigged the AAC codec format in the songs sold by iTunes and also  
13 rigged the firmware in iPods so that competition among sources for online music files is  
14 suppressed.

15 23. Counts III and IV of the Complaint allege that Apple has attempted to  
16 monopolize the market for portable online digital media players (Count III) and attempted to  
17 monopolize the market for the online sale of digital music/media files (Count IV).

18 24. In each of these counts, there are economic issues, such as the definition of  
19 the relevant market or markets, the existence of market power, and whether there are barriers or  
20 impediments to entry by potential competitors. I expect that I will be asked to address these  
21 issues at some later date. This will include addressing such issues as what constitutes reasonable  
22 substitutability between products and services from the consumers' standpoint, whether separate  
23 demand exists for two products, does Apple have power to increase or hold prices above the  
24 competitive level for a time or to impede entry by others or a there other barriers, apart from  
25 Apple's actions, which serve to impede entry. This list is not meant to be exhaustive of all the  
26 economic issues this case might present. But at this time, I simply note that these are issues that  
27 would be common to all class members. Each class member, if not joined together in a class,

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<sup>16</sup> Second Amended Class Action Complaint, paragraph 66.



1 would have to address these issues to prove the antitrust gravamen of the complaint before  
2 addressing antitrust impact and damages.

3 **IV. IMPACT IS COMMON TO CLASS MEMBERS**

4  
5 25. The class is defined as all consumers in the U.S. who, during the class  
6 period, purchased online music/media files from iTunes and an iPod—directly from Apple.<sup>17</sup> If  
7 the allegations in the complaint prove to be true, then all members of this class would have  
8 suffered some adverse impact, either in form of higher prices for music downloads or higher  
9 prices for iPods or both. Hence, impact would be common to class members.

10 26. The antitrust allegations in the complaint, tying, monopolization, and  
11 attempted monopolization, if true would give Apple the power to raise prices above the  
12 competitive level and earn profits that are higher than they otherwise would be in competitive  
13 markets. Presumably, Apple has exercised this power, and this is a reasonable presumption at  
14 this point in time. Apple has increased its profitability substantially since it gained market  
15 dominance. And it has sought to protect its position by aggressively thwarting competitors whom  
16 it views as intruding on its turf.<sup>18</sup>

17 27. The iPod products, while very good, are not without alleged shortcomings.  
18 For example, Apple's Form 10-K acknowledges that Apple has been sued by consumers about  
19 several aspects relating to iPod performance. iPods do not have some features which other  
20 competitors do such as FM radio and WiFi capability. Yet iPods seem somewhat insulated from  
21 this competition, because others have not been able to make much headway against iPod. This  
22 lack of success by others is probably due to iPod's exclusive link to iTunes; this is the gravamen  
23 of the tying allegation.

24  
25 28. Whether the evidence shows that Apple has been able to increase prices of  
26 iPods above the competitive level or to increase the price of digital online music files or to

27  
28 <sup>17</sup> Second Amended Complaint, paragraph 57.

<sup>18</sup> Second Amended Complaint, paragraphs 47-51.

1 increase both to some extent, the adverse impact to consumers in the class will be common since  
2 members of the class bought both and directly from Apple.

3 **V. FORMULAIC METHODS EXIST TO COMPUTE DAMAGES ON AN**  
4 **AGGREGATE, CLASS-WIDE BASIS.**

5 29. To estimate damages in this matter, one must estimate the degree to which  
6 Apple has been able to raise prices above the competitive level for iPods due to the exclusive link  
7 to iTunes. In addition, one must also determine whether Apple has been able to raise prices for  
8 music and other media content downloaded by consumers from iTunes, and raise the price of  
9 iPods above the competitive level. Alternatively, these higher prices may be reflected in higher  
10 profits that Apple has been able to earn on sales of these products to class members.

11 30. The usual methodologies employed for addressing these issues are the  
12 “before and after” method and the “yardstick” or “benchmark” method.<sup>19</sup> There is no “after”  
13 period in this case, but there is a “before” period for iPods which is the period of initial  
14 introduction of iPods, October 2001, to the beginning of the class period, April 2003. Data from  
15 this period from Apple on the prices, costs, profits and market shares of iPods could prove useful  
16 in comparison to the same types of data after the introduction of iTunes for establishing the degree  
17 of overcharge. For example, with a regression analysis of Apple’s prices for iPods, which are  
18 uniform for all sales to direct customers, together with a binary variable to indicate whether the  
19 sale was before or after the introduction of iTunes, and with other variables to specify the technical  
20 differences in the various iPods, it would be possible to determine the impact of iTunes on Apple’s  
21 iPod price.<sup>20</sup>

22 31. With respect to a “benchmark” analysis, Apple sells iPods and iTunes in  
23 several foreign markets, and Apple’s market shares in these markets may be different from its  
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25 <sup>19</sup> “*Proving Antitrust Damages*”; Section of Antitrust Law, American Bar Association., 1996,  
26 p.37.

27 <sup>20</sup>Regression analysis is an econometric technique often used in the estimation of damages  
28 especially for determining the degree of overcharge. ABA, Section of Antitrust Law, *Proving  
Antitrust Damages*, 1996, Chapter 5. pp. 145ff. and Daniel L. Rubinfeld, “Reference Guide on  
Multiple Regression,” *Reference Manual on Scientific Evidence*, 2<sup>nd</sup> Ed., Federal Judicial  
Center, West Group, 2000, pp. 179 ff.

1 shares in the U.S. market. These differences together with prices, profits, and assessments of  
2 competition in foreign markets is likely to yield good evidence on the amount of damages  
3 attributable to Apple's alleged antitrust violations in the U.S. For example, I understand that  
4 Apple sells iPods in China, but that iTunes is not available in China<sup>21</sup>; there may be other countries  
5 where this is true. With sufficient data on the market characteristics of each market, and with a  
6 cross-sectional analysis,<sup>22</sup> perhaps in the form of a regression, it might be possible to assess the  
7 impact of iTunes in iPod prices in the U.S.

8           32. Another type of benchmark analysis would focus on the product offerings  
9 of Apple compared to those MP3 players offered by competitors in the U.S., both over time and  
10 at the same point in time. In this particular case, in the regression model I envision, price of an  
11 individual iPod or MP3 player would be the dependent variable. Here again, Apple charges  
12 uniform prices for direct sales.<sup>23</sup> Sales by other manufacturers could be at list prices or average  
13 prices. The price for each product available in the U.S. starting in October 2001, or perhaps even  
14 earlier if data are available, would be a function of the product's specifications and capabilities.<sup>24</sup>  
15 These would be the independent variables. These represent cost parameters as well as consumer  
16 taste parameters. There may be 20 or more such factors that may be relevant. Price would also  
17 be a function of U.S. population for selected age cohorts such as consumers 10-29 years old. I  
18 suspect that Apple has data on who buys iPods and who downloads content from iTunes, including  
19 demographic information and data on tastes and preferences. But the key variable in this analysis  
20 would be whether or not the MP3 player has a direct link to iTunes. The answer to this question  
21 for each MP3 player is either yes or no; this type of variable, which can take on only one of two  
22 values, 0 or 1, for "no" and "yes" respectively, is termed an attribute variable or a dummy  
23

24 <sup>21</sup> "Despite the Rumors, iPhone is not for China" by David Wolf; *Seeking Alpha*, downloaded at  
25 china.seekingalpha.com/article/24487 January, 2007.

26 <sup>22</sup> A cross-sectional analysis examines two or more markets at the same point in time or at the  
27 same point in market development.

28 <sup>23</sup> Apple does offer student/educator discounts, but these too are uniform and based on uniform  
base prices.

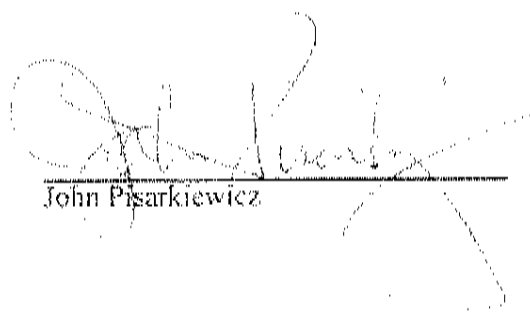
<sup>24</sup> Tables 5 and 6 in Exhibit 3 show some of the specifications and capabilities for currently  
available iPods and MP3 players (Table 5) and for currently available digital music download  
stores (Table 6).

1 variable or a binary variable. The regression analysis will provide a coefficient for this variable,  
 2 and if certain statistical tests are met, the value of this coefficient would indicate how much of the  
 3 price of an iPod is derived from or depends on the direct link to iTunes.

4 33. I would expect to employ all of these techniques in assessing damages.  
 5 Multiple techniques will yield multiple results, but the techniques are sound, and if they are  
 6 applied properly and the data are sound, then the results should be reasonably consistent with  
 7 each other.

8 34. Consequently, formulaic methods do exist to estimate damages on an  
 9 aggregate, class-wide basis.

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 14 I declare under penalty of perjury under the laws of the state of California that the  
 15 foregoing is true and correct to the best of my knowledge and based on the information I have  
 16 reviewed. Executed this 22<sup>nd</sup> day of January, 2007, in Arlington,  
 17 Virginia.

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John Pisarkiewicz

# EXHIBIT 1

# JOHN PISARKIEWICZ



## CURRENT POSITION

Principal Consultant, Nathan Associates Inc. (since 2003)

## EDUCATION

Ph.D., Economics, Vanderbilt University, 1973

A.B., Mathematics (*cum laude*), St. Louis University, 1966

## SPECIALIZED EXPERIENCE, RESEARCH, OR INTEREST

Applied microeconomics, industrial organization, statistics and econometrics, class certification, valuations and damage analysis. In addition to a number of antitrust matters, Dr. Pisarkiewicz has also testified in Lanham Act matters, intellectual property matters, securities matters, dumping cases and data compensation matters. Damages are an aspect of almost all matters.

## PAST POSITIONS

1996-2004	Adjunct Associate Professor, The George Washington University
2001-2002	Senior Vice President, Nathan Associates Inc.
1996-2001	Senior Vice President, Heiden Associates
1989-1996	Vice President, Nathan Associates Inc.
1985-1989	Principal Associate, Nathan Associates Inc.
1983-1985	President, Pisarkiewicz Economic Consulting Services, Inc.
1978-1983	Senior Consultant, National Economic Research Associates, Inc.
1978	Vice President, Glassman-Oliver Economic Consultants, Inc.
1977	Acting Director, Office of Policy Planning and Evaluation, Federal Trade Commission
1976-1978	Deputy Assistant Director for Economic Evidence, Federal Trade Commission
1975-1976	Instructor, Center for Administrative Justice
1974-1976	Staff Economist, Division of Economic Evidence, Federal Trade Commission
1970-1974	University Teacher, Department of Economics, Western Kentucky University

JOHN PISARKIEWICZ

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**EXPERIENCE SUMMARY**

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Dr. Pisarkiewicz has more than 25 years of experience serving as an expert economist before federal and state courts, administrative tribunals, and arbitration panels. He started at Nathan Associates in 1985, and rejoined the firm in 2001 after a five-year hiatus as senior vice president at Heiden Associates. Dr. Pisarkiewicz began his career at Western Kentucky University teaching applied microeconomics, industrial organization, statistics, and econometrics. He left full-time teaching to serve at the Federal Trade Commission, initially as a Brookings Economic Policy Fellow. He later served as Acting Director of the Office of Policy Planning and Evaluation at the FTC with oversight responsibility for all three operating bureaus—competition, consumer protection, and economics. He has been a member of the adjunct faculty of George Washington University in the Department of Health Policy. He has worked in Egypt on intellectual property matters pertaining to software and pharmaceuticals.

**RECENT EXPERT WITNESS TESTIMONY (DEPOSITION AND/OR TRIAL):**

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***U.S. District Courts***

*Anthony Park, et al v. The Thomson Corp., and Thomson Legal and Regulatory, Inc.*, Southern District of New York, Case No. 05 CIV.2931

*Orasure Technologies, Inc., v. Schering-Plough Healthcare Products, Inc.*, Eastern District of Pennsylvania, Civil No. 2:04-CV-03507-NS

*Allison Haas, et al v. Delta Air Lines Inc.*, Southern District of New York, Case No. 03 CV- 0589

*B&H Medical L.L.C. v. ABP Administration, Inc., and Wright & Filippis, Inc.*, Eastern District of Michigan, Southern Division, Case No. 02-73615

*Sundar V. Nilavar, M.D. v. Mercy Health System-Western Ohio, et al.*, Southern District of Ohio, Western Division, Case No. C-3-99-612.

*Santana Products, Inc. v. Bobrick Washroom Equipment, Inc. et al* Middle District of Pennsylvania, Civil Action No. 3:CV96-1794

***State Courts***

*Franz Inc. et al v. Quantum Corp., Hitachi Maxell, LTD., Maxell Corp. of America, Fuji Photo Film Co., LTD., Fuji Photo Film U.S.A.*, Superior Court of the State of California, County of San Francisco, No. CGC-03-423301.

*Barbara D. Wesley, M.D., M.P.H., v. Howard University and Howard University Hospital et al.*, Superior Court of the District of Columbia, Civil Action No. 000142 99.

*Natural Gas Anti-Trust Cases I, II, III, IV*, Coordination Proceeding Special Title (Rule 1550 (b)), Superior Court of the State of California, County of San Diego (unlimited jurisdiction), J.C.C.P. Nos. 4221, 4224, 4226 & 4228.

JOHN PISARKIEWICZ

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*Inhalation Plastics Inc., v. Johnson & Bell, LTD.*, In the Circuit Court of Cook County Illinois, County Department, Law Division, Case No. 97L02609-C.

### ***Arbitrations***

*Skywalker Communications, Inc., v. Hughes Network Systems, Inc.*, American Arbitration Association, Washington, D.C., No 16 181 00747 02

### **PUBLICATIONS**

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"Intellectual Property Rights and International Trade: The Case of Egypt and Pharmaceuticals," paper presented at International Economics and Finance Society meetings held in conjunction with the Southern Economic Association, 72<sup>nd</sup> Annual Conference, New Orleans, November 2002.

"Airline Woes—What To Do," American Bar Association, Section of Antitrust Law, Economics Committee Newsletter, Fall 2002.

"Notes—on the FTC Healthcare Workshop," Nathan Associates Inc., *Proceedings*, October 2002.

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Co-author with Lloyd E. Oliver, "A.C. Nielsen Market Share Data," *Antitrust Law Journal*, Vol. 47, Issue 3, August 1978.

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### **AWARDS AND HONORS**

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Brookings Institution, Economic Policy Fellowship, 1974-75



JOHN PISARKIEWICZ

4

Ford Foundation Dissertation Grant, 1969-70

Vanderbilt University, Teaching Assistantship, 1968-69

Vanderbilt University, N.D.E.A. Fellowship, 1966-68

**PROFESSIONAL MEMBERSHIPS**

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American Bar Association (Associate member)

American Economic Association

American Statistical Association

National Association of Business Economists

National Economists Club

Washington Automotive Press Association

Licensing Executive Society

7/7/05

# EXHIBIT 2

## Exhibit 2: Documents Relied Upon and Reviewed by Nathan Associates

Number	Subject	Author	Date
<u>Filings</u>			
1	"Second Amended Class Action Complaint" <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW. U.S. District Court, Northern District of California, San Jose Division</i>	-	8/8/2006
2	"Judge's Order Granting in Part, Denying in Part Defendant's Motion to Dismiss" <i>Thomas William Slattery v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	9/9/2005
3	"Defendant's Responses to Plaintiffs' First Set of Requests" <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	12/22/2006
4	"Defendant's Responses to Plaintiffs' First Set of Interrogatories" <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	12/22/2006
5	"Answer and Affirmative Defenses" <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	11/2/2005
6	"Declaration of Marc L. Godino In Support of Plaintiff's Request" <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	6/6/2005
7	"Defendant's Responses to Plaintiffs' First Set of Interrogatories" Objections and Answers <i>Somjai Troy Charoensak and Mariana Rosen v. Apple Computer, Inc. Case No. C05-00037 JW U.S. District Court, Northern District of California, San Jose Division.</i>	-	12/22/2006
<u>News Articles</u>			
8	"Record Labels Still on Top Despite Online Revolution" <i>The Independent</i>	Orlowski, Andrew and Charles Arthur	9/21/2004
9	"Fourth-Quarter PC Shipments up 17 Percent, IDC Reports" <i>Reuters</i>	-	Jan-06
10	"Apple Computer" <i>Value Line</i>	-	10/13/2006
11	"Squeezing Money from the Music" <i>The New York Times</i>	Leeds, Jeff	12/11/2006
12	"Apple Remains Unfazed by March of Microsoft's Zune" <i>Financial Times</i>	Taylor, Paul	12/28/2006
13	"Digital Music Offsets Drop in CD Buying" <i>The Los Angeles Times</i>	Samuels, Alana	1/5/2007
14	"Home Video Spending Records Another Decline" <i>USA Today</i>	Snider, Mike	1/8/2007
15	"Apple Introduces iPhone" <i>Reuters</i>	-	1/9/2007
16	"Apple Unveils Long-Awaited Phone, TV Box" <i>Breitbart</i>	-	1/9/2007
17	"Want an iPhone? Beware the iHandcuffs" <i>The New York Times</i>	Stross, Randall	1/14/2007
<u>Internet Articles</u>			
18	"MacWorld Expo San Francisco 2001" <i>arstechnica.com</i>	Siracusa, John	2001
19	"Apple Responds to RealNetworks FairPlay Hack" <i>ARSTechnica.com</i>	Bangerman, Eric	7/9/2004
20	"Apple Whistles a Happy iTunes" <i>ZDNet</i>	Fried, Ina	10/13/2004
21	"The Department of Justice's Investigation into Online Music" Cooper, White, and Cooper	Wadia, Cyrus	1/1/2005
22	"Microsoft Planning Music Subscription Service" <i>CNET</i>	Borland, John	6/9/2005
23	"Microsoft Wants to Take a Bite Out of iTunes' Market Share" <i>CNET</i>	Skee, Graham	6/13/2005
24	"Your \$200 iPod Nano Costs About \$90 to Make" <i>Engadget</i>	Block, Ryan	9/23/2005
25	"A Brief History of the iPod" <i>Low End Mac</i>	Hornby, Tom	10/14/2005
26	"iTunes Outsells Traditional Music Stores" <i>CNET</i>	Borland, John	11/21/2005
27	"PiperJaffray: '75 percent chance' of an Apple iPhone" <i>AppleInsider.com</i>	Marsal, Katie	3/16/2006
28	"Apple Discusses Growing iPod Market Share" <i>ITworld.com</i>	Evans, Jonny	4/20/2006
29	"Analyst: Macs Should Offset Lower iPod Sales" <i>Macobserver.com</i>	Gamet, Jeff	6/21/2006
30	"MP3 Players" <i>shopping.msn.com</i>	-	Oct-06
31	"MP3 Players" <i>ConsumerSearch.com</i>	-	Nov-06
32	"Warner Music Group Corp. Reports Full-Year and Fourth-Quarter Results for the Period Ended September 30, 2006" <i>www.wmg.com</i>	-	12/1/2006
33	"Apple to Introduce MVNO Wireless Service in '07" <i>blogs.barrons.com</i>	Savitz, Eric	12/13/2006

## Exhibit 2: Documents Relied Upon and Reviewed by Nathan Associates

Number	Subject	Author	Date
34	"Piper Jaffray: Apple CEO Not at Risk" <i>MacNN.com</i>	-	12/27/2006
35	"UBS: Apple Options Fears Seem Overblown" <i>MacNN.com</i>	-	12/27/2006
36	"UBS: Apple Options Fears Overdone" <i>SeekingAlpha.com</i>	Ray, Tiernan	12/28/2006
37	"Apple Answers the Call with iPhone, TV box" <i>CNN.com</i>	-	2007
38	"2006 U.S. Music Purchases Exceed 1 Billion Sales" <i>Businesswire.com</i>	-	1/4/2007
39	"TMO Reports - Analyst: iPhone a Revolutionary Device" <i>Macobserver.com</i>	Cook, Brad	1/10/2007
40	"EMI Ousts Top Music Executives, Forecasts Lower Sales" <i>Bloomberg.com</i>	Phoenix, Aisha	1/12/2007
41	"Apple F1Q07 (Qtr End 13/30/06) Earnings Call Transcript" <i>SeekingAlpha.com</i>	-	1/17/2007
42	"Apple Reports Record 1Q Profit" <i>BREITBART.com</i>	-	1/17/2007
43	"Piper Jaffray: Apple to Report Slight Upside" <i>MacNN.com</i>	-	1/17/2007
44	"Apple Earnings Skyrocket" <i>CNNmoney.com</i>	Kelley, Rob	1/18/2007
45	"Gartner, IDC: Mac Marketshare in the U.S. on the Rise" <i>Macslumnews.com</i>	Sellers, Dennis	1/18/2007
46	"Despite the Rumors, iPhone Is Not for China" <i>China.SeekAlpha.com</i>	Wolf, David	1/18/2007
47	"Consumer Reports: iPod Complaints" <i>tampabays10.com</i>	-	-
48	"iPod" <i>www.wikipedia.org</i>	-	-
49	"iTunes Store" <i>www.wikipedia.org</i>	-	-
50	"iTunes" <i>www.wikipedia.org</i>	-	-
51	"Moore's Law" <i>www.wikipectia.org</i>	-	-
52	"Moore's Law" <i>www.intel.com</i>	-	-
<u>The Wall Street Journal Articles</u>			
53	"Yahoo, RealNetworks Seek to Take a Bite Out of Apple's Music" <i>The Wall Street Journal Europe</i>	Mossberg, Walter S.	5/12/2005
54	"Mossberg's Mailbox" <i>The Wall Street Journal</i>	Mossberg, Walter S.	8/11/2005
55	"iPod's Latest Siblings" <i>The Wall Street Journal</i>	Mossberg, Walter S.	9/8/2005
56	"Music-Playing Cellphones Hit a Flat Note" <i>The Wall Street Journal</i>	Mossberg, Walter S.	9/14/2005
57	"Internet Radio Plays on iPod" <i>The Wall Street Journal Europe</i>	Mossberg, Walter S.	11/17/2005
58	"Software to Help You Download From iPods, Share iTunes on 1 PC" <i>The Wall Street Journal</i>	Mossberg, Walter S.	1/12/2006
59	"Apple's Production Model Makes it an Early Winner in the post-PC Era" <i>The Wall Street Journal Asia</i>	Mossberg, Walter S.	5/12/2006
60	"A New Approach to Denting the iPod's Lead" <i>The Wall Street Journal Europe</i>	Mossberg, Walter S.	6/14/2006
61	"The Wireless Factor: A Challenge to the iPod" <i>The Wall Street Journal</i>	Mossberg, Walter S.	6/14/2006
62	"Mossberg's Mailbox" <i>The Wall Street Journal</i>	Mossberg, Walter S.	6/15/2006
63	"Digital Music: Here's a Guide to the Basics" <i>The Wall Street Journal Europe</i>	Mossberg, Walter S. and Katherine Boehret	7/5/2006
64	"Mossberg's Mailbox: Determining the Capacity on Digital Music Players" <i>The Wall Street Journal Europe</i>	Mossberg, Walter S.	8/16/2006
65	"Rhapsody Uses Sonos For a PC-Free Entry Into a Trove of Music" <i>The Wall Street Journal</i>	Mossberg, Walter S.	9/14/2006
66	"Mossberg's Mailbox" <i>The Wall Street Journal</i>	Mossberg, Walter S.	9/15/2006
67	"Testing the Latest Movie-Downloading Services" <i>The Wall Street Journal</i>	Mossberg, Walter S. and Katherine Boehret	10/4/2006
68	"The New iPod: Ready for Battle?" <i>The Wall Street Journal</i>	Mossberg, Walter S. and Katherine Boehret	10/4/2006
69	"The Sansa Rhapsody Comes with Music Inside - Like It or Not" <i>The Wall Street Journal</i>	Mossberg, Walter S.	10/5/2006
70	"Mossberg's Mailbox" <i>The Wall Street Journal</i>	Mossberg, Walter S.	10/6/2006
71	"Mossberg's Mailbox: How to Play MP3 Tunes on a Treo 650 Phone" <i>The Wall Street Journal</i>	Mossberg, Walter S.	10/18/2006
72	"Microsoft's Zune challenges Apple's iPod, iTunes" <i>The Wall Street Journal Asia</i>	Mossberg, Walter S.	11/10/2006
73	"Mossberg's Mailbox" <i>The Wall Street Journal</i>	Mossberg, Walter S.	12/7/2006
74	"iPod Demand Lifts Apple Results" <i>The Wall Street Journal</i>	Wingfield, Nick	1/18/2007

## Exhibit 2: Documents Relied Upon and Reviewed by Nathan Associates

Number	Subject	Author	Date
<u>Consumer Reports Articles</u>			
75	"MP3 Players" <i>Consumer Reports Annual Buying Guide</i>	-	2006
76	"New iPod: Great music, So-So Video" <i>Consumer Reports</i>	-	Jan-06
77	"Apple Reveals the Latest iPods" <i>ConsumerReports.org</i>	-	Sep-06
78	"First Look: iPod Shuffle and MobiBLU Cube2" <i>ConsumerReports.org</i>	-	Nov-06
79	"First Look: Microsoft Zune" <i>ConsumerReports.org</i>	-	Nov-06
80	"Portable Digital Players" <i>Consumer Reports</i>	-	Nov-06
81	"Buying Advice - MP3 Players" <i>ConsumerReports.org</i>	-	-
82	"Important Features - MP3 Players" <i>ConsumerReports.org</i>	-	-
83	"MP3 Players: Buying Advice" <i>Consumer Reports Electronics</i>	-	-
84	"MP3 Players Do More than Just Play Music" <i>Consumer Reports: Electronics Buying Guide 2007</i>	-	2007
85	"Reference and Ratings" <i>Consumer Reports: Electronics Buying Guide 2007</i>	-	2007
<u>Internet Sites</u>			
86	Apple.com <i>www.apple.com</i>	-	-
87	Audio Lunchbox <i>www.audiolunchbox.com</i>	-	-
88	Bleep <i>www.bleep.com</i>	-	-
89	Buy.com <i>www.buy.com</i>	-	-
90	CNET <i>www.cnet.com</i>	-	-
91	eMusic <i>www.emusic.com</i>	-	-
92	Live Downloads <i>www.livedownloads.com</i>	-	-
93	Lowendipod.com <i>www.lowendipod.com</i>	-	-
94	Macrumors.com <i>www.macrumors.com</i>	-	-
95	MusicMatch <i>www.musicmatch.com</i>	-	-
96	Napster <i>www.napster.com</i>	-	-
97	Pricewatch <i>www.pricewatch.com</i>	-	-
98	ReelPlayer <i>www.reelplayer.com</i>	-	-
99	Sony Connect <i>www.connect.com</i>	-	-
100	URGE <i>www.urge.com</i>	-	-
101	Walmart <i>www.walmart.com</i>	-	-
102	Yahoo! Music <i>music.yahoo.com</i>	-	-
<u>IDC Publications</u>			
103	"MP3 Summit Wrap-Up"	Hause, Kevin	Jul-99
104	"The Future of the Music Industry: MP3, DVD-Audio, and More"	Hause, Kevin	2000
105	"MP3 Summit 2001 Wrap-Up"	Kevorkian, Susan	2001
106	"Worldwide and U.S. Compressed Audio Player Forecast and Analysis, 2002-2007: MP3 Everywhere"	Kevorkian, Susan	May-03
107	"U.S. Paid Music Service Provider 2004-2008 Forecast and Analysis: Sounding Better and Better"	Kevorkian, Susan and Martin, Josh S.	Jun-04
108	"Worldwide Compressed Audio Player 2004-2008 Forecast: MP3 Reaches Far and Wide"	Kevorkian, Susan	Aug-04
109	"\$0.99 Downloads and a Whole Lot More: Recent Developments in the Paid Music Service Provider Market"	Kevorkian, Susan and Scaramella, Jed	Nov-04
110	"Worldwide and U.S. Portable Multimedia Player 2004-2008 Forecast and Analysis: Got Video?"	Martin, Joshua S.	Nov-04
111	"Worldwide Portable Compressed Audio Player 2004-2008 Forecast Update: You Can Take It With You"	Kevorkian, Susan	Dec-04
112	"Market Analysis. Worldwide and U.S. Paid Music Service Provider 2005-2009 Forecast and Analysis: Small Today but Here to Stay"	Kevorkian, Susan	May-05
113	"Market Analysis. Worldwide and U.S. Compressed Audio Player 2005-2009 Forecast and Analysis: MP3 All Over the Place"	Kevorkian, Susan	Sep-05
114	PC Market Growth Dips to 9.7% as Demand in Europe Slows, According to IDC	-	7/19/2006
115	"HP Gains Continue as Dell Struggles and Slow Commercial Demand Limits Growth in the United States, According to IDC"	-	1/17/2007
116	"IDC's Overview of the Streaming Media Market"	Ma, Bryan, Kevin Burden, Lucinda Borovick eds.	-

## Exhibit 2: Documents Relied Upon and Reviewed by Nathan Associates

Number	Subject	Author	Date
<u>Jupiter Research Publications</u>			
117	"Digital Rights Owners Must Utilize DRM to Diversify Revenues and Expand Markets"	Sinnreich, Aram	1999
118	"Digital Music Subscriptions: Post-Napster Product Formats" Volume 2	Sinnreich, Aram, Mark Mooradian, Vipul Patel eds.	2000
119	"European Digital Music Sales: Building a Global Product One Country at a Time" Volume 1	Sinnreich, Aram, Mark Mulligan, Andrew Peach eds.	2001
120	"Adding It Up: Subscription Services Must Clarify Revenue Distribution Prior to Launch"	Mooradian, Mark and David Card	Sep-01
121	"Subscription Music Services: Identifying and Marketing to Target Customers"	Black, Lee, Corina Matiesanu, and David Card	2002
122	"Devices and Subscriptions: Using Portability as a Differentiator" Volume 1	Sinnreich, Aram, Stacey Herron, Mark Mooradian eds.	2002
123	"Secure CDs: Enforce Copy Protection by Adding Friendly Features"	Sinnreich, Aram and David Card	3/13/2002
124	"Selling Music Subscription Services: Beyond Installed Users"	Black, Lee, Roger McCleary, David Card	2003
125	"CD Copy Protection: A Bitter Pill to Swallow"	Black, Lee, Pete Sargent, and David Card	4/9/2003
<u>Documents from Archos</u>			
126	104 Product Specifications	-	-
127	104 Promotional Material	-	-
128	404 Camcorder Promotional Material	-	-
129	404 Camcorder Specification Sheet	-	-
130	404 Promotional Material	-	-
131	404 Specification Sheet	-	-
132	504 Promotional Material	-	-
133	504 Specification Sheet	-	-
134	604 Promotional Material	-	-
135	604 Specification Sheet	-	-
136	604 WiFi Promotional Material	-	-
137	604 WiFi Specification Sheet	-	-
138	ARCDisk Promotional Material	-	-
139	AV 300 Series Brief	-	-
140	AV 320 Promotional Material	-	-
141	AV 500 Promotional Material	-	-
142	AV 500 Promotional Material	-	-
143	AV 700 Promotional Material	-	-
144	AV 700 Promotional Material	-	-
145	AV120 Promotional Material	-	-
146	AV320/AV340 Promotional Material	-	-
147	Catalogue 2006/2007	-	-
148	Gmini 402 Camcorder Promotional Material	-	-
149	Gmini 402 Promotional Material	-	-
150	Gmini 500 Promotional Material	-	-
151	GMINI Series Brief	-	-
152	Gmini XS 100 Promotional Material	-	-
153	Gmini120 Promotional Material	-	-
154	Gmini220 Promotional Material	-	-
155	Gmini402 Promotional Material	-	-
156	GminiXS 202s Promotional Material	-	-
157	PMA400 Promotional Material	-	-
<u>RIAA Documents</u>			
158	NARM: 2000 Annual Survey Results	-	2000
159	NARM: 2002 Annual Survey Report	-	2002
160	2005 Consumer Profile	-	2005
161	2005 Year-End Statistics: Manufacturers' Unit Shipments and Retail Dollar Value	-	2005

## Exhibit 2: Documents Relied Upon and Reviewed by Nathan Associates

Number	Subject	Author	Date
162	2006 RIAA Mid-Year Statistics: Manufacturers' Unit Shipments and Dollar Value	-	2006
163	"RIAA Announces First Half 2006 Music Shipment Numbers II"	-	10/12/2006
164	Statement of Commissioner Mozelle W. Thompson, File No. 041-0054	-	-
<u>Books</u>			
165	"Proving Antitrust Damages" <i>Antitrust Damages Project Committee</i>	Page, William H., Gurl Ademi, Aton Arbisser, eds.	1996
166	"Reference Manual on Scientific Evidence Second Edition"	Federal Judicial Center, West Group	2000
167	"Market Share Reporter 2006"	-	2006
168	"Market Share Reporter 2007"	-	2007
<u>Government Documents</u>			
169	"Complaint Against iTunes Music Store" <i>Norway - Consumer Ombudsman</i>	-	-
170	"Interoperability Between Antitrust and Intellectual Property" <i>Department of Justice</i>	Barnett, Thomas	9/13/2006
171	"Statement by Assistant Attorney General R. Hewitt Pate Regarding the Closing of the Digital Music Investigation" <i>Department of Justice</i>	-	12/23/2003
<u>Other Documents</u>			
172	"Napster and After: Where the Online Music Industry is Headed" <i>Knowledge@Wharton Vol. 1</i>	-	-
173	"Licensing Intellectual Property in the Presence of Non-Contractible Complements"	Hagiu, Andrei and Lerner, Josh	10/1/2006

# EXHIBIT 3



**Table 1. Apple, Inc.: Worldwide Annual Net Sales, Fiscal Year 2002-2006**

(\$ in millions)

Product	2002	2003	2004	2005	2006
(1) iPod Sales	143	345	1,306	4,540	7,676
(2) iTunes and Other Music Related Product Sales	4	36	278	699	1,885
(3) Subtotal	147	381	1,584	5,439	9,561
(4) Macintosh Desktop Sales	2,828	2,475	2,373	3,436	3,319
(5) Macintosh Portable Sales	1,706	2,016	2,550	2,839	4,056
(6) Subtotal	4,534	4,491	4,923	6,275	7,375
(7) All Other Products (Hardware, Software, and Services)	1,061	1,335	1,772	2,217	2,379
(8) Total Net Sales	5,742	6,207	8,279	13,931	19,315
(9) iPod Sales as Percent of Total Net Sales: (1) ÷ (8)	2.5	5.6	15.8	32.6	39.7
(10) iPod, iTunes, and Other Music Related Product Sales as Percent of Total Net Sales: (3) ÷ (8)	2.6	6.1	19.1	39.0	49.5

Source: Apple, Inc. 10-K filings for fiscal year 2004, 2005, and 2006. Fiscal year ends on the last Saturday of September.

**Table 2. Apple Inc.: Worldwide Annual Gross Margins and Operating Income, Fiscal Year 2002-2006**

(\$ in millions)

	2002	2003	2004	2005	2006
(1) Net Sales	5,742	6,207	8,279	13,931	19,315
(2) Cost of Sales	4,139	4,499	6,022	9,889	13,717
(3) Gross Margin	1,603	1,708	2,257	4,042	5,598
(4) Gross Margin Percentage: (3) ÷ (1)	27.9	27.5	27.3	29.0	29.0
Operating Expenses:					
(5) Research and Development	446	471	491	535	712
(6) Selling, General, and Administrative Expenses	1,109	1,212	1,430	1,864	2,433
(7) Other Operating Expenses	31	26	23	-	-
(8) Subtotal	1,586	1,709	1,944	2,399	3,145
(9) Operating Income: (3) - (8)	17	-1	313	1,643	2,453
(10) Operating Income Percentage: (9) ÷ (1)	0.3	0.0	3.8	11.8	12.7

Source: Apple Inc. 10-K filings for fiscal year 2004, 2005, and 2006. Fiscal year ends on the last Saturday of September.

Table 3. Apple Inc.: iPod Total Unit Sales and iPod U.S. Direct Unit Sales,  
by Fiscal Quarter, 2002-2007

Fiscal Year	iPods sold	U.S. Direct iPod Sales	U.S. Direct as Percent of Total
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**REDACTED**

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Source: 10-Q Filings and documents produced by Apple Inc. Bates Number APPLE CHAR 00065

**Table 4. Apple Inc.: Total iTunes Songs sold in the U.S., by Fiscal Quarter, 2002-2006**  
**(in thousands)**

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Source: Documents produced by Apple Inc. Bates Number APPLE CHAR 00059 - 00064

Table 5: Comparison of Features and Prices of Current Portable Digital Music Players

Player	Lowest Price [a] (Dollars)	Color	Screen Size (inches)	Volume (cubic inches)	Storage (Gigabytes)	Battery Life (hours)		Plays		
						Audio	Video	Video	FM Radio	Photos
iPod - 5.5G - 30 GB [b]	249		2.5	3.936	30	14	3.5	X	-	X
iPod - 5.5G - 80 GB [b]	349		2.5	5.904	80	20	6.5	X	-	X
iPod Nano-2G - 2 GB [b]	149		1.5	1.68	8	24	n/a	-	-	X
iPod Nano-2G - 4 GB [b]	199		1.5	1.68	8	24	n/a	-	-	X
iPod Nano-2G - 8 GB [b]	249		1.5	1.68	8	24	n/a	-	-	X
Archos 104 - 4 GB	159.99		1.5	3.06	4	13	n/a	-	-	X
Archos 104 - 6 GB	189.99		1.5	3.06	6	13	n/a	-	-	X
Archos 404	276.1		3.5	6.903	30	12	4	X	-	X
Archos 504	295.98		4.3	13.77	40	17	5.5	X	-	X
Archos 504	344.98		4.3	13.77	80	17	5.5	X	-	X
Archos 504	537.25		4.3	13.77	160	17	5.5	X	-	X
Archos 604	314.98		4.3	9.945	40	16	5	X	-	X
Cowon iAudio 6	189.9		1.3	2.94	4	20	n/a	-	X	-
Cowon iAudio T2	134.9		0.9	1.1	2	12	n/a	-	X	-
Cowon iAudio F2	129.9		1.3	2.842	2	22	n/a	-	X	-
Creative Zen Vision M	220		2.5	6.888	30	11	4	X	X	X
Creative Zen Vision W	305		4.3	14.31	30	13	4.5	X	X	X
Creative Zen Vision W	362		4.3	14.31	30	13	4.5	X	X	X
iRiver U10 (1 GB)	200		2.2	3.078	1	34	n/a	X	X	X
Microsoft Zune 30 GB	230		3	6.336	30	14	4	X	X	X
Philips GoGear Jukebox HDD 6330	199.99		2	7.175	30	15	n/a	-	X	-
RCA Lyra RD2215	131.37		n/a	5.6	0.5	50	n/a	-	X	-
Samsung YP-K5			1.7	5.187	2	30	n/a	-	X	X
Sony NW-E005	91		n/a	1.86	2	28	n/a	-	X	-
Toshiba Gigabeat M ES30VW	196		2.4	5.616	30	12	2.5	X	X	X
Toshiba Gigabeat S	196		2.4	5.616	30	12	2.5	X	X	X
Toshiba Gigabeat S M ES60VK	235		2.4	5.616	60	12	2.5	X	X	X
Toshiba Gigabeat V30 MEV30K	234		3.5	11.76	30	30	8	X	X	X

[a] Prices found using online shopping tools provided by pricewatch.com and cnet.com

[b] Prices taken from the Apple online store

Sources: www.pricewatch.com; www.cnet.com; Documents provided by Archos; Consumer Reports. Prices found during January 2007

Table 6: Comparison of Features and Prices of Digital Music Download Stores

Service	File-type / Codec	Bit-rate (kbps)	Price per song (dollars)	DRM [a]	Catalog size [b]
Audio Lunchbox	MP3	192	0.99	No	-
Bleep	MP3	-	1.35	No	-
Buy.com (Buymusic)	WMA	128	0.79-0.89	Yes	1,000,000
eMusic	MP3	192	n/a	No	1,000,000
iTunes	AAC	128	0.99	Yes	3,500,000
Live Downloads	MP3	128	0.99	No	-
MusicMatch	WMA	160	0.99 - 1.99	Yes	900,000
Napster	WMA	128	0.99	Yes	2,000,000
RealPlayer (Rhapsody)	WMA	128-192	0.49 - 0.99	Yes	1,000,000
Sony Connect	ATRAC3	128	0.99	Yes	-
URGE	WMA	192	0.99	Yes	2,000,000
Walmart	WMA	128	0.88	Yes	1,000,000
Yahoo! Music	WMA	128	0.99	Yes	1,000,000

[a] Digital Rights Management (DRM) is used to prevent users from making unauthorized copies of music files

[b] Number of songs available for purchase

Sources: About.com; Consumerresearch.com; Individual company websites

**Figure 1. Apple, Inc.: iPod Total Unit Sales and iPod U.S. Direct Unit Sales, by Quarter, 2002-2007**

**REDACTED**

**REDACTED**

**iPods Sold**

**Source: Table 3**

**Figure 2. Apple, Inc.: Total iPod Sales and U.S. iTunes Sales**

**REDACTED**

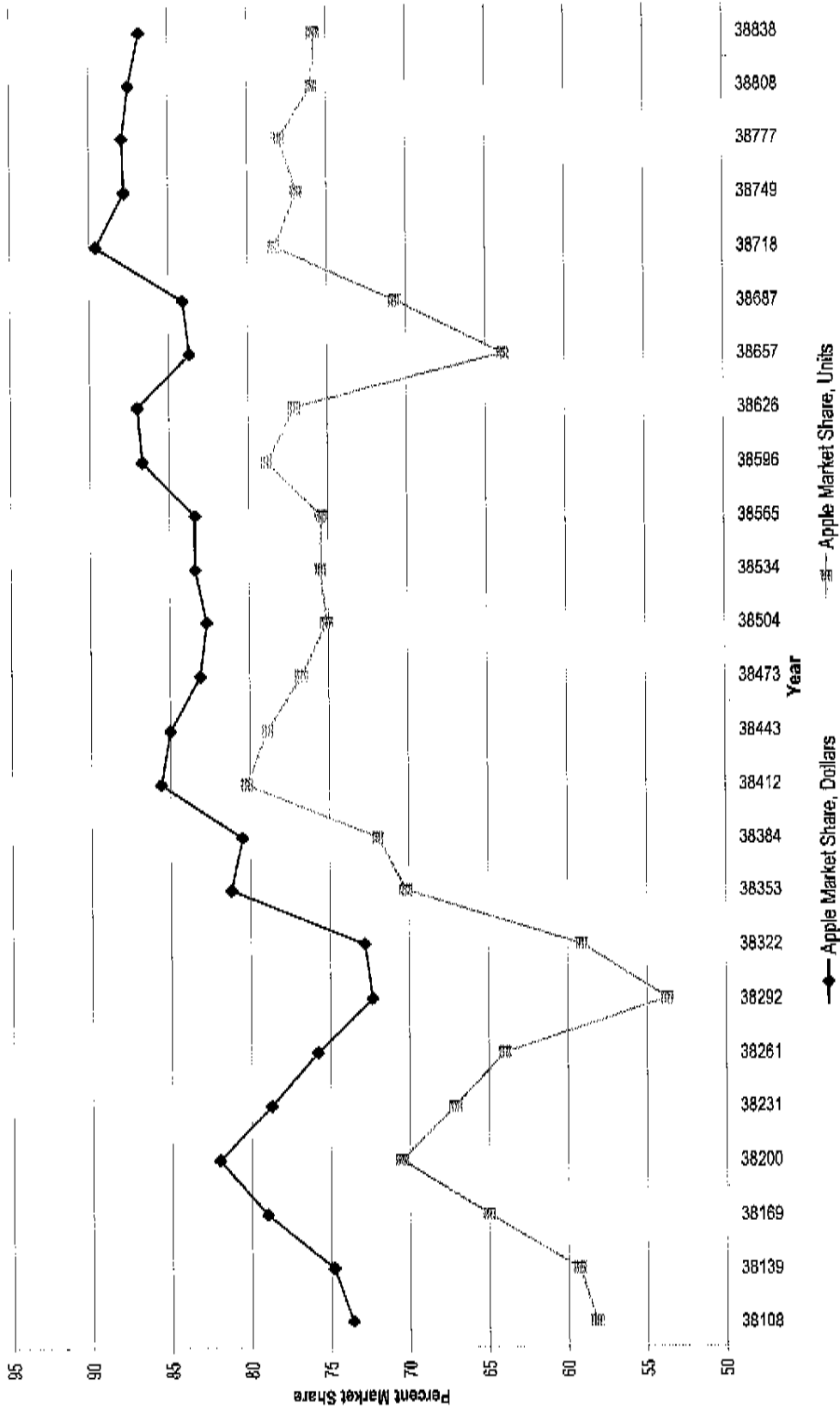
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**DATE CAL:**

**Sources: Table 3 and Table 4**



Chart 3. Apple, Inc.: Percent Market Share of iPod, by dollars and units sold



Source: The NPD Group