

EXPERT REPORT OF ROBERT E. HALL

I. Introduction

A. Background

1. I am the Robert and Carole McNeil Joint Professor of Economics at Stanford University and Senior Fellow at Stanford's Hoover Institution. I received a Ph.D. in economics from the Massachusetts Institute of Technology and a B.A. in economics from the University of California, Berkeley. I have been elected a fellow of the American Academy of Arts and Sciences and a fellow of the Econometric Society. I have published seven books and numerous journal articles in several areas of applied economics. I am the co-author of the "Reference Guide on Estimation of Economic Losses in Damages Awards" in the *Reference Manual on Scientific Evidence*, published by the Federal Judicial Center for the use of federal judges. I have extensive experience in economic matters involving copyrights and other forms of intellectual property; I served as Apple's damages expert in its copyright dispute with Microsoft involving Apple's graphical user interface. Further information about my professional activities is in my curriculum vitae, Attachment 1. A list of cases in which I have provided testimony during the last four years is provided in Attachment 2. I am being compensated at my usual hourly rate for the time spent working on this matter.

II. Assignment

2. I was asked by Napster, Inc. to analyze economic issues relating to the plaintiffs' proposal to shut Napster down during the period before trial and to comment upon the expert report and deposition testimony of David J. Teece given on behalf of the plaintiffs.

3. My conclusions are described below, but may also be affected by additional information that I receive.

4. I have not been asked to determine if Napster is contributing to copyright infringement by its users. Further, I have not assessed whether or not the use of Napster

itself constitutes copyright infringement. Rather, I consider the economic issues relating to the proposed shutdown of Napster for the period before trial.

5. Attachment 3 contains a list of the materials I have considered in forming my opinions in this case.

III. Executive Summary Of Conclusions

6. Napster's activities will not reduce the plaintiffs' profits in the near future, and therefore shutting down Napster pending trial will not prevent a loss of profits, because:

a) the exchanges of music facilitated by Napster stimulate the demand for the plaintiffs' CDs by allowing consumers to sample CDs and develop interest in CDs that they subsequently purchase;

b) the exchanges facilitated by Napster stimulate the building of the infrastructure necessary for the plaintiffs' entry into the digital download market, such as an inventory of music files and music players compatible with plaintiffs' offerings; and

c) the plaintiffs' policy of distributing music in unprotected form, and their failure to enter the download market earlier, has led to the creation of myriad facilities besides Napster for consumers to obtain free MP3 files, and these facilities would replace Napster if Napster were shut down pending the trial.

7. Furthermore, shutting down Napster pending trial would be harmful to Napster and its users, and will create a significant probability that Napster will lose most of its value of well over \$63 million.

IV. Framework

8. The plaintiffs in this dispute own music that is available in many forms: as CDs or cassettes sold in stores and online, as tapes or CDs copied from originals, and as digital files downloaded from the Internet or obtained in other ways. The plaintiffs' rights in their music have become less effective than in the past because it is relatively easy to copy digital music from CDs and convert it to the MP3 format widely used on the Internet. The plaintiffs seek to prevent such circulation of their music. As I understand the technology, it will be possible to accomplish this goal through encryption methods.

9. I share Professor Teece's belief that intellectual property rights, such as copyrights for music, are an essential feature of the U.S. economy. The U.S. is the world leader in music and other creative products, and its system of intellectual property rights is a contributor to this success.

10. I understand that a trial to take place next year will determine the validity of the plaintiffs' challenge to Napster. Consequently, the current proceeding does not involve the issue of Napster's permanent role in the exchange of digital music. Rather, this proceeding will determine if Napster may remain active during the period before the trial. There are four possible outcomes from this proceeding and the subsequent trial:

The Court does not grant the preliminary injunction and

(1) Napster is exonerated at trial, or

(2) Napster is enjoined as a result of the trial,

or the Court does grant the preliminary injunction and

(3) Napster is exonerated at trial, or

(4) Napster is enjoined as a result of the trial

11. Cases (2) and (3) call for special economic analysis in this preliminary proceeding. In case (2), the plaintiffs would be subject to the influences of Napster for several additional months, and these influences would be found to be inappropriate after the full investigation at trial. Most of Professor Teece's analysis considers case (2). In case (3), Napster and its users suffer inappropriately from the interruption of Napster's business during the period of the temporary injunction. Professor Teece has not considered the issues of case (3) directly.

12. My analysis, as I noted earlier, does not contribute to the estimation of the probability that the plaintiffs will prevail at trial and Napster will be shut down. Rather, my analysis considers the economic effects on the plaintiffs of a delay in shutting down Napster—the issue of case (2)—and the economic effects on Napster and its users of a temporary shutdown—the issue of case (3).

13. Before presenting my analyses of these two cases, I will discuss issues that are in the background for both cases.

V. Napster's Role in the Exchange of Digital Music

14. Professor Teece's analysis appears to assume that Napster is the primary source of free music on the Internet, and that the elimination of Napster from the market would largely prevent the distribution of the unprotected music owned by the plaintiffs. I believe he is incorrect in this assumption. Rather, music lovers exchange digital music in many ways. Napster is the most prominent file-sharing technology in terms of recent press coverage, but many other sources exist for file-sharing software and thousands of other websites provide free downloads. Software is widely used to exchange music over the Internet with and without a central website. And unprotected music is often distributed by methods not based on the Internet.

15. Music customers appear to have a strong impulse to make their favorite music available to others. There are thousands of websites that provide free downloads of the operators' favorite bands. Downloads from these sites are substitutes for those files shared using Napster. Were Napster not in operation, its users would employ the other sites in higher volume. It is relatively easy for users to locate these sites with Internet search engines. More than two dozen websites provide search tools for free MP3 downloads including Lycos' Fast MP3 Search, altavista.com, AudioGalaxy and MP3Robot.¹ Moreover, information about new sites passes rapidly among the fans of the bands whose music they supply.

16. In addition to Napster, there are other organizations and software that provide the sharing of digital music that has made Napster famous. For example, software called Gnutella facilitates the distribution of digital music among users without a central website. Thought by some to be an improvement over Napster, Gnutella was developed by programmers in AOL's Nullsoft division.² It is currently distributed for free through a

¹ <http://mp3.lycos.com>, <http://www.altavista.com>, <http://www.audiogalaxy.com>,
<http://www.mp3Robot.com>.

² Lewis, M., "Programmer Creates Java Gnutella in Defense of Liberty," Webnoize News, May 25, 2000, <http://news.webnoize.com/item.rs?ID=9127>.

network of individuals' websites. It does not rely on central servers so there is no central hub through which files are routed.³ "Gnutella is nothing but a protocol. It's just freely-accessible information."⁴ Users logged on to Gnutella can search for and exchange any type of computer file, not just MP3s.⁵ If Napster were not in operation, use of Gnutella and more than a dozen other file-sharing programs (including CuteMX, FreeNet, iMesh and Scour Exchange) would expand.⁶

17. Sales of music downloads at positive prices are growing rapidly. An IDC study reports that "in the first six months of 1999, eMusic sold \$9,000 worth of downloads; in the last three months of the year, it sold \$206,000. This figure grew 118% in 1Q00 to \$450,000."⁷ The study concludes, even before Napster existed, that the "key reasons for music downloads are convenience, availability of hard-to-find works, and free music."⁸ Further, an analyst at Forrester Research predicted as early as mid-1999 that downloaded music could be a \$1 billion market by 2003.⁹ With the record labels slow to meet that demand, many other suppliers have responded to the high level of consumer interest.

18. The Internet is far from the only way that users copy and distribute unprotected music. For many years, this activity has taken the form of making cassettes from CDs. In the past few years, the development of the writeable CD has made it possible for users to "burn" CDs containing digital music from other CDs. CDs themselves can be "ripped"

³ Nelson, C., "Digital Nation: There's Just No Stopping Gnutella," Sonicnet.com, All News, May 26, 2000, <http://www.sonicnet.com/news/archive/story.jhtml?id=820234>.

⁴ <http://gnutella.wego.com/go/wego.pages.page?groupId=116705&view=page&pageId=118400&folderId=118398&panelId=119597&action=view>.

⁵ Lewis, M., "Programmer Creates Java Gnutella in Defense of Liberty," Webnoize News, May 25, 2000, <http://news.webnoize.com/item.rs?ID=9127>.

⁶ "Napster University: From File Swapping to the Future of Entertainment Commerce," Webnoize Research, Spring 2000, p. 17. <http://www.scour.com>

⁷ "Music Downloads and Consumer Perception: Hype, Skepticism, and the Generation Gap," IDC, November-December 1999, p. 6.

⁸ "Music Downloads and Consumer Perception: Hype, Skepticism, and the Generation Gap," IDC, November-December 1999, p.6.

⁹ Sutel, S., "Record Companies Change Tune: MP3s, Digital Music Files, May Be More Of An Opportunity For The Recording Industry Than Executives Once Thought," Greensboro News & Record, July 24, 1999, p. B12.

into MP3 files to store on computers. Even some of the plaintiffs' own websites promote software for ripping CDs and software and hardware for playing MP3 files.¹⁰

19. I conclude that Napster is not a unique participant in the market for access to digital music. Rather, the intense desire of music lovers to enjoy the convenience of digital music has elicited a broad response from suppliers of many methods for exchanging or distributing digital music. Napster has seized the moment because it provided an improvement over previous technologies and obtained notoriety by being sued. There is hydraulic pressure in the market to respond to consumer interest. If Napster were not in operation, a wide variety of alternatives would expand to take its place.

VI. Impact upon the Plaintiffs' Businesses of Permitting Napster to Remain in Operation until Trial

20. As I noted in the introduction, in what I called case (2), Napster is permitted to remain in operation until trial, and the outcome of the trial is the determination that Napster should not have operated in the first place. The analytic issue in this case is the effect of the temporary extension of Napster's operation during the time leading to the trial. Most of Professor Teece's analysis deals with this issue.

21. However, Professor Teece does not focus consistently on the effect of the temporary extension of Napster's activities up to trial. Rather, some of his analysis fails to distinguish between Napster's overall effect on the plaintiffs and its effect just during the coming months. Only the latter is relevant in the current proceeding, as I understand the Court's procedures.

22. Professor Teece concludes that Napster presents a threat to the current and future efforts of the plaintiffs to develop businesses based on digital downloads of their music products. While Professor Teece only addresses the market for digital downloads, I also examine their existing businesses based on physical distribution of music on CDs and

¹⁰ Sony's Open MG Jukebox music management software can be used to rip CDs for play on that system or on Sony's VAIO Music Clip digital music player. See <http://www.ita.sel.sony.com/jump/musicclip/specs/specs.html> and <http://www.ita.sel.sony.com/jump/musicclip/software/software.html>.

cassettes. I will consider a variety of kinds of evidence on the effects of Napster's operations on the plaintiffs.

A. Evidence on Recent Sales of the Plaintiffs' Music

23. One approach to determining the extent of the threat is to look at the recent levels of sales of the plaintiffs' products. Although Professor Teece believes that the activities of Napster and other distributors have harmed, or will harm, music sales, he does not refer to the detailed data that should be available from the plaintiffs with respect to their actual CD sales.

24. National unit sales at retail of CDs for the first quarter of 1999 (prior to the public release of Napster, in August 1999), as reported by Soundscan's Michael Fine, were 164 million—a 3.3 percent increase over unit sales in the first quarter of 1998. After the appearance of Napster, unit sales in the first quarter of 2000 rose to 175 million—a growth rate of 6.7 percent over the same period in 1999.¹¹ This growth exceeds the growth of sales of goods and services in general in the U.S. economy. Real gross domestic product grew 5 percent from the first quarter of 1999 to the first quarter of 2000.¹²

25. Through 1998, only Garth Brooks had ever sold more than one million copies of an album in its first week on sale. In 1999, the Backstreet Boys (1.1 million copies) and 'N Sync (2.4 million copies) broke Brooks' record. Soundscan reports that, in May of this year, Britney Spears, "one of the most widely traded artists on Internet sites," sold 1.3 million copies of her latest album in its first week.¹³

26. In his declaration in this proceeding, Michael Fine states that Soundscan data reveal a decline in sales at retail stores located near college campuses, despite the overall growth of retail music sales. He states that he has found even larger declines in sales near the top

¹¹ Report of Michael Fine.

¹² U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.doc.gov/bea/newsrel/gdp100p.pdf>.

¹³ Strauss, N., "Teeny-Boppers Shatter a Record," *The New York Times On The Web*, May 25, 2000.

40 wired schools and near campuses that have banned Napster.¹⁴ Mr. Fine uses these results to conclude that Napster has a detrimental impact on CD sales. In my opinion, Mr. Fine's results are flawed because, among various other reasons, they fail to capture the likely increase in online sales of CDs to these consumers. The groups he identified as seeing larger declines are even more likely than all college students to shop for CDs online.

27. There is substantial evidence to support this criticism of his study. A spring 2000 report by Student Monitor, a market research firm studying student buying habits, finds that the music retailer CDnow Online is the fifth most common music website visited by students.¹⁵ CDnow reports increased sales to that group with a "32 percent increase in sales to the 18 to 24 demographic from the first quarter of 1999 to the first quarter of 2000. 'Maybe what's happening is kids are online, downloading music and, since they're already online, they go and buy the music online,' [CDnow spokeswoman Deborah] Vondran said."¹⁶

28. There are several other sources of evidence that online music sales have been growing rapidly. A report by Anderson Consulting concludes that "global online music sales are currently growing at a compound annual rate of 80 percent—faster than the growth in the use of the Internet itself."¹⁷ CDnow's net sales grew 161 percent to \$147.2 million during the year ended December 31, 1999, compared to \$56.4 million during the year ended December 31, 1998.¹⁸ Forrester estimates that total online music revenues in the United States are expected to grow from \$89.0 million in 1998 to \$7.8 billion in

¹⁴ In the case of sales near campuses after they have banned Napster, Mr. Fine should be looking for increases in CD sales. The fact that he sees even greater declines provides additional evidence that the changes in sales of CDs he claims to find must be due to something other than Napster use, such as on-line CD sales.

¹⁵ Ploskina, B., "Numbers Rock 'N' Roll In Napster Dispute," June 19, 2000. <http://www.zdnet.com/intweek/stories/news/0,4164,2589586,00.html>.

¹⁶ Ibid.

¹⁷ Anderson, J. and Mody, P., "New Media. New Value: The Music Revolution," 1999. http://www.ac.com/ideas/Outlook/pov/pov_newmedia.html.

¹⁸ CDnow 1999 Form 10-K.

2003.¹⁹ Barnes & Noble's online music store is rapidly growing as well, currently offering over 200,000 music titles for purchase.²⁰

29. I conclude that the data on music sales do not support the hypothesis that the exchange of the plaintiffs' unprotected music through Napster has had any adverse effect on the plaintiffs' total sales. Rather, as I discuss in more detail below, the data are consistent with the view that the favorable effects of higher volumes of exchange activities outweigh the adverse effects. For example, Napster and other methods for exchanging digital music may expose large numbers of new listeners to various artists' work, resulting in higher CD sales. It is reasonable to conclude that these favorable effects would continue into the future, and that the plaintiffs will not lose sales overall if Napster is permitted to continue operating until trial.

B. Evidence from the Stock Market

30. I have also studied data on the stock market price of one of the five major record labels, EMI Group. This stock is traded on the London Stock Exchange. EMI Group is the only record label that is part of a publicly traded company and whose sales of recorded music represent a substantial share of the company's revenues. The stock market uses publicly available information to judge the prospects of firms into the future, so it may contain some indications of the effect of the sudden upsurge in downloads on the future businesses of this seller of recorded music. Over the period from January 4, 2000 to June 22, 2000, Napster (and others) have been active in promoting digital music file sharing. I measured the change in EMI Group's stock price, relative to the London FTSE 350 Index during that time period and found the cumulative abnormal return to be about 3 percent with a standard error of 26 percentage points. The cumulative abnormal return is the gain that shareholders have achieved that exceeds the return from the general stock market (measured by the FTSE index) after adjustment for risk. If the rapid development of exchange of digital music adversely affected EMI's sales and profits, the cumulative abnormal return would have been negative. In fact, the return was slightly positive, but within the range of normal statistical variation. Thus the market sees no

¹⁹ eMusic 1999 Form 10-K.

substantial effect one way or the other on the value of EMI from events of the first six months of this year, when music downloads have become prominent.

31. There is no support from my analysis of EMI's stock price for the hypothesis that widespread use of file-sharing programs, including Napster, has had a material impact on the prospective profits of established sellers of recorded music. Hence there is no evidence from this source that the plaintiffs will lose sales and profits if Napster continues in operation until trial. Again, the evidence is consistent with the view that Napster and other exchange opportunities add at least as much value by promoting the plaintiffs' music as they reduce by permitting established fans to obtain music for free that they would otherwise have purchased from the plaintiffs.

C. Survey Evidence on the Effect of the Availability of Downloads on Sales of CDs

32. In my opinion, evidence obtained by interviewing music customers suggests that online music listeners in the aggregate do not appear likely to discontinue purchasing CDs in favor of MP3 formatted music. CD sound quality is considered better. A survey conducted by the University of Southern California found that "fifty-one percent of all respondents say that CDs have excellent sound quality, compared to 19% of MP3 users who say MP3s have excellent sound quality."²¹

33. Further, many customers indicate that they value the packaging and other materials that accompany CDs. Listeners may still prefer to own a full album over a collection of MP3 files; they often want the photographs, liner notes, and other features that the traditional CD format offers that are missing from a download. Maxine Jones of the group En Vogue said, "having a downloaded file in your computer is not the same as having the finished CD with artwork and credits in your hand."²² Melodicom Partners' recent report details the fact that some artists and producers have explicitly

²⁰ Barnesandnoble.com 1999 Form 10-K.

²¹ See Latonero, M., "Survey of MP3 Usage: Report on a University Consumption Community," The Norman Lear Center, Annenberg School for Communication, University of Southern California, June 2000, p. 13.

²² Billboard, "The Industry Responds To Napster," April 15, 2000.

acknowledged—and have begun to respond to—the desire for such value-added offerings, saying that “you can’t download cool packaging on Napster and respondents to the survey stated that they are more inclined to buy an album of songs they like if the artist had very unique packaging for their CD. . . . Many artists are seeing increased sales as a result of including poems, artwork, special pullouts, enhanced CDs with music videos and interviews, contests and coupons for discounts on concert tickets or merchandise.”²³

34. Rather than using Napster as a replacement for buying CDs, many consumers use Napster to discover new bands and listen to new songs before making purchasing decisions. A University of Southern California (USC) study found that 39 percent of survey respondents, all of whom are students and who download MP3s often, use Napster to sample music before buying CDs.²⁴ According to this report, the frequency with which a student downloads MP3s does not appear to affect his or her buying habits.²⁵ The USC study also found that 34 percent of students purchased more CDs this year than in the previous year while 38 percent purchased the same number.²⁶ This evidence contradicts the hypothesis that Napster use leads to lower music sales near colleges. And the survey conducted by USC is not the only recent study offering support for my conclusion that music downloaders’ purchases are not adversely affected by their access to distributed file-sharing programs. See, for example, the studies presented by Digital Mogul/CENTRIS, Greenfield Online, Rolling Stone, and the Digital Media Association, all of which concluded that the vast majority of those sampling downloaded music purchase the same or more music as a result.²⁷

²³ Melodicom Partners, “How To Kill Napster In 6 Easy Steps,” 2000.

²⁴ Latonero, M., “Survey of MP3 Usage: Report on a University Consumption Community,” The Norman Lear Center, Annenberg School for Communication, University of Southern California, June 2000, p. 13.

²⁵ Ibid.

²⁶ Ibid.

²⁷ See “Sampling Music Singles Online Increases Likelihood of Purchasing CDs - Especially at Retail,” Digital Mogul and CENTRIS Press Release, December 14, 1999. Greenfield Online QuickTake survey, May 4, 2000, p. 45. http://beta/greenfield.com/pages/go_article.asp?AID=1293&SS=music. RS Readers Poll: Music and the Internet,” Rolling Stone, July 6-20, 2000. DiMA web site, www.digimedia.org/whatsnew/web_music.html.

35. The survey evidence does not show that users of Napster and other methods for exchanging digital music cut back on CD purchases to the extent that they obtain music for free from other sources. Rather, the evidence is consistent with the view that users take advantage of exchange opportunities in many different ways, including exploring new types of music in order to decide what CDs to purchase. Hence the survey evidence does not support the view that eliminating Napster's exchange activities in the period before trial would prevent losses of sales and profits by the plaintiffs. Instead, that move would deprive users of the opportunities for using Napster to sample music before purchase of CDs from the plaintiffs. The survey evidence is consistent with the evidence I noted earlier that the net effect of Napster and other exchange mechanisms on the plaintiffs' sales is either zero or positive.

D. Effects of Providing Free File Sharing on the Subsequent Market for Music Downloads

36. The evidence I have considered so far relates to plaintiffs' music sales in all forms. For the relevant period before trial, the plaintiffs will continue to sell the vast majority of their music products as CDs and cassettes. As a result, the effects discussed above will be the most significant in economic terms. However, at least one plaintiff, Sony, offers downloads of its artists' songs on an Internet website, and others are moving in this direction. Thus it is appropriate to consider the effects on these activities of permitting Napster to remain in operation pending trial. Again, the analysis should focus on the situation described by my case (2). By hypothesis, Napster is put out of business as a result of the trial, and the analytical issue is the effect on the plaintiffs of allowing Napster to continue to operate during the period before trial.

37. Professor Teece analyzes this issue without stating a clear focus on the relevant question, though some of his conclusions would fit into the appropriate framework for this proceeding. In particular, he concludes that Napster has permanently disabled the music download market by helping users obtain music for free. When the owners of recorded music enter the market for downloadable music themselves, according to Professor Teece, their potential customers will refuse to buy music because the earlier

access to downloads created the mentality that downloads should be free. To explain this argument, Professor Teece invokes the concept of path dependence.

38. Within Professor Teece's hypothesis, the relevant question is whether the continuation of the activities of Napster in the period before trial would result in a spoiling of the market for downloads that otherwise would have been profitable for the plaintiffs. Professor Teece does not focus on this question. I believe that his general analysis of the effects of free downloads is mistaken, so the answer to the relevant question is that there will not be incremental adverse effects on the plaintiffs' future download business from this source.

39. I believe that Professor Teece is incorrect in his theory that valuable products cannot command a positive price after a period when the price has been zero. The public has shown that it places high value on recorded music since the advent of commercial recordings early in the 20th century. Most music today in every genre is purchased in the form of a compact disc selling for a price of up to \$20. According to the standard economic model of consumer behavior employed by almost all economists, a person buying a download for, say \$1, indicates that the person places a value on the download of at least \$1. It goes without saying that the purchaser will have a strong preference for buying the same download for a lower price, including zero. But, in a world where effective property rights prevent or inhibit anyone from obtaining the product for a lower price or for free, purchasers will resume their willingness to pay a positive price for that product. If they did not, they would sacrifice the extra value they enjoy from the fact that their personal value is above the price charged by the music owner.

40. It is important not to confuse consumers' vocal resistance to higher prices with their actual behavior in the face of higher prices. American consumers are irate about the high current level of gasoline prices, but they are continuing to buy almost as much today. The fact that gasoline was available for \$1.49 per gallon last year does not create a mentality that people would rather not drive than to buy gas at \$1.89 a gallon today. There is no support in the standard theory of consumer behavior for Professor Teece's suggestion that consumers will not pay for a product after enjoying it for free.

41. Instead, the evidence supports the view that consumers would be willing to pay for music from Napster and other sources. In a recent survey of college students by Webnoize Research, 59 percent of 3,124 college-age Napster users responded that they would be willing to pay a \$15 subscription fee for Napster's services. Webnoize found that more intensive Napster users were willing to pay a higher subscription price. Approximately 71 percent of daily users, compared to 59 percent of weekly users, indicate a willingness to pay the hypothesized \$15.²⁸ This finding suggests that many Napster users will be interested in purchasing downloads from the plaintiffs when they become available. Of course, the volume of their purchases will depend on the prices set by the plaintiffs.

42. A study by Cyber Dialogue found that 71 percent of Internet music listeners expressed an interest in purchasing customized CDs online. Fifty-two percent were willing to pay for access to sites with downloading capabilities, and 43 percent say they would pay for customized radio webcasts.²⁹ A poll conducted by MP3 Impact, an online digital music newsletter, indicates that 27 percent of respondents would pay \$25 for access to sites offering digital music downloads, and 11 percent would be willing to pay \$25 to \$50 per month for such access.³⁰ The USC poll noted earlier found that 69 percent of the respondent students believe that copyright owners should receive payment for music that is downloaded from the Internet.³¹

43. These survey findings support the presumption of economic analysis that music fans would pay subscription fees or download prices rather than stop listening to new music. Once the owners of music adopt and implement the appropriate technology to enforce their ownership rights, they will be able to extract the full economic value of

²⁸ "Napster University: From File Swapping to the Future of Entertainment Commerce," Webnoize Research, Spring 2000, pp.8-9.

²⁹ Cyber Dialogue, Inc., "Cybercitizen Entertainment Continuous Advisory Service: CyberBits Trend Report," No. 1, 2000.

³⁰ "Special Analysis: Quarterly Report," MP3 Impact: The Digital Music Weekly, Issue 13, April, 1999.

³¹ Latonero, M., "Survey of MP3 Usage: Report on a University Consumption Community," The Norman Lear Center, Annenberg School for Communication, University of Southern California, June 2000, p. 12.

those rights. The period that elapsed prior to the development of effective property rights will not spoil the ability of music owners to benefit from those rights.

44. There is one sense in which Professor Teece's view may be correct. Participants in the Internet music economy have learned from the example of Napster and other facilitators of exchange of digital music that there is a great deal of interest in exchange among consumers. Shutting down Napster may have relatively little effect on the environment in which the plaintiffs' new businesses will have to compete, because, as I noted earlier, there are many substitutes for Napster. It is not that consumers won't purchase because downloads were free earlier through Napster, but rather that other entrepreneurs have learned that exchange facilities can generate a large amount of web traffic. Shutting down Napster will not result in these entrepreneurs unlearning that lesson.

E. Stimulus to the Development of Infrastructure

45. Customers for music downloads need hardware and software to enjoy the downloaded music. The hardware includes personal computers, broadband Internet access, sound boards, speakers, and portable digital audio players. The software includes web browsers and playback software (see paragraph 48). In addition, the customers need familiarity with handling and enjoying music in digital form. In other words, there needs to be infrastructure in the hands of customers before there can be a market for digital music downloads. Napster's popularity has stimulated, and over the coming months will continue to stimulate, investment by customers in this infrastructure. When the plaintiffs launch their download websites, many of their customers will already be equipped, or because of Napster will become equipped, with the necessary infrastructure. These investments will remain valuable under new encryption standards that allow for backward-compatibility. As a result, the volume of the plaintiffs' sales will be higher than they would have been if the plaintiffs had to play the role of pioneer suppliers.

46. In this respect, the plaintiffs face a situation similar to that faced by Japanese automakers in the U.S. market. Because the country already had roads, highways, and Interstates, gas stations, repair facilities, experienced drivers, and all the other

infrastructure needed to support the auto industry, the Japanese automakers were able to achieve substantial market share relatively soon after introducing high-quality cars to the market. The Japanese success in the U.S. auto market demonstrates that there is no universal principal that the first seller dominates the market.

47. Napster promotes the construction of an infrastructure that will be the foundation of future online music sales by record labels. By providing a channel by which digital music files can easily and efficiently be shared, Napster has stimulated investment by consumers in the infrastructure necessary to pave the way for offerings by the major record labels. The massive popularity of Napster and the hundreds of other sites offering MP3 files have led to the wide acceptance of the download by consumers. Napster software has millions of users. Nielsen/NetRatings “recorded more than 1 million unique users (accessing the site from home) on Napster's website in the last two weeks of April 2000.”³²

48. The availability and acceptance of MP3s have, in turn, stimulated the innovation and growth of digital audio playback devices offered to the consuming public. Software for playing MP3 files on a home or laptop computer abounds, led by Microsoft's *Windows MediaPlayer*, Apple's *Quicktime*, RealNetwork's *RealPlayer*, and AOL/Nullsoft's *Winamp*, among many others. *Winamp*, launched in January 1998, was the second most downloaded piece of software on the Internet in 1999 with more than 10 million downloads.³³ There is also a rapidly growing market for portable, home, and car playback devices. S3 sold \$18 million worth of its highly publicized Rio player in the first quarter of this year.³⁴ As the SDMI portable device specification allows SDMI encrypted music players to also play MP3s, these investments will remain valuable. S3's RIO, Sony's VAIO and others will produce SDMI-compliant players.³⁵ Plaintiff Sony

³² Pew Internet & American Life Project, “Internet Tracking Report,” June 8, 2000, p. 2. <http://www.pewinternet.org>.

³³ “ICQ and Winamp Rank #1 and 2 on C-Net.” January 7, 2000. <http://www.winamp.com/community/press/1700.jhtml>.

³⁴ “Features: MP3 Gadgets Preview Music Distribution's Future,” Yahoo! News, June 19, 2000. Recipients of Rios for Christmas 1999 included two Hall offspring.

³⁵ Existing music in MP3 files will remain available to consumers because the industry adopted an SDMI portable device specification that allows SDMI-compliant players to play MP3s. SDMI Press Release,

has marketed the VAIO by encouraging users to download MP3s from their favorite websites, thus building infrastructure for its future download offerings.³⁶

49. I conclude that the continuing operation of Napster will result in the further development of infrastructure that will be valuable to the plaintiffs when they enter the download business. Far from impeding plaintiffs' download business, Napster is paving the way to consumer acceptance of both new formats and new channels for music distribution, two major changes in the music business that Professor Teece claims are impediments to the plaintiffs' success.³⁷ Shutting down Napster in this proceeding would deprive both the plaintiffs and music consumers of the benefit of Napster's contribution to the development of infrastructure.

F. Penetration Pricing

50. Professor Teece's theory that Napster has spoiled the market for downloads by facilitating free exchange needs to be evaluated by examining the market they would enter with Napster shut down. The benefits of low pricing early in the life of a new product are well known. This strategy is often called *penetration pricing*. Sellers voluntarily set low prices when new products are introduced. The use of low prices or giveaways is particularly common in web commerce. For example, PayTrust.com provides free bill paying to new customers for the first three months, after which customers pay the regular subscription fee. In the nascent market for electronic books, Stephen King's novella, *Riding the Bullet*, was offered as a download for \$2.50 and given away for free by web retailers Barnes & Noble.com and Amazon.com.³⁸ Following this free product offer, a *Newsweek* article commented that publishers have "just seen the

May 25, 1999. See SDMI Press Release, May 25, 1999.
http://www.sdmi.org/pr/May_25_1999_PR.htm.

³⁶ In conjunction with its VAIO, Sony touts the abilities of the Sony OpenMG Jukebox by encouraging consumers to "log-on and download ATRAC3, MP3 or WAV files from your favorite music web sites. The secure music download capability of the software ensures that you will be prepared to download and purchase the wave of titles from major artists and record labels that are soon to come." See <http://www.ita.sel.sony.com/jump/musicclip/specs/specs.html> and <http://www.ita.sel.sony.com/jump/musicclip/software/software.html>.

³⁷ Expert Report of David J. Teece, June 5, 2000, p. 14.

³⁸ "Publisher reports strong sales of Stephen King's 'e-book,'" Associated Press Newswires, March 15, 2000.

fastest selling book of all time.”³⁹ According to a spokesman for King’s publisher, Simon & Schuster, the e-book “racked up 400,000 orders during its first 24 hours for sale over the Internet.” The spokesman also commented: “Nothing compares to this. It even tops Stephen’s first day on sale with a typical book by a large measure.”⁴⁰

51. Free downloads of music are becoming common in the Internet music business. Internet music listeners can choose from a wide variety of music sites and software to download free music. In addition to Napster, people may use file-sharing techniques including Gnutella, Cute MX, FreeNet, iMesh and Scour Exchange.⁴¹ For websites with MP3 downloads, a consumer has numerous options. Many online music companies are choosing temporarily to offer their downloads for free to build a customer base and to obtain easy publicity for lesser-known bands. They are anticipating future methods for receiving revenues such as micropayments or subscription fees. A recent study by IDC reports that “several companies in the download space . . . say their business model involves getting people to use the technology by giving them free music and then turning them into paying customers at a later point.”⁴² Aaron Newton, founder of Epitonic.com, a website offering free downloads of MP3s, maintains that the Internet is currently for “promotion and marketing.” He believes online music sales will eventually become “commonplace” but they are currently inappropriate while the Internet public adjusts to listening to music online.⁴³

52. The heavy-metal band Metallica, a vocal opponent of Napster, has provided free music in the form of streaming audio on the Internet and authorized bootlegs. Because

³⁹ “A Thriller on the Net: Stephen King’s e-book sold half a million copies on the Web. It could signal a scary future for publishers,” *Newsweek*, March 27, 2000, p. 46.

⁴⁰ “Publisher reports strong sales of Stephen King’s ‘e-book,’” *Associated Press Newswires*, March 15, 2000.

⁴¹ “Napster University: From File Swapping to the Future of Entertainment Commerce,” *Webnoize Research*, Spring 2000, p. 4. <http://www.scour.com>.

⁴² Maclachlan, M., “Music Downloads and Consumer Perception: Hype, Skepticism, and the Generation Gap,” *IDC*, 2000, p. 10.

⁴³ “Are Free Tracks a Bad Thing?” *Webnoize.com*, March 2000. http://www.epitonic.com/company/press/article031700_webnoizesxsw.html.

See also: “Industry Profile: Aaron Newton,” *CMJ*, October 1999. http://www.epitonic.com/company/press/article102599_cmj.html.

Toomey, J., “Interview with Epitonic’s Aaron Newton,” *Insound*, 1999, <http://www.insound.com/machine/essay.cfm?id=17>.

technology exists for converting streaming audio to the MP3 format generally used for digital distribution, Metallica is taking the risk of delivering music to fans who are likely to distribute it more widely. Metallica presumably is taking this step to gain the benefits that free music provides as an inducement to later purchases.

53. The evolution of bootleg recordings of rock bands provides interesting evidence against Professor Teece's view that it is harmful for products to be free. Many bands, such as the Grateful Dead and Metallica, actively encourage those attending their concerts to make free recordings and to distribute them widely. They have even provided connections to the band's soundboard to improve the quality of the recordings.

54. I conclude that the widespread use of penetration pricing, including frequent giveaways, for music downloads contradicts Professor Teece's conclusion that the period of free circulation of music owned by the plaintiffs will prevent the plaintiffs from building a profitable download business once they implement the appropriate protection technology. Rather, it may well be the case that the period of free circulation is similar to what the owners would have done as a promotional device if Napster were not active. Consequently, there is probably little difference between the pricing strategies that the plaintiffs would use in the presence of Napster and in its absence. In my opinion, the plaintiffs' prospective profits from downloads would not be significantly affected by shutting down Napster during the period before the trial.

G. Music Exchange and the Promotion of Music

55. I noted earlier that the performance of the plaintiffs' sales in the period since downloads became popular suggests that the new method of distribution has helped rather than harmed sales. There is evidence that increasing consumers' access to music stimulates increased demand for music products such as CDs. Despite this evidence, major sellers of recorded music have often been *opposed* to efforts that expand the influence of music as they seek to preserve the existing model of distribution. Jupiter Communications, a leading research firm in the area of new media, commented in a recent study, "labels have historically been hesitant to embrace new technologies and media. The industry's reluctance to adopt the CD format—one that would be responsible

for more than doubling revenues industrywide—is well known. Before MTV was a proven driver of record sales, most majors wanted nothing to do with it.”⁴⁴ Similarly, movie owners tried to suppress the video cassette recorder on the grounds that it would dilute their ownership interests. Today, sales of videos are one of the largest sources of revenue for the movie business.⁴⁵

56. Music provided on the web and exchanged on platforms such as Napster creates promotional value to the record labels in much the same way—and generally without cost to the labels. The actions of artists and record labels reveal their recognition of the value of these promotional mechanisms. Hilary Rosen, president and CEO of the RIAA, commented, “We’ve seen a shift in the overall attitude toward the piracy threat and the opportunities on the Internet. The opportunities clearly outweigh the threats now.”⁴⁶ The rock band The Offspring, demonstrating artists’ recognition of the value created by Napster and other file-sharing platforms, recently posted the following statement at its website: “The Offspring view MP3 technology and programs such as Napster as being a vital and necessary means to promote music and foster better relationships with our fans.”⁴⁷ The Offspring sold 8 million copies of its “Americana” album after giving away 18 million downloads of a single from that album.⁴⁸ Veteran rockers Motley Crue offered fans the chance to download their new album in its entirety prior to its release when consumers placed a pre-order for the album.⁴⁹ Jupiter Communications pointed out that “the demonization of MP3 as a format has obscured a greater truth about the good the format could achieve. So much music—especially B-sides and live performances—remains unexploited by labels. These labels could create formidable grassroots marketing campaigns using material that does not necessarily stand to eat into their

⁴⁴ Jupiter Communications., “Music Industry and the Internet,” July 1999, p. 3.

⁴⁵ Gomes, L., “Entertainment World Has Flawed Crystal Ball,” Wall Street Journal, June 20, 2000.

⁴⁶ Sutel, S., “Record Companies Change Tune: MP3s, Digital Music Files, May Be More Of An Opportunity For The Recording Industry Than Executives Once Thought,” Greensboro News & Record, July 24, 1999, p. B12.

⁴⁷ <http://www.offspring.com/napster.html>.

⁴⁸ EMI Presentation, “Recorded Music,” E0834.

⁴⁹ <http://www.towerrecords.com/promo/motley/>.

market share. Numerous artists—David Bowie, Tom Petty, and Chuck D, to name a few—have capitalized on the marketing power of MP3 files...⁵⁰

57. Long before the introduction of Napster, “some artists and record labels [were] already forging ahead in the belief the popularity of MP3s could generate a huge promotion for sales of their legitimate recordings.”⁵¹ In 1998, Hollywood Records posted a single by a newly signed band and then enjoyed more than 40,000 downloads “and some valuable buzz.”⁵² More recently, an “outbreak of heavy-metal fever hit the Internet in October when Kittie, a Canadian rock band, posted a free sample song online. By the time Kittie’s album hit stores in January, pent-up demand helped sell 8,800 copies in a week, propelling it to No. 147 on the Billboard charts.”⁵³ Sales of the album are now approaching 400,000 copies.⁵⁴ Because of the value created by offering fans song samples, and the widened exposure offered by such promotional efforts, “the craze for downloadable songs could make labels and artists richer than ever.”⁵⁵ The opportunity to receive a free preview of a musician’s songs does not adversely impact consumers’ willingness to then purchase that same artist’s albums. As demonstrated by Kittie’s experience, these opportunities often increase consumer demand. Kittie’s guitarist notes that “you could download a lot of our music from the Internet and burn it onto a CD, but we think our fans will want to buy our album, too. We’ve found that even people who listen to us online buy our albums.”⁵⁶

58. The recording and exchange of bootleg copies of live performances is another instance of beneficial free promotion. For example, the Grateful Dead found that allowing distribution of bootleg concert tapes was a positive marketing mechanism. In the 1970s, the Dead attempted to crack down on fans who recorded their concerts and then sold the bootleg tapes. However, the band discovered that the bootlegging network

⁵⁰ Jupiter Communications, “Music Industry and the Internet,” July 1999, p. 1.

⁵¹ Haring, B., “You can’t stop the music on the Net: Recording industry debates MP3 piracy issue,” USA Today, November 4, 1998, p. 5D.

⁵² Dibbell, J., “The record industry’s digital daze,” Rolling Stone, November 26, 1998, p. 102.

⁵³ Segal, D., “An Upside to Music Downloads,” Washington Post, June 22, 2000, p. A01. <http://washingtonpost.com/wp-dyn/articles/A38086-2000Jun21.html>.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Ibid.

was actually good for business and enlarged the “Deadhead” community. Like many artists, the primary source of revenue for the Dead turned out to be concert receipts, not album sales. Grateful Dead lyricist and Berkman Fellow at Harvard Law School John Perry Barlow says that musicians make most of their money from concerts and the wide distribution of music increases concert attendance. “By the time the Grateful Dead died we were able to fill any stadium in America, any time we wanted.”⁵⁷

59. Groups such as Metallica, Blues Traveler, and Dave Matthews Band have encouraged fans to record and trade concert tapes. Metallica, who rose to fame on the back of an underground tape-trading circuit,⁵⁸ began setting aside a special taper’s section at its concerts, allowing fans to bring recording equipment that could be used to create live bootleg recordings of Metallica concerts.

60. I conclude that Napster and other facilities that promote the exchange of digital music play a positive role in the promotion of music, both in CD and download form. If Napster were shut down in the period before the trial, the plaintiffs would lose the benefit of these promotional activities. There is historical evidence that the recording industry, like the movie industry, fails to recognize the benefits of new technology that results in higher volumes of sales, even though some consumers gain access to content without paying for it. The VCR has been unambiguously a good thing for the movie industry even though many people have unauthorized copies of movies on their bookshelves.

H. Role of the First Seller in the Market

61. Professor Teece believes that Napster will obtain a permanent advantage in the developing market for music downloads on the Internet. He believes that switching costs will inhibit customers from moving to the plaintiffs’ download sites once they become active. He invokes the theory of path dependence and network effects to support this view.

⁵⁷ Gorov, L., “Hi, I’m Napster,” Boston Globe, June 11, 2000, p. A01.

Kriz, H., “The Online Artist is the Empowered Artist: An EFF Correspondent Expresses Her Views on Artists and the Net.” Signal or Noise: The Future of Music on the Net, February 25, 2000.

⁵⁸ Metallica chat transcript, <http://www.metallica.com/news/2000/000503.html>, May 2, 2000.

62. Most of his analysis on this subject fails to focus on the issue relevant to the current proceeding. His analysis appears to hypothesize that Napster would remain active permanently if it were not shut down in this proceeding. Professor Teece fails to consider that the relevant analysis must assume that, if its conduct is illegal, Napster will be shut down at the end of the trial. Even if there were important advantages to early participants in this market, the analysis must consider the situation that the plaintiffs would find immediately after trial, when Napster would necessarily be out of business. Professor Teece's assertion of future injury does not provide any analysis useful to the current proceeding because he does not consider the effect of the subsequent trial.

63. An analogy may clarify this point. The Dolby noise reduction system is a product that probably does have an advantage from being first to the market. Professor Teece would be correct to say that entry in competition to Dolby would be difficult today. But his analysis would surely be completely different if he knew that Dolby is required to leave the market in February of 2001. This point eliminates most of the sources of irreversibility he discusses, and he has failed to make the appropriate adjustment in his analysis for this proceeding.

64. Moreover, I believe that Professor Teece is mistaken in assigning too much advantage to an early entrant in the music download arena. Economics does not recognize any general principle favoring the first seller in a market. A good example is computer operating systems, a market where network effects are plainly important. In 1980, the market for operating systems for personal computers was dominated by CP/M. When IBM developed its personal computer, the machine was offered with CP/M along with DOS. The latter was supplied by Microsoft, then a tiny software maker. DOS overcame CP/M's head start and replaced it as the dominant operating system. Similarly, the Macintosh operating system was by far the leading graphical user interface, but was replaced by Windows about 8 years later.

65. Professor Teece cites the QWERTY keyboard as an example of path dependence favoring an inferior technology. The facts about keyboard layout contradict his analysis, however. Careful tests have shown that the performance of typists is not affected by the

layout. It appears that QWERTY has survived because it is just as good as supposedly more logical layouts.⁵⁹

66. The analysis of path dependence, network effects, and resulting advantages or disadvantages to the first firm in a market is completely specific to the market at issue. With respect to the market for music downloads, I believe that the evidence I discussed earlier favors the view that the activities of Napster will, over the next eight months, contribute positively to the success of the plaintiffs' download businesses.

67. Although his report did not spell out the mechanisms by which Napster could create a path-dependent outcome, in deposition Professor Teece cited a number of factors he considers to be "irreversibilities" or "switching costs" related to Napster that he says will create path dependence in the market for digital downloads. The demand-side factors he mentions include consumer expectations of free music, an installed base of downloaded files, the strength of Napster's brand name, familiarity with the Napster website and program protocols, and the Napster community. On the supply side, he cites denied revenues, damage to brands, learning curve effects and the MP3 standard.⁶⁰

68. Even if Professor Teece were correct about the presence of these factors, they do not provide support for the hypothesis that the plaintiffs would enjoy substantially higher profits if Napster were shut down in this proceeding rather than later at trial. If Napster ceased to operate after trial, Napster's brand name, users' investments in its program protocols, and the Napster community would all be irrelevant and would have no impact on the plaintiffs' ability to profit in the market for digital downloads after the trial.

69. The only demand-side factor creating path dependence mentioned by Professor Teece in his report is consumer expectations of getting downloads for free. As I discussed above, this argument is unsupported by the standard theory of consumer behavior. It is also contradicted by the evidence that consumers are willing to pay even while Napster is available for free.

⁵⁹ See Liebowitz, S.J., and Margolis, S.E., "The Fable of the Keys," *Journal of Law and Economics*, April 1990, pp. 1-25.

⁶⁰ Deposition of David J. Teece, June 20, 2000, pp. 130-141.

70. Professor Teece also suggests that the installed base of downloaded files that already reside on consumers' hard drives creates path dependence. These are standard computer files in MP3 format and are not specific to Napster, so they do not constitute an installed base particular to Napster. In any case, this installed base may be substantially smaller than Professor Teece appears to believe. Evidence from Webnoize Research "Napster University" study shows that most MP3 files downloaded by Napster users are discarded. For example, users downloading more than 100 files will discard 97 or 98 percent of those files.⁶¹ Further, consumers are most interested in new music. New releases, such as the albums described above selling millions in their first weeks, constitute a substantial share of all music sales, suggesting that the market for downloads of new songs would be sizable irrespective of the size of the installed base of downloaded files. As the plaintiffs implement the appropriate protection technology, they will have more effective property rights for their new songs. Any growth of the existing body of stored digital music over the next eight months will accelerate adoption of the secured systems the plaintiffs envision. Finally, under SDMI, new portable players will be compatible with both MP3s and secured music, preserving the value of the installed base of MP3s and eliminating any associated switching costs.

71. Third, Professor Teece believes that Napster's brand name represents an impediment to the plaintiffs' success in the digital download market. But the brand names of the major sellers of recorded music are among the strongest brands in the world. More importantly, it is the artists who are compelling to their fans. Finally, Napster's brand name would be irrelevant if Napster were shut down after a trial.

72. Fourth, Professor Teece believes that users' familiarity with Napster's site and program protocols create switching costs. I believe that these switching costs are tiny. Napster, like most commercial websites, is easy to use. The site does not require any sizable investments in specific knowledge that might create significant switching costs. Even if such costs did exist, they would pose no threat if Napster ceased to operate.

⁶¹ Webnoize Research, "Napster University: From File Swapping to the Future of Entertainment Commerce," Spring 2000, Exhibit 9, pp. 10-11.

73. Finally, Professor Teece mentions that consumers have learned about other Napster users who have music they want. The method by which these consumers have found these kindred spirits includes doing searches for songs and artists they like and meeting other users in chat rooms. A consumer could use the same type of features at another website to hook into another community. Numerous websites are currently offering community features related to digital music and MP3s.⁶² This feature of Napster's use also does not generate any meaningful switching costs. Even so, in the event of an injunction, Napster's community would be shut down along with Napster itself.

74. On the supply side, Professor Teece's report is again silent but at his deposition he first suggests that the plaintiffs will be hurt because they have been denied revenues. Evidence suggests that in the short-run Napster is helping, not hurting the plaintiffs, by increasing CD sales and aiding consumer acceptance of digital music technologies.

75. Professor Teece also suggests that the plaintiffs' brands will be damaged because they will charge for what Napster users currently exchange for free. Because CDs selling for \$12 to \$18 are the predominant method by which people buy music today, it is illogical to expect that brand value could be injured because plaintiffs charge for downloads when they have always charged for similar music provided through other channels.

76. Professor Teece believes Napster slows down the roll-out process in which plaintiffs will be experiencing learning curve benefits. I believe this is incorrect and that Napster is accelerating the speed with which consumers will be prepared to embrace digital downloads, as discussed in detail above.

77. Finally, Professor Teece believes that Napster is driving widespread adoption of the MP3 standard which will impede the emergence of a standard with encryption capabilities. First, the SDMI encryption specification need not be incompatible with the MP3 format as "SDMI is an architectural framework, and is not intended to specify

⁶² Such sites include Lycos Message Boards, Lycos Community, AudioGalaxy: Fora, ICQ Inc., iuma, Hotline Network, Globalscape: CuteMX, mp3.com, iMusic, wiredplanet.com and MP3Board.com.

particular technological choices (such as compression or encryption technologies).”⁶³ More importantly, planned backward-compatibility with MP3 will preserve the value of the installed base of MP3 files while encouraging consumers to adopt the new technology. SDMI’s plans include allowing portable digital music players compatible with the new encryption standard to be backward-compatible with MP3 files.⁶⁴ Presumably, software players will also provide such backward-compatibility. In sum, I believe that Professor Teece is incorrect in his conclusion that path dependence will cause injury to the plaintiffs.

VII. Effects on Napster and Its Users of a Temporary Shutdown

78. The second area of analysis appropriate for this proceeding relates to the case (3) that I identified in the introduction. In case (3), Napster is shut down as a result of this proceeding, but the later trial exonerates the company. The topic for economic analysis is the effects of this sequence of events. Both Napster and its users should be considered, in my opinion.

79. As Professor Teece notes, Napster is a valuable company. One concrete measure of its value comes from a recent transaction in the company’s securities. On April 22, 2000, the venture capital firm Hummer Winblad agreed to invest \$13 million in Napster in exchange for about 6.5 million shares, with a price per share of about \$2.00. There are 31.3 million shares of Napster stock outstanding after the deal, so the resulting valuation of the company is roughly \$63 million.⁶⁵

80. This valuation almost certainly understates the true value of the company. First, the new shares are not quite as valuable as most of the existing shares, because earlier investors would stand ahead in line if the company were liquidated. Second, a startup company is generally worth more to its owners than the price paid by outsiders for its stock. It would be rare for the founders of a company at Napster’s stage to be willing to sell their shares at the price paid by new investors. When a company is acquired by

⁶³ See “SMDI FAQ.” <http://www.sdmi.org/FAQ.htm>.

⁶⁴ SDMI Press Release, May 25, 1999. http://www.sdmi.org/pr/May_25_1999_PR.htm.

⁶⁵ “Memorandum of Terms,” ER00001-ER00005.

another company and the founders of the first company do sell their shares, the price is usually substantially above the price paid by venture funds or other incremental investors. Since the normal definition of the value of a firm is the price that would be the result of negotiation between a willing seller and a willing buyer, the value of Napster is probably well above \$63 million.

81. A second reason that the observed value of \$63 million is an understatement of the value relevant for analyzing case (3) is that the price was set under the shadow of the plaintiffs' challenge to Napster's right to be in business. In case (3), by contrast, the relevant value of Napster for determining injury from a wrongful injunction is the value that holds after Napster's right to operate its business has been affirmed by the Court. Given the reduction in value due to the risk posed by litigation, which is reflected in the \$63 million valuation, but which should be excluded in determining the loss the company will face if it is ultimately exonerated, the \$63 million probably seriously underestimates Napster's value within the framework of the analysis of case (3). Thus the observed value of \$63 million is an understatement of the value relevant for case (3) is that it does not take into account the appreciation in Napster's value that would occur absent an injunction. Pending trial, Napster's prominence and user base would grow, and its position as a market leader would likely solidify, thereby substantially enhancing that valuation.

82. The appropriate question for the analysis of case (3) is how much of this potential value could nonetheless be realized after the trial if Napster is shut down temporarily. There is a substantial probability that the company could not be brought back to life after exoneration at trial because of the period of inactivity that would result from the temporary shutdown. The probability of the loss of the entire potential value of the company would be greater if the time to exoneration were longer.

83. The steps that would be required to bring the company back to life after the trial found its operation to be legitimate would include (a) re-establishing relationships with investors and obtaining fresh funds, (b) replacing employees who moved on to other exciting opportunities in Internet companies, and (c) attracting users who moved to other websites and methods for exchanging digital music. This process would be all the more

difficult because exoneration of Napster's business model would open the way for rivals using the same model.

84. In my opinion, there is a serious probability that Napster would not be able to resume its current role as a promising Internet startup, and that it would lose most of its current market value of at least \$63 million as a result of the temporary shutdown considered in case (3). If Napster were unable to resume operation after exoneration, its value would be the cash remaining in the company plus the liquidation value of its intellectual property and plant and equipment less the amount of its debt.

85. Napster's services to its users are free and are likely to remain so in the near future if the company is allowed to continue in business. The enthusiasm of Napster's users and the volume of exchanges that occur through Napster suggest that users place considerable value on the services. Thus the users enjoy benefits with Napster. The temporary shutdown of Napster hypothesized in case (3) would cause users to lose these benefits. This is a second factor that should be considered in weighing the costs of case (2), which may be incurred if the trial condemns Napster's business model, and case (3), which may be incurred if the trial exonerates it.

86. As I noted earlier, there are many alternatives to Napster for exchanging digital music. Napster's success results from consumer preferences for Napster over other methods of exchange. The benefits lost by consumers in the event of a temporary shutdown of Napster are the difference between the value they place on Napster's services and the value they place on the services that would replace Napster in the event of a shutdown.

87. If Napster were unable to resume operation for the reasons discussed above, then consumer losses from the temporary shutdown would extend into the future past the trial as well, until other providers of exchange services were fully established.

VIII. Conclusions

88. The current proceeding involves a balancing of the effects on the plaintiffs of permitting Napster to remain in business in the event that the later trial condemns its

business model (case (2)), against the effects on Napster of a temporary suspension of its operations in the event that the trial exonerates its business model (case (3)). My analysis has addressed the magnitude of these effects, without investigating the probability of one outcome or the other at the trial.

89. In my opinion, it would make little difference to the plaintiffs' profits if Napster were shut down temporarily pending trial. The plaintiffs' sales show no signs of reduction from Napster's and others' activities, which have grown rapidly in recent months. On the contrary, sales of CDs have accelerated during this period. Survey evidence does not support the view that music downloads via Napster replace CD purchases. Rather, the evidence suggests that exchanges facilitated by Napster and others stimulate the overall demand for recorded music. As a result of the explosion of downloaded music, the plaintiffs enjoy a smaller share of a larger market. Consumers have benefited without harm to the sellers of recorded music. As music owners establish more effective property rights, they will be able to play a larger role in the distribution of music over the Internet.

90. The plaintiffs are in the process of developing their own businesses offering downloads of the music they own. I do not believe that the path that these businesses will take would be influenced in any important way by shutting Napster down temporarily. Napster is not impeding the plaintiffs' prospective download businesses. Rather, it is the plaintiffs' policy of distributing music in unprotected form that creates a myriad of opportunities for the exchange of digital music.

91. On the other hand, the shutdown would be quite harmful to Napster and its users. It cannot be assumed that Napster would be able to resume operation after a shutdown—there is a significant probability that the company would lose most of its value of well over \$63 million. And Napster's users would lose the benefits that brought them to use Napster instead of the many other ways that digital music can be shared.

92. I do not find evidence that Napster's users' activities have an overall negative effect on the plaintiffs' ability to extract economic value from the music they own. If there is a threat, it is a healthy one. The unimpeded exchange of music—in a setting

where music owners use the available technology to create effective ownership rights—lowers barriers to entry in every part of the music industry. Song writers, performers, producers, distributors, and retailers can flourish in greater numbers and provide the public with a wider variety of music at lower prices in a world where anybody can offer music downloads on any terms they choose.