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### New Architectures for Music: Law Should Get Out of the Way

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# New Architectures for Music: Law Should Get Out of the Way

by

HENRY H. PERRITT, JR.\*

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## I. Introduction

The United States Supreme Court's decision in *Grokster*<sup>1</sup> and the filing of thousands of lawsuits against individual consumers of music<sup>2</sup> have focused public attention on the economics of musical entertainment. *Grokster* itself involved liability of intermediaries who facilitate infringement by individual consumers of music, but it reawakened debate over fundamental premises of copyright law, including what music consumers should be privileged to do with music. The copyright laws are intended to—indeed, the Congress is empowered only to write copyright laws that—create incentives for the production of creative works. In order to do that, intellectual property law must walk a fine line between making it too easy for people to steal creative work product and making it illegal for people to enjoy it.

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1. Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 125 S.Ct. 2764 (2005) (reversing court of appeals and holding that distributor of music-file-sharing software could be liable for copyright infringement by users of software upon proof that distributors clearly expressed intent that software be used for infringing activities).

2. See Andrew C. Humes, *The Day the Music Died: The RIAA Sues its Consumers*, 38 IND. L. REV. 239, 239 (2005) (reporting September 2003 RIAA lawsuits against 261 defendants alleged to have downloaded and uploaded copyrighted music); Brett J. Miller, *The War Against Free Music: How the RIAA Should Stop Worrying and Learn to Love the MP3*, 82 U. DET. MERCY L. REV. 303, 312 (2005) (describing more than 9,000 lawsuits against music downloaders by music industry).

This article explores the economics of popular music creation and consumption in the wake of *Grokster* and suggests the most appropriate role for copyright law in striking a socially beneficial balance between those who create and distribute music and those who consume it.

As technology changes, it increases and decreases risks of certain kinds of market failure, altering the incentives to create and perform music. Before Gutenberg invented the printing press, one who wanted to listen to music had to be close enough to hear the composer perform.<sup>3</sup> The printing press increased the scope of markets by allowing performance of another's music without any contact between composer and performer, but it also created risks of unauthorized mass reproduction of the written representation of music. Before invention of the earliest sound recording devices, consumers of music had to be present at alive performance.<sup>4</sup> Sound recording changed all that.

Each later technological revolution—improvements in the techniques for manufacturing phonograph records in large quantities, the invention and commercialization of magnetic recording, the development of low-cost techniques for producing digital recordings on cheap plastic media, and most recently a combination of advanced compression techniques and greatly increased bandwidth available to most users of the Internet, altered equilibria<sup>5</sup> and raised questions about the proper balance between law and technology in preserving appropriate incentives for producing and consuming music.

The impact of technology on the music market is widely recognized by the public and by legal experts. But, too often, observers only focus on the possibility for technological advances to reduce incentives to create and distribute music. Insufficient attention usually is given to the tendency of some of the same technological advances to increase incentives to create and produce because they reduce costs of original producers.

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3. Or close enough to hear someone who had been given a handwritten score perform.

4. It was also possible that someone with particularly good musical talent could hear a performance and memorize or transcribe a musical score, and play the work for themselves.

5. In economics, *equilibrium* is the state at which supply and demand are in balance. Technological changes often produce a new equilibrium at which the quantity of a good supplied and demanded is greater or less than at a previous equilibrium, and the price may be higher or lower.

This article builds on work done by the author when print publishers and some authors were concerned that the combination of the personal computers and the Internet would stunt creation and publication of literary works.<sup>6</sup> The article explores the economics of music production in a world in which compact disc recorders are part of almost every personal computer, a world in which studio quality audio recordings can be produced in anyone's living room with equipment costing only a few thousand dollars, a world in which all listeners can carry music players wherever they go, and a world in which robust markets exist for exchange of music through the Internet using software such as Grokster and commercial services such as iTunes, Rhapsody, Google, and MySpace.

This article argues that the bleak scenarios painted in public policy venues by the music industry about the risks posed by the new technologies are considerably exaggerated. The reality is that the new technologies do not threaten the position of musicians and other creative actors but are rather the embedded capital of an elaborate, sophisticated, and arguably bloated system of intermediation that was designed to deal with old technologies. The system that the RIAA and MPAA are suing schoolchildren to protect is obsolete, and never had much to do with creative effort.<sup>7</sup> Indeed, as Professor Michael Carroll has observed,<sup>8</sup>

removing copyright protection from musical works and sound recordings would not eliminate professional musicmaking. On the contrary, historical evidence strongly suggests that demand for the services of a class of professional musicians and composers would be sufficient to induce society to find alternative means to enable this group to practice its art.<sup>9</sup>

The vigor of the industry's attack on new technologies has more to do with fear of new forms of competition than protection of creativity.<sup>10</sup>

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6. See Henry H. Perritt, Jr., *Property and Innovation in the Global Information Infrastructure*, 1996 U. CHI. LEGAL F. 261 (1996).

7. See Jessica Litman, *Sharing and Stealing*, 27 HASTINGS COMM & ENT. L. J. 1, 2 (2004) (existing law was designed to facilitate a world in which music distributors needed substantial capital investment in printing presses, trains or trucks, warehouses, broadcast towers or communications satellites).

8. Michael W. Carroll, *Whose Music Is It Anyway? How We Came to View Musical Expression as a Form of Property*, 72 U. CIN. L. REV. 1405 (2004) (describing competing positions on whether music should be protected by copyright law and how much).

9. *Id.* at 1412.

10. See Miller, *supra* note 2, at 321-22 (explaining that industry has not embraced MP3 technology, even though it could "virtually eliminate . . . marketing costs," because of fear of competition from independent bands).

Writing and enforcing law aimed at protecting these obsolete methods of intermediation represent dead weights on society. Michael Carroll again said it well: “From a utilitarian perspective, we should be open to the possibility that copyright no longer is the best tool for stimulating musical innovation, even if copyright law remains cost-justified for more expensive forms of expression, such as feature films.”<sup>11</sup>

At the very least, legislators should resist pressures from the music industry to expand copyright protection. Instead copyright law should be interpreted, or amended if necessary, to permit informal, non-commercial file sharing—conduct which will occur in any event, regardless of what the law says, and which the law should not discourage because it actually encourages further creative effort.

Regardless of what the law says, however, the music industry will not prevail in the end, any more than other protectors of the status quo have prevailed in the past. Technology and market forces will win. Consumers and producers of music—and society—will benefit.

This article begins by recalling that copyright law is justified only by the need to prevent a particular kind of market failure—free riding on the creative effort of another. It summarizes how the substance of copyright law has evolved in response to technological change, in a manner that was perceived by legislators to alter the risk of free riding.

Then it moves to an analysis of the market for music, as shaped by the new economics of the complementary processes of production and consumption. This part of the article argues that new technologies reduce the risk of free riding because they narrow the cost gap between producer and pirate.<sup>12</sup> It also argues that opportunities for new musicians will be enhanced by file sharing and file-sales technologies, coupled with low-cost Web-based advertising and virtual-community technologies. Throughout, the article uses actual or estimated costs, revenues, production and consumption functions. It frankly acknowledges that the opportunities for additional empirical investigation of music production and consumption is vast—far beyond the reach of a single investigator or article. It crystallizes these opportunities for follow-up by the author and others in other articles.

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11. Carroll, *supra* note 8, at 1413-14.

12. For ease in exposition, this article uses the term “producer” to encompass composers, performers, producers and distributors. It uses the term “pirate” to refer to anyone who sells music without authorization from the rights holder in that music.

The article explores new business models for musicians and consumers of music, offering two case studies of Indie musicians<sup>13</sup> who are using new technologies in very different ways.

Finally, the article concludes by considering various proposals advanced by stakeholders and commentators for reforming music copyright law, some of which include the imposition of new taxes on factor inputs for music production and consumption. It argues that fair use should be interpreted more broadly, but that regardless of legal interpretations, a new equilibrium will result over the next few years: the major music labels fade from the scene and music consumers continue to enjoy the benefits of downloading music, sometimes paying for it and sometimes exchanging it with their friends, which in turn will increase the demand for paid music. At the same time, consumers will be drawn to smaller venues at which as-yet undiscovered musicians perform.

## II. Coase and Copyright

Why should the law concern itself with the exchange of music? Music is art. Those who generate music and those who enjoy it should be empowered in a free society to decide for themselves how they will generate it and enjoy it. Ronald H. Coase teaches that rational actors will make good decisions about allocating their resources in the absence of law.<sup>14</sup> If a singer is willing to sing a song for \$1.00 and someone wants to listen to his song and is willing to pay a \$1.50 for it, they will reach an agreement under which the listener will pay something between \$1.00 and \$1.50 to the singer, who will then perform for the listener. Of course the singer and the listener have to find each other before they can bargain. The cost of finding each other is what is called a “transaction cost,” which the Coase Theorem explicitly does not take into account.<sup>15</sup>

Another kind of transaction cost exists. It may be that the singer is willing to sing for a dollar but is concerned that the listener will steal his song, neither giving him credit for it nor preserving the market for future paying listeners. In other words, the listener also may be able to sing and, having heard the song, may appropriate it and sing it for others who are just as happy to pay the original listener as to pay the original singer.

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13. “Indie” musicians are those who perform or record professionally but have no relationships with major labels.

14. Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960).

15. Coase, *supra* note 14, § V, at 7.

It is not impossible for the original two parties to take this concern into account in their bargaining. The original singer may say to the original listener, "I will pay you \$.25 for your promise not to tell anyone the lyrics of my song or to sing it to anyone else. The listener, more interested in listening than in singing, agrees. The two parties offset the original payment for the singing against the payment for not appropriating the song and end up with a bargain under which the singer sings and the listener only listens and pays somewhere between \$.75 and \$1.25.

Of course the original listener may break his promise and sing the song in the public park. Detecting such a breach of his promise and punishing him for it represent additional transaction costs.

The possibility that a consumer may become a competitor reflects the fact that music—especially recorded music—is what economists call a "public good." Public goods are distinguished from private goods by two characteristics: non-excludability, and non-rivalness. Non-excludability means that when the singer sings the song, anyone nearby can hear it. The singer cannot exclude those who have not paid unless he builds (or rents) a soundproof wall. Non-rivalness<sup>16</sup> means that the singer still has the song even after he has performed it and that the original listener may sing it for someone else and still keep it in his head and sing it again.

Performed music is not a perfect public good. Performed music is excludable and thus lacks one of the two defining characteristics of a public good. One can perform—and performances typically occur—in an enclosed space from which those who have not paid can be excluded. Performed music also is not entirely non-rival, either. Consumers get to see the pretty (or otherwise interesting) faces of the performers as well as hearing their music. Attending a performance is more than simply hearing the music; it is an experience. One cannot internalize the performance fully and thus "keep" it while passing it on to someone else. Musicians have little difficulty in making Coasian contracts that protect themselves from transaction costs associated with live performances of music.<sup>17</sup> The only risk is that someone in the audience goes out and sings the song later—absent recording technology discussed later in this section.

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16. "Non-rivalness" also is known as non-depletability.

17. See, e.g., [www.lollapalooza.com](http://www.lollapalooza.com) (prohibiting video or audio recording equipment and professional-quality cameras, in "info"/"prohibited items" section); <http://www.soldierfield.net/facilityGuide.aspx> (prohibiting video or movie cameras).



Natural limitations on human capacity historically kept these transaction costs of public goods in music within tolerable bounds. Not all listeners can sing well enough that anyone wants to hear them as opposed to the original singer. Even those listeners who sing well may have poor memories, have no interest in performing, or be less attractive physically than the original singer.

Technology reduces the impact of these human limitations and transforms much music into public goods. If the listener listens, not to a live performance, but to a recording of the music, the listener need not be able to sing or to remember the song. She can play her recording for others without paying the singer again. And with the advent of digital representation of sound waves and the proliferation of devices that can copy these digital representations, it is impossible for the one who produces an original recording to prevent anyone who possesses that recording from making a perfect copy, copy protection aside. Now the original listener can easily and cheaply produce multiple copies of the song, distribute them widely, and thereby deprive the original singer of revenues that would otherwise flow to the original singer from everyone who wants to listen to the song. In addition, anyone who possesses the original recording has little incentive not to duplicate it because she can keep it even as she gives the perfect copy to her friends. In other words, digitally recorded music possesses the non-rival and non-excludable characteristics more strongly than a live music performance, and therefore increases the risk of free riding.

Free riding is a transaction cost that looms large in the market for music (and for other forms of entertainment). If an original listener internalizes a song and performs it for others, or duplicates and distributes a recording of the song, both the original listener and the new listeners obtain a free ride on whatever investment the singer made in creating the music and lyrics. The listener who then becomes a singer gets a free ride on the creative effort although he cannot get a free ride on the original singer's voice quality, vocal performance ability or looks. The original listener who becomes a record distributor gets a free ride on everything. Not only that, the original listener—the one who breached his contract with the original singer—is not the only one who can duplicate the recording. Anyone who has it can duplicate it. That opens up the original singer to the possibility of free riding not only by his original listener, with whom he can, after all, make a contract prohibiting whatever he wants to prohibit, but also by everyone else in the world who gets possession of the sound waves representing his music in circumstances that permit them to

record it. The original singer is not in a position to enter into contracts with all of those unidentifiable third parties.

Recorded music exhibits both characteristics of a “public good” to such an extent that a simple model of private contract has difficulty making enforceable deals to manage transaction costs. Because of the law’s inability to readily handle these transaction costs, performers will make fewer deals than they would in a transaction-cost-free world and will insist on higher prices because they fear that listeners will steal their songs.<sup>18</sup> Listeners will make fewer deals and insist on paying lower prices than they would in a transaction-cost-free world because they believe they can obtain the same music elsewhere for free or at a lower price. Only search costs<sup>19</sup> make them willing to pay anything at all.<sup>20</sup> The Coase paradigm therefore suggests a role for law to reduce the transaction costs and make a Pareto optimal equilibrium<sup>21</sup> more nearly obtainable.

Contrast that with a world in which music is only performed live and not recorded. In that world, the transaction costs are tolerable. Designing a legal regime to manage the transaction costs and promote optimal resource allocation with respect to creation and consumption of music would be a relatively low priority. But the possibility of recording music and passing along the recordings dramatically changes the economic equation.

The economic harm from free riding on recorded music may be even greater because, if the original singer produces recordings as well as performances, he also must have the capital goods and skill to make acceptable recordings.<sup>22</sup> Depending on the available technology, it may be possible for free riders to duplicate the recording with much less expensive capital equipment and far less

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18. The higher price approximates a Coasian bargain in which the original listener implicitly says to the original singer, “I will pay you a little more for the privilege of possibly duplicating your music and giving (or selling) it to others.”

19. “Search costs” are all of the costs, in terms of money and time, incurred to find an equivalent product from another source.

20. See Litman, *supra* note 7, at 28 (recording industry and its “bookkeeping tricks” barely manage to subsidize its searching for and identifying the “musicians whose work will prove to be worth listening to”).

21. A Pareto-optimal equilibrium is one in which no one can be made better off without making someone worse off. It reflects the most efficient distribution of societal resources, distributive justice aside.

22. He can buy the capital goods, or he can rent them from a recording studio. He can buy skill in the form of training for himself.

skill than is necessary to make the original recording.<sup>23</sup> The third party now gets a free ride not only on the voice training and creative effort of the original singer but also on that part of the original singer's capital investment not necessary for mere duplication of the recording.<sup>24</sup>

If the original singer is commercially motivated and has invested in voice training, put forth the creative effort, and bought the capital equipment and skilled labor necessary to produce recorded music in order to sell it to as many consumers as possible, his business model is threatened by the possibility of free riding. A third-party free rider, not having to make the same investment as the original singer, can make money by selling the original singer's work at a price less than the original singer must charge to recover a reasonable return on his investment.

The result, once everyone in the market understands all this, will be the underproduction of recorded music by those seeking at least enough revenue to recover their costs. At the limit, no profit-seeking musicians will record music; they will only perform it live.<sup>25</sup> The quantity of music that would be performed and consumed through recordings will be subtracted from the goods available to society.

Both technology and law can help avoid this artistic catastrophe. Technology can make it more difficult to duplicate recorded music except through equipment or knowledge possessed by the original singer, thus increasing the cost and thereby reducing the incidence of free riding.

The law can reduce various kinds of transaction costs, including free riding. At the most basic level, the law can make the contracts between the original singer and the original listener enforceable, thereby reducing transaction costs associated with enforcement of the

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23. The original singer needs recording and mixing equipment and CD mastering equipment (if he delivers recorded music on CDs). The free rider only needs a CD "burner," which comes as standard equipment on most computers.

24. See William M. Landes, *Copyright, Borrowed Images, and Appropriation Art: An Economic Approach*, 9 GEO. MASON L. REV. 1, 4-6 (2000) (Landes offers the same explanation of the economics of free riding, albeit outside the music context).

25. In the interest of clarity, this conclusion overstates the risk. In the real world, some musicians always will make recordings, even if they have to give them away or even subsidize their production, simply because they want others to hear their music. Nevertheless, rock stars like David Bowie predict that touring would be the only way for performers to make money because music would "become like running water or electricity." Marie Connolly & Alan B. Krueger, *Rockonomics: The Economics of Popular Music*, at 24, available at, <http://www.irs.princeton.edu/pubs/pdfs/499.pdf> (last visited June 16, 2005) [hereinafter "Princeton Study"].

original deal.<sup>26</sup> More ambitiously, the law can impose a duty on anyone in possession of a song not to make it available to others without the permission of the original singer and without honoring whatever terms the original singer may insist upon for subsequent availability of his artistic work. For example, the law might give the original singer a statutory or common law right in the music and lyrics and impose a duty on everyone else not to reproduce, distribute, publicly perform, publicly display or prepare derivative works of the original song.<sup>27</sup> Such legal regimes reduce the risk of free riding by imposing potential costs on free riders—litigation costs and the prospect of fines or damages for violating their duties. Even if not everyone violating the duties gets caught, there is some non-zero probability of getting caught and punished. Rational persons tempted to engage in free riding will calculate the expected value of the costs imposed by law.

The law also could go further, and seek to reduce other transaction costs, such as search costs, either directly or indirectly, by creating incentives for private voluntary efforts to make it easier for singers and listeners to find each other and make deals.

The Coase paradigm not only assumes zero transaction costs, it ignores questions of distributive justice. A society where distributive justice prevails is not only one in which resources are allocated efficiently; it also is one in which each member enjoys resources she deserves, in a moral sense. Distributive-justice considerations are sources of argument as much as they are sources of principles for law. Does each member of society deserve, in a moral sense, to be able to enjoy music? Does each person with musical talent deserve to be able to adapt music that already exists? Does each musician deserve to have his art recognized as his creation and to be able to make a living off of making music? Affirmative answers to each of these questions are plausible, but affirmative answers to all of the questions offer little guidance as to how copyright law should strike balances among competing claims.

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26. Even in the absence of a legal regime to enforce contracts, some contracts nevertheless could be enforced. A singer might refuse to sing again for a listener who breached an earlier contract, or demand a higher price for the next performance. She also might beat up a breaching listener. These possibilities would provide a deterrent for breaching—at least for some listeners.

27. See 17 U.S.C. § 106 (2006).

### III. Copyright

#### A. Justification

As the preceding section suggests, copyright law is justified by the need to preserve creative incentives by plugging holes in the market. As the risk of free riding and other transaction costs changes, the intensity of copyright protection should change. The music industry claims that new technologies have increased the risk of free riding. In fact, they have reduced it. Moreover, the technologies that threaten the position of established stakeholders dramatically have changed other transaction costs for both artists and consumers, mostly reducing them.

#### B. History

The earliest proprietary protection for music was effectuated through a printing franchise for printed musical scores. The right belonged to the publisher, rarely to the composer.<sup>28</sup> After copyright law came into existence, music generally was treated like any other printed work, with protection focused on the printer or bookseller. The first U.S. copyright statute, enacted in 1790, protected only “maps, charts and books.”<sup>29</sup> Music, drama, and works of art obtained protection only later.<sup>30</sup>

When Congress debated the 1909 Copyright Act, technology existed for manufacturing and playing sound recordings, but not for copying them. Accordingly, when the drafters added protection for composers of music, they focused entirely on written scores, and not on recordings.<sup>31</sup>

The 1909 Copyright Act included, however, among the exclusive rights reserved to the composer, the right to perform the work publicly.<sup>32</sup> There ensued a struggle over whether radio broadcasts of

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28. Carroll, *supra* note 8, at 1409.

29. William A. Carleton, *Copyright Royalties for Visual Artists: A Display-Based Alternative to the Droit de Suite*, 76 CORNELL L. REV. 510, 547 (1991) (quoting original statute).

30. See Clayton v. Stone, 2 Paine 382, 5 F.Cas. 999, 1000-01 (C.C.N.Y. 1829) (referring to the possibility that a “volume of . . . music” could be entitled to copyright protection under the original copyright law; protectable “book” including “one sheet, as the words of a song or the music accompanying it”; quoting Statute of February 3, 1831, 4 Stat. 436, as including “musical composition” among the works eligible for copyright).

31. Robert J. Delchin, *Musical Copyright Law: Past, Present and Future of Online Music Distribution*, 22 CARDOZO ARTS & ENT. L.J. 343, 346 (2004) [hereinafter Delchin].

32. *Id.* at 347.

musical performances violated this right,<sup>33</sup> resolved in the 1931 Supreme Court case of *Buck v. Jewell-La Salle Realty Co.*, which said not only that a radio broadcast, but also that public redistribution of the broadcast in a hotel, constituted a public performance.<sup>34</sup> This was a major victory for the music industry and a major defeat for the broadcasting industry. Two collective rights organizations, Broadcast Music Incorporated (“BMI”) and the American Society of Composers, Authors and Publishers (“ASCAP”),<sup>35</sup> formed to administer the performance right by licensing blocks of musical works to radio stations.

But forty years later, in *Twentieth Century Music Corp. v. Aiken*,<sup>36</sup> the Supreme Court held that playing a radio in a small business did not violate the public performance right. The radio station had a license from ASCAP; the small business owner did not. The Supreme Court observed that rights conferred by the Copyright Act are limited. “No license is required by the Copyright Act, for example, to sing a copyrighted lyric in the shower.”<sup>37</sup>

The limited scope of the copyright holder’s statutory monopoly, like the limited copyright duration required by the Constitution, reflects a balance of competing claims upon the public interest: creative work is to be encouraged and rewarded, but private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts.<sup>38</sup>

The court was motivated by two policy considerations: the impracticability of enforcing a contrary rule, and the fact that the copyright owner already had received a fair return on his investment by the license of the music to the radio broadcaster—a factor absent from the 1931 case.<sup>39</sup>

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33. In the early days, radio stations did not broadcast music recordings because of poor quality, they broadcast live performances. Music copyright owners later pushed for broadcasts of recordings in order to promote demand for live performances and for sheet music. *Id.* at 347.

34. 283 U.S. 191, 201 (1931) (holding, *inter alia*, that a separate public performance occurs each time a radio receiver transforms radio waves into sound waves. “There is no difference in substance between the case where a hotel engages an orchestra to furnish the music and that where, by means of the radio set and loud-speakers here employed, it furnishes the same music for the same purpose. In each the music is produced by instrumentalities under its control.”).

35. See *K—91, Inc. v. Gershwin Publishing Corp.*, 372 F.2d 1, 2-3 (9th Cir. 1967) (describing ASCAP).

36. 422 U.S. 151 (1975).

37. *Id.* at 155.

38. *Id.* at 156.

39. *Id.* at 162-64.

As sound recording technology improved and magnetic tape was commercialized, the music industry began, in the 1950s, to seek legal protection for sound recordings. Congress finally responded with the enactment of the Sound Recordings Act of 1971.<sup>40</sup> That Act granted copyright protection to sound recordings for the first time but did not grant owners of copyrights in sound recordings all the usual rights of copyright owners. Instead they were granted only reproduction, distribution, and derivative-work rights. Public performance was excluded,<sup>41</sup> giving the owners of sound recordings less than the full inventory of exclusive rights guaranteed composers and publishers. As a result, commercial radio broadcasters (and others) could play recorded music for the public, royalty-free.<sup>42</sup>

For most music, two distinct copyrights exist: the copyright in the composition—the musical work, and the copyright in the sound recording. When a song is broadcast over the radio, only the owner of the composition copyright is entitled to royalties. The distinction between the right in the music itself and the right in a sound recording of the music can be confusing at first. Some examples may help to reduce the confusion.

Suppose Andrew composes a song and sings it to Tim, never having written it down. Tim thinks it is catchy and sings it at Tim's next performance at a club. Tim has not infringed Andrew's performance right. Andrew has no copyright in the song because there was no "fixation;" he did not write the song down or record it.

Andrew, having learned a little more about copyright law, composes a second song, writes a simple score, and sings it to Tim. Tim does the same thing he did with the first song. This time Tim has infringed Andrew's performance right. A copyright now exists in the song because it was "fixed" when Andrew wrote the score. Tim infringed Andrew's exclusive right to perform the song publicly. It makes no difference that what Tim copied was the sound of the music rather than singing from the score.

Andrew composes a third song, records himself singing it and makes a CD. A radio station plays the CD. Tim hears the radio broadcast, likes the song and sings it at his next performance. Tim has once again violated Andrew's performance right because he copied

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40. Sound Recording Act of 1971, Pub. L. No. 92-140, 85 Stat. 391 (1971). This Act was amended and made permanent by Pub. L. No. 93-573, 88 Stat. 1873 (1974) (codified as amended in the Copyright Act of 1976, 17 U.S.C. 102 (1990)).

41. H.R. REP. 104-274 at 11 (Oct. 11, 1995).

42. Delchin, *supra* note 31, at 348 (citing Sound Recording Act of 1971, Pub. L. No. 92-140, 85 Stat. 391 (codified as amended at 17 U.S.C. § 102)).

the music and performed it. Andrew has a copyright because he “fixed” the song when he recorded it. On the other hand, Tim did not copy the sound on the sound recording, so he has not infringed Andrew’s sound recording rights.

Tim gets hold of the score Andrew created, gets his band together and they produce an enhanced version, with a drumset, bass, guitar, and Tim’s vocals. They make a CD and sell it. Tim and his fellow performers have a right in the musical elements they added to Andrew’s underlying music. They produced a derivative work, and they are entitled to a copyright in the value they added. They are not entitled, however, to rights in Andrew’s underlying music. In fact, by producing the new work based on Andrew’s original, they have infringed Andrew’s derivative work right. When Tim plays the CD for 100 of his classmates at a college reunion, he has infringed Andrew’s performance right in the original song. He has not, however, infringed Andrew’s sound recording rights in the CD Andrew originally made, because he made no use of that CD.

If Tim is embarrassed by his group’s derivative work, and makes copies of Andrew’s original CD and gives them out at the reunion, Tim has violated Andrew’s reproduction and distribution rights in the sound recording, and has also violated Andrew’s reproduction and distribution rights in the song.

In 1995 Congress changed the legal equation by enacting the Digital Performance Right in Sound Recordings Act.<sup>43</sup> This Act extended a public performance right to digital recordings, but only when they are obtained through an interactive service, which was thought more likely than conventional one-to-many broadcasts to displace sales of physical audio recordings. Established arrangements with radio and television broadcasters were left intact.<sup>44</sup> So if Tim downloads an MP3 file of Andrew’s song and plays it at his reunion, he has infringed Andrew’s public performance right in the digital recording, as well as Andrew’s public performance right in the song itself.

These developments in music copyright law occurred largely independently of broader reforms of copyright law in general. Fundamental reform took place in 1976,<sup>45</sup> and again in 1988 when

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43. Pub. L. No. 104-39, 109 Stat. 336 (1995) (codified as various amendments to 17 U.S.C.).

44. Delchin, *supra* note 31, at 352-53.

45. In 1974 the Congress had created a National Commission on New Technological Uses of Copyrighted Works (“CONTU”) to develop recommendations on how to solve problems raised by the impact of new technologies such as photocopying and computers on the authorship, distribution, and use of copyrighted works. Pub. L. 93-573 (Dec. 31, 1974). The Commission’s work shaped the content of the Copyright Act of 1976, although



U.S. copyright law was brought into conformity with copyright practices in other countries.<sup>46</sup> Under the 1909 Act, federal copyright arose when a work was published with the requisite copyright notice. Unpublished works were protected by state common law. Publication without a copyright notice placed the work in the public domain. The 1988 Act makes a copyright vest as soon as the work is fixed in a tangible medium. The amended statute eliminates state common-law copyright through express preemption.<sup>47</sup> It greatly reduces the legal significance of a copyright notice. The Act has been amended many times since then to accommodate the law to changing technologies.<sup>48</sup>

### C. Current Content

Under current law, copyright protection extends to “original works of authorship fixed in any tangible medium of expression.”<sup>49</sup> “Works of authorship” explicitly include “musical works, including any accompanying words.”<sup>50</sup> “Musical works”<sup>51</sup> constitute a category separate from “sound recordings,”<sup>52</sup> “dramatic works, including any

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the act was adopted before the Commission finished its work. Pub. L. 94-553 (1976) (codified as 17 U.S.C. § 101 *et seq.*). The legislative history of this act is contained in 94th Cong., 1st sess., 1975, S. Rept. 473 [hereinafter “Senate Report”]; 94th Cong., 2d sess., 1976, H. Rept. 1476 [hereinafter “House Report”]; and 94th Cong., 2d sess., 1976, H. Rept. 1733 [hereinafter “Conference Report”].

46. Berne Convention Implementation Act, Pub. L. No. 100-568, 102 Stat. 2853 (Oct. 31, 1988) (codified in scattered sections of 17 U.S.C.).

47. 17 U.S.C. § 301.

48. See Satellite Home Viewer Act of 1988, Pub. L. No. 100-667, 102 Stat. 3960 (codified at 17 U.S.C. § 119) (establishing compulsory licenses for satellite television broadcasters); Audio Home Recording Act of 1992, Pub. L. No. 102-563, 106 Stat. 4237 (codified at 17 U.S.C. §§ 1001-1010) (imposing fees and technology requirements for digital audio recording); Digital Performance Rights in Sound Recordings Act of 1995, Pub. L. No. 104-39, 109 Stat. 336 (codified at 17 U.S.C. §§ 106(6), 114) (creating new public performance rights and compulsory licenses for digital transmission of sound recordings); No Electronic Theft Act of 1997, Pub. L. No. 105-147, 111 Stat. 2678 (codified at 17 U.S.C. § 506(a)) (expanding scope of criminal copyright infringement to cover noncommercial digital infringements); Digital Millennium Copyright Act of 1998, Pub. L. No. 105-304, 112 Stat. 2860 (codified at 17 U.S.C. §§ 1201-1205) (prohibiting efforts to defeat technological copy protection schemes); Small Webcaster Settlement Act of 2002, Pub. L. No. 107-321, 116 Stat. 2780 (codified at 17 U.S.C. § 114) (modifying compulsory license rates for small webcasters); Technology, Education, and Copyright Harmonization Act of 2002, Pub. L. No. 107-273, 116 Stat. 1758 (codified at 17 U.S.C. §§ 110(2), 112) (expanding copyright privileges for educational and library users to facilitate distance learning over the Internet).

49. 17 U.S.C. § 102(a).

50. *Id.* § 102(a)(2).

51. *Id.*

52. *Id.* § 102(a)(7). (“Sound recordings” are works that result from the fixation of a series of musical, spoken, or other sounds, but not including the sounds accompanying a

accompanying music”<sup>53</sup> and from “motion pictures and other audiovisual works.”<sup>54</sup>

As the examples in the preceding section show, “When a copyrighted song is recorded on a phonorecord, there are two separate copyrights: one in the musical composition and the other in the sound recording . . . The rights of a copyright in a sound recording do not extend to the song itself, and vice versa.”<sup>55</sup> Moreover, the lyrics are subject to an independent copyright as literary works.<sup>56</sup> In addition, performers and producers may enjoy independent intellectual property protection for their trademarks<sup>57</sup> and for copyrighted images appearing on recorded media or packaging.<sup>58</sup>

The act defines six types of conduct for which copyright owners exclusively have the privilege of doing or authorizing:

1. reproduction<sup>59</sup>
2. preparation of derivative works<sup>60</sup>
3. distribution of copies or phonorecords<sup>61</sup> to the public<sup>62</sup>
4. public performance<sup>63</sup>
5. public display<sup>64</sup>
6. performance through digital audio transmission<sup>65</sup>

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motion picture or other audiovisual work, regardless of the nature of the material objects, such as disks, tapes, or other phonorecords, in which they are embodied.”). *Id.* § 101. (The physical object containing a “sound recording” is a “phonorecord,” but the recorded music itself is a “sound recording,” but not a “phonorecord.”).

53. *Id.* § 102(a)(3).

54. *Id.* § 102(a)(6).

55. *Newton v. Diamond*, 204 F. Supp. 2d 1244, 1249 (C.D. Cal. 2002).

56. *ABKCO Music, Inc. v. Stellar Records, Inc.*, 96 F.3d 60, 64 (2d Cir. 1996) (holding that inclusion of lyrics on a CD containing music exceeded privilege conferred by compulsory license and constituted infringement of copyright in lyrics).

57. *See Firma Melodiya v. ZYX Music GmbH*, 886 F. Supp. 1306, 1312 (S.D.N.Y. 1995) (granting injunction against use of symbols and words on recorded music which qualified as trademarks)

58. *Jefferson Airplane v. Berkeley Systems, Inc.*, 886 F. Supp. 713, 716-17 (N.D. Cal. 1994) (registration of copyright for sound recording did not include illustration on album cover; assuming that album cover would be eligible for separate copyright registration).

59. 17 U.S.C. § 106 (1) (2006).

60. *Id.* § 106(2).

61. *Id.* § 101 (“Phonorecords’ are material objects in which sounds, other than those accompanying a motion picture or other audiovisual work, are fixed by any method now known or later developed, and from which the sounds can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. The term ‘phonorecords’ includes the material object in which the sounds are first fixed.”).

62. *Id.* § 106(3).

63. *Id.* § 106(4) (excluding sound recordings from right).

64. *Id.* § 106(5).

Music is treated differently under the statute depending on its form. The reproduction and derivative-work rights extend to all copyrighted works, including musical works, phonorecords and sound recordings. The public-performance and public-display rights extend to musical works but not to phonorecords and sound recordings. Sound recordings alone are subject to the exclusive right of public performance “by means of a digital audio transmission.”<sup>66</sup>

Section 114 further defines and limits rights and privileges for the broadcast of sound recordings,<sup>67</sup> including a specific privilege for non-commercial public broadcasting entities.<sup>68</sup> This section expressly excludes sound recordings from the public-performance right under section 106(4).<sup>69</sup> The section limits the right to duplication of sound recordings that recapture the actual sounds fixed in the recording and excludes from the derivative work right the ability of the holder to make or duplicate another sound recording that “consists entirely of an independent fixation of other sounds, even though such sounds imitate or simulate those in the copyrighted sound recording.”<sup>70</sup>

Section 114 exempts from the specific performance right performances through nonsubscription broadcast transmissions<sup>71</sup> and certain retransmissions. It also limits the duration of exclusive licenses to interactive services,<sup>72</sup> but it grants an exemption from the antitrust laws for collective negotiation of licenses.<sup>73</sup> This section provides for compulsory arbitration of license terms for broadcast services, but not for interactive services.<sup>74</sup> Small webcasters enjoy specific compulsory licensing rights under section 112.<sup>75</sup> Overall, section 114 limits the unfettered exclusive right for public performance of sound recordings to interactive digital audio services.<sup>76</sup>

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65. *Id.* § 106(6).

66. *Id.*

67. *Id.* § 101 (“‘Sound recordings’: are works that result from the fixation of a series of musical, spoken, or other sounds.”).

68. *Id.* §114(d)(1)(A).

69. *Id.* §114(a).

70. *Id.* §114(b).

71. *Id.* §114(d)(1)

72. *Id.* §114(d)(3)(A).

73. *Id.* §114(e)

74. *Id.* §114(f).

75. *Id.* §112(e).

76. *See generally* 18 U.S.C. § 2319(a) (prohibiting unauthorized copying of commercially unreleased performance); *Bonneville Int’l Corp. v. Peters*, 347 F.3d 485, 487-88 (3d Cir. 2003) (reviewing history of performance right exclusion for sound recordings and approving Copyright Office rule subjecting simultaneous webcasting of radio broadcasts to performance right under Digital Audio Recording Act); *United States v.*

#### D. Response to Changes in Technology

Changes in technology have influenced the creation and content of music for hundreds of years. Technologies for musical instruments changed the style of performance and created a niche for composers as distinct from singers.<sup>77</sup> Printing technology changed the way music was disseminated, enlarging the possibilities of experiencing music for listeners beyond live performances.<sup>78</sup> The development of the phonograph record influenced audience choice in favor of singers like Caruso, whose voice range matched the audio bandwidth capabilities of early phonographs.<sup>79</sup> The flexibility afforded by analog tape recorders made it possible for artists to create and mix music distinct from mere live recordings.<sup>80</sup> Later, digital technologies made possible the processing of multiple recordings less expensive without sacrificing quality.<sup>81</sup> Jukeboxes permitted listeners to develop their own playlists, concomitantly increasing the demand for vinyl records.<sup>82</sup> Radio broadcasts of music and Motorola's automobile radio receivers made music enjoyment portable,<sup>83</sup> as did the later development of transistorized portable radios<sup>84</sup> and later pre-recorded cassette tapes and the Sony Walkman portable cassette player.<sup>85</sup>

Leapfrogging between playback and recording technologies promised to increase markets for, and to increase the supply of,

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Moghadam, 175 F.3d 1269, 1271-72 (11th Cir. 1999) (reviewing history of statutory protection of sound recordings and affirming conviction for violation of anti-bootlegging statute).

77. Musical instruments have been around for a long time. Instruments such as flutes, drums, harps and predecessors of guitars and banjos have existed since biblical times. There also has been constant innovation in instrument technology. The guitar was introduced in 14th century Spain, the trombone in the 15th century, the clarinet in the late 1600s, the piano in 1709, the keyed trumpet in 1796, the tuba in 1835, and the saxophone in 1846. In the twentieth century, electric guitars, drumsets for rock music, synthesizers, and music generating computer software were added to the inventory. *See also* MARK COLEMAN, *PLAYBACK*, 115-54 (Da Capo Press 2003) (chronicling evolution of disco DJ manipulation of turntables into music synthesizers).

78. *See* Carroll, *supra* note 8, at 1408-09 (describing the effect of printing technology on music).

79. COLEMAN, *supra* note 77, at 18 (chronicling the interaction between technology and music, and exploring how technology influences the creation and content of music as well as its distribution).

80. *Id.* at 58.

81. [http://en.wikipedia.org/wiki/Digital\\_audio](http://en.wikipedia.org/wiki/Digital_audio).

82. COLEMAN, *supra* note 77, at 42-46.

83. *Id.* at 82 (people listen to radio while they are doing something else).

84. *Id.* at 86.

85. *Id.* at 155-58.

music.<sup>86</sup> This flexibility at times threatened the positions of established stakeholders.<sup>87</sup> Vinyl records, a subsequently developed recording media, killed big bands. Cassette tapes and the Walkman killed vinyl records and the turntable. CDs and CD players killed cassette tapes. Now downloadable music is killing the CD.<sup>88</sup>

At the onset of all these changes in technology, those already established in the music industry usually initially deny the utility—or at least the impact—of the new technologies, and then seek changes in the law and in quasi legal arrangements to protect themselves from competition enabled by the new technologies.<sup>89</sup> Rarely have the established interests been the early adopters of the new ways of making or disseminating music. Inevitably, however, the pressure of consumer demand, which could be satisfied in new ways through new technologies, has swept away the objections of the defenders of the status quo—and often the objectors themselves.

Not only do the established rights holders seek to block technologies making new competition possible, the new entrants and new technology innovators also face daunting challenges in sorting through the multiplicity of rights under existing law. One of the difficulties in applying existing copyright law to music distribution over the internet is in deciding what constitutes a reproduction, public performance, or a distribution to the public. One innovative MP3 file service, MP3.com, obtained licenses for public performances of music streamed through its website. It obtained these public-performance licenses from copyright collectives owning the right, only to be sued for infringing the reproduction right, controlled by a different entity.<sup>90</sup>

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86. *Id.* at xix-xxiii.

85. *Id.*

88. There continues to be, however, some demand for vinyl records, and perhaps also for cassette tapes. This interest is fueled mostly by nostalgia and arguments that the quality of a vinyl recording is somehow better than—or at least different from—recordings on other media. The same will likely be true for CDs. Music recordings on most CDs are less compressed than recordings in .mp3 files, and are therefore, technically, higher quality recordings.

89. Litman, *supra* note 7, at 38 (“The current dominant forces in the music and recording business may no longer need recording pressing plants, CD stamping plants, warehouses and trucks to distribute music, but they have a huge stake in ensuring that digital distributors be limited to those who used to rely [on those capital assets].”).

90. Litman, *supra* note 7, at 18 (describing MP3.com experience (citing TEEVEE Toons v. MP3.com, 134 F. Supp. 2d 546 (S.D.N.Y. 2001); UMG Recordings, Inc. v. MP3.com, 109 F. Supp. 2d 223 (S.D.N.Y. 2000))); Zeb G. Schorr, *The Future of Online Music: Balancing the Interests of Labels, Artists, and the Public*, 3 VA. SPORTS & ENT. L.J. 67, 77 (2003) (describing MP3.com’s requirement that subscribers demonstrate ownership of purchased CD).

According to rights holders, any dissemination of music through the Internet, whether by posting on a website, sending it by email, or including it in a file-sharing index, potentially infringes the reproduction, public-distribution, and public display/performance rights.<sup>91</sup> Some rights holders have taken the position that making a link to copyrighted material available on a website also infringes the reproduction, public-distribution, and public performance/display rights, because a visitor to the website can easily make a copy of the linked music file by clicking on the link.<sup>92</sup> Music copyright also presents difficulties for consumers and artists who want to build on existing music. "Today, in short, everything is protected by copyright and it is almost impossible to figure out whom to ask for permission."<sup>93</sup>

#### E. Supreme Court *Grokster* Decision

In *Metro-Goldwyn-Mayer Studios Inc. v. Grokster*,<sup>94</sup> the Supreme Court of the United States, reversing the Ninth Circuit, held that distributors of free software that permitted sharing of music files through peer-to-peer networks were liable for copyright infringement by users of the software because they distributed the software "with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement."<sup>95</sup>

The United States Court of Appeals for the Ninth Circuit had shown little sympathy for the position of the *Grokster* plaintiffs:

From the advent of the player piano, every new means of reproducing sound has struck a dissonant chord with musical copyright owners, often resulting in federal litigation.<sup>96</sup>

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91. Litman, *supra* note 7, at 19; *Recording Industry Sues XM Satellite Radio*, N.Y. TIMES, May 17, 2006 at p. C7 (reporting on RIAA suit in the Southern District of New York claiming damages for the downloading of digital radio broadcast songs into a device that can store up to 50 hours of music for a monthly fee; acknowledging that XM radio already paid for public performance license fees).

92. Litman, *supra* note 7, at 20 (citing *Kelly v. Arriba Soft Corp.*, 280 F.3d 934 (9th Cir. 2002), *withdrawn in* 336 F.3d 811 (9th Cir. 2003)); *Intellectual Reserve v. Utah Lighthouse Ministry*, 75 F. Supp. 2d 1290 (D. Utah 1999). Prof. Litman also notes that the recording industry apparently takes the position that mere possession of an infringing file constitutes infringement. *Id.*; *supra* notes 78-79.

93. Litman, *supra* note 7, at 22.

94. 545 U.S. 913 (2005).

95. *Id.* at 918.

96. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster Ltd.* 380 F.3d 1154, 1158 (9th Cir. 2004), *rev'd* 545 U.S. 913 (2005).

The introduction of new technology is always disruptive to old markets, and particularly to those copyright owners whose works are sold through well-established distribution mechanisms. Yet, history has shown that time and market forces often provide equilibrium in balancing interests, whether the new technology be a player piano, a copier, a tape recorder, a video recorder, a personal computer, a karaoke machine, or an MP3 player. Thus, it is prudent for courts to exercise caution before restructuring liability theories for the purpose of addressing specific market abuses, despite their apparent present magnitude.<sup>97</sup>

The court of appeals evaluated the claim against Grokster under the standard of *Sony Corp. of America v. Universal City Studios, Inc.*<sup>98</sup> In *Sony*, the Supreme Court held that the sale of video recorders could not give rise to contributory copyright infringement liability even though the defendant knew the machines were being used to commit infringement. It was sufficient to defeat a claim of contributory copyright infringement if the defendant showed that the product was “capable” of “substantial” or “commercially significant” non-infringing uses. Because Sony’s Betamax video recorder was capable of commercially significant non-infringing uses, constructive knowledge of the infringing activity could not be imputed from the fact that Sony knew the recorders, as a general matter, could be used for infringement.<sup>99</sup>

The Ninth Circuit construed *Sony* as requiring only that the accused product be *capable* of substantial non-infringing uses and, thus, evidence of the percentages of infringing versus non-infringing uses was immaterial.<sup>100</sup> Grokster’s evidence met this standard. The court also found insufficient evidence that the defendants had specific knowledge of infringing activity at the time of their alleged contribution to it and failed to take appropriate action. It therefore affirmed summary judgment for Grokster on the count of contributory infringement.<sup>101</sup>

As to vicarious infringement,<sup>102</sup> the court found insufficient evidence that the defendants had the right and ability to control the

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97. *Id.* at 1167.

98. 464 U.S. 417 (1984) (“Sony-Betamax”).

99. *Id.*

100. *Grokster*, 380 F.3d at 1162.

101. *Id.* at 1162-63.

102. “One infringes contributorily by intentionally inducing or encouraging direct infringement, and infringes vicariously by profiting from direct infringement while declining to exercise a right to stop or limit it. . . . [T]he lines between direct infringement, contributory infringement and vicarious liability are not clearly drawn.” 545 U.S. at 930-31 & n.9.

direct infringers. The defendants were more like “landlords” than “dance hall operators,” and thus could not be liable for vicarious infringement.<sup>103</sup>

The Supreme Court reversed. Central to its analysis was the fact that “[t]he record is replete with evidence that from the moment Grokster and StreamCast (the co-defendant) began to distribute their free software, each one clearly voiced the objective that recipients use it to download copyrighted works, and each took active steps to encourage infringement.”<sup>104</sup>

The Court recognized that the interpretation of copyright law requires striking a balance between providing appropriate incentives for creation of music and inhibiting technological innovation.<sup>105</sup>

The argument for imposing indirect liability in this case is, however, a powerful one, given the number of infringing downloads that occur every day using StreamCast’s and Grokster’s software. When a widely shared service or product is used to commit infringement, it may be impossible to enforce rights in the protected work effectively against all direct infringers, the only practical alternative being to go against the distributor of the copying device for secondary liability on a theory of contributory or vicarious infringement.<sup>106</sup>

Declining to be drawn into the controversy over how the “capable of substantial non-infringing uses” standard of *Sony* should be quantified according to percentages of infringing versus non-infringing uses, the Court side-stepped application of the doctrines of contributory or vicarious infringement and instead relied on an “inducement” theory.<sup>107</sup>

The rule on inducement of infringement as developed in the early cases is no different today. Evidence of active steps . . . taken to encourage direct infringement, such as advertising an infringing use or instructing how to engage in an infringing use, show an affirmative intent that the product be used to infringe, and a showing that infringement was encouraged overcomes the law’s reluctance to find liability when a defendant merely sells a commercial product suitable for some lawful use.<sup>108</sup>

Because the evidence showed active efforts by the defendants to promote use of the software to reproduce copyrighted music files without permission of the rights holder, the Court reversed the Ninth

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103. *Grokster*, 380 F.3d at 1164.

104. *Grokster*, 525 U.S. 923-24.

105. *Id.* at 928.

106. *Id.* at 929-30.

107. *Id.*

108. *Id.* at 936 (internal quotations and citations omitted).



Circuit and held that the evidence presented triable issues of fact on the liability of the defendants for inducing copyright infringement.

*Grokster* is important, not only because it extends liability to software developers, but also because it extends the scope of liability for music file sharing beyond those actually sharing files. Accordingly, it invites careful consideration of the circumstances under which file sharing should be treated as infringement. If copyright law were to provide a “safe harbor” within which file sharing is legitimate, developers of software and network infrastructures who facilitate that type of file sharing could escape liability.

Originally intended and constitutionally justified as a tool to reduce transaction costs that might impede music creation, copyright law has grown into a thicket of thorns that threatens creators of new music and distributors of old music with new transaction costs. Market participants continue to worry about free-riding, but they also worry about traps that may await them if they are accused of infringing some obscure right in a sound or a musical idea that may be claimed by someone else.

#### IV. The Market for Music

Total worldwide recorded music sales in 2005 were \$21 billion, down about 3% from the previous year. More than 100,000 album titles were released worldwide in 2004, while singles sales dominated the digital market.<sup>109</sup> Digital sales revenues tripled in 2005, from \$400 million to \$1.1 billion, while sales of physical formats fell by 6.7% in value, and 8% in units.<sup>110</sup> Performance rights revenues totaled nearly \$500 million in 2004, up 19% over the last five years, reflecting additional licensing income from webcasting.<sup>111</sup>

The demand for recorded music in CD form is declining.<sup>112</sup> CD sales dropped an average of 7% per year since 2000.<sup>113</sup> It is unlikely that the demand for the music contained on CDs is declining. Rather, demand is increasingly being satisfied by downloading. By one

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109. IFPI Fact Sheet: RIN 2005, [http://www.ifpi.org/content/section\\_news/20050802a.html](http://www.ifpi.org/content/section_news/20050802a.html) (last visited Apr. 1, 2006).

110. IFPI.org, Digital formats continue to drive the global music market (Mar. 31, 2006), [http://www.ifpi.org/content/section\\_news/20060331a.html](http://www.ifpi.org/content/section_news/20060331a.html).

111. IFPI.org, IFPI releases definitive statistics on global market for recording music - Press Summary: RIN 2005 (Aug. 2, 2005), [http://www.ifpi.org/content/section\\_news/20050802.html](http://www.ifpi.org/content/section_news/20050802.html).

112. Princeton Study, *supra* note 25, at 23 (noting decline from 1999-2002, after being flat for five years before that).

113. *Id.* at 53.

estimate, one billion songs were downloaded each week in 2004.<sup>114</sup> Conclusions differ on whether downloading is responsible for declining CD sales. The “sampling” effect might increase CD sales, just as advertising does. A “substitution” effect would diminish sales.<sup>115</sup> MP3s and CDs are not perfect substitutes because CD packages often include photographs and other artwork, lyrics and notes.<sup>116</sup> Apple iTunes, other commercial sources for MP3 files, and artists are closing this gap, however, by making artwork available on their websites.

One study found that, for the top 35 popular music artists,<sup>117</sup> income from live performances exceeded income from record sales by a ratio of 7.5 to 1, and royalties from publishing music was slightly less than income from recordings.<sup>118</sup> But this statistic is misleading. In 2003, the total value of sales of recorded music was \$11.8 billion, while the total value of concert ticket sales was \$2.1 billion. Most of the revenue from recorded music sales goes to intermediaries, not to the artists.<sup>119</sup> The top 1% of artists took 56% of concert revenue.<sup>120</sup>

The authors of the Princeton Study observe that “popular music concerts are a slow productivity growth sector.”<sup>121</sup> In other words, changes in technology have not affected the production function for musical performances, which always have been defined by high fixed costs and near-zero marginal costs. On the other hand, changes in technology making recorded music more widely available at lower cost may have increased the demand for live performances because of the network effects considered more fully in § B.3 below.

Music publishing revenues in the United States were about \$2 billion in 2001, with \$1 billion attributable to performances.<sup>122</sup> For example, performance rights for the song “Happy Birthday” are estimated to earn \$2 million per year.<sup>123</sup>

Musicians now have many more choices for creating music, recording it, and distributing it. They also have new ways to draw people to their live performances. Consumers also enjoy new

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114. *Id.* at 51.

115. *Id.* at 53-54.

116. *Id.* at 55.

117. *Id.* at 2 (defining popular music to include rock, jazz, blues and rap).

118. *Id.* at 4.

119. *Id.* at 6.

120. *Id.* at 19.

121. *Id.* at 21.

122. *Id.* at 43.

123. *Bonneville International Corp. v. Peters*, 347 F.3d 485, 487 n.1 (3d Cir. 2003).

possibilities and face new choices. New choices impact costs, prices and revenue streams. Copyright law's role in this transformed marketplace can encourage creativity or it can discourage it. Its ideal role should be determined by a careful assessment of the economic effect of new technologies for creation, search, distribution, and performance.

In any market, supply functions and demand functions determine how much of a good is supplied and consumed, as a function of price and other relevant variables. Supply and demand functions must be estimated separately for different markets. For example, the supply function for mass-marketed big-label music is markedly different than the supply function for Independent ("Indie")<sup>124</sup> music. The demand function, however, is largely the same because both types of producer span a broad range of genres. The supply and demand functions are different for recorded, as opposed to live, music. Such complete supply and demand functions could be manipulated mathematically, to say things like: "Based on these assumptions about creator and consumer behavior, this is how the free riding risk has been changed by this particular technology; here's why the following change in copyright law will not undercut production of music," and so on.

This section does not specify complete supply and demand functions. Instead, it identifies the variables that affect any plausible supply or demand functions, suggests the effects that new music technologies are likely to have on the value of the variables, and then estimates the direction and rough magnitude of the technology's aggregate effects on the supply of and demand for music. In other words, it sketches the structure of the supply and demand functions. A following article will suggest equations that can be manipulated to estimate new equilibria

#### **A. Supply**

This section begins by explaining the structure of the supply side of the popular music industry, proceeds to explore how technology has changed the cost of performing the main functions, and concludes by sketching a supply function.

Four major components of the supply chain for music exist. Artists include songwriters and performers often working together in groups (bands) with longevity measured from months to years. A handful, such as Coldplay, are well known. Millions are unknown;

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124. "Indie" refers both to smaller record labels, often operating on a financial shoestring, as well as to undiscovered musicians.

nearly every town has scores of (mostly) young people who consider themselves professional musicians. The boundary between amateur and professional is indistinct because most undiscovered musicians make their livings primarily by working at jobs outside the music industry.

Producers, comprising the second component, arrange live performances and oversee the process of studio recording. When capital costs for recording were high, economies of scale resulted in producer concentration in both the recorded- and live-music categories. Major record labels, with their market share shown in parentheses, include Universal (25.5%), Sony BMG (21.5%), EMI (13.4%), and Warner (11.3%). Indie labels account for 28.4% of the market.<sup>125</sup> “Label” is a confusing term. It actually refers to two distinct functions in the producer category. Its most precise meaning is as a brand. In this sense, the “major labels” actually are music conglomerates, each producing and selling music under a multiplicity of labels.<sup>126</sup> For example, Warner owns the Elektra and Atlantic labels; Sony/BMG owns the Columbia, Arista, RCA Records and Epic labels.<sup>127</sup> At the low end of the market, the distinction between a label and the name of a band is ambiguous. Performers wishing to break into the market often simply adopt one or more names for their band(s) and more or less simultaneously adopt one or more names for their label.<sup>128</sup> Usually label names are associated with the process of recording and marketing CDs.<sup>129</sup>

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125. IFPI.org, IFPI releases definitive statistics on global market for recording music - Press Summary: RIN 2005 (Aug. 2, 2005), [http://www.ifpi.org/content/section\\_news/20050802.html](http://www.ifpi.org/content/section_news/20050802.html).

126. See generally, DONALD S. PASSMAN, ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS 64 (Simon & Schuster, 5th ed. 2003).

127. *Id.*

128. See, e.g. Ouchosparks, <http://www.ouchosparks.com/>, <http://www.myspace.com/ouchosparks> (Chicago group offering CD and digital sales through the Web); Dick Prall, [www.dickprall.com](http://www.dickprall.com), <http://www.myspace.com/dickprall> (performing under his own name and under band-names “Dick Prall Band,” and “Starch Martins,” offering live performance schedules and CDs and digital singles for sale); Hijack the Disco, [www.hijackthedisco.com](http://www.hijackthedisco.com) (an Oakland Group, which emphasizes live performances); Andreas Kapsalis Trio, <http://www.andreaskapsalis.com>, <http://www.myspace.com/andreaskapsalistrilo> (Chicago group offering performance schedules and downloads through the Internet); Jamie Gallagher, [www.myspace.com/jamiegallagher](http://www.myspace.com/jamiegallagher) (performing as part of Ouchosparks and Andreas Kapsalis Trio); Darren Garvey, <http://www.myspace.com/darrengarvey.com> (performing as a member of several bands, including Andreas Kapsalis Trio).

129. See Patrick Sisson, *Chicago's Record Labels*, CENTERSTAGE, Apr. 1, 2004, <http://centerstage.net/music/articles/chicago-record-labels.html> (profiling 19 record labels in Chicago).

Concentration in that part of the industry that promotes live music concerts is growing. Live Nation, Inc., the largest U.S. promoter of live music concerts acquired HOB (“House of Blues”) another larger live-concert promoter, in mid-2006. Live Nation itself was spun off from Clear Channel Communications, the country’s largest owner of radio stations, which bought it from SFX Entertainment, then the largest U.S. concert promoter and venue owner, in 2000. Nevertheless, in every community, small, free-lance promoters help music groups and venues get together.

Distributors (including both distributors of recorded music and concert promoters), making up the third component, are wholesalers, responsible for getting finished product from the producers to the retailers. Distributors offer value in the form of their established relationships with retailers and their capacity to manage inventory. At the high end of the market, the production and distribution activities are vertically integrated. At the low end of the market, they are not.

Retailers, (including retail sellers of recorded music and venues for live performances) representing the fourth component, include stores such as Tower Records, and Borders Books, in which physical product is sold, online retailers of physical product such as CDBaby, Amazon.com, and online merchants for digital music, such as Apple iTunes.

Fisher estimates that out of the price of a CD, a little over a third goes to the retailer, and a little less than 10% to the distributor, with the remaining 55% or so to the record label. For the record labels, out of their 55%, 17% goes to overhead, 14% to marketing, about 6% to manufacturing, 14% to artist royalties and 2% to profit. The artist royalty figure includes recovery of advances to artists and losses for most works.<sup>130</sup>

According to one commentator, working from industry data, only 10% of major-label albums released annually are profitable, based on advances to artists of \$250,000, \$250,000-\$500,000 in marketing costs for each album, manufacturing and shipping costs of \$2.25 per album, record-company margins of \$7.50-\$11.50 per album at wholesale, and net profit of \$5.75 per album. The breakeven is 90,000 sales, and only 16% reach this level.<sup>131</sup>

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130. William W. Fisher III, *PROMISE TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT* (2004), 260 (reviewing various estimates, which differ in detail but basically agree on the rough proportions of the revenue split).

131. See Brett J. Miller, *The War Against Free Music: How the RIAA Should Stop Worrying and Learn to Love the MP3*, 82 U.DET.MERCY L.REV. 303 (2005) (arguing that

The premise for copyright law is that all of these market participants need to be protected against “free-riding.” The free-riding risk is higher for recorded music than for live concerts.<sup>132</sup> It also is higher for creators of music, compared with producers, distributors and retailers, although these downstream participants may have to compete with an alternative supply channel in which the initial costs for product are lower. Accordingly, it is appropriate to focus the economic analysis of free riding on the creation and recording activities. For convenience, the article refers to a person getting a free ride as a “pirate,” though it ultimately concludes that some kinds of copying and distribution are desirable and should not be illegal.

The sections below evaluate the elements of the cost structures for both creator and pirate, for live performances, for the traditional recording-studio approach and for the newer web-enabled “Indie” approach. The sections include cost functions and sketch supply functions, based on the assumptions developed.

### 1. *Products and Revenue Streams*

The estimation of supply functions for music must consider four different forms in which music can be delivered: (1) live performances, (2) CDs, (3) MP3 files delivered via CD or via the Internet, (4) broadcast music played on terrestrial or satellite radio or streamed through the Internet. As the description of the forms suggests, the supply functions also may need to take into account nine different distribution channels: (1) physical exchange of CDs, (2) live performances, (3) file downloading through specialized music sales services on the Internet, such as Rhapsody and iTunes, (4) peer-to-peer file sharing networks, (5) direct e-commerce sales of recorded music and live-performance tickets through the Internet by the artist or his producers, (6) conventional radio broadcasting, (7) satellite radio broadcasting, (8) Web broadcasting, and (9) “pod casting.”

Any economic analysis of music production must recognize that many co-products, joint-products, complementary products, and substitute products exist in music production.

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file sharing represents consumer preferences in the face of “years of foisting shoddy bands and overpriced albums on the public” by the recording industry).

132. *But see* 17 U.S.C. § 1101 (granting exclusive rights for public performances and making it an infringement to make an unauthorized recording of a public musical performance); Susan M. Deas, *Jazzing Up the Copyright Act? Resolving the Uncertainties of the United States Anti-Bootlegging Law*, 20 HASTINGS COMM. & ENT. L. J. 567 (1998) (reviewing history and interpretation of Anti-Bootlegging law).

“Co-product” and “joint-product” signify multiple products that are produced from the same capital assets and, often, from the same production process. In farming, chickens can produce eggs and fried chicken; cows can produce milk and steaks, though neither can do so at the same time. Raw milk can produce both butter and skimmed milk. All thermal engines produce both power and heat (that is how most cars are heated, with otherwise waste heat from the engine).

Complementary products are a bit different. They may be produced from different production processes and different producers, but they are used together: peanut butter, jelly, and bread; (old-fashioned) razors and razor blades; iPods and iTunes; laser printers and laser cartridges, microphones and recorders.

Substitute products, as the phrase suggests, are products either of which may satisfy demand. One may eat either a peanut-butter-and-jelly sandwich or a grilled cheese sandwich, but probably not both. One may listen to an authorized recording of a song or a pirated version.

In the music industry there are a multitude of co-products and complementary products. The same song can be performed publicly, recorded, or published. The same singer can sing one song or another of his own creation. The same song can be performed live, recorded, or distributed on sheet music. The same performance can be delivered live, on a music-video DVD, through a television performance, or through a downloadable music video file.<sup>133</sup> Fans of particular performers like to consume not only the live concerts and the CDs, but also to download the music, wear T-shirts, buy books about the performer, and, sometimes, play sheet music representing the performers' songs.

These related products can be understood as multiple distribution channels for the same product. They can be understood as ways to promote a particular member of the product family. But they are also mostly co-products (except for the T-shirts and books), in that they are produced from the same capital assets.

Their existence is significant for economic analysis because the fixed costs for one member of the product family can be spread over

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133. Most recorded music, however, is produced through separate processes, in which different parts of a musical composition are recorded separately and then “mixed” to achieve the desired effect. To a substantial degree, recorded music and music performed before a live audience are separate products with distinct inputs, sharing only the same composition or musical idea. They are as different as a motion picture is from a stage production. Exceptions exist, however. Frank Zappa was notable for mixing tracks recorded from live concerts rather than producing tracks in a studio.

multiple products, and because their multiplicity enables different business models. One performer may sell admission to the performances and give away CDs to build audiences; another may offer free admission to the performances to build the market for CDs. Increasingly the availability of free music over the Internet builds visibility and reputation, enabling sales of other products that otherwise would not occur.

Substitute products exist in the form of pirated recordings and of multiple artists performing similar songs. But often there is room for debate whether something is a substitute product or a complementary product. Does a consumer choose between a recording and a live performance, or does exposure to the recorded music induce her to go to a concert? Most performers think that performances and recorded music are complementary products—a given performer can perform or record the same song, and often does both. Consumers often go to see a live performance because they have heard the artist's recorded music.

Other products clearly are complementary. As artists become more popular, and when the audience enjoys a particular performance, sales of merchandise—tangible products such as posters, tee shirts and coffee mugs with the artists' name or logo on them—can provide a significant revenue contribution. Truly famous artists can earn large amounts of additional income by endorsing non-music products in print and electronic advertisements.

This and following sections crystallize the different permutations that exist in the real world and associates them with different business models likely to be used by different types of performers at different stages in their careers.

All of these revenue streams are associated with different outputs or differentiated products of the same inputs—bundles of physical, human, and organizational capital representing the artists and associated producers. To some extent, the same performer costs are shared by all the revenue streams. These market participants can choose which kind of product to emphasize, using essentially the same human, physical and organizational capital.<sup>134</sup> On the other hand capital for producers, distributors and retailers is specialized. The capital embedded in a producer of recorded music cannot easily be

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134. This is true only to some extent. The costs and activities associated with a tour involving multiple performances obviously are different from the costs and activities associated with recording a single in the studio. Musician preferences and relative talents also matter in electing between live performances and studio recording. Some songwriters can produce a respectable song in a studio but are entirely incapable of performing live.



adapted to produce concerts, nor can a CD distributor's capital be used easily to promote live-music performance. The capital embedded in a live-performance venue cannot easily be used to retail a large number of CDs. Performers and intermediaries, however, usually have some monopoly power in multiple markets and thus can determine relative prices,<sup>135</sup> and thus "steer" consumers to the distribution channel the performers and their intermediaries prefer.

## 2. *Inputs and Factors of Production and Their Costs*

Digital, small-computer, and Internet technologies have had a profound effect on almost every aspect of popular music.<sup>136</sup> The technologies have changed the way music is created, the way it is produced, promoted, and distributed. Technology has had a greater impact on the supply functions for recorded music than on those for live music performances. Nevertheless, by reducing the costs of advertising, marketing, and distribution enormously, it has changed the economics of the supply of live music as well as of the supply of recorded music.

Understanding the economics of the supply of music requires consideration of human, physical and organizational capital, which comprise the principal inputs for music creation and production.

### a. Human Capital

Human capital is most closely associated with creative activity, while physical and organizational capital (musical instruments aside) is more closely associated with production and distribution activities.

Musical works start in with a songwriter getting an idea for a song. Some songwriters start with the lyrics and build melody, chord progressions and rhythm around them. Others start with a rhythmic idea and build out from there, sometimes authoring the lyrics last. Others start with interesting chord progressions, and so on. Many rock bands do not engage in conventional songwriting in the sense of writing out a complete score. Instead, they improvise through an unstructured jam session as a group. As they play, they take parts that they like and form them into more structured songs, although they may play them a bit differently every time.

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135. See Princeton Study, *supra* note 25, at 24 (offering pricing equation based on cross-elasticities of demand).

136. As Section IV(B) argues, the same technologies also have profoundly changed the way music is enjoyed.

Music has to be played or sung to be consumed. Not every songwriter is a good singer or guitar or keyboard player. Few are good drummers. Some good singers and guitar and keyboard players are good composers, but many are not. Accordingly the songwriting function and the performing function often are performed separately, quite separately in the country music part of the industry, less separately in the Indie rock part of the industry.<sup>137</sup>

Producers bring the necessary factors of production together, including finance, using their own embedded human capital. Music industry producers often have significant creative talent and supervise rehearsals and recording sessions. Not only do these types of producers need to be creative musically, they also must be knowledgeable about acoustic engineering and the technologies of recording and manipulation of digital audio files.

Recording a song in a studio requires significantly different human capital, compared with public performances. Any acceptable public performance involves singing and playing the accompaniment for a song from the beginning to the end, straight through without interruptions or retakes. It also involves stage presence: physical appearance, athletic moves, and humorous asides between songs. Recording in a studio avoids the visual features of a live performance. Musicians may attend a recording session unshaven, in dirty T-shirts, barefooted or with mismatched socks. Charisma is unimportant. Moreover, for most musicians and producers, studio recording is nothing but breaks, retakes, and repetition. In a studio, a performer need not have in mind more than one phrase or section of a musical work. Once that portion of the work has been recorded to the satisfaction of the producer and the performers, they move on to another section. The sections need not be recorded in order, and repeating sections of lyrics or music can simply be cut and pasted into any position where they are needed.

Moreover, it is unnecessary for all of the performers involved in a particular song to be in the studio at the same time. It is common to have the singer present only for one session, the drummer present for another session, the bass guitarist for another, and so on. Many group members, however, like to be present, even when they themselves are not performing, so they can influence the assembly of their song.

These possibilities have a profound impact on the creative process. A composer can come to a producer with some lyrics, a basic

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137. See GEOFFREY P. HULL, *THE RECORDING INDUSTRY* 77-78 (2d ed. 2004) (contrasting songwriting models in rock and country segments of music industry).

musical idea of structure, melody and chords and rhythm. The producer and/or composer then can recruit performers to contribute to the work—a singer, a drummer, a bass guitarist, and electric guitar player, an acoustic guitar player, and perhaps a trumpet player and a pianist. Or, the same musician can sing and play all the instruments, separately recording each track.

The singer produces a “scratch track” with some accompaniment. The drummer comes in, and he and the producer and composer try out different rhythms and percussion effects—bass drum, tom, snares, top-hat, cymbals, for different parts of the song, typically recording the drum track in segments of four to eight measures, which will be put together later. The drummer leaves, after a four or five hour recording session for one song, and the result is the drum track, which is maintained separately on the computers and hard drives used for recording.

The process is repeated for a bass track, for an electric guitar track, and so on. As each track is recorded, the main performer (and perhaps other members of the group) interacts intensively with the others present, collaborating creatively. Because the performance occurs in short takes, everyone can focus on particular sections of the music rather than having to be in the position to perform a piece from beginning to end. It is more like a careful rehearsal process than a public performance.

Once all the necessary tracks have been recorded, the producer, or a separate sound engineer operating under the producer’s direction, mixes the tracks to emphasize different tracks at different points in the musical work. At this point, mistakes such as off-pitch notes and poorly timed attacks or releases<sup>138</sup> can be fixed by the software. This also is an intrinsically creative process, inseparable from the composition and performance steps.

At these recording sessions whoever controls the creative character of the work makes significant artistic judgments. For example, a song writer, listening to the vocals, lead guitar and percussion tracks together may try out different kinds of bass accompaniment, some of which can be computer generated or performed in real time by the requisite instrumentalist. In this fashion the creativity of song writing and arranging is integrated seamlessly with the work of performing, recording, mixing, and production.

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138. An attack is the commencement of the sound representing a musical note. A release is the termination of the same sound.

The savings in human capital resulting from this method of production can be significant, because each performer can be scheduled for a time when his or her opportunity costs are lowest. Moreover, much less rehearsal time is required for all the performers because they need never have practiced their part in a work so that it can be performed more or less flawlessly. Also, recording the performers separately means that each performer need take time only to correct his or her own mistakes and not wait around or have to do a retake because someone else has made a mistake.

Recording on separate tracks has been common for years. What is new is desktop computing power and software for a few hundred dollars that makes the collection, editing and integration of short musical passages easy. These new tools also significantly reduce the “granularity” with which tracks can be manipulated. Short musical phrases are easy to keep track of and to find.

New technologies have varying effects on different aspects of human capital involved in producing music, significantly changing the way recorded music is put together, and creating possibilities for musicians of modest talent to put together acceptable recorded musical works. Voice quality, and creativity with respect to lyrics, melody, rhythm, and chord progressions, are a combination of innate talent and training and experience. PC software and websites exist that facilitate—and thereby reduce the time commitment and cost—for ear training, for becoming proficient on an instrument, and for songwriting.<sup>139</sup> Technology long has expanded the nature of musical instruments available, with the advent of electric guitars in the 1940s and the advent of the synthesizer in the 1960s. Desktop digital recording hardware and software are many new music instruments. Their existence increases the options available to musicians.

Not only has the equipment itself become cheaper by a couple of orders of magnitude, it has become easier to use. Significant musical skill is a prerequisite; it always has been. But much of the tedium of rewinding audio tapes, and physically cutting and splicing tape has been completely eliminated. Digital software makes it possible to go directly to a desired part of a recorded track. Analog devices permit only sequential access; the entire tape must be run through the heads until the desired passage is reached. Tape counters make it possible to note the beginning of each take, but the audio engineer must write down the counter reading for each passage he may want to retrieve

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139. See, e.g. Berklee Music web site, <http://www.berkleemusic.com> (offering online, interactive, courses for musicians).

later. It probably takes 10 seconds to write down a counter reading, and another 20 seconds to reach the beginning of a phrase by rewinding or fast forwarding the tape. Suppose five musicians are recording contributions on separate tracks for a three-verse, three-chorus song lasting three minutes in total. Each musician requires six takes on average to get the desired performance for each section. That results in 180 separate sections on tape. That results in 90 minutes of time just to access parts of the recording, time that is completely eliminated with the use of digital recording and editing software. If all the members of a musical group are present during the process, 450 minutes of human opportunity cost are saved by digital PC technology as compared with older technology.<sup>140</sup>

Someone with a few dozen hours of training can produce acceptable quality recorded music, at least if she has reasonable levels of talent. It is surely within the reach of almost any serious musician with ordinary levels of computer competence to acquire the skills necessary to use all the features of mixing and dubbing hardware and software. Formal training is unnecessary for most users; they can learn on their own, just as they learn to use word processing or photo editing software. Others can obtain formal training on Pro Tools recording equipment for \$1,000 for about 20 contact hours classroom and lab training.<sup>141</sup> More traditional resident training for audio engineers costs on the order of \$18,000.<sup>142</sup>

In sum, technology has reduced the amount of human capital to make recorded music, especially over the first few years of the 21<sup>st</sup> Century, even as changes in wage rates for “day jobs” have also increased, making opportunity costs even more important.

#### b. Physical Capital

New technologies affect the physical capital necessary to produce recorded music more profoundly than the physical capital relevant to live performances. In both areas, however, capital costs continue to plummet, reducing the overall fixed cost burdens of music creators.

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140. There is no inherent reason that newer technologies make it less necessary for all musicians to be present during a recording session. It was just as feasible using multi-track analog recording technology of 1990 to record individual musicians separately on separate tracks, although the number of available tracks was less than with digital technology.

141. Soundthinking, [www.soundthinking.com/digiology.pdf](http://www.soundthinking.com/digiology.pdf) (last visited April 12, 2007) (advertising a cost of \$1000 for both levels of training, each having four classes of 2.5 hours).

142. Audiocareer, <http://www.audiocareer.com/tuition.html> (last visited Feb. 1, 2007) (advertising \$18,225 tuition, plus \$75 registration, for two 5 week sessions).

Historically, the development and low cost availability of amplification and loudspeaker systems significantly changed the possibilities for music performances. These technological advances increased the possible scale of a performance. Without sound amplification, the maximum audience size was in the hundreds. With amplification, it is in the tens of thousands, constrained not by the reach of the sound but by the size of possible arenas. Advances in audio technology over the 20th Century have reduced the cost of sound systems by an order of magnitude or more. In addition, advances in video technology, more recent in their low cost availability, have nudged the feasible scale of performances higher. Now, one can see a much-greater than life-sized image of performers on a large screen and get greater satisfaction from watching a live performance at a considerable distance than would be possible if one could barely see the musicians or had to use binoculars to see them.

Live performances have high fixed costs and very low marginal costs. But only a small fraction of the fixed costs is in capital goods for sound amplification. Most of the costs involve facility rental and advertising and promotion. For a large scale performance, it costs tens of thousands of dollars to rent an arena and to pay all the personnel who take tickets, run the sound, video and light systems, and provide security. The added cost for each additional member of the audience is close to zero. Accordingly, the impact of technology on the physical capital costs for live performances is modest.

The impact of technology on the costs of physical capital for recorded music is much greater. Capital equipment required for studio recording includes high-quality microphones, pre-amplifiers for each microphone, sound-proof isolation rooms, hardware or software for controlling levels and frequency response of each input channel, recording hardware and software, mixing software and CD duplication hardware.

The preceding section on human capital provided an overview of the recording process. Management of this process requires a means to play back material already recorded so that a performer can hear it while he performs to create an additional track. It requires a means to record the new track as it is playing back the existing ones—a process known as “overdubbing,” and to combine each new track with existing ones. It requires a means to control volume levels of each track separately, to introduce fades, and to cut and paste portions of tracks according to a finely grained time track.

The process of recording through different channels onto different tracks permits the subsequent process of mastering, which

adjusts volume, tonal range, and sometimes tempo and pitch of the different sounds to get a pleasing result, and to permit a consumer to move from one song to another in a single album without hearing distracting changes in tone or volume. State-of-the-art software permits pitch adjustment and stretching or condensing the length of a segment without changing pitch.

In 1990, the audio equipment in a recording studio cost on the order of \$100,000.<sup>143</sup> Its cost and size made it very unlikely that a musician would have his own equipment. The only practical means for recording and mixing a song or an album was to spend hours in the recording studio, at a typical 1990 cost of \$75 to \$100 per hour.

In 2005, the possibilities have increased greatly and the cost has been reduced even more. Even an amateur musician can afford studio-grade recording and mixing equipment. Microphones are available for a hundred dollars—a few hundred for specialized mikes for recording percussion instruments— and a few hundred dollars buys software for Wintel or Apple Macintosh computers that does everything in terms of mixing and overdubbing that used to require the highest end studio equipment. Recording and mastering equipment is available at prices within the reach of middle class musicians. Moreover, the prices are falling. The “cadillac,” ProTools HD Accel TDM Systems have an 80% market share and run on Windows and Apple Power Macs. A high-end ProTools system lists for \$14,000.<sup>144</sup> A new Mac Pro with two monitors lists for \$4,500.<sup>145</sup> Packages are available for \$20,000<sup>146</sup> to \$35,000.<sup>147</sup> More and more producers are passing up ProTools and using software such as Adobe Audition (formerly CoolEdit Pro), which sells for \$299 and, unlike

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143. See Sara Filzen, *The History of Cuca Records, 1959-1973: A Case Study of an Independent Record Company*, “Epilogue” (1998), <http://digicoll.library.wisc.edu/cgi-bin/FilznHCuca/FilznHCuca-idx?type=HTML&rgn=DIV1&byte=48581&q1=&q2=&q3=> (reporting value of recording studio equipment as \$70,000 in 1973). Basic recording technology did not change much between 1973 and 1990, and the rate of inflation was on the order of 5% annually.

144. List price for Pro Tools HD 3 Accel system bundle \$13,995. See [www.digidesign.com/support/docs](http://www.digidesign.com/support/docs) for documentation on hardware and software for digital recording, and [www.digidesign.com/index.cfm?navid=84&langid=100&itemid=4888](http://www.digidesign.com/index.cfm?navid=84&langid=100&itemid=4888) for price (last visited Feb. 1, 2007).

145. List price for Power Mac G5 dual 2.7 GHz w/250 GM hard drive, no monitor: \$2,499; list price for Apple 23 inch display: \$999. [www.apple.com](http://www.apple.com) (last visited June 16, 2005).

146. \$23,500 for “entry level” ProTools HD1 package. [www.soundthinking.com/hd1\\_system.htm](http://www.soundthinking.com/hd1_system.htm) (last visited 16 June 2005).

147. Sound Thinking: Pre-configured pro tools systems, [www.soundthinking.com/hd3\\_system.htm](http://www.soundthinking.com/hd3_system.htm) (last visited Feb. 1, 2007).

ProTools, does not require proprietary add-ons. It runs on generic PCs with fast processors and hard disks of 700 MB or more. Acoustica's Mixcraft is another option.<sup>148</sup> Audacity, with basic recording and mixing features, is available for free.<sup>149</sup>

The same technological advances are, of course, available to high-end recording studios. As their capital costs have declined so have hourly rates for studio recording time. Now, an Indie musician can spend up to a hundred hours in a studio recording an album for less than \$10,000 total studio cost, compared to ten times that much a decade earlier.

High-quality recording studios in big cities charge \$40 to \$85 per hour for recording time, and \$95 per hour for mastering.<sup>150</sup> Bargain studios offer specials, such as a 3 to 4 song demo for a grand total of about \$1,100,<sup>151</sup> and have lower hourly rates, as low as \$30 per hour.<sup>152</sup> Studio Ballistico in Chicago<sup>153</sup> charges \$50 per hour for everything. Its proprietor is a talented musician who provides significant creative input if a customer desired.

### c. Organizational Capital

Most of the fixed costs of producing and selling popular music, whether in recorded or live form, involve organizational capital. The share of revenue that flows to composers and performers rarely exceeds 5% of the total. The share that covers the capital costs of recording, mixing and mastering is hard to break out from aggregate capital costs in reported data, but likely accounts for less than 5% of the total. All the rest covers artist selection and recruitment, marketing and advertising, distribution (including wholesaler and retailer margins) and return on capital investment.

These activities are necessary to reduce search costs for consumers, discussed more fully in § B.4.

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148. Acoustica – Easy to use audio & music recording, <http://www.acoustica.com> (last visited Feb. 1, 2007).

149. Audacity: Free audio editor and recorder, at <http://audacity.sourceforge.net/> (last visited Feb. 1, 2007).

150. Email from studio manager of Studiochicago to author (16 June 2005). *See also* Apocalypse Cow Recording Studios, Chicago suburbs, [www.callthecow.com](http://www.callthecow.com) (\$40 per hour for mixing; \$30/song for mastering) (last visited June 16, 2005); Atmosphere Recording, Montgomery, Alabama, [www.atmosphererecording.com](http://www.atmosphererecording.com) (Studio A - \$55 per hour; Studio B - \$70 per hour; Mastering - \$4.00 every finished minute of a song) (last visited June 16, 2005).

151. Studio Chicago, <http://www.studiochicago.com/home.cfm>.

152. In the Jar Studios, <http://www.inthearstudios.com/rates.htm>.

153. Studio Ballistico, <http://www.studioballistico.com>.



Major record labels exist to perform intermediation in music markets as they have been structured by past technologies. They represent organizational capital devoted to recruiting new talent, vetting new music, overseeing the recording process, promoting new products, and distributing product to consumers. New technologies profoundly change the possible ways in which the functions performed by existing intermediaries can be performed and therefore threaten the embedded capital of major record labels. That is why they have been so militant in trying to slow the uptake of the technologies.

Although aspiring musicians regularly send sample tapes and CDs to record labels, record labels also employ talent scouts, known as “A & R” (artist and repertoire) agents, who visit performance venues, participate in word of mouth networks and negotiate contracts with new talent for the label. As more musicians establish websites with samples of their music, the search costs for artist recruitment have declined dramatically.

The same phenomenon, however, creates more “noise” for consumers and raises their search costs. Just as the musicians are visible to A&R agents, they also are visible to consumers. Record labels and other current intermediaries arose in large part to reduce consumer search costs. This problem is considered more fully in § B.4.

The Internet has opened up enormous possibilities for marketing music. All that one needs is a website and sufficient knowledge of techniques for increasing the chances that the website will be picked up by search engines such as Google. Annual hosting fees are not likely to exceed \$1,000. Even if one has a professionally designed website developed under contract with state of the art e-commerce features, such as ones that permit users of the website to pay for and order or download CDs, MP3 files, and merchandise, the cost is unlikely to exceed \$5,000 to \$10,000. A musician also can have an online storefront on sites like Yahoo! for \$75 per month.<sup>154</sup>

Social networking sites like MySpace link musician Websites directly to their fans through “friends” designations. In addition, major e-commerce sites such as eBay, Yahoo!, Google, and MSN, offer paid placement on their Websites. An advertiser can either pay a flat monthly fee, or can elect to pay only for “click throughs”—only when a customer actually clicks on the link of the e-commerce site

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154. Google AdWords Help Center, <https://adwords.google.com/support/bin/answer.py?answer=6382> (last visited Feb. 1, 2007).

and is redirected to the advertisers own Website.<sup>155</sup> This is the virtual equivalent of being able to buy prominent shelf space in the CD section of Borders or in a major music chain store. Not only that, the virtual presence is global rather than purely local. An artist need not have a deal with a major record label to engage in any of these forms of advertising.

This replaces a system of marketing that requires human marketing representatives to visit distributors, newspaper, radio, and television advertising and printed brochures or leaflets. Reasonable quantities of radio advertising time in a large market run on the order of \$3,000 to \$5,000 per week per market. A high quality color brochure or pamphlet costs on the order of \$20,000 to design and print. It is hard to buy a newspaper ad even in a small community newspaper for less than \$500 to \$1,000.

Undoubtedly, the greatest economic impact of small-computer and Internet technologies is on options for distributing music to the end user. It is possible for someone to buy a song and download it from a well designed site like Apple's Music Store in about 30 seconds. Online distribution enormously reduces the distribution costs of music producers. One need only produce an MP3 file and put it in one place on one server with adequate capacity to handle the expected demand.

If one uses a physical distribution network, including retail stores, the inventory cost would be on the order of \$1 per year per CD in inventory, assuming a price of \$10, and a cost of money of 10%. Most people will not drive more than five miles to visit a physical store with a supply of recorded music. Accordingly, the inventory costs increase linearly with the size of the geographic market a musician wants to serve. Assuming one wants to serve a market the size of metropolitan Chicago, one would need retail store coverage within a 25-mile radius of the central city. That is an area of about 1,800 square miles, and using the figure of a five mile radius for the shopping reach of a retail store, one would need to finance inventory in about 25 stores. Assuming each store needs five copies of a CD in inventory, that's \$1,250 per year in inventory costs just for one metropolitan area. Nationwide coverage would proportionally increase the inventory cost. For example to extend this inventory model to the top 100 metropolitan areas in the United States would impose an inventory cost of \$125,000 per year. And of course, there

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155. *Id.*; A new Google advertiser can open an account for \$5.00, and can then choose a maximum cost-per-click (CPC) from \$0.01 - US\$100.

are additional costs associated with inventory management: capital costs for computer software and communications linkages, and labor cost for delivering merchandise—or postage cost. U.S. mail costs for distributing physical CDs approximate \$2.

No longer is it necessary to manufacture CDs, to inventory them and to ship them. Almost every PC comes with a CD burner, and one can burn a CD from music files stored on a PC in about five minutes. (And, of course, if most consumers listen to music in the form of MP3 files, no one needs CDs). Using this very low-end method for manufacturing CDs has no insignificant opportunity costs. It would take roughly 5,000 minutes or just under 70 hours to manufacture 1,000 CDs. CD duplication, including color printing, is available for \$1.60 to \$2.25 each depending on the quantity.<sup>156</sup>

Variable costs for national distribution of CDs are about \$175,000 per album.<sup>157</sup> Major record labels exist to capture the economies of scale and scope<sup>158</sup> related to traditional methods of marketing music and of manufacturing and distributing CDs. Many of the economies of scale and scope disappear as newer technologies take over.

Other aspects of intermediation, such as rights management, may be less effective. Private “rights collectives” exist to reduce the transaction costs of collecting revenue for music performance rights, monitoring radio broadcasts and jukebox equivalents and collecting royalties on a blanket basis for all of their members. It would be impracticable for most musicians to perform this role on their own. ASCAP<sup>159</sup> charges a royalty of about 2% of gross advertising revenue, BMI<sup>160</sup> charges about 1.6%, and SESAC<sup>161</sup> (with only about 3% market share) charges based on a formula that depends on market size and advertising rates.<sup>162</sup>

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156. Atmosphere Recording, [www.atmosphererecording.com](http://www.atmosphererecording.com) (follow “services” hyperlink) (Duplication prices include media: 300 CD’s - B&W \$1.35ea / Color \$1.60ea; 200 CD’s - B&W \$1.40ea / Color \$1.65ea; 100 CD’s - B&W \$1.45ea / Color \$1.70ea; 50 CD’s - B&W \$1.50ea / Color \$1.75ea; 15-50 CD’s - B&W \$2.00ea / Color \$2.25ea) (last visited June 16, 2005).

157. The approximate variable costs for national distribution equals \$25,000 (cost of manufacture), plus \$125,000 (cost of inventory), plus \$25,000 (cost of mailing).

158. Economies of scale exist when average costs are lower for higher quantities of a good than for smaller quantities. Economies of scope exist when average costs are lower for a family of related goods than for a single good.

159. The American Society of Composers, Authors and Publishers, <http://www.ascap.com> (last visited Apr. 6, 2006).

160. Broadcast Music, <http://www.bmi.com> (last visited Apr. 6, 2006).

161. SESAC, <http://www.sesac.com> (last visited Apr. 6, 2006).

162. Princeton Study, *supra* note 25, at 41.

New types of rights collectives are emerging, offering more favorable terms to musicians, and focused on using Internet harvesting tools to monitor downloading and web streaming.<sup>163</sup> Such functions and the intermediaries performing them can be expected to crystallize further over the next few years as entrepreneurs test different business models.

### 3. *Monetary and Non-monetary Incentives*

Most people accept the proposition that economic incentives play a dominant role in determining the supply of any good or service. As other parts of this article argue, available evidence raises significant doubts about the validity of this proposition for the creation of music. In any event, the actual economic rewards to musicians from the present system are miniscule.<sup>164</sup> If musicians are primarily motivated by economic return and are rational in their response to experience, one would expect the quantity of new music created to be much smaller than it is. On the contrary, quantities are high and increasing. Moreover, conduct in other spheres of new technology exploitation suggests that many creative goods and services are produced “for the sake of curiosity, or for the approbation of their peers, or because it’s fun.”<sup>165</sup>

Those non-monetary incentives will continue to operate in the music industry. What will change is that technology will make it possible for consumers to have access to the stock of music produced mostly for fun. No longer will it be necessary for major record labels to stitch together artist and consumer. Economic incentives will become less necessary for music to be available to consumers.

### 4. *Supply Function*

Drawing on observations about revenue, costs, and incentives in preceding sections of this part, this section suggests a supply function for music, identifying its basic elements or variables. It also suggests the nature of the relationship among independent variables<sup>166</sup> and

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163. See SNOCAP, Inc., <http://www.snocap.com>.

164. See Schorr, *supra* note 90, at 83-84 (reporting that 99.6% of all recording artists at major labels are in a deficit position due to poor compensation terms, lack of bargaining power, infeasibility of auditing major-label bookkeeping, and failure of labels to contribute pension and welfare benefits).

165. Dan Hunter, *Culture War*, 83 TEX. L. REV. 1105, 1134 (2005) (characterizing motivations of open-source-software programmers).

166. An independent variable is one that influences supply, such as, for example, expected revenue. The dependent variable is the amount of music produced in response to the values of the independent variables.

between each independent variable and dependent variable, but it defers to a following article any attempt to specify the actual equations in closed form and the values for those variables.

At the most basic level, it is plausible that the supply of music increases as benefits to the creator increase and decreases as costs increase.<sup>167</sup> The benefits from creating music include monetary rewards, but they also include non-monetary rewards such as personal gratification from writing and performing music that one enjoys, and the enhanced social status from having one's friends and other validators like the music. For example, one might be induced to write a song because one wants a promotion on a music faculty. All these benefits can be captured in a benefits function, although quantifying the non-monetary benefits is challenging.<sup>168</sup> The monetary revenue variable must include all the sources of revenue, many of which are complex functions of quantities sold in various submarkets.<sup>169</sup>

Cost variables include the cost of writing and performing the song, the cost of recording the performance, the cost of duplicating the recording, the costs of promotion and advertising, the cost of distributing it to consumers, and, for both original creators and pirates, the cost of legal liability.<sup>170</sup>

167.  $S=f(B)-f(C)$ , where  $S$  is the amount supplied,  $B$  represents benefits, and  $C$  represents costs.

168.  $B=f(R) + f(A) + (G)$ , where  $B$  is the benefit to the creator,  $R$  is revenue,  $A$  is social status, and  $G$  is personal gratification from the creative act.

169.  $R_{total} = R_p + R_o + R_{la} + R_m + R_r + R_s$  where:  
 $R_p$ =revenue from purchases of a particular song or album in a given time period,  
 $R_o$ =revenue from purchases of other songs or albums by the same artist in the same time period,  
 $R_{la}$ =revenue from live performances during the same time period,  
 $R_m$ =revenue from sales of "merch" during the same time period,  
 $R_r$ =revenue from copyright royalties paid by movie producers and advertisers for use of the song or album, and  
 $R_s$ =revenue from increased salary because of improved reputation resulting from song or album.

170.  $C=c_w + c_p + c_{rec} + c_r + c_a + c_d + c_{li}$   
 where:

$c_w$  is the cost of creation, including, for example, costs of musical instruments, music lessons, and opportunity costs of practice time,  
 $c_p$  is the cost of performance, including, for example, payments to other musicians, the cost of amplification hardware and the opportunity costs of performance,  
 $c_{rec}$  is the cost of recording, including the cost of studio time,  
 $c_a$  is the cost of advertising and marketing, including promotional expenses,  
 $c_r$  is the cost of copying or reproduction,  
 $c_d$  is the cost of distribution to consumers, including costs for inventory and for billing and collection, and

The sophistication of the supply function can be increased by discounting future benefits or costs to present value.<sup>171</sup> Capital investment on the cost side, both human capital and physical capital, should be amortized over time. Revenue, both direct cash revenue and revenue from other songs and enhanced professional position, is likely to be received over multiple periods. If a song is commercialized, people will buy it not only in the month or year in which it is released, but also in later months and years. If spillover or coattail effect is important, those effects likely will be felt in later periods. Similarly, professional advancement is quite likely to occur at a period later than the period in which the song is released.<sup>172</sup>

Further complicating the equations are the likelihood of interdependencies among the variables and the virtual certainty of interaction among different songs.<sup>173</sup> So there might be an additional revenue variable for each song that represents the residual value of other songs already in the marketplace—a kind of proxy for the strength of the “brand.” Moreover, relationships almost certainly exist between advertising effort and direct revenue, and between direct revenue and reproduction and distribution costs. A complete supply function would need to express links among those independent variables.

Technology has no effect on purely financial factors, such as the discount rate for present-value calculations. It has little effect on benefit variables, except insofar new technologies cause the price to fall and consumer exposure to increase. It has its predominant effect on cost variables, significantly reducing the value of each, especially the costs of reproduction, advertising, and distribution, as explained in the preceding sections. As costs decline so will prices, especially because the marketplace is becoming more competitive as more creators of music have access to more consumers.

A complete supply function must take into account the fact that, of the millions of new songs written and recorded each year, only a

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$c_l$  is the cost of legal liability.

171. In addition, the amount of revenue associated with purchase of the song is likely to decline over time. Time value factors for direct revenue should decay exponentially. On the other hand, reputational and professional-enhancement effects are likely to increase exponentially for a period and then tail out, representing that the relevant audiences have forgotten about the song. In other words, it takes a while for the “word” to get out, and then the “word” gradually becomes less interesting to potential consumers.

172. “Released” in this context means made available to others, not any particular commercial context.

173.  $R_p$ ,  $R_o$ ,  $R_{la}$ ,  $R_m$ , and  $R_s$  are positively correlated, unless one assumes that attending a live performance is a substitute for listening to recorded music from the same artist.

few become “hits.” A supplier with significant capital costs must, therefore, have a portfolio of songs and manage it so as to increase the probability of some of them becoming hits. Some of the investment in each song can be varied, especially promotional and distribution costs. Most large labels pick only a few songs and groups in their portfolio and invest heavily in promoting them, giving little attention to the rest. This is a rational strategy if the probability of any song becoming a hit is a function of promotional effort. But some investment—typically advances paid to a performer intended to cover recording and mixing costs—is necessary for each song in the portfolio.

Such a portfolio-management approach is necessary when capital costs are high, because imperfections in the capital markets make it easier for a large enterprise such as a major record label to amass the necessary capital and manage it than for investors to seek out individual performers and manage their own portfolios. As capital costs fall under the pressure of new technologies, however, it becomes more feasible for individual performers to acquire the necessary capital and to manage much smaller portfolios—maybe a few dozen songs. If they get a hit, that is welcome, but millions are willing to soldier on, still producing music, struggling to get it noticed, and dreaming that they may become rock stars. In other words, the market, rather than major label strategy, manages the portfolio of multiple musicians.

The role for intellectual property in the less concentrated market is different from the role it plays in the concentrated market. Investors and the managers of large enterprises must deal with uncertainty, but they try to reduce it as much as possible. It is much easier to make strategic portfolio management decisions when you know exactly what property rights are represented in the portfolio. Any change in technology or law which undercuts those property interests threatens the entire approach to portfolio risk management. An independent artist, having a much smaller portfolio, is in a better position to manage it on an ad-hoc basis. He has less need of intellectual property law to reduce portfolio risk.

## **B. Demand**

The preceding sections address the supply side. To understand the market, one also must pay attention to the demand side. Music is a leisure good, not a necessity of life. A piece of music may be, and usually is, consumed more than once. The demand for music is characterized by strong network effects—as more people consume a

song, the greater the demand for that song becomes. Demand includes a desire for portability in the act of consumption, and for experiences beyond simply listening, such as knowing more about the personalities and activities of the performers, being able to read the lyrics, and being part of a crowd that witnesses a live performance. The demand for music also shares with the demand for other types of products and services features such as price elasticity, substitutability, and diminishing returns to scale. New technologies have particularly profound effects on portability, knowing the performers, and network effects.

Demand for music is sensitive to price, i.e. the *price elasticity of demand* is greater than one. One estimate, based on RIAA recording music shipments data for 1992-2001, is that the price elasticity of demand for music is 6.3.<sup>174</sup> But the elasticity of substitution is a function of *relative price*. As the price for music falls, the relative price for legitimate music necessarily falls.

Almost any music product has partial substitutes in the market. A consumer usually can choose between going to a live concert, listening to a webcast of a concert, buying and playing a CD or downloading and playing a digital file, all from the same performers and all containing the same song. And of course, consumers may choose among different artists within the same musical genre or between genres and between pirated works and legitimate ones. The propensity to entertain these possibilities is expressed in microeconomic theory as *elasticity of substitution*, usually simplified by expressing it as a function only of the relative price of the substitutes.

But demand is also sensitive to non-price factors, such as quality of the recording, other determinants of the musical experience (going to a rock concert is a fundamentally different experience, compared to listening to a CD in one's car, or to a MP3 file on one's iPod while walking down the street), the attractiveness of the package, loyalty to the performer, and so on.

This section evaluates the factors likely to influence the demand for music and concludes by sketching demand functions based on these observations. It crystallizes the non-price factors. Ultimately it would be useful to put a dollar value on them, i.e. how much more will a consumer pay for a really pretty and interesting CD package

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174. O'Reilly Emerging Telephony, <http://www.oreillynet.com/pub/wlg/2496> (last visited June 16, 2005). If the price elasticity of demand for a product is 1.0, a 1% increase in price results in a 1% decrease in sales.



than for a CD with the title scrawled on it with magic marker? How much more will a consumer pay for a “legitimate” download from a performer whom he really loves than for an illegitimate download from the pirate?

*1. Size and Scope of Market*

The maximum demand for recorded music can be estimated as follows:

Based on census figures for the age distribution of the U.S. population in 2005, and assuming that half have no interest in listening to music and that the remainder over age 5 and under age 95 want to listen to some music, ranging from 15 minutes per day for those age 5 to 9 and 85 to 95, with greater amounts desired at ages in between, peaking at 5 to 6 hours per day for those age 15 to 30,<sup>175</sup> one can approximate a demand for 325 million minutes of music per day. Assuming the average song plays for 3 minutes, that results in demand for about 100 million “plays” per day, if consumers only listen to music individually. In a world in which people listen to music only on the radio, and the average radio station has an average audience of 500 at any one time. That would result in a demand for 200,000 plays per day. As new devices for individual music listening proliferate, the total demand will shift upward, toward the 100 million figure.

One can assume a typical decay function for any particular song: a consumer is likely to play it repeatedly soon after acquiring it (assuming the consumer controls how often it is played, instead of a radio disc jockey controlling how often it is played), and less and less often as time passes.<sup>176</sup> Assume that, a typical consumer or radio station plays a song, on average, twenty five times over a year, and not at all thereafter.

Combining these assumptions, one arrives at a total demand estimate of between 73 million plays per year and 2.9 million new songs per year, if all music is enjoyed individually, and of 1.9 million new songs per year if one-third of all music is enjoyed on the radio. In 2006, roughly 350,000 new songs were released on CD format. So there is considerable unmet demand.

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175. The high estimate is plausible for this age group: one can imagine two hours commuting to and from work or school, and another three hours while performing activities of daily living.

176. *But see* Jeff Leeds, *When All the ‘Greatest Hits’ Are Too Many to Download*, N.Y. TIMES, Feb. 2, 2006, §E, col. 1 (reporting that 20 years after its peak popularity, Survivor’s song “Eye of the Tiger” sold 275,000 copies once it became available on iTunes).

One obvious implication of this analysis is that as technology shifts the possibilities toward individual ownership and enjoyment of music, it dramatically increases the percentage of demand that is satisfied.

The demand for live music—for public performances—must be estimated separately because live performances are different experiences from listening to recorded music.<sup>177</sup> Attending a live performance has a social dimension that listening to recording music over an iPod or in one's car lacks. High-school and college-age youth and young singles are most likely to go to live concerts or to smaller music venues, but in doing so they develop habits and tastes that draw them back, albeit less frequently, after they are settled, with family responsibilities.

If, as § V.B suggests, the business model for musicians favors live performances over recording, understanding the demand for this music format is important. Venues range from the Schuba's Tavern in Chicago, with a maximum seating capacity of 150, through Metro in Chicago, a jazz and rock club with a capacity of 1100, where ticket prices often are less than \$10, to Soldier Field in Chicago, with a capacity of 60,000, at which prime seats for a Bon Jovi performance in July, 2006 sold for \$125. They include multi-band festivals such as Lollapalooza, originally a touring experience, which introduced many new bands playing on the "second stage"—actually a multiplicity of stages. In its current incarnation, Lollapalooza is a three-day event in Chicago, which drew 65,000 people to Grant Park in 2005. As the promotional materials for the 2006 event say, "Three-day passes are just \$150. That's about \$1 per band. Single-day tickets are . . . just \$65."<sup>178</sup>

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177. See Andrew Jacobs, *Music's Hottest Star: The Publisher*, N.Y. TIMES, Apr. 24, 2006, at C1 (reporting that, while CD sales were down 5% in 2005, music publishing business is booming because royalties for public performances (through recordings or otherwise) of older songs from catalogs is stable or growing); Daniel Akst, *Actually Video Didn't Kill the Live, Onstage Star*, N.Y. TIMES, Jan. 15, 2006 at 4 (reporting that, despite availability of books, music and other creative fare at little or no cost over the Internet that live performance attendance and prices for live performances are holding up well).

178. Lollapalooza 2007, [www.lollapalooza.com](http://www.lollapalooza.com) (last visited July 29, 2006). According to Jason Mollner, a stage, a staffed bar and room for a 400-person audience costs \$300-\$600 in Omaha. Increase the audience to 2000 and the cost increases \$800-\$1200. Typically bands use a local promoter. In every major city, there are a few promoters who will offer to pay the band a fixed price or a percentage of the revenue from ticket sales. The promoter then invests in renting a space. Advertising and promotion for small/Indie bands is often done by the club/promoter and not the band. The band mails flyers to the club and it is the club's responsibility to post them or advertise in the paper. Thus, advertising and promotion costs for the band are generally low.

According to U.S. census figures, there are about 60 million people between the ages of 15 and 29 in 2006 and there are about 170 million between the ages of 30 and 100. If the younger group attends live music performances once a week on average,<sup>179</sup> and the older group attends twice a year on average,<sup>180</sup> the result is an annual demand for 3.5 million music venue seats per year. If the average venue size is 100,<sup>181</sup> and at a typical performance only half the seats are filled, that results in a demand for almost 70,000 live performances per year.

## 2. *Inputs and Outputs of Purchase Decisions*

The total demand estimate developed in the preceding section estimates *potential* demand; actual demand is far less than that. Several factors (“inputs”) influence the conversion of potential demand for music into actual demand. Consumer tastes matter. Some people like rock music; others like pop; others, jazz; still others, country music. Within each of these broad genres, preferences may run to heavy metal, or emo.

Perceived talent of artists also influences demand. A band with a ragged-sounding drummer is less likely to appeal to many consumers than a band with a good drummer. Some theories of the demand for popular music emphasize variations in “quality,” but that is too simple. If it were true, only the highest quality performers would become superstars. If everyone agreed on measures of quality, and if no search costs existed, “only one person is needed to serve the whole market . . . .”<sup>182</sup> But that is not the way it works. Tastes differ.

But more than the music matters. Personal attraction to the performers drives much demand.<sup>183</sup> Consumers of music not only are

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179. Data available from several university surveys and from other studies suggests that more than half the college age population regularly attends live music performances, as often as nightly during vacation periods and once or twice per week during the academic year.

180. It is reasonable to assume that the percentage of the population attending live performances declines as age increases, and that the frequency of attendance declines as family and job responsibilities increases.

181. The average would be pulled upward by large stadium-size venues, and downward by the much larger number of smaller “clubs,” many seating only a few dozen.

182. Princeton Study, *supra* note 25, at 35 (quoting Borghans and Groot).

183. See Kelefa Sanneh, *Just a Pretty Face, and Proud of It*, N.Y. TIMES, July 13, 2006, at B1 (reporting on Justin Timberlake’s emphasis on his handsome looks in promoting his music; observing that artists work hard on albums only to get “a bunch of fans who don’t even notice; they’re too busy drooling over you . . .”) [internal quotations omitted]; See Robert Levine, *Rage Against the Record Label: The Hanson Brothers Make a Film*, N.Y. TIMES, Oct. 31, 2005, at C6 (reporting that audience at recent performance by Hanson

interested in the sound of the music, they are interested in the people who produced the sound. They want to see pictures and videos of the performers, read about them, and know their personalities. Often, depending on the age groups and the culture in which they are embedded, consumers want to identify with the performers as by wearing tee shirts or sweatshirts or having coffee mugs or computer mouse pads showing the performers' logo. "The price of a concert ticket is set lower than it would be in the absence of complementary goods, because a larger audience increases sales of complements and raises revenue."<sup>184</sup>

Knowing what she likes, in terms of genre, style, talent, and looks, is not sufficient, however. Search costs are also important. How does a consumer find new music she will like? Potential consumers hear—or hear about—the music of only a fraction of the total numbers of musicians. Consumers may find about new songs or new performers in several ways. A consumer may see a newspaper or magazine advertisement for a new song and be moved to buy it. A consumer may see a review of a musical work or a performer and decide to buy or to listen to the reviewed music or performer. A consumer may hear a song on the radio and decide he wants to possess a copy so he can play it anytime he wants, or be moved to attend a live performance. He may hear about the new song from a friend, who tells the potential consumer about it, gives him a CD containing the song, or emails him an MP3 file. He may see reference to the song on a website, which may permit him to download some or all of it. He or she may see a performer on a poster, on television, on in a webpage "photogallery," and be attracted physically.

Rankings also affect demand through network effects, considered in the next section.<sup>185</sup> Rock superstars sell lots of music just because they are superstars. The more popular the song or performer, the more likely people are to be talking about it or her, which reduces network effects.

Several kinds of behavior ("outputs") may result from these stimuli: a consumer may ask others about the performer or the song; he may immediately download it from a for-pay artist website or service such as iTunes or Rhapsody; he may surf the Web to find out more about the performer or the song, including the possibility of

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"consisted mainly of young women," one of whom said, "As soon as I saw the poster I was overwhelmed," and send lead performer a birthday present of his favorite food.).

184. Princeton Study, *supra* note 25, at 11.

185. *Id.* at 30 ("when you play music at a party, you would like your guests to enjoy the music").

listening to it from a streaming or downloadable file from the performer's website; he may download it for free if he can find it; he may buy a CD with the song on it; he may buy tickets to a concert, or stop by a local bar or other music venue where the group is performing. And of course, a consumer may do nothing.

Rational consumers choose among these behaviors depending on the degree to which each satisfies a particular consumer's preference function, compared with the cost of the particular behavior. Preferences vary from artist to artist, even for an individual consumer. For example, a consumer may download one song from Arctic Monkeys that she really likes but nothing more because she does not like that group's other music, but someone else may buy the CD of Westlife, because he enjoys its music artistry as a whole, and perhaps also enjoys the artwork or other aspects of the CD

The capacity of different formats to satisfy consumer preferences may vary too. CDs give artwork, and perhaps the sense that the purchaser is supporting the artist financially. Attending a live performance is a different experience, with social elements, from listening to recorded music. Simple MP3 file downloading provides neither type of satisfaction.

Networks of music aficionados meet group-affiliation needs. Certain age groups and subcultures find music CD stores attractive places to "hang out"—to meet their friends and to reinforce their ties to an important social network.<sup>186</sup> Being a regular at live-music venues, allows one to talk about different music performers, comparing musical tastes, getting the latest on the latest new-band sensations, and gossiping about the personalities of the artists. The costs of attending a live performance or a gathering place such as a CD store can be significant, however, including the price of admission and other monetary and opportunity costs of travel and the opportunity costs of attendance for several hours.

New technologies, implemented on performer websites,<sup>187</sup> and through virtual communities such as MySpace, allow consumers to become music "groupies" without leaving their computers.

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186. Some indication exists, however, that this phenomenon is fading. See Alex Williams, *The Graying of the Record Store*, N.Y. TIMES, July 16, 2006 at § 9, 1 (reporting that role of record [CD] store as a "clubhouse for teenagers" has declined dramatically).

187. See Andreas Kapsalis Trio—Jazz, Flamenco, Acoustic, Experimental, <http://andreaskapsalis.com> (providing information about performers, schedule of upcoming performances, reviews, downloadable music, and allowing viewers to sign up for emails); Dick Prall, <http://www.dickprall.com> (same); Hijack the Disco: Rentless Press, California, <http://www.hijackthedisco.com> (same, also including comments thread,

If a consumer values portability—being able to listen to the music anywhere—he will value a format that is easily portable, such as MP3, rather than a CD, which requires a bulkier playing device and a physical stock of CDs. MP3 satisfies that consumer's preference function better than a CD.

"Cost" includes more than price. Going to a bricks and mortar store to buy a CD imposes much higher transaction costs on a consumer than downloading it from a computer on which iTunes is already installed and which is already connected to the Internet. Transaction costs also include risk, such as being sued or prosecuted for copyright infringement or getting a virus or some other harmful code from downloaded music.

Estimating demand is complicated by the uncertainty of the relationship among different ways consumers can enjoy music from the same performer. CDs and MP3 files may be substitutes—one chooses between the CD and an MP3 file containing the same song, but they also may be complementary—one hears a song on an MP3 file and buys the CD containing the song as a result. Live performances and both recorded-music formats are more likely complementary than substitutes. A consumer does not choose between listening to a recording of Dick Prall and attending one of his performances; one is more likely to go to a performance *because* he has heard an MP3 or CD recording.

One could of course construct a probability function for each outcome—the purchase of a particular song in a particular format, as a function of all the inputs, and the relative costs of substitutable outcomes—the purchase or other acquisition of other songs and formats. Such a function would compute the probability of paying to download a song if a consumer hears it and reads a review, but gets no other inputs; the probability of buying a CD if the consumer hears about the song from a friend, listens to a streaming version on the Web, and then is offered a ride to Borders by the friend, the probability of seeking out and attending a venue where a group is performing because one has heard a song by the group, and so on. These functions could be either empirically or theoretically based. Construction of such demand functions is beyond the scope of this article, although the article suggests certain key features of the likely demand functions.

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allowing anyone to post comments and messages); Coldplay: Official Site, <http://www.coldplay.com> (same, also allowing viewers to become "members," and offering chat room).

### 3. *Network Effects and Demand for Complementary Products*

Earlier sections of this article point out that strong network effects shape the demand for music.<sup>188</sup> The more popular a piece of music is, the more rapidly its popularity spreads.<sup>189</sup> The more popular a performer becomes, the faster his popularity accelerates. Consumers want to share a common culture.<sup>190</sup>

Not only does pop culture manifest itself in the desire to know about and to have experienced the latest “big thing,” the more popular a piece of music is, the more likely a potential consumer will hear about it through word of mouth or in press or media reviews and the more likely the consumer is to hear it on the radio.

Superstars exist not mainly because of differences in talent but because consumers want to share a common culture.<sup>191</sup> The more popular a performer becomes, the faster his popularity accelerates. And the deceleration is gradual: Madonna is not what she was, but seems to be able to sell a constant level of new albums. The same for the likes of Prince, Pearl Jam, Bon Jovi—long past their prime but still able to maintain a relatively constant level of demand. The intuition that network effects are important determinants of the demand for music is reinforced by a study recently completed by Columbia University music laboratory personnel.<sup>192</sup> The study included almost 15,000 participants recruited from teenage-oriented

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188. Network effects are the same as “bandwagon effect” in ordinary discourse—high network externalities, in more formal terms. *See generally* Michael Abramowicz, *An Industrial Organization Approach to Copyright Law*, 46 WM. & MARY L. REV. 33, 87 n.153, 155 (2004) (noting that the demand for music experiences network externalities—“I invest in music to be in the cool crowd”—but each investment may “harm others by diluting their relative coolness quotient”). According to Metcalfe’s law, the usefulness, or utility, of a network equals the square of the number of users. John T. Nakahata, *Regulating Information Platforms: The Challenge of Rewriting Communications Regulation from the Bottom Up*, 1 J. TELECOMM. & HIGH TECH. L. 95, 135 (2002) (analyzing network effects in terms of tendency toward monopoly in communications networks).

189. *See generally* Abramowicz, *supra*, note 188, at 87 n.153, 155 (noting that the demand for music experiences network externalities—“I invest in music to be in the cool crowd”—but each investment may “harm others by diluting their relative coolness quotient”). According to Metcalfe’s law, the usefulness, or utility, of a network equals the square of the number of users. Nakahata, *supra*, note 188 at 95, 135 (analyzing network effects in terms of tendency toward monopoly in communications networks).

190. Princeton Study, *supra* note 25, at 35.

191. *Id.*

192. Matthew J. Salganik et al., *Experimental Study of Inequality and Unpredictability in an Artificial Cultural Market*, 311 SCIENCE 854 (2006) [hereinafter “Columbia Music Study”]; *see also* Benedict Carey, *In Music, Others’ Tastes May Help Shape Your Own*, N.Y. TIMES, Feb. 14, 2006 at D7 (describing Columbia Music Study).

Internet sites. One-half of the experiment produced a rough consumer-rating of song quality. The other half of the experiment presented subjects with information about the number of previous downloads for each song by other members of their teenage interest group. "A small group of people making decisions at the beginning had a large influence on how the songs were ultimately ranked."<sup>193</sup> The experiment demonstrated that consumers with little information to guide their choices of songs are strongly influenced by other consumers' behavior. The result of a kind of "cascade effect" in favor of the songs chosen first.<sup>194</sup>

This suggests that demand can be increased by giving music away to build the fan base, much as America Online built its consumer base by giving away its software.<sup>195</sup> For a time in the late nineties, one could not open one's mailbox, or open the newspaper or a magazine without a free disk with AOL software on it falling out. But it also is true that not all giveaway programs are successful. The cemeteries of the dot-com bubble are littered with enterprises whose business model was premised on building market share—or "attracting eyeballs," in the parlance of the Web venture-capital and entrepreneur culture—at a loss, with profits to come automatically once a customer base was established. For many firms, the profits never materialized. Similarly, a musician or a promoter also may spend money on producing music, giving it away in the expectation that he will build audience for download sales or for concerts, and for the paying customers never to materialize in sufficient numbers to offset the investment in the promotion.

#### 4. *Search Costs*

"Time is money." Time also is not unlimited. 350,000 new songs were released on CD format in 2006. If each one takes three minutes to play, and the average consumer listens to only one minute before

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193. *Id.*, ¶7 [internal quotations omitted].

194. *Id.*

195. As Jason Mollner, one of my musician-students, said, "I know of many bands (like my old band) that give away songs for free on websites like <http://www.purevolume.com/backwhen>. Fans cruise these sites looking for new music and when they listen to Back When's music, they have links to the Back When website where they can contact Back When about shows, t-shirts, buttons, a CD with full insert, or they can just talk to the community of other Back When fans. This has helped Back When's fanbase increase in areas where they have never performed or ever been promoted. I think of a MP3 as a kind of book review. It is a synopsis of the entire experience that the band can create through their live performance, their cover art, t-shirt art, or a reading of their lyrics in the CD insert."



deciding whether he likes it, it would require 350,000 minutes, or about 6,000 hours to sample all of them. That is 250 days per year, without allowing any time for sleep. No one is that compulsive about music, apart from the physiological problems of sleep deprivation. And that does not allow for the other new songs created each year that never get released on CDs by major record labels. They surely number in the tens of millions. So consumers need some way to reduce search costs.

The existing music marketplace offers several types of intermediaries whose principal reason for being is to reduce search costs—and to satisfy a part of the demand as they do so. When radio stations play music, they bring consumers into contact with songs they never had heard before. Music reviewers tell consumers about new songs and new musician groups. Retailers of CDs, including Starbucks, have displays to make consumers aware of new music. Albums not only force consumers to buy songs they may not have been interested in, but at the same time expose them to new songs they may like. Print and media advertising, some through general audience publications, and some through special-audience publications such as *Rolling Stone* and *Spin* tell consumers about new music purchase possibilities.

Record labels similarly reduce search costs by purportedly weeding out the good from the bad in the enormous inventory of new music. But it is difficult for an A & R representative of a record label to be sure that her tastes match those of all the subsets of consumers, and economics influence label decisions as much as perceived quality of the music.

New technologies reduce search costs further. The Web creates new channels through which a consumer may come into contact with a song for the first time. It makes it easier to find out about the performers, most of whom have websites—even those who have not “broken through” yet.<sup>196</sup> This presents much lower transaction costs to purchasers than going to a physical store, finding an interesting CD and standing in line to pay for it.

##### 5. *Demand Function*

Eventually, unless copyright law impedes taking advantage of new technologies, and is enforceable, the same technologies that reduce the cost and open up new alternatives for music production also increase consumer demand for music.

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196. See e.g. Studio Ballistico, <http://www.studioballistico.com>.

Demand for a song from a particular source is a function<sup>197</sup> of price,<sup>198</sup> perceived quality of the music,<sup>199</sup> transaction cost of obtaining the song (including search costs),<sup>200</sup> “altruism” toward the supplier—the possibility that a consumer may identify with the performer and therefore want to purchase music from a source that maximizes revenue flow to the creator,<sup>201</sup> popularity of the song with others in social groups to which the consumer feels a connection,<sup>202</sup> inconvenience of listening to the song,<sup>203</sup> perceived probability of obtaining a corrupted file,<sup>204</sup> and perceived probability of legal liability.<sup>205</sup>

New technologies reduce transaction costs and inconvenience of listening to downloaded MP3 files, compared with physical CDs. The availability of recorded music in the form of MP3 files downloadable from “legitimate” sources reduces the probability of getting corrupted files and of legal liability, relative to “illicit” sources, and also reduces the relative price of “legitimate” sources, compared with illicit sources. It also increases the likelihood that a favored musician will get some of the revenue. Thus the demand function suggests a shift from CDs to files and a shift from illicit sources to legitimate sources.

Technology’s influence on convenience is especially profound. The phenomenon began with transistor radios and boom boxes and accelerated with the introduction of the first Sony Walkman. With

197.  $D_i=f(p_i, q_i, tc_i, a_i, s_i, i_i, v_i, ll_i)$ , where  $D$ =demand for a song in a particular form,  $i$ , and the independent variable are as defined and explained in the following notes and accompanying text.

198.  $p_i$ = price, and the function is an decreasing one (the higher the price, the less the demand, with greater elasticity in the middle)

199.  $q_i$ = perceived quality, where the function is an increasing one, with greater elasticity at the low end

200.  $tc_i$ = transaction costs of obtaining the song, where the function is a decreasing one, with greater elasticity at the low end

201.  $a_i$ =“altruism” toward supplier, where the function is an increasing one, probably with a discontinuity

202.  $s_i$ = popularity of song; network effects suggest that the influence of this variable would exponentially increase to some upper limit

203.  $i_i$ = inconvenience of using song, where the function is a decreasing one, with greater elasticity in the middle

204.  $v_i$ = perceived probability of getting a corrupted file, such as one including a virus or spyware, where the function is a decreasing one, with greater elasticity at the high end

205.  $ll_i$ = perceived probability of legal liability, where the function is a decreasing one, probably with a discontinuity; it may be a step function, and the other dependent variables represent factors identified in the preceding notes. The probability of getting a virus and the inconvenience could be lumped into transaction costs, but they are shown separately to focus attention on them, i.e., “transaction costs” can be understood to encompass “other” transaction costs.

iPod technology, music is completely portable. One can have thousands of songs recorded on an iPod and carry it around in his or her shirt pocket. If one wants to enjoy the music recorded on an iPod as part of a group, one simply plugs the iPod into an amplifier and all of the amplification and speaker options are available that would be available for playing a CD or a vinyl record. One can still buy a CD and download the songs to a PC and then copy them to an iPod, but it is much easier simply to buy the songs online and copy them directly to an iPod. This is exactly how Apple's iTunes works. Great portability increases the total amount of realizable demand for music rather than merely influencing market share. It makes it possible for consumers to spend more of their waking time listening to music.

Producers and other intermediaries can impede this portability by making it more difficult to rip a CD by incorporating encryption technologies and by refusing to license their music to iTunes, Rhapsody, or competitors. Technical standards exist for universal compatibility. Almost everyone has adopted the MP3 format for music files, and the experience suggests that future standards can be adopted with similar alacrity. Incompatibility of formats is most closely associated with copy protection—"digital rights management" ("DRM") is the more elegant term preferred by music suppliers.<sup>206</sup> Apple, for example, deliberately makes iTunes formats impossible to play on devices other than iPods, unless the files are modified.<sup>207</sup> Apple does this to protect its dominant position in the market for both music and portable music players. It is, for the short term at least, in Apple's interest to have iPods work only with the iMusic store and vice versa. Eventually, well financed competitors like Microsoft and Yahoo! probably will gain enough market share to induce Apple to open up its hardware and e-commerce sites to competitors. It is irrational for producers to exclude themselves from this rapidly growing new distribution channel and thus to stunt total demand.

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206. See Tom Zeller, Jr., *The Ghost in the CD*, N.Y. TIMES, Nov. 14, 2005, at C1 (reporting that Sony-BMG's effort at copy-protecting its music CDs backfired when consumers discovered that the DRM software exposed user computers to viruses, Trojan Horses, spywire and other malicious software).

207. Actually, all one has to do is to modify the file *name*. See Thomas Crampton, *Paris Approves Law Aimed at Making iTunes Compatible with Rival Devices*, N.Y. TIMES, July 1, 2006, at B4 (reporting on final adoption of French statute that would reduce penalties for illegal downloading of music to those for minor offense and that would prohibit copy protection schemes that limit consumer use of purchased music on devices consumer chooses).

Higher search costs inflate the transaction-cost variable and reduce demand. The technologies make more music available and make it easier for consumers to acquire it, but where should a consumer look for it? How does she decide if she wants it? No one is going to search thousands of web pages that might contain appealing music. Some form of intermediation is necessary to reduce search costs for consumers, but it is unlikely to take the form of existing record labels in their present configuration.

The altruism variable incorporates factors such as a performer's "sex appeal," and identification with the performer and the community of other admirers of that performer. "Groupies" are more likely to be willing to pay for the music of the target of their attachment, as a way of rewarding the target.

Whether consumers prefer to purchase music licensed by the copyright holder in order to avoid copyright infringement associated with free file-sharing services, or whether they are lured by the chance to get music for free, is another question. The pirated versus legitimate purchase question exists for every consumer, regardless of whether the consumer prefers CDs, or MP3 files. A student note offers useful estimates of demand functions that highlight the factors that may encourage or discourage illicit file sharing.<sup>208</sup> Law's deterrent effect depends on the magnitude of the penalties and the decisionmaker's perceived probability of getting caught.<sup>209</sup> For some

208. Aaron D. Delgado, *Confessions of a Tennis Shoe Pirate—Can Proper Pricing of Factors of Production Deter Copyright Infringement?*, 8 U.FLA.J.TECH.L. & POL'Y 179 (2003) (Mr. Delgado's economic analysis is better than his legal analysis. He ignores fair use while identifying the first-sale doctrine and the possibility of substantial non-infringing uses as the most important sources of privileges for copying music); *Id.* at 184 (He treats purchasing an unauthorized copy as an act likely to lead to liability); *Id.* at 189 (Nevertheless, his economic analysis is insightful).

209. *Id.* at 188-189 (Mr. Delgado's equations for this facet of the decisionmaking process are:

$$P_{\text{copy}} = (F \cdot R_p) + C$$

Where  $P_{\text{copy}}$  = is the cost of an illicit copy

F = fine for copyright infringement

$R_p$  = probability of fine being imposed

C = physical cost of copying

If incarceration is a possibility, the cost function for the illicit copy becomes:

$$P_{\text{copy}} = [(J \cdot W \cdot R_p + C) / (1+r)] \cdot J$$

Where

J = jail sentence in years

W = lost wages per year of incarceration

r = discount rate

As published, this equation calculates the cost of incarceration for one year; it would have to be modified to reflect the total cost of incarceration for more than one year.

consumers, the decision whether to buy a legitimate copy or to acquire an illicit copy may depend on opportunity cost—the value the decisionmaker imputes to his or her time.<sup>210</sup> Teenagers are more likely to obtain illicit copies of music than physicians because they have so much more leisure time than physicians.<sup>211</sup> The note also identifies what it calls a “nouveau” variable, to account for the greater value that may be associated with a legitimate CD because of photographs, interviews and video clips packaged with the CD.<sup>212</sup> Because the note does not consider consumer decisions with respect to purchase of a legitimate CD versus downloading of an illicit MP3 file, it does not probe the most interesting question—whether file sharing enhances or undermines revenue streams to artists. The basic models presented however, are useful starting points for a more robust model that would encompass CD versus MP3 decisions.<sup>213</sup>

The importance of the demand function expressed in note 197 for the risk of free riding is that it includes terms other than a price term. The relative price for legitimate music compared to pirated music will decline, as § IV.A.4 above explains. It may not go to zero, and thus pirates’ price advantage will continue to pull some consumers in their direction. But as the relative price advantage declines, it will pull fewer consumers away from legitimate sources. More importantly, price is not all that matters. As e-commerce for

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A rational consumer will choose the illicit copy as the cost of the copy is lower than the cost of a legitimate copy: as long as  $P_{\text{copy}} < P_{\text{authentic}}$

Mr. Delgado’s function can be understood as focusing on the  $p_i$  and  $ll_i$  variables in the demand function expressed in note 198).

210. Mr. Delgado presents the following equation to illustrate the role of opportunity cost:

$$P_{\text{copy}} = *P_m + [( *P_r)/x] + T(W* ) + N$$

Where  $P_m$  = unit price of blank media

$P_r$  = price of recording device

$N$  = nouveau factor

$W$  = wages per unit time

$T$  = time to make a copy, including search costs

= time weighting factor increasing with time

= time weighting factor declining with time, and

$X$  = number of copies made on the same device

211. Delgado, *supra* note 200 at 190-191.

212. *Id.* at 191-192.

213. All that is necessary is to substitute variables representing the “investment” necessary to obtain MP3 files, comparable to the purchase of blank CDs and of CD burning hardware and to illustrate the factors that are likely to alter the opportunity cost effect significantly in the MP3 world—chiefly the additional time required to locate a desired file on non-commercial services, and the probability of obtaining a corrupt file and the time required to undo the damage if a corrupt file is acquired.

popular music develops, consumers will be able to get more of what they want from legitimate Web-based sources for music. Participating in communities sponsored by artists will enhance the value of the altruism variable.

Illicit channels for music distribution will continue to present a significantly higher risk of getting corrupted or inferior files, and viruses. That will increase the (already negative) value of the quality variable ( $q_i$ ) and the corruption variable ( $v_i$ ). Legitimate distributors of music can weaken the importance of the convenience/quality/corruption variables in pushing consumers toward legitimate sources of music, however. Most digital rights management schemes make consumption of legitimate sources of music more cumbersome than would be the case without DRM. At some point, struggling with DRM limitations, beyond the control of ordinary computer users, drives the quality and corruption and convenience variables in the favor of pirated sources of music. If something may happen so that my collection of purchased music becomes inaccessible, I may as well get pirated music from which I may get an occasional virus that mostly can be controlled by antivirus programs.

Just one example is the apparently innocuous DRM protections built into iTunes Windows Media Player and Sony Sonic Stage. They routinely check an Internet-connected database for information on new songs imported into music libraries. Often they cannot find the song in the database because it has been created and recorded by a small independent musician who has not put data in the database. Nevertheless, acquisition and possession of the music may be entirely legitimate—as when I import music I myself created into one of these music library managers. Although it is not difficult to cancel the query to the master database and to include the imported file anyway, the need to do so is somewhat cumbersome and the effect of the window opening asking a consumer to choose among alternatives in the database is at least confusing and might deter some consumers from enjoying the unregistered music.

The threat of legal liability also will continue to play a role and aggressive efforts by the music industry to enforce copyrights against ordinary consumers and those that make it easier for ordinary consumers to get illicit copies of music will always have some effect in increasing the (already negative) value of the legal liability variable. It also, however is likely to decrease the value of the altruism variable because consumers are angry about what they see as overreaching and abuse of the legal system by existing industry giants.

For many consumers the altruism variable dominates. When some consumers hear a new song, the first thing they do is to try to find a photograph of the performers. If they like their looks they are more likely to buy their music, often more music—more songs or more than one album—than they heard. It is not only looks, of course; it also is the ethos that the performers communicate: rebellion, striving, solidarity with each other, commitment to hope, commitment to certain kinds of traditional values. The Web facilitates making all of this readily available to consumers and thus increasing their vicarious social attachment to the artists. If, on the other hand, consumers believe that a purchase will benefit artists or those labels with whom artists have made a deal that are abusing teenagers and elderly grandparents, this powerful altruism factor can sour.

### **C. Combined effect**

#### *1. On Supply and Demand*

The new technologies will transform the marketplace for music because they reduce the costs for advertising, promotion and distribution of music nearly to zero, while they increase the overall demand by making music more portable. As demand increases, it will be satisfied by more music produced by Indie musicians, who will bypass traditional intermediation functions performed by the major labels.

Prices will fall as costs decline, further increasing demand. Total revenue may fall because of lower prices and more competition but more of it will be available to Indie musicians who were largely shut out of yesterday's market by the major labels.

On the supply side, costs will fall dramatically, for most of the variables in the supply function constructed in § IV.A.4 above. The most significant barrier to entry in the past was the cost of advertising, promotion and distribution, which only could be borne efficiently by major labels. Those were the greatest costs in past business models, far greater than the human and physical capital costs of initially creating and producing music, which also are declining because of new recording technologies. Because new technologies reduce these costs so much, compared to traditional means of production, marketing and distribution, the barriers to entry for “undiscovered”<sup>214</sup> musicians are greatly reduced, increasing the supply

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214. “Undiscovered” signifies musicians and groups that have not attained a large consumer following through a major-label deal or otherwise.

of music. These musicians manage much smaller portfolios than the record labels—maybe a few dozen songs. Some may get a hit, that is welcome, but most will not and will nevertheless persevere, still producing music, building networks of fans, enjoying gradually increasing social status and personal gratification as more people hear their music, while still dreaming that they may become rock stars. Because less is at risk financially, they will be less frantic to make it big quickly.

Incentives to give away more music to build fan base will put further pressure on prices. Musicians will develop business models that place less emphasis on revenue from sales of recorded music. Live performances will continue to dominate the business models for most musicians. Most of the income stream for artists will continue to come from live performances, for which CDs were, and MP3 files now are, essentially advertising.

Unlicensed file sharing will become less controversial because it will become less distinguishable from consumer conduct desired by musicians. File sharing enabled by the Internet further reduces advertising and promotion costs. Moreover, the newer technologies permit artists to retain greater control over how file sharing and other forms of music sampling take place. Artists can put samples of their music on their Website, offer samples—often one minute of a song in MP3 format, on intermediary Websites such as CD Baby. They can use sites like MySpace to limit the communities within which file sharing occurs.

On the demand side, the shift to consuming music in the form of digital music files loaded onto portable players enlarges the amount of time available to consumers for listening to music, potentially increasing demand by a factor of two or more, and they will want more music to listen to. Finding appealing music will become easier because new architectures will keep search costs manageable.<sup>215</sup> Altruism toward artists will increase because social networking through virtual communities such as MySpace and more complete artist websites<sup>216</sup> allow consumers to get “closer” to the musicians and their personalities. Consumers can become music “groupies” without leaving home. It is no longer necessary to get backstage in the

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215. New architectures to manage search costs are considered more fully in § IV.C.3.

216. See <http://www.andreaskapsalis.com> (last visited on April 3, 2007) (providing information about performers, schedule of upcoming performances, reviews, downloadable music, and allowing viewers to sign up for emails); <http://www.dickprall.com> (last visited on April 3, 2007) (same); <http://www.coldplay.com> (last visited on April 3, 2007) (same, also allowing viewers to become “members,” and offering chat room).



physical sense—an opportunity available to few. One can get backstage—and almost in the bedrooms—of performers through web spaces offering virtual communities. New kinds of network effects will reduce total demand for “top” songs, while they increase demand for less famous musicians through new virtual social networks focused on particular genres or clusters of performers.

The new technologies will shift demand toward Indie musicians and their intermediaries at the expense of major record labels and artists under contract with them.<sup>217</sup> Once a consumer knows that he might enjoy music from an Indie artist, it is just as easy to acquire that music as to acquire music sponsored by a major label—maybe easier if major labels continue to burden their offerings with DRM or withhold them altogether from major download sites. The costs for competitors of Indie musicians, including major labels and pirates, will go down too, but labels do not want to undercut their existing business models, and will continue to resist wholesale adoption of the new technologies and business models and concomitant price reductions.<sup>218</sup> MP3 and Web technologies reduce the barriers to breaking through, based on talent; compare the experience of Clap Your Hands Say Yeah, or Coldplay, which distributed free MP3 files on the Internet, with Jimi Hendrix or Bob Dylan, who played for years in out-of-the-way clubs before a music-industry executive stumbled across them.<sup>219</sup>

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217. There is no significant difference between the music genres available from both types of artist and intermediary, notwithstanding some claims that the sources produce distinct types of music. See Miller *supra* note 2 at 329 (arguing that Indie music does not compete directly with major-label music, which tends toward heavy metal, while Indie music tends toward Beach Boys, Bob Dylan, Johnny Cash, rock-and-roll, and folk).

218. See Steven Levy, *Why Don't We Do It on the Internet*, NEWSWEEK, May 1, 2006, at 16 (reporting that Beatles have been unwilling to allow their music to be sold online through services such as iTunes or Rhapsody); Jeff Leeds, *Labels Halt Downloads to Increase CD Sales*, N.Y. TIMES, Mar. 9, 2006, at E1 (reporting on major label that delayed sales of song on iTunes for two months after radio play started to allow time for CD sales in record stores to mature); cf. Robert W. Cort, *Straight to DVD*, N.Y. TIMES, May 6, 2006, at A15 (arguing that movie producers should release DVD formats of movies as soon as they are released in theaters; consumers would still go to theaters; otherwise piracy is encouraged, costing industry \$6 billion per year).

219. See Johnnie L. Roberts, *Edgar and the Indies*, NEWSWEEK, May 22, 2006, at 42 (reporting that “superstar” group Arctic Monkeys “first got a buzz going through Internet downloads and chat rooms;” other Indie groups, “long spurned by radio and other traditional outlets,” use internet to reach fans eager to discover new music artists; “not uncommon” for Indie group to generate sales of 300,000 or more with low marketing costs); David Carr, *Media Age Business Tips from U2*, N.Y. TIMES, Nov. 28, 2005, at C1 (reporting that U2’s success in attracting four million fans to 130-sold-out shows in 1005, grossing \$300 million, while selling eight million copies of latest CD, after 35 years as a top group is due to its effective management of a portfolio of assets, including website that

The impact of new technologies on the demand for live performances by major stars will be marginal because these performers and their promoters already have access to mass media. The impact will be greater for undiscovered musicians because it gives them access to the mass market with whatever targeting of subgroups the musicians want. The result may be an increase in attendance at live performances for less famous musicians. It is more likely to pull consumers towards smaller venues where musicians they discovered through the web are performing. In other words, consumers will use more of their leisure time available for live music performances to enjoy the music of less-known groups.

CDs are dead, or soon will be. The end result of technology's impact on demand functions is almost certain to extinguish demand for CDs. The convenience of downloading a song or an album into a portable music player overwhelms the inconvenience of going to Tower Records or Borders hoping to find the desired CD, standing in line to pay for it, and then transferring the songs to a portable player.<sup>220</sup> Major-label CDs are doomed not because downloadable music is available for free, but because it provides better utility for consumers at the same or a lower price.

Conventional music radio likewise is threatened; although music radio offers more than music – news, traffic, and weather—and it affords the opportunity to hear new music. Having your own playlist is better than listening to the DJ's. On the other hand, hearing new songs on the radio is an easy way to mitigate search costs.

## 2. *On Piracy*

New technologies always affect the externalities that influence the likelihood of private bargaining producing Pareto-optimal allocations of resources. Much of the public policy debate over music file sharing proceeds as though the new digital technologies deployed through the Internet increase the risk of free riding, and leave demand unchanged. Such an assumption is profoundly incorrect. The

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indexes every song and lyric, tour news refreshed daily, and subscriber features including priority access to tickets, exclusive content, streaming downloads of every song and exclusive videos; promoting the downloading of music through special edition iPod); Kelefa Sanneh, *A Scrappy Jam Band, but Hold the Jam*, N.Y. TIMES, Jan. 16, 2006, at E5 (reporting that O.A.R. cultivated a “rabid” audience by playing concerts nonstop and by encouraging fans to share recordings).

220. CDs do offer positive externalities, such as finding other CDs of which a consumer was unaware by looking at recommendations made by a store owner (particularly for Indie record stores).

preceding section explains how the new technologies dramatically increase demand for music.<sup>221</sup>

Conclusions differ about the overall effect of file sharing on different elements of the music industry. Some economists conclude that social welfare is increased, with less-known musicians benefiting the most, at the expense of intermediaries and super stars.<sup>222</sup> Others, of course, conclude that social welfare is diminished.<sup>223</sup> One overview of the declining fortunes of major record labels<sup>224</sup> concludes that the decline is unlikely to be attributable to music downloading and CD burning and more likely to be due to industry consolidation, musician resistance to economic terms imposed by major labels, and the major labels' "current ineffective business models and use of the Internet."<sup>225</sup> Widely-respected and industry-oriented Forrester Research reaches the same conclusion.<sup>226</sup>

Furthermore, the new technologies actually may *reduce* the risk of free riding. Digital duplication dissemination through the Internet cost less than older means of copying and distributing of music. This, considered by itself, would seem to increase the risks of free riding. But the same technologies also reduce the fixed costs of music creators and producers.

Free riding occurs because the pirate can satisfy some or all of the demand at a price lower than the creator needs to cover the creator's costs. Being unable to cover his costs, the creator will stop producing, or will produce less—unless non-economic motivations induce him to subsidize consumption. Some artists will always make music for the fun of it.

The risk of free riding is proportional to the gap between the creator's costs and the pirate's costs. Changes in technology have narrowed the gap because they have reduced the creator's costs more

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221. Miller, *supra* note 2 (arguing file sharing represents consumer preferences in the face of "years of foisting shoddy bands and overpriced albums on the public" by the recording industry).

222. See Litman, *supra* note 7, at 28 (discussing competing views on incentives and effect of file sharing; some musicians produce because music is what they love and do best; others are motivated by the possibility of making a fortune as next big rock star).

223. Princeton Study, *supra* note 112, at 60-61 (reviewing studies).

224. Data shows that shipments of recordings in the United States fell more than 15% from 2000 to 2002, resulting in the layoff of 5,000 and 10,000 music-industry employees. Schorr, *supra* note 90, at 72-73. "Pressured by shareholders, music executives more than ever are concentrating on economic returns, focusing on only a few superstar musicians-turned-celebrities and neglecting other recording artists. Accordingly, all parties—the public, the music labels, and the musicians—suffer in the current environment." *Id.* at 73.

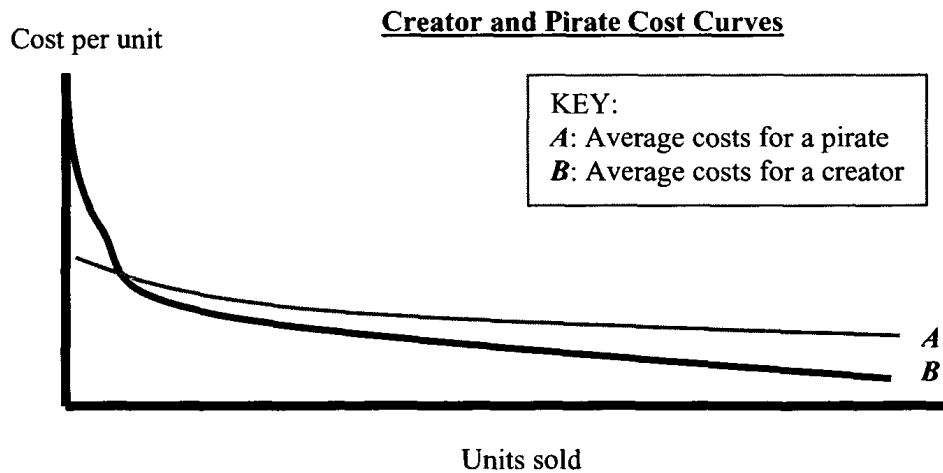
225. *Id.* at 73-74.

226. *Id.* at 82, n.76 (citing Forrester Report)

than they have reduced the pirate's costs. To evaluate technology's effects on the free riding risk, one must consider creator and pirate cost structures, drawing on the supply function developed *supra*. Both structures comprise fixed and variable costs. Examples of fixed costs for the creator include lessons, the opportunity cost of practicing, instruments, audio equipment, mixing and editing equipment, web servers, and CD manufacturing hardware. Examples of fixed costs for pirates include CD copying equipment and web servers. Variable costs for both include the cost of blank CDs, packaging costs, rental for websites, and advertising costs.

Total costs, which determine viable prices, vary with volume because fixed costs must be averaged over the total quantity of product sold. One can envision the graph of a cost function, with quantity along the X axis and dollars along the Y axis. The function will curve downward to the right, with the average cost of a CD or a single download diminishing as more are sold.<sup>227</sup>

The following graph shows, in simplified form, the likely effects of new technologies.



A pirate's variable cost may fall as well when pirates use newer technologies to duplicate music and distribute it. That might lead to the conclusion that the pirate's cost advantage always remains and the

227. The first derivative of this function is negative. The second derivative also is negative, at least until diminishing returns set in (volume becomes so great that either producer must buy another web server or CD duplication device).

pirate always will be able to offer pirated works at prices lower than the originator because the pirate never has to incur fixed costs. In other words, the originator simply would be chasing the pirate's costs downward. But what matters with respect to elasticity of substitution is not the *absolute* price for the legitimate work, but the *relative* price advantage the pirate enjoys. Virtually all economic models of consumer choice among substitute goods express the likelihood that consumers will shift to a substitute good as a function of relative, not absolute, price.<sup>228</sup> The result of technology is to reduce marginal costs close to zero for the originator and to reduce fixed costs dramatically because of the impact of technology on production costs and its even more dramatic impact on promotion and distribution costs. The result is that the relative price advantage of pirated works<sup>229</sup> will be sharply reduced. Pirates will continue to try to steal music, but they will sell proportionately less of it because their price advantage will be reduced. Piracy is becoming *less* of an economic threat because technology is narrowing the gap between creator costs and pirate costs. Technology reduces fixed costs and promotion and distribution costs for creators, reducing the price necessary for them to recover their full costs. Therefore, at the margin, the demand for pirated works relative to the demand for legitimate works will fall, permitting other factors in the demand function to dominate and to push consumers toward legitimate works.

As the relative price advantage of pirates declines, it will pull fewer consumers away from legitimate sources. People *will* pay to download music. Cable television and bottled water prove that it is possible to "compete with free."<sup>230</sup> Lower prices for consumers mean more of them will consume more music. Lower prices for consumers mean more will buy than steal. More importantly, price is not all that matters. As e-commerce for popular music develops, consumers will be able to get more of what they want from legitimate Web-based sources for music.<sup>231</sup>

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228. See generally Valentino Piana, *Substitute Goods* (2005), <http://www.economicwebinstitute.org/glossary/substitute.htm> (last visited Sept. 1, 2006).

229. Relative price advantage can be represented as expressing the price for the pirated work as a percentage of the price for the legitimate work.

230. James Snider, *Fear and Loathing in Hollywood – Again*, ELECTRONIC NEWS, Feb. 10, 2003, available at <http://www.edn.com/article/CA274972.html>.

231. So the shift of consumer demand between legitimate and pirated sources of the same musical work will be driven by the same factors traditionally used to estimate cross elasticity of demand among substitute products. In this analytical framework, each variable in the demand function can be expressed as the relative value of that variable between legitimate and pirated sources of the same work. For example, not only would the

It is important to remember that creators of music enjoy advantages over free riders not fully explained by analysis of their economic production functions. Of particular importance are lead time and search costs. A creator who keeps up of the pace of creativity offers new products desired by consumers frequently. These products are available from the creator for some period of time before free riders discover them, decide to copy them, and actually do the copying and distribution. During the lag between creator and free rider activity, the creator enjoys a window of opportunity free from the risk of free riding. The risk of piracy will stimulate creation of new music as the lead-time advantage for creators gets shorter, and performers will want a new song to steal back the audience just as the pirate gets ramped up to deliver the old one. The model is the same as that for new versions of PC software.

Search costs also advantage the creator. Creators of music and other information goods benefit from making it easy for consumers to find them, with stable, highly visible websites or through more traditional means. Free riders also benefit from making it easy for consumers to find them, but they also have to take into account the likelihood that they will get caught and sued or prosecuted for copyright or trademark infringement. Thus free riders are less likely than creators to maintain highly visible, stable Websites or other commercial presence. Even slightly greater search costs for finding music from free riders benefits creators.

None of these techniques blocks consumer use of completely unauthorized file sharing sites such as the old Grokster, but they offer some of the same advantages of file sharing to consumers that the unauthorized sites offer, therefore bleeding off at least some of the demand for illicit file sharing. Even illicit file sharing reduces barriers to commercial transactions between consumers and artists. It reduces consumer search costs and thereby makes it easier for consumers to find music they may like enough to buy. And it reduces the cost of distributing music by artists thereby freeing up resources for more innovative ways to match consumer tastes. The risks of viruses, spyware and spam are far less on iTunes than on free file sharing networks and the search costs are less because almost everything is (or will be) available from iTunes.

The point is not that all users of the different forms of file sharing will now purchase every song they sample, but some will.

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price variable be expressed as relative price, but the convenience variable would be expressed as relative convenience, the altruism variable as relative altruism, and so on.

Successful marketing of any product or service has never required that a producer must peel all potential consumers away from alternative products or services; it merely requires that enough be pried away to support the producers business model. The newer technologies, including musician-encouraged file sharing make that likely.

So: the likely effect of new technologies is not dramatically to increase the free-riding risk. It reduces prices and consumer costs for acquiring new music from legitimate sources so much that residual free riding is of far less importance than commonly believed. The proposition that technology increases free riding risks so much that it swamps these other effects is entirely unsubstantiated, either theoretically or empirically.

If externalities are constant or reduced, the Coase paradigm suggests that law need not play a greater role, and that public policy and allocative efficiency may best be served by law playing less of a role.

### 3. *On Intermediation: Connecting Musicians and Their Fans*

Increased supply, of course, is not an unmixed blessing. As the number of suppliers increases, search and coordination costs increase for intermediaries and for consumers. The great unanswered question about the structure of the market is how search costs will be managed with new technologies. For consumers to benefit from a greater supply of music, offered at lower prices, they must be able to find it without encountering intolerable search costs. The Internet undermines old models for reducing search costs, which are based on 19th and 20th century technology.<sup>232</sup> It greatly improves consumer access, at lower prices.<sup>233</sup> What major labels know how to do well does not match the needs of either musicians or consumers anymore. Moreover, the mismatch is likely to get worse. As the labels respond to shifts in demand to new formats and new distribution channels they will respond by becoming more risk averse, and they will provide fewer opportunities for new talent. This will cause new talent to put aside dreams of being signed by a big label and push them toward new architectures. As the major labels become identified in the minds of consumers with a smaller and smaller subset of music they are interested in, they will attach less credibility to major-label sponsorship. The labels' efforts at copy protection and other efforts to

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232. Schorr at 75.

233. *Id.* at 74-75.

reduce illegitimate—and legitimate—competition will reduce convenience of their products, similarly driving consumers to other sources of music.

Better ways to manage search costs will continue to drive the industry. As Chris Dahlen put it, “Artists can now let consumers and their friends do the work of getting the word out.” His comment suggests that the wider availability of samples of new music will intensify word of mouth. This suggests that demand can be increased by giving music away. His comment also, however, exposes a weakness in his vision: if consumers and their friends have too much work to do to discover new music, they may not do it. Search costs in the 21st century are still important. New tools are available to reduce them: music blogs, reviews on [pitchforkmedia.com](http://pitchforkmedia.com), [Pandora.com](http://Pandora.com), and file sharing. Soon services like iTunes will offer “we think you’d also like . . .” just as [amazon.com](http://amazon.com) does today for books. In fact an independent web-based service already does this. Pandora<sup>234</sup> allows a consumer to list the songs she likes. The service analyzes musical features of these songs and suggests others with similar features.

The following section explores management of search costs in greater depth.

## V. New Architectures

### A. New Production and Distribution Channels

There are more than 325 licensed music downloading sites worldwide (not counting thousands of MySpace pages), up from 50 in 2003.<sup>235</sup> Five popular and large-scale services illustrate the types of distribution now available for the popular music market, neither of which relies on traditional intermediaries such as the major record labels.

iTunes is an Internet-based virtual store maintained by Apple Computer Company through which consumers can purchase music in digital form to be played on Apple’s iPod, a portable piece of hardware, smaller than a deck of cards, capable of storing and playing thousands of individual songs, depending on the model. Most major performers and most popular music are available through iTunes.<sup>236</sup>

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234. <http://www.pandora.com/>

235. Global Digital Music Sales Triple to US\$1.1 Billion in 2005 as New Market Takes Shape, <http://www.ifpi.org/site-content/press/20060119.html> (last visited April 1, 2006).

236. Miller, *supra* note 2, at 326 (reporting that iTunes offers 500,000 tracks licensed from major labels and works from some 200 independent artists).



Each song is priced at \$0.99, with albums also available at prices ranging from \$6–16 dollars. Under current license deals, a record company gets 65% of 99 cents and iTunes keeps 35%.<sup>237</sup> The artist signed to a major label can expect 8-14 cents per song, after the label takes its cut.<sup>238</sup>

When one purchases a song from iTunes, one “owns it,” but it can be copied only to a limited number of computers and CDs, and its format is incompatible with any player other than an iPod.

By the end of 2005, Apple’s iTunes was number seven in the top ten music retailers, according to independent market research. It had a 70-80% market share of the downloaded music market.<sup>239</sup> The major labels were pressuring Apple to increase the price for more popular singles and albums.<sup>240</sup>

Yahoo’s Rhapsody works similar to iTunes, but the business model is different. Rhapsody users can download an unlimited number of songs from the Rhapsody library and play them for as long as they make subscription payments to the Rhapsody music service.<sup>241</sup> Rhapsody also offers the option to buy music files and to burn them to CDs or to download them to portable players, including iPods.<sup>242</sup>

CD Baby<sup>243</sup> has been selling and distributing CDs for independent musicians since 1998 and reports that it has paid more than \$4 million to artists. Anyone can list his music for distribution by CD Baby by online registration, payment of a \$35 membership fee, and sending five CDs as an initial inventory.<sup>244</sup> CD Baby lists the new music on its website, sends it to amazon.com, and pays royalties to the artist monthly, taking only a 9% share of revenues.<sup>245</sup> CD Baby also distributes music digitally, making it available to iTunes, Rhapsody, and other commercial music sales outlets, although these other outlets make their own decisions whether to carry the music.<sup>246</sup> At an author’s discretion, CD Baby also makes available MP3 file samples

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237. Dina LaPolt, *Taking a Glance at New Media Deals in the Music Industry*, [http://www.musicbizacademy.com/articles/dl\\_newmedia.htm](http://www.musicbizacademy.com/articles/dl_newmedia.htm) (reporting that Apple keeps 35 cents of the 99 cents charged for an iTunes sale)

238. *Id.*

239. <http://www.macnewsworld.com/story/47525.html> [visited 29 Dec. 2005]

240. Apple Was Pressured to Raise iTunes Pricing in 2006 (Dec. 9, 2005), <http://www.appleinsider.com/article.php?id=1223> (last visited Apr. 6, 2006).

241. [http://www.rhapsody.com/rhapsody\\_faqs#1](http://www.rhapsody.com/rhapsody_faqs#1)

242. *Id.*

243. <http://www.cdbaby.com>.

244. <http://cdbaby.net/submit>

245. *Id.*

246. *Id.*

of music it offers on its Web page for the particular author and musical work.<sup>247</sup>

Amazon.com's "Advantage" program offers another distribution and sales outlet. Artists and producers may be listed on Amazon by sending a small number of CDs to Amazon, which then lists them in its database which potential purchasers can browse.<sup>248</sup> Amazon imposes slightly higher requirements with respect to packaging and bar codes than CD Baby (CD Baby does not require bar codes, for example).<sup>249</sup> Amazon reserves a certain amount of discretion to refuse music it deems unsuitable.

Disc Makers<sup>250</sup> offers comprehensive mastering and CD manufacturing services with a variety of pricing points. The basic service provides 300 CDs with color silkscreen printing on the face of the disc and color jewel-case inserts for \$999. Reproduction of smaller number of discs is available at lower prices. Disc Makers has partnership with CD Baby, so a musician can sign up to use Disc Maker services and at the same time list the music for sale and distribution on CD Baby and, through CD Baby, on iTunes and the other services.

MySpace represents an explosive new form of intermediation. Focused on building social communities initiated by individual subscribers, it has enabled heretofore unknown musicians to make their music accessible to MySpace's 55 million users and to reach out to networks of "friends" to build a fan base and to strengthen the attachment of these friends to the musicians.

Startups like Snocap offer the possibility of pure intermediaries who fuel internet supply chains for music by allowing artists to put their songs in at one end and allowing retailers to get the music out at the other end, with a seamless payment system for all participants.<sup>251</sup> They professionalize the creaky but enormously popular MySpace,<sup>252</sup> which allows musicians to post their music for free thus increasing the likelihood that others will find out about it. In September, 2006, MySpace announced a partnership with Snocap, through which it would sell music on MySpace. The service allows bands and labels of any size to sell music at whatever price they wish to set. Unlike

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247. *Id.*

248. <http://advantage.amazon.com/gp/vendor/public/join-advantage-music>

249. <http://cdbaby.net/barcode>

250. <http://www.discmakers.com>.

251. <http://www.snocap.com>.

252. <http://www.myspace.com>.

iTunes, which requires unsigned artists to go through a label or distributor to place music on iTunes, Snocap allows any artist to upload music and sign a contract online.<sup>253</sup>

eMusic is a subscription-based service that allows consumers to own, not rent, their music in MP3 without DRM. eMusic concentrates on music outside the commercial mainstream. However, it does not work directly with unsigned artists, who must work through a label or an online music distributor such as The Orchard (<http://www.theorchard.com>) which makes all its artists available on eMusic. eMusic is the world's largest retailer of independent music and the world's second-largest digital music retailer overall (after iTunes).<sup>254</sup>

Free file sharing networks fueled much of the current reassessment of the current industry structure. They are likely to continue to exist in some form, although they now must compete with "legitimate" file acquisition networks such as those discussed in the preceding paragraphs of this section.

Napster was an Internet-based network of music consumers who could share their MP3 files by entering them into a centralized index. The existence of the centralized index made it possible for the United States Court of Appeals for the Ninth Circuit to find that the administrators of the central index service were engaged in contributory copyright infringement.<sup>255</sup>

After Napster was shut down, Grokster became popular. It was thought to be less vulnerable to litigation by the music industry because it had no central index. Participants in the network wishing to share files with each other did so directly, without the need for a central index. The industry sued the developers of the Grokster software, and the Supreme Court, as explained in § 0, found that the defendants could be liable for inducing infringement. Grokster was acquired by Mashboxx, which then entered into an agreement with Sony-BMG for legal distribution of Sony music at 99 cents per download.<sup>256</sup>

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253. Robert Levine, *MySpace Music Store Is New Challenge for Big Labels*, N.Y. TIMES, Sept. 4, 2006 at C3.

254. <http://www.emusic.com>.

255. *A & M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1029 (9th Cir. 2001).

256. Mashboxx.com, *Mashbox, the First P2P Authorized by Major Record Label, Completes Licensing Deal with Sony BMG Entertainment*, <http://www.mashboxx.com/release.html> (last visited Dec. 29, 2005).

## B. New Business Models

The interaction of supply and demand for music is determined more by business models around which production is organized than by law, although business models are, of course, influenced by perception of law's rights and privileges.<sup>257</sup>

Present business models typically focus predominantly on one source of revenue, for example, concerts, and use other potential sources of revenue, for example recorded music, primarily to support the first sources. For example a band might give away CDs or MP3 files in order to build interest in planned concerts. Another band might use concerts to build interest in purchases of CDs or MP3 files. Neither band would necessarily give away either performances or recordings, but it would either give some away or price each so as to maximize demand for the combination. In other words, rational music suppliers price complementary and substitute products they control so as to maximize the complementarity and to minimize the substitution.

As technology makes it more difficult to control the distribution of recorded music, limiting distribution only to those who have paid for it, one effect may be to shift performer preferences toward the first business model, the one that emphasizes revenue from live concerts. The changes in technology may make it more difficult for owners of the underlying musical work to collect revenues for performances of recorded music, but nothing about the technology should make it more difficult to collect revenues for large public performances. They will continue to be as visible and therefore as susceptible to enforcement of performance rights as in the past.

For songwriters and some performers the revenue stream for performance rights in the underlying musical work will continue to be more important than the revenue stream from other elements in the bundle of rights owned by different participants in the marketplace

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257. Cf. Schorr, *supra* note 90 (reviewing factors contributing to decline of major record labels and evaluating four online business models for major labels); Jeff Leeds, *Korn Sells a Stake in Itself*, N.Y. TIMES, Jan. 11, 2006, at B1 (reporting that hard-rock band Korn is promoting new album by unusual deal with Live Nation, Inc. concert promoter that gives concert promoter 6% interests in band's box office, licensing, publishing, merchandise and CD revenue for an album, in exchange for \$3 million cash payment; suggesting new business model in which all revenues go into a single "pot" and various participants, such as record producers and artists get a percentage share, replacing separate bilateral deals); Jeff Leeds, *As Pop Music Seeks New Sales, the Pussycat Dolls Head to Toyland*, N.Y. TIMES, Apr. 17, 2006, at C1 (reporting on trend for record labels to market dolls, cosmetics lines, and other merchandise as a part of a portfolio from which they get revenue and artists get royalties).

for music. Mechanical royalties for owners of the underlying rights of the musical work may be more difficult to collect because the technology widely disbursts the capability of producing new mechanical recordings, while, at the same time making mechanical recordings less important, compared to digital music files as a medium for exchanging music.

### *1. Two Case Studies*

Two case studies illustrate how real musicians plan to use new technologies to build or maintain sustainable business models for creating music and connecting with consumers. In both cases, the capacity of new technologies to expose new potential audiences to their music is crucial to the business model. But the two artists, Dick Prall and Tim Sandusky, have very different concepts of how to use the technology. Prall intends to follow the tradition of emphasizing live performances. Sandusky intends to be a pioneer with a new philosophy of artistic creation and fan engagement.

#### *a. Dick Prall*

Dick Prall is a 37-year old Chicago singer/songwriter who has been performing professionally since he was 23. He released his first album when he was 28 and was a full-time musician for four years thereafter. For the last five years, he has worked full-time in various administrative and professional jobs while playing music part-time. Now he contemplates quitting his “day job” to resume performing, playing and singing full time. During his first full-time period, he experienced considerable success, opening for major groups before audiences of 1,500 to 7,000, getting some 50 mostly favorable reviews, selling 4,000 copies of his first album and 3,000 copies of a second. He did live performances 12-15 times a month as the lead in a band he called “Starch Martins.” A vanity label called WhiteRose Recordings served as a conduit for investors and donors to defray recording-studio and touring expenses, in the aggregate sum of \$40,000. Despite these apparent indicia of success, Prall only made about \$50 per week—hardly enough to support himself and his daughter. His most enthusiastic supporter and manager, Fred Haumesser, had a full time job and had only limited amounts of time to provide management for the band. No one else in Prall’s base of friends and fans had the time to connect all the dots—to make sure that he captured the synergy that might have developed from the favorable reviews, the fan support, and the CD sales, which occurred at different times in different places.

Since he has been working fulltime outside the music industry, he continues to perform live four to six times per month, and has released a third album, which has sold 1500 copies so far. He has a well constructed website, on which one can listen to samples of his music, see the upcoming calendar of performances, and order CDs. His music is available for sale on CDBaby, AwareStore, Miles of Music, Not Lamé Recording Company, iTunes, and Amazon. He wrote six new songs in 2006, and he has 6,906 MySpace “friends” as of September 21, 2006.<sup>258</sup> He makes \$400-\$1000 per month on his music, mostly from live performance revenues.

Now, Prall plans to become a fulltime musician again. When the setting requires it, he will arrange for others to join him, on a performance-by-performance basis, but the brand will always be “Dick Prall.” He has hired a professional manager, who intends to concentrate on expanding his public performances and disdains the usual record-label deal, which “leaves the artist with nothing but debt to the label.”<sup>259</sup> He will put off releasing another album until someone is willing to front the costs. Prall hopes to alternate two-week touring periods, with one week off in between, throughout the year, averaging fifteen performances per month. He expects to earn \$50-\$500 per performance, with \$500-\$1000 from college performances. He will write new songs while he is on the road. His hope is that his popularity will increase, which will increase live performance opportunities and attendance and drive CD, download and merchandise sales. Success would be defined as earning \$50,000 per year. He expects that the revenue split would be 50% from live performances, 20% from CD sales—mostly at performances, 10% from sales of merchandise such as T-shirts, posters and coffee mugs, and another 20% from download sales. The margin is highest on CD sales (\$6 per CD) and merchandise.

“I am a musician,” Prall says, “and I want to make a living pursuing my passion. I’m not going to give up. When people hear my music, they like it and want to hear more.”<sup>260</sup>

“It’s different now,” he believes, “than when I was 30. You don’t have to print and assemble the press packets; they are already in an electronic bundle on your hard drive, and you just click the mouse button once to send it to a hundred promoters, venue owners or reviewers. You don’t have to recruit a network of people to give out

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258. Interviews with Dick Prall, (Sep. 2006-Mar. 2007).

259. *Id.*

260. *Id.*

CDs to draw people to the next performance; you just pull them to your MySpace site or webpage and they can sample your music and see what you look like and get acquainted and join your club from wherever they are. Nor does it matter where my manager is physically. She can reach out to promoters and venues all over the country from her home office. She can get my input on scheduling without our having to have a meeting.”<sup>261</sup>

With the aid of new technologies for broadening awareness, building fan-artist attachment through virtual communication, Prall believes that he can gradually increase attendance at his live performances, producing enough income to survive and to live a modestly comfortable life, one in which he has quality time for his daughter and his partner.

Prall is undaunted by any concern that some music consumers prefer younger singers. “Occasionally, a 15-year old girl may lose interest when she discovers I am 37 rather than 25, but my music has a broader appeal than 15-year-old girls who fantasize about a romantic relationship.”<sup>262</sup>

“Of course,” good-looking, charismatic Prall says with a smile, “I don’t mind that I look younger than I am.”<sup>263</sup>

b. Oucho Sparks

Tim Sandusky, 26, is the lead singer and manager of a Chicago Indie rock group called “Oucho Sparks” and the proprietor of Studio Ballistico, a recording studio. The band, with varying membership, has been performing since 1998, when Sandusky was 18, and aims its music at high-school and college age consumers. It has released two albums, the first of which sold 700 copies. The second album, released in September 2006, sold 60 CDs and 20 downloadable versions in the first week. The band alternates between focusing on live performance and on recording, and is deliberate in setting the schedule for creating new songs and releasing them.

Sandusky has designed the band and its business model to accommodate multiple involvements by its eight members: Sandusky himself, Jamie Gallaher (drums), who also is a member of Andreas Kapsalis Trio and teaches music; Laura Grey (backup vocals), who tours with the Second City comedy troupe; Dave Bowers (guitar); Dave Gallagher (guitar); Aaron Allietta (keyboard); Bob Salihar

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261. *Id.*

262. *Id.*

263. *Id.*

(bass); and Ryan “Catfish” Chindlund (live producer and percussionist). Oucho Sparks relies mainly on its own website and on MySpace to promote and distribute its music, disdaining intermediaries such as record labels, CDBaby, Amazon or iTunes. Oucho Sparks has 38,562 MySpace “friends.”

His experience recording other artists and bands causes Sandusky to conclude that “It’s really hard to make money by playing music. People want to be stars all of a sudden because they are too lazy to do music in a serious way over a sustained period of time. The more they try to ‘make it,’ the more they’re digging a hole for themselves—either through bad financial deals with record labels or because of disappointed expectations, or both. Even for the few that make it big, rarely do they have significant income for more than 3-5 years. Popular music stars are shooting stars.”

He has a different philosophy, one the other band members share:

There’s more to playing music than making money off of it. If I want to make money from music, I should write popular songs and recruit a really attractive young singer to sing them and an investor to finance marketing and promotion. That’s not what I want to do.

Sandusky and the others would be happy if they get enough revenue to cover their costs, plus a little.

For Oucho Sparks, the objectives are to write and play good music, to become well known and respected, and to make a living. Different members would rank these objectives differently, and Sandusky is determined to maintain a mode of operating that helps each band member fulfill his or her own goals according to his or her own priorities. That means flexibility in scheduling practice sessions, minimizing “democratic” discussions of business policy and artistic direction, and reliance on Sandusky to be the manager and the linchpin who keeps each member involved through frequent one-to-one communication. It’s not a significant setback when Grey is unavailable for a period because she is on tour with Second City or Jamie Gallaher is on a three-month tour with Andreas Kapsalis Trio. Despite their other involvements, each band member finds the Oucho Sparks philosophy credible and believes that the group can help each performer fulfil his or her goals for music. They always make time available for their Oucho Sparks obligations.

“For a modern musician to make a living, you have to be diverse: you perform live; you record; you give lessons; you produce; you work as a webmaster; you promote MySpace exposure; you do



interviews; you may have a job in a completely different field,” Sandusky says. This defines the Oucho Sparks philosophy for its performers.

The business model reflects Sandusky’s understanding of how the demand for music has changed. The forces that skewed demand to a handful of music superstars have shifted to a broader set of music creators. It has become easier to be “medium big”—to have 1,000 loyal fans; it is harder to be Red Hot Chili Peppers. The skew to the top may remain for pop, rap, hip-hop, but not for rock. There no longer is such a thing as the top 40 for rock music. And being signed with a record label does not matter any more. Everyone has a label, and the consumers don’t know the difference; they want to find music they like, and it is easier to find it by ignoring the big labels. “We’ve had 80,000 plays of our music—that means that someone listened to some of our music for at least a second or two 80,000 times. It would have cost a fortune to achieve that twenty years ago,” Sandusky says,

and you could not have done it without a major label’s validation and marketing and distribution resources. Now it costs very little with downloading websites and MySpace. The club and old boys network that the industry stalwarts provide is largely irrelevant now; we can form our own club through MySpace. The major labels are just investors, and we can get better terms from a bank.

Moreover, according to Sandusky, it is not just a matter of splitting existing market share differently. The total demand for music has increased dramatically because music has become more portable through the combination of downloading digital files and portable music players such as iPod.

Now consumers can use more of their work, leisure, and travel time, listening to music, often doing something else at the same time.” Before the advent of the new technologies, you could enjoy music only during blocks of leisure time; now you can listen to it during all the time you are awake—if you want to.

The result is more opportunities for more musicians to sustain music long-term music careers, even though prices have fallen and will continue to fall.<sup>264</sup>

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264. Interview with Tim Sandusky, (Sep. 22, 2006).

### C. Other Possibilities

Beyond the Prall and Sandusky visions, more dramatic shifts in business models are conceivable. One thoughtful student note identifies four new business models for the music marketplace that take advantage of new technologies: the “online tip-jar,” the “advertising-shipping” model, the “commercial” model, and the “digital rights management” model.<sup>265</sup> These do not exhaust the possibilities, but they are illustrative of new possibilities.

The online tip-jar model would function much as the shareware model for computer software;<sup>266</sup> consumers would voluntarily contribute to artists whose music they like.<sup>267</sup> Experience suggests that it would not work, because most consumers would not contribute. The advertising-shipping model would induce consumers to place orders for CDs and other physical formats (and, by implication, from downloadable songs and albums) on websites that contain advertisements and samples of available music.<sup>268</sup> The commercial model would embed advertising in music embodied in CDs and other physical formats or delivered through the Internet and available to consumers without charge. The DRM model would alleviate industry concerns about piracy but would entrench restrictions on supply presently exercised by major labels.<sup>269</sup>

Ultimately, the note concludes,

Perhaps the inevitable solution is the dissolution of the major-labels.... [T]hese companies are not healthy, and they are inefficient. The labels are out of touch; they are bulky and sluggish, and their primary tactic to date has been to delay the development of music services online. It is possible that they have dug their own grave.<sup>270</sup>

It also may be, however, that the major labels would embrace new business models for their own roles. The core of what they have done in the past is to mediate advertising and distribution. Because the ways they have advertised and distributed in the past are

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265. Schorr, *supra* note 257, at 89-109.

266. *Id.*

267. *Id.*

268. This model fails to take advantage of the Internet's capacity to reduce distribution costs associated with manufacturing, stockpiling, and shipping physical formats.

269. Schorr, *supra* note 257, at 109 (concluding that advertising-shipping and commercial models are more attractive than other two models).

270. *Id.* at 110.

becoming unnecessary, they could look at new forms of advertising and distribution enabled by new technologies. Rather than having their recorded music be distributed by iTunes, they could organize Web-based downloading sites of their own. Then they could compete with one another based on the scope of their catalog of available music, the user-friendliness of their websites and the convenience with which downloaded music could be transferred to iPod-like players. Why Sony-BMG rather than Apple was not the first to organize a site like iTunes presents an interesting question. The probable answers are, first, that Sony-BMG, unlike Apple, was so preoccupied with threats to its old business model that it was inhibited from innovating with a new business model. It saw MP3 files and Internet downloading as a threat rather than an opportunity. It also may be that Apple is good at designing products for computer and Internet enthusiasts and Sony-BMG is not, having no experience in that field.<sup>271</sup>

A dramatic shift to completely different business models such as the tip-jar or advertising models is unlikely. Some music will be available for free, either because the singer wants it that way or because he has no choice once one copy is available to someone with access to the Internet. Far more likely that wholesale embrace of new business models is that most consumers will continue to pay for most of the music they consume, but they will pay \$0.99 for a song instead of \$18 for an CD album, and they will buy their MP3 files through iTunes, Rhapsody, and MySpace/Snocap; and their CDs through CDBaby and Amazon rather than through Tower Records and Borders. Musicians like Prall and Sandusky will adapt their expectations and practices to the new marketplace more rapidly than entrench intermediaries and will flourish.

## VI. Role of Copyright Law

This article argues that the new technologies under attack by the music industry increase the supply of, and demand for, music, while reducing the risks of free riding. Accordingly the need for copyright law to intrude into the marketplace to mitigate the risk of free riding is reduced; not increased; in other words, the scope of music copyright should be narrowed, not broadened. Nevertheless, some risk of free riding remains, and its potential to damage legitimate interests and

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271. Accepting that inference would require distinguishing the music part of Sony from the computer products part. Sony is very good as designing notebook and desktop PCs and digital cameras.

the incentives to create, produce and distribute new music by large scale piracy remain. Remedies often matter more than rights in law. If it costs more to enforce a right than the right is worth; the law does not add much value by recognizing the right. While the copying incident to music file sharing is prima-facie infringement, the transaction costs of enforcing copyrights against every individual engaging in file sharing are enormous.<sup>272</sup>

Twenty years ago Ithiel De Sola Pool suggested that technological bottlenecks always will be natural focal points in intellectual-property regimes.<sup>273</sup> Thus the concentration of music rights holders litigation on ISPs, peer-to-peer file-sharing hosts using Napster and similar technologies and the writers and distributors of file sharing software employing Grokster and similar technologies is not surprising.

The appropriate public policy debate that is needed is not how to strike fear into the hearts of computer programmers working on new file dissemination techniques and on teenagers burning discs for each other, but how to tailor copyright law to the real problems of the future, instead of using it to slow down technological innovation.

If intellectual property law needs to be tweaked, the reform initiative should aim at getting the balance right so that resources allocated for the production and consumption of music are optimal from a societal standpoint, the tweaking also should focus copyright law on activities that truly have the potential to undermine incentives to create music. The law needs to clarify privileges for certain types of music consumption that no longer represent appreciable risks to the legitimate expectations of music performers.

Moreover, anyone who would redesign intellectual property law should focus not on the business models of the major record labels and recording studios, but instead on the new business models represented by MySapce, iTunes, Rhapsody, Google, CDBaby, Pandora and Snocap, and consider what, if anything, the law needs to do to protect the legitimate expectations of those who would invest in

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272. See *In re Charter Communications, Inc., Subpoena Enforcement Matter*, 393 F.3d 771 (8th Cir. 2005) (vacating subpoena compelling ISP to disclose identities of subscribers who were using peer-to-peer music file sharing services); *Elektra Entertainment Group, Inc. v. Does 1-9*, No. 04 Civ. 2289 (RWS), 2004 WL 2095581 (S.D. N.Y. Sep. 8, 2004) (discussing difficulties encountered by plaintiff music copyright holder in ascertaining the identities of individuals engaging in music file sharing); *Sony Music Entertainment, Inc. v. Does 1-40*, 326 F. Supp. 2d 556 (S.D.N.Y. 2004) (enforcing subpoena to compel ISP to identify individual defendants accused of downloading music).

273. See Ithiel de Sola Pool, *TECHNOLOGIES OF FREEDOM* 248-50 (Belknap Press, 1983).

these new technologies. It must encourage the design and erection of these new marketplaces within which search costs—one of the originally important categories of transaction costs in music economics—are substantially lower than in older market configurations.

Such an assessment necessarily considers the fact that music and other hedonic goods<sup>274</sup> closely related to music can be produced in many forms. A market economy should consider potential producers and consumers to decide what packages of related goods and services they want to exchange. If a performer wants to give away CDs or downloadable files to increase attendance at paid performances where t-shirts are sold at inflated prices, and if consumers want to pay for that bargain, the law should not impede their flexibility to do so.

#### **A. Maximizing Social Benefits Through Law**

Economists differ on whether copyright protection is socially beneficial or not.<sup>275</sup> Whether it enhances society depends on whether it reduces transaction costs more than it increases them. As earlier sections of this article explain, copyright law is justified as necessary to reduce transaction costs of free riding, which otherwise would greatly reduce the economic incentives to create, produce, and distribute music. Some musicians assert that the law should promote file sharing.<sup>276</sup>

The central thesis of this article is that, because technology has reduced the free riding risk, the scope of copyright should be narrowed, not broadened. The second argument developed by this article is that new technologies increase the demand for music. Here is where copyright law may increase transaction costs, if it makes it more difficult for new technologies to be widely deployed and used to enable sellers and purchasers to find each other and make whatever deals they would like to make.

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274. A “hedonic good” is one that satisfies primarily non-monetary desires.

275. See Princeton Study, *supra* note 25, at 52 (citing economists reaching opposing conclusions).

276. See Damian Kulash, Jr., *Buy, Play, Trade, Repeat*, N.Y. TIMES, Dec. 6, 2005, at A31 (op-ed by lead singer for OK Go, arguing that “It’s much better to have copies of albums on iPods, even if only half of them have been paid for, than to have a few CDs sitting on a shelf and not being played;” copy protection insults consumers, inconveniences them, and encourages them to engage in illegal file sharing; “As for musicians, we are left to wonder how many more people could be listening to our music if it weren’t such a hassle and how many more iPods might have our albums on them if our labels hadn’t sabotaged our releases with cumbersome software”);

Major transaction costs include free-riding, search-costs, detection, and enforcement by rights holders. The Internet may have reduced search costs, but lowered barriers to entry increase the supply of music. The quantity of music available over the Internet may overwhelm search technologies, leaving search costs as an important externality. Detection and enforcement costs remain significant.

Conclusions differ on the overall effect of file sharing on different sectors of the music industry. Some economists conclude that social welfare is increased, with less-known musicians benefiting the most, at the expense of intermediaries and superstars. Others, of course, conclude that social welfare is diminished.<sup>277</sup>

Copyright law in the new marketplace for music should make it easier for undiscovered musicians to reach out to potential consumers. It should allow potential consumers to sample artists they do not know. In other words, copyright law should promote file sales and file sharing. It should do nothing to increase transaction costs by encouraging cumbersome DRM copy-protection schemes.

A number of commentators advocate reforming copyright law to encourage peer-to-peer file sharing,<sup>278</sup> and others propose more fundamental reform.<sup>279</sup> Too many are enamored by DRM, and more pervasive regulation and taxation of music.

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277. Princeton Study, *supra* note 25, at 60-61 (reviewing studies). See Alejandro Zentner, *Measuring the Effect of Music Downloads on Music Purchases* (First Draft June 2003), <http://home.uchicago.edu/~alezentn/musicindustrynew.pdf> (last visited June 16, 2005) (estimating that without file sharing 2002 recorded music sales would have been 7.8% higher); Stan J. Liebowitz, (2003b), *Alternative Copyright Systems: The Problems with a Compulsory License*, Unpublished paper (School of Management, University of Texas at Dallas), available at <http://www.utdallas.edu/~liebowit/intprop/complpff.pdf>; Stan J. Liebowitz, (2004a), Unpublished paper (School of Management, University of Texas at Dallas); Stan J. Liebowitz, (2004b), *Pitfalls in Measuring the Impact of File sharing*, Unpublished paper (School of Management, University of Texas at Dallas), available at <http://www.utdallas.edu/~liebowit/intprop/pitfalls.pdf>.

278. See Jessica Litman, *Sharing and Stealing*, 27 *Hastings Comm. & Ent. L.J.* 1 (2004) [hereinafter "Litman"] (arguing that copyright law should encourage music file sharing so that the information space for music would resemble the space for collaboration that has developed for other types of information in the Internet). *Id.* at 38 (summarizing proposals by Netanel, Fisher, Ku, Lunney, Gervais and Lessig).

279. See Miller at 323 (identifying as options: voluntary collective licensing, compulsory licensing, ad revenue sharing, P2P subscriptions, bandwidth levies imposed on ISPs, media tariffs on blank CDs, maintaining status quo). *Id.* at 324-325 (noting that compulsory licensing has been imposed with respect to player piano, satellite televisions, cable television, and Internet radio).

Harvard professor William W. Fisher III, in his book, *Promises to Keep*,<sup>280</sup> meticulously outlines the current status of the music industry and provides good data on the cost structure of music production and delivery in the world of CDs. He is balanced and objective in his analysis of the interests of the participants in the music industry, and stresses the institutional arrangements developed for a different technological environment. He reviews several approaches for reform and ultimately prefers a system in which creators of music would register their works with the copyright office, resulting in a unique file name which would be used to track digital copies of the work. Public revenues would subsidize those who register to make their works available to the public, based on techniques pioneered by performing rights organizations. A government agency would collect data and estimate the frequency with which each work is heard by consumers, and registrants would be paid a share of the available revenues in proportion to the relative popularity of each work. Once such a system was in place, Fisher would repeal most of the current prohibitions in copyright law on unauthorized reproduction, distribution, adaptation, and performance. The result would be that most music would be available for free.<sup>281</sup>

Lawrence Lessig, in his book *Free Culture*,<sup>282</sup> explains how extensions of copyright law and computer architectures have combined with concentration in the communication and entertainment industries to narrow the scope of public domain music and other information available for creative effort. Not only does a creator confront a world in which her building blocks are more encumbered than ever with property interests, she confronts a nearly insuperable set of transaction costs if she tries to get permission from all the rights holders in order to build on their works.<sup>283</sup> Lessig explains that fair use, while theoretically at least a partial answer to some of these problems is not a good answer because it is so

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280. WILLIAM W. FISHER III, *PROMISES TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT* (2004).

281. Fisher, *supra* note 280 at 202.

282. LAWRENCE LESSIG, *FREE CULTURE: THE NATURE AND FUTURE OF CREATIVITY* (2004).

283. *Id.* at 95-97 (story of frustration in trying to get permission to use a short segment of "The Simpsons" in the background of a documentary); *Id.* at 100-103 (story of Alex Alban's efforts to clear rights for segments to be used in a new video mosaic).

expensive to defend a copyright infringement lawsuit and the penalties for losing are so great.<sup>284</sup>

Lessig offers five reform proposals. First, he suggests more formalities to obtain and to keep a copyright in force.<sup>285</sup> He suggests a model for copyright registration similar to that used to register Internet domain names.<sup>286</sup> He also suggests a standard for marking files to distinguish that which is free from that which permission must be obtained.<sup>287</sup> He suggests shortening the term for copyright to the 1976 average of about 32 years.<sup>288</sup> He suggests narrowing the exclusive rights of copyright owners by limiting the right to create derivative works to a much shorter term than the underlying copyright and mark specific derivative uses that are protected, leaving others unprotected.<sup>289</sup> He suggests particular reforms with respect to music file sharing so that the law focuses narrowly on those who use file sharing networks as substitutes for purchasing copyrighted music. Lessig privileges those who use sharing networks for three further purposes: (1) to sample before purchasing it; (2) to obtain access to content that is no longer sold but is still under copyright; and (3) for those who are using the networks to get access to content that is not copyrighted or access that the rights holder explicitly or impliedly approves.<sup>290</sup> As to works no longer available, Lessig suggests a statutory license that would establish a low statutory licensing rate for the commercial sharing of content not offered for sale by a commercial publisher, while creating an incentive to keep works available commercially by exempting them from the statutory license.<sup>291</sup> He suggests a modification of William Fisher's proposal. While Fisher offers a proposal to replace the current copyright system, Lessig would have it complement the existing system.<sup>292</sup> Lessig would tax and compensate for file sharing that replaces sales if actual harm is demonstrated.<sup>293</sup> Finally, he would "fire all the lawyers" by simplifying the copyright legal regime.<sup>294</sup>

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284. *Id.* at 98-99.

285. *Id.* at 287.

286. *Id.* at 289.

287. *Id.* at 291.

288. *Id.* at 293.

289. *Id.* at 295.

290. *Id.* at 296-297. Lessig does not suggest that this would be feasible to make such a distinction with any proposed distribution system, but rather, articulates it as a goal.

291. *Id.* at 299-300.

292. *Id.* at 301.

293. *Id.* at 303. This resembles the Canadian Copyright Board's CD tax system. See <http://www.cb-cda.gc.ca/tariffs/proposed/c25022006-b.pdf>. In addition, France



Litman proposes legislation to permit consumer downloads of music and collective licenses to pay for them.<sup>295</sup> She proposes a blanket license for widespread file sharing. The terms of the license would be statutory, but copyright owners could opt out. Opting out would be intentionally burdensome in order to encourage file sharing. Rights holders who wish to opt out for the statutory licensing system must use a special file format she calls “.drm” to give notice that the music contained in the file is copyrighted and not licensed for sharing.<sup>296</sup> The “.drm” format could include copyright rights management data as defined in 17 U.S.C. § 1202. Royalties would be administered by a government agency because empirical evidence shows that private copyright collectives disadvantage, and possibly cheat, small artists.<sup>297</sup> Individual artists would have rights enforceable against the licensees and the royalty agencies.<sup>298</sup> Through this scheme, Litman envisions a space in which “free” music could coexist with paid-for music, just as paid information and news sites on the Internet coexist with free sites.<sup>299</sup> Her proposal includes some attractive incentives, including the requirement that a copyright holder demonstrate that it released files in other than the “.drm” format in order to be entitled to statutory royalties.

Professor Neil Netanel suggests the imposition of a tax to mitigate the effects of free peer-to-peer file sharing.<sup>300</sup> He acknowledges arguments in favor of the benefits of free peer to peer file sharing to artistic creativity, but concludes that “untrammelled P2P file swapping could eviscerate the economic incentive for

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has a copyright levy on nearly everything that can be used for private copying, and Germany imposes a copyright levy on personal computers.

294. *Id.* at 304-305.

295. Litman, *supra* note 278 at 39 (encouraging mobilization of 60 million people who share music files to balance political power of entrenched lobbying power of recording industry).

296. Litman, *supra* note 278 at 49 (“With the exception of works released *only* in the .drm format, consumer-to-consumer dissemination and any reproduction, distribution or public performance of display that it entailed, would be completely legal. Any music that’s already been released in other formats could be recaptured only with great difficulty . . . .”) (emphasis added),

297. Litman, *supra* note 278 at 42 “[R]oyalty collectives may sometimes be better at collecting money than disbursing it”. Ethics in the music industry generally are not admirable. See Jeff Leeds, *Spitzer Sues Radio Chain As Part of Music Inquiry*, N.Y. TIMES, Mar. 9, 2006, at C4 (reporting on accusations that radio chain solicited payments from record companies in exchange for playing songs on the air).

298. Litman, *supra* note 278 at 43.

299. *Id.* at 45.

300. Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 Harv. J. L. & Tech. 1 (2003).

creating many types of valuable works.”<sup>301</sup> He recommends a “noncommercial use levy” tax on the sale of consumer products or services whose value is substantially enhanced by P2P file sharing. These products and services include Internet access, P2P software and services; computer hardware; CD burners; MP3 players; digital video recorders; blank CDs.<sup>302</sup> The statutory enactments imposing the tax would afford copyright immunity for “noncommercial copying and distribution of any expressive content that the copyright owner has previously released to the public.”<sup>303</sup> Noncommercial derivative works would also be non-infringing as long as the second creator identifies the underlying work and indicates the enhancements.<sup>304</sup> The revenues collected would be distributed to copyright holders for revenues lost due to P2P file sharing, which Netanel estimates as amounting to some 4% of the retail price of P2P goods and services.<sup>305</sup> Tax proceeds would be allocated in proportion to the popularity of their works and of derivative works, as measured by digital tracking and sampling technologies.<sup>306</sup> He would piggyback his taxation scheme and revenue distribution proposals on the rulemaking and arbitration proceedings regarding levees and compulsory licenses under existing copyright law.<sup>307</sup>

Professor Glynn Lunney proposes reforms aimed at strengthening the privileges of users of copyrighted material whose interests otherwise were largely extinguished by the Digital Millennium Copyright Act (DMCA).<sup>308</sup> He criticizes tax-based approaches such as those subsequently proposed by Netanel. First, the technologies that would be subject to the tax have uses other than private copying of copyrighted materials, yet the tax would be generally borne.<sup>309</sup> Second, a tax would discourage the creation and dissemination of new distribution technologies.<sup>310</sup> Third, copyright

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301. *Id.* at 3-4.

302. *Id.* at 4. Weinstock defines noncommercial use as any transmission or receipt of works in digital format over P2P file swapping networks not involving the (1) sale of copies of copyrighted works; (2) access to copyrighted works; or (3) advertising in connection to the copyrighted work or any derivative thereof. *Id.* at 42-43.

<sup>303</sup> Netanel, *supra* note 275, at 4.

304. *Id.* at 4 (summarizing proposal).

305. *Id.* at 4.

306. *Id.* at 4.

307. *Id.* at 44-45.

308. Glynn S. Lunney, Jr., *The Death of Copyright: Digital Technology, Private Copying, and the Digital Millennium Copyright Act*, 87 VAND. L. REV. 813 (2001).

309. *Id.* at 855-856.

310. *Id.* at 856-857.

owners would oppose such a scheme because it would legitimate private copying and limit their ability to engage in price discrimination and otherwise to price their works as they see fit.<sup>311</sup> Instead, he suggests that an honor system might be more effective than many people think.<sup>312</sup> Generally, he observes that civil disobedience will limit the effect of more stringent legal protections advocated by the existing industry.<sup>313</sup>

This article draws on some of these ideas, while rejecting most of the proposed solutions. It would privilege most consumer-to-consumer file sharing; it recognizes the social utility of civil disobedience. It is skeptical about grand reform proposals based on use taxes, both because of the risk of unintended consequences and because of the risk of capture of the legislative process by entrenched protectors of the status quo.

The law should distinguish between informal free-file sharing, which improves the functioning of the market, and piracy, which should be redefined as charging money for someone else's music. The best direction for copyright reform would create an express privilege for exchanging recorded music among friends and maybe for any non-profit public distribution.<sup>314</sup> As with current versions of the fair use privilege, the burden would be on the one asserting the privilege to prove its applicability. A college sophomore accused of copyright infringement by a music rights holder could escape liability by offering evidence that he only exchanged files with twelve people: his sister, four of his high school classmates and five of his fraternity brothers. The rights holders, knowing that the privilege exists, would not sue the sophomore in the first place unless they were confident they could prove more widespread sharing or charging a fee for the sharing.

This approach offers several advantages. It would conform the law to reality, eliminating the undesirable result of making millions of (mostly) young people outlaws. It would encourage the kind of social intercourse with respect to music that would promote discovery of new artists and according to the Oberholzer-Gee/Strumpf study,<sup>315</sup>

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311. *Id.* at 857-858.

312. *Id.* at 862-863.

313. *Id.* at 909.

314. The author credits his former student Andrew T. Strong for persuading the initially skeptical author that this is the best direction for reform.

315. Felix Oberholzer-Gee & Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, 115 J. Political Econ'y 1 (2007), [http://www.unc.edu/~cigar/papers/FileSharing\\_June2005\\_final.pdf](http://www.unc.edu/~cigar/papers/FileSharing_June2005_final.pdf); Playlist at 214

well might increase sales of physical formats or downloads through services such as iTunes. It also would mitigate the risk of increased free-riding by permitting enforcement and litigation resources to be focused on the real free-riding culprits—those who seek profit from free riding on another's creative effort.

Such a reform could be implemented in two ways. First Congress could amend section 107 of the Copyright Act<sup>316</sup> to allow copying of music for personal use and for exchange among friends as long as the exchange is free; maybe to allow Web publishing and other forms of free downloading as long as it is free. Such an approach is certainly within Congressional capability to enact. For example, non-public performances of musical works "without any purpose of direct or indirect commercial advantage and without payment of any fee or other compensation for the performance to any of its performers, promoters, or organizers," are, subject to certain limitations, already expressly privileged.<sup>317</sup> Moreover, Canadian law permits file sharing in a broader set of circumstances than privileged by U.S. law.<sup>318</sup>

A second way is to interpret the existing text of section 107 to privilege the same kind of informal file sharing, on the grounds that the most important factor in fair use analysis is impact on the market for the protected work, and the evidence suggests that informal file sharing *increases* demand for copyrighted music and music recordings rather than reducing it.

It is desirable to adopt the Lessig and Fisher ideas of providing incentives to improve the transparency of existing ownership of music, by requiring rights holders to support a national database of claimed rights that is easy for musicians and new intermediaries to access. Entries in the database for a certain period of years could be made a prerequisite for filing suit, much as existing copyright law requires registration and deposition of a work with the Copyright Office as a pre-requisite for recovering damages or attorneys fees for infringement.<sup>319</sup> Reformers should be wary of wholesale embrace of DRM schemes because they increase transaction costs for consumers and create barriers to entry for small suppliers.

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(reporting on independent study showing that free file exchange did not diminish sales of recorded music and might have increased it).

316. 17 U.S.C. § 107 (recognizing common-law fair-use privilege) (2007).

317. 17 U.S.C. § 110(4) (2007).

318. Litman, *supra* note 278 at 34 & n.129 (citing *BMG Canada v. Doe* [2004] F.C. 88 (Can.)); Miller, *supra* note 131 at 316 & n.95 (describing Canadian law as permitting file-sharing).

319. 17 U.S.C. § 412 (2007).

## B. Politics of Reform

The reality of legislative process when it comes to music and other forms of entertainment is that the interests considered by legislators are skewed. The entertainment industry enjoys enormous clout on Capitol Hill because it is a generous contributor to election campaigns, to Democrats as well as Republicans—perhaps more to Democrats. That means it gets what it wants, except in those circumstances in which it is opposed by an equally well organized and well heeled lobby, such as the broadcasting industry or the telephone industry. Dan Hunter observed that “[W]ithout muscular social welfarist protection of the public domain, intellectual property industries will never voluntarily reduce their expansionary claims. . . . We simply cannot expect those who are granted property interests to reduce their entitlements to accord with social policy.”<sup>320</sup> To some extent the producers of hardware, software and services related to the Internet may represent an effective counterpoise to music industry power in the future, but so far, the music industry has been much better organized than the “Internet industry.”

Another factor is the potential power of aroused consumers, who can get the attention of legislators, when they are sufficiently aroused, as they were in the recent uproar over certain copy protection technologies deployed by Sony-BMG.<sup>321</sup> “For the better part of three hundred years they have expanded their empires, only to find that their encroachment on the public domain has finally generated the kind of proletarian backlash from the have-nots that threatens to undermine all that they’ve work for.”<sup>322</sup>

Monopolists always try to generate monopoly profits by restricting output, i.e. by withholding product from the most efficient channels. In the years to come, the music industry intermediaries, exemplified by the major labels, will continue to do everything they can to delay and frustrate deployment of new music technologies because these technologies represent lower-cost competition by legitimate artists and new kinds of intermediaries. It’s not piracy they are really afraid of; it is creative entrepreneurship by artists and their supporters.<sup>323</sup>

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320. Dan Hunter, *Culture War*, 83 TEX.L.REV. 1105, 1120 (2005) [hereinafter “Hunter”].

321. See note 200, *supra*.

322. *Id.* at 1119.

323. Schorr, *supra* note 257 at 74-75 (adherence to major label business models is motivated by desire to avoid competing with small record labels on a national level, and desire to continue to benefit from share of revenue for distribution expenditures).

Some commentators have crafted their reform proposals to achieve political support among the more powerful interest groups.<sup>324</sup> The reality is, however, that once the legislative process is put in motion, those most skilled at influencing it are likely to get most of what they want. A member of the Senate or House might introduce a bill that reflects a balanced compromise and the law that gets enacted could enhance copyright protection for music, while doing little or nothing to privilege socially useful file sharing. The legislative approach is dangerous.

### C. Legitimizing Reform Under Current Fair-Use Law

The fair-use privilege provides legal justification for some conduct that constitutes *prima facie* copyright infringement. Theoretically, the common law of fair use could accommodate the beneficial behaviors that define the new marketplace—including file sharing. Reliance on existing fair-use concepts would obviate the risks of the legislative process. Developed by the courts, the basic principles of fair use are now codified in section 107 Copyright Act:<sup>325</sup>

“Notwithstanding the provisions of *sections 106 and 106A*, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—

“(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

“(2) the nature of the copyrighted work;

“(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and

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324. See Litman, *supra* note 278 at 39 (explaining why elements of her proposal could attract support from music, recording, computer, and consumer electronic industries to “have a fair chance of enactment”).

325. 17 U.S.C. § 107 (2007).

“(4) the effect of the use upon the potential market for or value of the copyrighted work.

“The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.”<sup>326</sup>

The first and fourth factors favor non-commercial music file sharers; the second and third factors favor the copyright holder accusing such a file sharer of infringement.<sup>327</sup>

Circuit Judge Posner, widely regarded as conservative and business-oriented, emphasized the flexibility of the Fair-Use doctrine in a 2004 law review article,<sup>328</sup> suggesting its use to mitigate the adverse effects of legislation upheld by the Supreme Court in the *Eldred* decision that extended the term of the copyright.<sup>329</sup> His article begins by explaining fundamental differences between intellectual property and physical property, including greater difficulty in negotiating for a right to use intellectual property,<sup>330</sup> and the fact that use of another’s intellectual property does not interfere with the owner’s use of it.<sup>331</sup> In this respect the non-rival characteristic of intellectual property benefits the owner.

The article emphasizes the “open-ended” nature of the fair use privilege, which was judicially created and codified by statutory factors that are “expressly illustrative rather than controlling.”<sup>332</sup> Moreover, the article expresses concern that some judges are inclined “to view their role in the copyright system as enforcers of any claims copyright owners bring, no matter how extravagant the claim and how beneficial the unauthorized copying.”<sup>333</sup> “Recognition that the public benefits from certain unlicensed uses is essential and should be acknowledged, not rhetorically but in practice through generous interpretation of fair use.”<sup>334</sup> The article expressly identifies one category of fair use in which the harm to the copyright holder is non-

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326. *Id.* (emphasis added).

327. Andrew C. Humes, *The Day the Music Died: The RIAA Sues its Consumers*, 38 IND.L.REV. 239, 249-250 (2005) (noting that music file sharing may qualify as fair use under first and fourth factors of 17 U.S.C. § 107, but that the second and third factor militate against fair-use characterization).

328. William F. Patry & Richard A. Posner, *Fair Use and Statutory Reform in the Wake of Eldred*, 92 CAL.L.REV. 1639 (2004).

329. *Id.* at 1639.

330. *Id.* at 1643.

331. *Id.*

332. *Id.* at 1645.

333. *Id.*

334. *Id.* at 1645-1646.

zero but is more than offset by the sum of the benefits to others and the savings in transaction costs that would be involved if explicit licensing were required.<sup>335</sup> The Posner article also explains why pure market forces are unlikely to yield licenses for uses that benefit society more than they harm the copyright.<sup>336</sup>

Another commentator suggests that fair-use comfortably accommodates a distinction between uses of intellectual property that represent consumers as consumers and those in which a consumer is functioning effectively as a competitor to the rights holder.<sup>337</sup> Such a distinction supports an interpretation of fair use that would privilege file sharing among friends while leaving commercial file sharing subject to liability. On the other hand, one must acknowledge that when a consumer shares files with others (as opposed merely to copying files for his own time-shifting or space-shifting purposes), he deprives the rights holder of potential sales, thus becoming the rights holder's competitor.

While the fair use privilege conceptually accommodates socially beneficial music file sharing, recent judicial decisions exclude that possibility. In *A & M Records, Inc. v. Napster, Inc.*,<sup>338</sup> the district court granted a preliminary injunction against the continued operation of the Napster music file sharing service. In working its way through the four fair-use factors, the court, noting that, "[i]f a use is non-commercial, the plaintiff bears the burden of showing a meaningful likelihood that it would adversely affect the potential market for the copyrighted work if it became widespread,"<sup>339</sup> found:

"Although downloading and uploading MP3 music files is not paradigmatic commercial activity, it is also not personal use in the traditional sense. Plaintiffs have not shown that the majority of Napster users download music to sell—that is, for profit. However, given the vast scale of Napster use among anonymous individuals, the court finds that downloading and uploading MP3 music files with the assistance of Napster are not private uses. At the

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335. *Id.* at 1649.

336. *Id.* at 1646 (identifying the desire by rights holders to extract pure windfall, their reluctance to set precedent, their anxiety that consent would be abused, and their desire not "to be bothered" by defining privilege of copying).

337. Matthew Sag, *God in the Machine: A New Structural Analysis of Copyright's Fair Use Doctrine*, 11 MICH. TELECOMM. & TECH. L. REV. 381, 431 (2005).

338. 114 F. Supp. 2d 896 (N.D. Cal. 2000), *aff'd in material part*, 2001 U.S. App. LEXIS 1941 (9<sup>th</sup> Cir 2001).

339. *Id.* at 912.



very least, a host user sending a file cannot be said to engage in a personal use when distributing that file to an anonymous requester. Moreover, the fact that Napster users get for free something they would ordinarily have to buy suggests that they reap economic advantages from Napster use."<sup>340</sup>

With little difficulty, the court found that the second and third factors tilted against the defendants.<sup>341</sup> As to the fourth factor, it summarized:

"The fourth factor, the effect on the potential market for the copyrighted work, also weighs against a finding of fair use. Plaintiffs have produced evidence that Napster use harms the market for their copyrighted musical compositions and sound recordings in at least two ways. First, it reduces CD sales among college students. Second, it raises barriers to plaintiffs' entry into the market for the digital downloading of music."<sup>342</sup>

The court also rejected the argument that Napster use is like visiting a free listening station in a record store or listening to song samples on a retail website because Napster users get to keep the music they download.<sup>343</sup>

The court made an explicit finding of fact that Napster use is likely to reduce purchases of CDs by college students, who constitute a major market segment.<sup>344</sup> It found that studies and expert testimony presented by the defendants did not credibly establish that file sharing increases CD sales.<sup>345</sup> Further, the court found that Napster posed a threat to the market for digital downloads by the rights holders.<sup>346</sup>

In *A&M Records, Inc. v. Napster, Inc.*,<sup>347</sup> the Ninth Circuit affirmed the district court's conclusion that Napster users do not engage in fair use.<sup>348</sup> In particular, it found that copying to avoid paying for the music constitutes a commercial activity under factor

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340. *Id.*

341. *Id.* at 913.

342. *Id.* [internal citations to record omitted].

343. *Id.* at 913-914.

344. 114 F. Supp.2d at 909-910.

345. *Id.* at 910.

346. *Id.*

347. 239 F.3d 1004 (9th Cir. 2001)

348. *Id.* at 1015.

one.<sup>349</sup> The court easily found that the works at issue were creative, thus mobilizing the second factor against a finding of fair use.<sup>350</sup> The court also found that wholesale copying under the third factor was involved, thus also tilting that factor against the defendants.<sup>351</sup> As to the fourth factor, the court articulated a connection between the burden of proof on market effect and the position of the defendant on the other factors:

“If the intended use is for commercial gain, that likelihood [of market harm] may be presumed. But if it is for a noncommercial purpose, the likelihood must be demonstrated.”<sup>352</sup> The court found no error in the district court’s inferences drawn from the conflict evidence on market effect.<sup>353</sup> Moreover:

“[L]ack of harm to an established market cannot deprive the copyright holder of the right to develop alternative markets for the works. Here, . . . the record supports the district court’s finding that the record company plaintiffs have already expended considerable funds and effort to commence Internet sales and licensing for digital downloads. Having digital downloads available for free on the Napster system necessarily harms the copyright holders’ attempts to charge for the same downloads.”

“Napster further argues that the district court erred in rejecting its evidence that the users’ downloading of *samples* increases or tends to increase audio CD sales. The district court, however, correctly noted that any potential enhancement of plaintiffs’ sales . . . would not tip the fair use analysis conclusively in favor of defendant. We agree that increased sales of copyrighted material attributable to unauthorized use should not deprive the copyright holder of the right to license the material. Judge Leval gives the example of the film producer’s appropriation of a composer’s previously unknown song that turns the song into a commercial success; the boon to the song does not make the film’s

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349. *Id.*

350. *Id.* at 1016.

351. *Id.*

352. *Id.* [citations omitted].

353. *Id.* at 1017.

simple copying fair. Nor does positive impact in one market, here the audio CD market, deprive the copyright holder of the right to develop identified alternative markets, here the digital download market.”<sup>354</sup>

Similarly, in *BMG Music v. Gonzalez*,<sup>355</sup> a panel of the Seventh Circuit in an opinion written by Judge Easterbrook, gave little import to a fair-use defense proffered by a defendant who downloaded songs through the KaZaA file-sharing network. The summary judgment record showed that the defendant “downloaded more than 1,370 copyrighted songs during a few weeks and kept them on her computer until she was caught.”<sup>356</sup> The court of appeals held that “a copy downloaded, played, and retained on one’s hard drive for future use is a direct substitute for a purchased copy—and without the benefit of the license fee paid to the broadcaster,”<sup>357</sup> thus vitiating any argument that time shifting or “space shifting” was all that was involved.<sup>358</sup> Reproducing the four factors of sec. 107, the court noted that she “was not engaged in a non-profit use.” It is not clear whether the court misread the first factor as being limited to non-profit educational activity or whether it concluded that the defendant’s activity was somehow commercial in nature. She downloaded complete songs, thus dooming her on the second and third factors. So the focus was on the fourth factor. She argued that “downloading on a try-before-you-buy basis is good advertising for copyright proprietors, expanding the value of their inventory.”<sup>359</sup> The court of appeals, relying on *Grokster*, concluded that file sharing such as that engaged in by the defendant hurts the market for purchased music.<sup>360</sup> The court did not explain why application of the fourth factor necessitated a trial; the facts are in dispute over the market impact of file sharing.

In *Arista Records, Inc. v. MP3Board, Inc.*,<sup>361</sup> the district court denied summary judgment to plaintiff record companies because they had produced insufficient evidence of distribution to the public of copyrighted MP3 files pointed to by links on the defendant’s website.

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354. *Id.* at 1018 [quotations and citations omitted].

355. 430 F.3d 888 (7th Cir. 2005).

356. 430 F.3d at 889.

357. *Id.* at 890.

358. *Id.*

359. *Id.*

360. *Id.* at 890.

361. *Arista Records, Inc. v. MP3Board, Inc.*, No. 00 CIV. 4660 (SHS), 2003 U.S. Dist. LEXIS 11392 (S.D. N.Y. Jul. 2, 2003).

It found sufficient evidence to warrant an inference of distribution, but not that the distribution was to the public.<sup>362</sup> Without finding the need for much factual or legal analysis, the district rejected a fair-use defense, finding that all four factors tilted against the defendants.<sup>363</sup>

It is conceivable that a test case could be organized that would result in a more flexible application of the fair use privilege to distinguish different types of file sharing, along the lines suggested by Lessig. That would be an uphill battle, however, considering the absence of favorable judicial precedent involving file sharing.

#### **D. Market or Law-Reform?**

The ultimate question is whether copyright law should be reformed by the Congress to permit new technologies to flourish, and to work their own reform of the way music is created, produced, disseminated and consumed, or whether the market will work things out better than the legislature can.

It is likely that the current legal regime along with the operation of the marketplace and a considerable amount of “civil disobedience,” to use Professor Lunney’s characterization, will produce socially optimal results—better results than would be produced by any attempt to amend the copyright statute. Despite their victories in the *Grokster* case and the effects of their aggressive litigation strategy against individuals participating in file downloading, the established music intermediaries know that they are fighting a losing battle with new technologies. Indeed their aggressiveness in the political and judicial arenas may be animated by this realization, accompanied by an economically rational desire to exploit their embedded capital as long possible before they are forced to give in.

They are under growing pressure to participate in “legitimate” downloading services such as iTunes. These services may produce a revenue stream smaller than the lost revenue stream from diminished CD sales, while nevertheless giving music producers a way to provide to music consumers much of what they get—indeed arguably *more* than what they get—from “stealing” the music through peer to peer file sharing services. So the suppliers have an incentive to migrate to new technology platforms and new business models.

Similarly, the demand functions discussed earlier in this article suggest that much more than price motivates consumers to pick one

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362. *Id.* at \*4.

363. *Id.* at \*13.

music source or another. The convenience of “legitimate” downloading services and the reduced risk of getting corrupted files are already sufficiently powerful to have generated double-digit growth rates for iTunes. In addition, the threat of being haled into court and forced to defend an expensive lawsuit, if not to pay damages, doubtless operates at the margin to drive additional consumers away from the illegal peer to peer services to “legitimate” services.

That provides the foundation for new equilibrium—one in which the latest technologies are mobilized by everyone to facilitate the creation and distribution of music. A residue of people would still exist who exchange files informally with each other, whether by handing each others CDs or by sharing MP3 files over the Internet. When they do so, they technically commit *prima facie* infringement. The Fair Use Doctrine, although it has not been interpreted very charitably toward those sharing music files in recent cases, and although it does suffer from the transaction costs identified by Professor Lessig, nevertheless remains available as a potential safe harbor for informal copying and sharing, which is likely to increase demand for music.

In the end, it probably is a safer political risk to entrust evolution of the Fair Use Doctrine to the market and to the courts rather than to put in motion a legislative process that is highly likely to be captured by the well organized established music intermediaries. It will produce better results to rely on the entrepreneurial instincts of musicians and designers of new forms of Internet-based intermediation and on the resourcefulness of consumers than erecting new legal schemes that will certainly get in the way.