

## FLANKING THE DRM MAGINOT LINE AGAINST NEW MUSIC MARKETS

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### I. INTRODUCTION

Exploding sales of popular music on the Internet exemplify the success of global e-commerce. At the same time, this technology-driven revolution in the market for popular music has shaken up the industry.

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When the revolution has run its course, the major labels and CDs will be obsolete. New forms of Internet-based intermediation are emerging that perform the functions heretofore performed by major record labels. Neither expanded intellectual property ("IP") protection<sup>1</sup> nor digital rights management ("DRM") can play a constructive role in this reformed market. Neither furthers the interests of creativity, music consumers, or musicians.

This Article focuses on popular music, leaving classical and experimental music for another day or for other commentators. It treats popular music broadly, including Broadway musicals, jazz, rap, folk, rock, and country genres. It includes music produced and marketed by large entertainment firms such as Disney, Time-Warner and Sony/BMG and also music created and recorded or performed by "Indie" musicians,<sup>2</sup> which, in the past, was usually known and enjoyed only by a small circle of friends of the creator. This selection of a subset of the world of music for inquiry is appropriate because it is in the arena of popular music, thus defined, where mass markets potentially operate, where creation of new musical works is most active, and where technology is playing its greatest role. This Article concedes that the market dynamics may be different for the parts of the music universe not covered here.

The subject of the sponsoring symposium and of this Article is on the international market, even though much of this Article's explicit analysis focuses on creators, consumers and intermediaries based in the United States, and on U.S. law. This is appropriate for three reasons. First, worldwide demand for American music is strong; so strong, in fact, that American "cultural imperialism," exemplified by the worldwide spread of U.S. entertainment, including popular music, is under attack. Second, the Article's thesis is rooted in technological developments made available through the Internet, which is inherently global, as music available on an Internet website is available around the

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1. See generally Henry H. Perritt, Jr., *New Architectures for Music: Law Should Get Out of the Way*, 29 HASTINGS COMM. & ENT. L.J. 259 (2006-2007) (developing supply and consumption functions for popular music and arguing that both supply and demand will continue to increase in the absence of expanded intellectual property protection); see also Henry H. Perritt, Jr., *Music Markets and Myths*, -- SETON HALL J. SPORTS & ENT. L. -- (forthcoming 2007) (analyzing the decline of CD sales and arguing that the primary cause is the greater convenience of downloadable formats).

2. An "indie" musician, as this Article uses the term, is an independent musician who is not under contract with a major record label.

world. Third, U.S. law is a magnet for the development of international law, as through WIPO's TRIP agreement,<sup>3</sup> and for development of national law in other countries. This U.S.-centric approach is not meant to underrate the importance of developments in other countries. The "British Invasion," for example, transformed American rock music in the 1960s and continues to influence American music today through groups such as Arctic Monkeys, U2, and Coldplay.

The Article begins with a recapitulation of the transformation of the marketplace for popular music. It then explains how expanding copyright protection and DRM are impeding the transformation and concludes by portraying a marketplace with no DRM, considering various business models to replace those embedded in the corporate structures of the major record labels.

## II. THE NEW MARKET

### A. What Has Happened

A revolution is underway in the international marketplace for popular music. Technology is leading the revolution. Digital recording, mixing and mastering software running on inexpensive multi-processor computers make every dwelling a potential recording studio. Portable music players exemplified by the iPod make it easy to listen to music anywhere and all the time. The .mp3 file formats combine with the ubiquity of high-bandwidth Internet connectivity to enable direct artist-to-consumer distribution. New intermediaries such as MySpace, YouTube, and Snocap make it easier for musicians and potential fans to find each other.

Sales of music CDs are declining rapidly as consumers act on their preferences for downloadable and more portable formats. Preliminary data for the last week of December 2006 and the first weeks of January 2007 show that sales of physical CDs were down some 15-17 percent from corresponding months a year earlier.<sup>4</sup> Overall sales in 2006 were

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3. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 (1994), available at [http://www.wto.org/english/docs\\_e/legal\\_e/27-trips.pdf](http://www.wto.org/english/docs_e/legal_e/27-trips.pdf).

4. *Anatomy of a Downfall: Analysts Delve Into CD Decline*, DIGITAL MUSIC NEWS, May 7, 2007, <http://www.digitalmusicnews.com/stories/050707cd> (reporting 17 percent

about 5% less than in 2005.<sup>5</sup> This continues a steady five-year erosion of distribution of popular music through this format.

Meanwhile, sales of music through downloading of digital files are exploding. Worldwide, sales from downloaded music and digital devices totaled nearly \$2 billion in 2006, almost double the \$1.1 billion for 2005.<sup>6</sup> After three-and-a-half years of operation, Apple's iStore has sold more than two billion songs, one billion in its first year alone.<sup>7</sup> RIAA data for 2006 show that revenue from digital downloads replaces about 1/3 of the revenue lost from declining CD sales, a figure consistent with the lower price per song of digital formats and the shift of consumer purchases from albums to singles, which means that consumers buy only the songs they want instead of being forced to buy unwanted songs bundled by the album with songs they do want. Sale margins and therefore profits per sale are higher for download sales, however, because suppliers do not bear the overhead costs of the CD itself, the packaging, and shipping.

Consumers now can purchase most of the new music released through multiple sources on the Internet without ever leaving their homes or offices. They can buy it or sample it on musician websites—and almost every serious musician has one. They can buy it on iTunes, Amazon, Google, Yahoo, CDBaby and through Snocap on any website the musician designates.

Discovering new musicians is easier than ever; listeners can simply enter the name of a song they like on Pandora and receive suggestions for other songs that share features such as genre, rhythm, harmony or melodic contour. Or they can begin with the site of a musician or band they know on MySpace, and click through that artist's "friends" links to find other bands.

The widespread availability of popular music in digital file formats has driven consumer purchases of portable music players. iPod sales revenue now exceeds revenue from computer sales by Apple. More than 70 million iPods had been sold by the end of 2006, representing 90% of the market for hard-drive based players and 70% of the market

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decrease in CD sales from 2006 to corresponding months of 2007).

5. *US-based Albums Sales Sluggish During First Week*, DIGITAL MUSIC NEWS, Jan. 10, 2007, <http://www.digitalmusicnews.com/stories/011007sales>.

6. Eric Pfanner, *Digital Music Up 80% but Shy of Lost Revenue*, N.Y. TIMES, Jan. 18, 2007, at C5.

7. *iTunes Store Crosses Two Billion Song Downloads*, DIGITAL MUSIC NEWS, Jan. 8, 2007, <http://www.digitalmusicnews.com/stories/010807billion>.

for all players.<sup>8</sup> In the first quarter of its fiscal year, roughly corresponding to the last calendar quarter of 2006, Apple sold more than 21 million iPods, more than double the number sold in the corresponding quarter of the previous year.<sup>9</sup>

Demand is increasing but shifting to new formats and suppliers. Portability increases the amount of time consumers have available for listening to music. No longer must one reserve music enjoyment to leisure time or driving time. Every waking hour is now a possible music-listening hour.<sup>10</sup> As this dimension of potential demand has increased, the overall demand for popular music has increased as well. But demand is shifting away from blockbuster albums released by rock stars sponsored by the major record labels to “Indie” musicians – those without major label contracts. “Dreamgirls” topped the sales charts in early 2007 with a mere 33,000 CD sales, the lowest figure for an album at the top since figures began to be collected in 1991.<sup>11</sup>

These technological changes reduce the barriers to entry for “Indie” musicians. They no longer need record deals with the major labels to get access to top-of-the-line recording equipment. A sound engineer with the requisite skills can record and mix as good a sound track on \$5,000-\$10,000 worth of PC hardware and software as he can in a one-million dollar recording studio. The cost of physical capital for studio recording has declined by one or two orders of magnitude.

More significantly, the Internet and new forms of intermediation such as iTunes, MySpace, and Pandora have reduced the costs of distribution nearly to zero, making obsolete the system of CD mastering and stamping, warehousing, physical transportation, and brick-and-mortar retail music stores. Pandora allows anyone to submit music and claims

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8. “iPod,” WIKIPEDIA, <http://en.wikipedia.org/wiki/iPod#Sales> (last visited Sept. 15, 2007).

9. John Markoff, *Apple Profit Rose 78% Last Quarter*, N.Y. TIMES, Jan. 18, 2007, at C10.

10. Moreover, the data suggest that many consumers download significantly more music than they listen to. One commentator interprets the available data as showing that consumers “continue to shift toward supersaturated, overstuffed musical diets that feature heavy sampling, bloated collections, and anywhere access, often with a zero price tag attached.” Paul Resnikoff, *Resnikoff's Parting Shot: The eMusic Dilemma*, DIGITAL MUSIC NEWS, May 7, 2007, <http://www.digitalmusicnews.com/stories/050707parting> (explaining that eMusic's subscription service caters to heavy-buying customers, who buy subscriptions but do not fully exploit them).

11. *US-based Album Sales Sluggish During First Week*, *supra* note 5.

that it listens to everything that it receives.<sup>12</sup> It selects only a portion, however, to be included in its “music genome” project and thus be available for consumers.<sup>13</sup>

The costs of basic marketing and promotion have similarly been reduced nearly to zero by artist websites and musician communities such as MySpace. As § II.B explains, however, the shape of new forms of intermediation for more aggressive marketing and promotion likely to induce significant numbers of consumers to purchase music is still unclear, although it is evolving rapidly.

As technology reduces costs, and as decreasing barriers to entry increase the number of suppliers of music, competition is reducing prices dramatically. While demand is increasing as explained in §II.A, it is not certain that the total revenue for popular music sales will increase. Indeed it will probably decline. Suppliers with significant embedded capital associated with old methods of producing, marketing and distributing music will be unable to compete unless they write off the capital and transform their business models – something that large enterprises have always had a hard time doing. EMI, for example, reported losses of 263.6 million pounds (519 million dollars) for the fiscal year ending in May 2007, compared with a profit of 118 million pounds (233 million dollars) for the preceding fiscal year. In its accompanying report, EMI signaled a future emphasis on digital sales and DRM-free content.<sup>14</sup> As-yet-undiscovered musicians and new firms providing intermediation suited to the new technological environment will more than fill the gap, but they will earn less in gross revenue per song than record labels and their artists have in the past. The total demand will be spread over a larger supply of songs, resulting in lower per song demand. In addition, competition will drive the price per song down as costs decline. The result will be an increase in the number of musicians who can make a modest living at offering their music to consumers, but a significant decline in the number who get rich and become rock stars.<sup>15</sup>

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12. Pandora.com, Frequently Asked Questions, <http://blog.pandora.com/faq/> (last visited Sept. 15, 2007).

13. *Id.*

14. *EMI Delivers Dour Financial Review, Losses Substantial*, DIGITAL MUSIC NEWS, May 21, 2007, <http://www.digitalmusicnews.com/stories/052107emiearnings>.

15. See Daniel J. Wakin, *From Lead Percussionist to Different Drummer*, N.Y. Times, Feb. 6, 2007 at E1 (explaining changes in the economic circumstances of Ted Atkatz, a

The supply side of the market will have a dramatically different structure. The number of professional musicians will explode, but the chances of making it big, as measured by traditional measures such as numbers of albums sold, will diminish. Consumers will spend more of their dollars on a greater number of Indie musicians and less on superstars. The declining record labels will invest in fewer potential stars.

When the author presented an earlier version of this article at the symposium on February 23, 2007, a member of the audience asked, "Aren't you troubled that your model would deny support to Beethoven, if he were alive today, because it would deny the major record labels the revenue they need to support such creative effort that may never be profitable?"

My answer had two parts:

"First, neither copyright nor DRM was available to Beethoven or his sponsors, but he created anyway. Second, the empirical evidence provides little support for the proposition that the major record labels support the creative effort of modern-day Beethovens, which is not expected to be highly profitable."

In the resulting labor market, the number of musicians will constantly be replenished as young people reaching their late teens get serious about recording and marketing their music. At the other end, a significant fraction – probably most – will exit the marketplace when they reach their late twenties and early thirties and discover that the money they can make from performing and recording music is less than they want or need to support their families and lifestyles. In this respect, the labor market for musicians will resemble that for professional athletes: the economic life of a player will be relatively short, extending from about age 20 to about 35. In another respect, of course the music and sports market will be dramatically different: professional athletes will continue to accrue a lot more wealth than will professional musicians.

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percussionist at Chicago Symphony Orchestra who gave up his position to pursue rock career; income of \$45,000 per year is only one-third of what it was, based now on sales of about 1,800 CDs and revenues from live performances at venues owned by "tightwads").

### B. What's Missing?

While the magnitude of the revolution in the marketplace for music is apparent, the revolution is not complete. New business models are just beginning to emerge and major questions remain about how certain functions, performed in the past by major labels to promote consumer awareness of new music, will be performed in the future.

The old business model for popular music was clear: out of a million young people who wanted to be musicians, a handful would be discovered by A&R<sup>16</sup> representatives of about a half-dozen major labels. Out of that handful, maybe a quarter would "make the charts" with albums conceived, recorded and promoted by the major labels, who would use personal relationships with retailers, decision makers in the popular radio industry, and the trade press to keep high the profile of new albums released by the labels. A typical record deal would involve a total investment by the label of \$300,000, half to record an album and half to promote it, and an obligation by the artist to produce six to eight albums over a five to seven year time period.<sup>17</sup> Total recorded music sales in 2006 were about \$9 billion, exclusive of downloads. Live concerts also generated significant revenue. Major concert revenues were \$3.6 billion in 2006, up from \$3.1 billion in 2005.<sup>18</sup> Different firms organize the market for recorded music than those that organize the concerts.

The old business model for undiscovered Indie musicians was quite different, although the business model for their live music was well established. Artists willing to devote the time and energy earn significant parts of their income from going on tour to perform live at the thousands of music venues which exist in all but the smallest towns. Most live performances draw small crowds of 25-50 consumers paying on the order of \$10 each to enjoy music. Only those already celebrities because of radio play or album sales can fill football stadiums and arenas and charge prices of \$50 per head or more. The organizational

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16. "Artists and Repertoire," referring to the division of a record label responsible for scouting and record development.

17. GEOFFREY P. HULL, *THE RECORDING INDUSTRY* 140-142 (2d ed. 2004) (describing terms of a typical record deal).

18. *Stones, Streisand Among Top 2006 Tours*, USA TODAY, Dec. 28, 2006, [http://www.usatoday.com/life/music/news/2006-12-28-biggest-tours\\_x.htm](http://www.usatoday.com/life/music/news/2006-12-28-biggest-tours_x.htm).



and promotional effort associated with an arena performance is huge, and the likelihood is low that an Indie artist could fill a stadium.

Artists selling CDs at performances (usually priced at \$5-10) rarely sell more than 10 or 20 at any particular performance. So a typical four-person band plays an average of two performances per week, to a crowd averaging fifty, each of whom pay a \$10 cover charge. Most bands at venues of this sort share the stage with three other bands. Even if the performance venue pays all the cover-charge revenue to the bands, which is unusual, and even if all the bands get the same amount, which also is unusual – usually the best-known band gets the most and many lesser-known bands play for free to increase their popularity – the revenue stream per musician is \$3,250 per year from live performances,<sup>19</sup> and another \$4,000 or so from CD sales.<sup>20</sup> \$7,250 per year is not a living wage. What most bands do is to pool the revenue and use it to finance the next CD or the costs of performing – gasoline, repair of instruments and sound equipment, and lodging.

Only the smallest fraction will play to audiences of hundreds or thousands and sell more than a couple of thousand CDs per year, and thus make a wage that would put them into the lower middle class, assuming their only income were from music.

If this Article is correct, the old business model for recorded music is dead. The model for live performances will change less dramatically, although fewer opportunities will exist for large-arena performances, and the easy availability of performance information on MySpace and similar community or individual-artist websites will increase the opportunities for Indie musicians to draw somewhat larger crowds.

The more difficult question is where the declining revenue-per song trend will intersect the declining cost curve for recorded music, considering the continued need to promote new music and new artists effectively to potential consumers of their music. Simply making songs available for purchase on iTunes or for sampling or purchase on MySpace does not result in sales. A musician must be aggressive in reaching out to potential MySpace “friends” – one becomes a “friend” on MySpace only by being invited and accepting or volunteering and

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19. Twice per week, times 52 weeks, times 50 paying consumers per performance, times \$10 cover, divided by four bands, divided by four persons per band:  $(2 \times 52 \times 50 \times \$10) / (4 \times 4) = \$3250$ .

20. Twice per week, times 52 weeks, times 20 CDs per performance, \$8 margin per CD, divided by four members per band:  $(2 \times 52 \times 20 \times \$8) / (4 \times 4) = \$4160$ .

being accepted. One possibility is that musicians will be able to succeed in making a living only by employing the same techniques now used by the music labels – hiring managers and promoters, buying advertising, and investing the time or money to schmooze reviewers and radio disk jockeys, or, more likely, performing these functions themselves or through volunteers. While the opportunity cost for doing this may be low for an Indie musician or fan in his mid-twenties, his skill and sophistication in advertising and public relations is also likely to be less than those of an employee of or contractor to Sony/BMG.

Success may continue to depend on mechanisms for aggregating enough capital to finance serious marketing and promotion campaigns. Internet-based technology offers new possibilities, but the outlines of how new music can be advertised and promoted effectively, and how consumer search costs can be mitigated, are still uncertain.

### III. DRM

So far, distribution and consumption of music through the Internet has been limited by various forms of DRM, which freeze, technologically, old business models. The term “digital rights management” (DRM) refers to several kinds of copy protection embedded in computer application- or data-files. Purposes and means of implementation vary. All types of digitally recorded music employ particular data structures to represent the amplitude and frequency of the sounds comprising the music. Software and hardware used to play the music or to copy it must “understand” the data structures and be able to process them appropriately so that the sounds can be recreated. As related to music, one type of DRM makes music files delivered on CDs or via downloading unusable except on certain hardware or software applications. Apple’s DRM in music files sold through its iStore is an example. Such files can be played only on Apple’s iPod hardware.<sup>21</sup>

Another type makes the file unusable except when it retrieves a token, usually encrypted, that resides on the local machine or on a remote database accessible through the Internet. This token-retrieval method can be associated with date limitations, producing the effect of making the data useable only while a user remains “subscribed” to a service.

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21. See “FairPlay,” WIKIPEDIA, <http://en.wikipedia.org/wiki/FairPlay> (last visited Sept. 15, 2007).

This, generically, is the way Rhapsody's music subscription service works.

Another implementation limits the number of copies that can be made by maintaining a counter on the software or hardware that makes the copies or on a remotely accessible database. Apple also employs this type of DRM to limit the number of CDs that can be burned from iTunes-encoded music. Microsoft offers Windows Media DRM, which enables vendors to specify conditions for subscription renewal and copying.<sup>22</sup>

#### A. Audio Signal Processing and DRM

Copy protection presupposes digital representation of sound signals. To encode a digital sound signal requires an algorithm that performs two basic functions: it must prescribe the rate at which a continuous function representing a sound pressure wave is sampled, and it must determine how the sampling data is to be quantized. Sampling can be envisioned as the process for determining how often to measure the value of a continuous signal in order to determine its characteristics such as shape, amplitude, frequency, and phase. Quantization refers to the number of discrete digital values necessary to reproduce the original signal at acceptable levels of quality. For example, the audio data on a CD is sampled at 44.1 kHz and quantized with 16 bits capable of producing any one of about 64 thousand possible values for each sample. This combination of parameters would be incapable of capturing those components of a signal with frequencies higher than 44.1 kHz or that part of a signal that has a range of values greater than 64,000. But limitations on human perception simplify the problem when sound signals are involved. The human ear and brain can perceive sounds in the range from about 20 Hz to about 20 kHz, although a typical adult cannot hear frequencies above 16 kHz. Moreover, the ear usually cannot resolve pitch changes less about 2 Hz. These perceptual limitations simplify the design decisions to be made with respect to digital coding and decoding ("codec") technologies and also facilitate design of compression algorithms. There is no point in achieving digital

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22. See "Windows Media DRM," WIKIPEDIA, [http://en.wikipedia.org/wiki/Windows\\_Media\\_DRM](http://en.wikipedia.org/wiki/Windows_Media_DRM) (last visited Sept. 15, 2007).

representation of audio signals that capture features of the signal that cannot be perceived when it is decoded.

Nevertheless, encoding the full range of sound that is perceivable by a theoretical human being produces large amounts of data. The resulting file size for a typical musical work is inconvenient, given commercially feasible bandwidths for transmission of data, storage capacities, and processor and memory-chip speeds. Accordingly, the commercial feasibility of using music in digital formats requires methods for compressing the digital data. Compression can be lossless or lossy. (Of course some information is already lost in the process of sampling and digitization.) Compression technologies all begin with strategies for eliminating two types of data: that which represents sounds that cannot be perceived by human listeners, and that which is redundant. For example, there is no point in paying the cost of storage and transmission of bits that represent sounds below 20 Hz or above 16 kHz or a little more. Moreover, there is no point in storing and transmitting the bits representing the repeating values of, say, a pure sine wave expressing a sustained pitch of A below middle C. Instead, all that is necessary is to represent the pitch and its duration and, of course, to have a method for recreating an approximation of the sine wave in the decoding process. Those two simplifying realities can result in some degree of compression without losing any data. The "unnecessary" data is not present in the compressed version of the file, but it can be replicated with 100% accuracy when the compressed file is decoded and re-expressed as a continuous sound signal. In other words, the compression is lossless.

Additional steps can be taken to reduce the size of the file further, although they involve removing data which cannot be recreated perfectly. A variety of algorithms and mathematical transformations can be utilized in this process that result in recreated sounds that are not quite as good as the original but most listeners can perceive only slight differences, if any at all.

The two dominant lossy compression approaches are mp3 and Advanced Audio Coding ("AAC"). Most people who use sound files of any type on digital computers are familiar with mp3. It is the universal compression format, although it is proprietary, and requires payment of royalties by certain intermediaries such as software creators and codec manufacturers. AAC was developed and standardized later in time than mp3. It provides greater flexibility for codec designers and also accommodates a greater number of options for compressing different

types of sounds. AAC is widely used because it is the base for Apple's iTunes music.

Neither mp3 nor AAC themselves provide copy protection. Even though both are proprietary to some extent, their design parameters are publicly known. So anyone with an mp3 or AAC file can readily recreate the sounds that it represents by using codecs included with most operating systems. Copy protection requires an additional level of signal processing: one to transform the mp3 or AAC file into a form that cannot readily be directly transformed into a sound signal, and a process for changing the file back into mp3 or AAC format – or some other “open” standard format.

The most straightforward way to provide copy protection is to encrypt the file; to express it in a code unknown to those not given permission to make use of it. But encrypting all of the data in a file adds enormous overhead in the processing steps to encrypt and decrypt, and sometimes adds to the amount of data required to express the encrypted file. Most practicable copy protection schemes involve simpler – but less fully protective – methods, typically relying on some kind of envelope in which the unencrypted data is enclosed but which requires some kind of encryption key to open. Alternatively, copy-protected files may be expressed in a data structure that can be “understood” only by licensed hardware and software. The first approach is actually a subset of the second.

For example, Apple's iTunes uses a copy protection method known as FairPlay. FairPlay involves encryption of an AAC audio stream with an encryption standard known as AES (advanced encryption standard), a generalization of the Rijndael cryptographic algorithm. FairPlay encodes a master key for the encrypted data within the file, which is itself encrypted with a user key. When a user buys a file from iTunes, public key encryption techniques are used to provide the user key for the purchased file. By means of the user key thus disclosed, an authorized user can decrypt the master key and through it decrypt the encoded AAC file.

Similar techniques for encrypting Windows proprietary “Windows Media Audio” (WMA) are used in the “Advanced Systems Format,” a technique for including a WMA file in an encrypted envelope which makes use of DES (data encryption standard) cryptography and public key techniques for transferring the requisite keys.

Both of these copy protection technologies make use of patented cryptographic algorithms. Moreover, both the Apple and Microsoft

implementations permit rights holders to specify certain terms that then are included in the encrypted file. Such terms can require renewal of the key, as is typical with subscription approaches, or they can specify the hardware necessary to decrypt the file, as is typical with Apple's approach.

#### B. Standardization

Vendors of hardware, music-management software, and rights holders regularly negotiate with each other to expand or contract the scope of permissible uses relative to playback devices, duration of subscription licenses, and transfer to other media. The music industry and those to whom it licenses rights consistently press for legislation that would require all playback devices, and software that permits music to be played on PCs, to incorporate DRM management features so that limitations expressed in the DRM code supplied with the music will be enforced by any consumer device.

### IV. WHAT CAN IMPEDE DEVELOPMENT OF THE NEW MARKETPLACE?

#### A. What is the Goal?

Many symposia could be held in an effort to define more clearly the policy goals for e-commerce in music. No matter how many are held, agreement among stakeholders on goals is unlikely. This Article cannot avoid those debates over goals. It must offer a working definition of goals before it proceeds with its argument that certain directions of IP law development, and most implementations of DRM, undermine those public policy goals.

Broad agreement exists that the Patents and Copyrights Clause of the United States Constitution embraces two conflicting goals: the goal of allowing society to enjoy the benefits of creative effort, on the one hand, and the goal of rewarding those who engage in creative effort in order to create an incentive for socially productive creativity. The Patents and Copyrights Clause requires that copyright law strike a balance between the interests of society to the free use of knowledge for enjoyment and

creating new works and the property interests of creators.<sup>23</sup> Biasing the law too far in favor of the first goal dilutes incentives to create. Biasing the law too far in favor of the second goal deprives society, including new potential creators, of the fruits of the efforts of past creators.

This Article's central thesis is that copyright law and the technologies of copy protection are developing in directions that serve the second goal at the expense of the first, and, moreover, that they are developing in a way that protects obsolete forms of economic activity against competition from newer and more efficient forms.

The overarching policy goal should be the existence of a marketplace in which creators and consumers can make individual choices freely about how to spend their time and money and what art to enjoy.

### B. Standing on the Shoulders of Giants

The elements of music – sequences of the notes of the 12-tone scale and the simultaneous sounding of some of the notes in chords, rhythm, and lyrics – can be combined in a nearly infinite number of ways. Still, certain patterns have become so familiar with repetition that they define what is pleasing to most consumers. Such patterns include the 1-4-5-1 chord progression, prominent in most folk and country music; the “rock beat,” a drum pattern in which a bass drum is played on the first and third beats of each measure and a snare drum on the second and fourth beats; and basic song structures such as two verses interspersed with a chorus, followed by a bridge, followed by a final chorus.

Songwriters often begin with a “groove”<sup>24</sup> or “motif”<sup>25</sup> borrowed from another song and build upon them with their own ideas. As Larry Lessig explains,<sup>26</sup> creative artistic effort always has borrowed from

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23. See *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 928-30 (2005) (acknowledging the need for balance, but finding that imposition of infringement penalties is appropriate against those who promote infringement); *Eldred v. Ashcroft*, 537 U.S. 186, 215-19 (2003) (acknowledging that the Constitution requires a balance between the need to encourage creative effort and the need to keep knowledge open as a foundation for further creativity and balance between legislated monopolies and free speech, but rejecting a challenge to the extension of the copyright term because Congress is entitled to strike the balance).

24. “Groove,” as used in this article, refers to the rhythmic feel of a piece of music.

25. “Motif,” as used in this article, refers to a recurring succession of notes, the repetition of which defines a section of music.

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

existing art. A robust marketplace for popular music depends on the viability of such borrowing, which can occur freely when the borrowed elements are not protected by the law or by technology, or when transaction costs are low for getting permission from the owners of protected elements. Expanding the scope of copyright, narrowing the scope of fair use, and DRM all conspire to inhibit this kind of creative borrowing.

The Berne Convention Implementation Act<sup>27</sup> amended the 1976 Copyright Act by eliminating the formalities of registration and deposit as prerequisites for statutory copyright.<sup>28</sup> Now, a copyright springs to life as soon as anyone “fixes” original expression in a tangible medium from which the expression can be retrieved or perceived.<sup>29</sup> That means that a copyright in a fragment of music may be owned by any of several million people, who are not identified in the copyright registry or any other database. There is no central clearinghouse for obtaining copyright permission. The problem for one who wants to obtain permission is exacerbated because the rights associated with music may be fragmented and owned by a multiplicity of persons or firms.<sup>30</sup>

### C. IP Law

Intellectual property law poses several distinct threats to realizing the social benefits of creative efforts in the popular-music realm. IP law, through the Digital Millennium Copyright Act (“DMCA”),<sup>31</sup> empowers rights holders, and even those without legal rights, to interfere with the exercise of rights and privileges long recognized by IP law under the first-sale and fair use doctrines, even when there is no free riding.<sup>32</sup>

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27. See Berne Convention Implementation Act, Pub. L. No. 100-568, 102 Stat. 2853 (1988).

28. William Gable, *Restoration of Copyrights: Dueling Trolls and Other Oddities Under Section 104A of the Copyright Act*, 29 COLUM. J.L. & ARTS 181, 185 n.20 (2005).

29. 17 U.S.C. § 101 (2000) (definition of “fixed”); 17 U.S.C. § 102 (2000) (declaring that copyright comes into existence as soon as an original work is “fixed”).

30. For example, the rights in the sound recording typically are owned by a record label, while the rights in the musical work are owned by a separate enterprise. Downloading or playing a musical work usually implicates both sets of rights.

31. 17 U.S.C. § 1201 (2000) prohibits the “circumvention” of technologies intended to control access to a copyrighted work.

32. Free riding refers to a particular type of transaction cost associated with the production of “public goods,” such as intangible expression. A person may profit from the investment by a creator simply by copying and selling the expression, thereby getting a “free



Rights-holders have been successful in expanding the scope of their rights in the Congress and in the courts. Most notable are the Supreme Court's rejection of a challenge to an extension of copyright term in a manner that has no direct incentive effect, and its extension of liability, in *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*,<sup>33</sup> to a broad class of intermediaries. The courts have narrowed the fair use doctrine too far, undermining not only socially beneficial activity with minimal costs to creators, but also activities that could increase incentives to create more music. Amendment of the copyright law to weaken incentives to register and deposit musical works and failure of the Congress and the Copyright Office to embrace modern Internet accessible databases makes transaction costs for "standing on the shoulders of others" higher than necessary.

In the past, the first sale doctrine, the fair use privilege, and the practical possibility of undetected and unpunished infringement provided breathing space for creative effort. All are in jeopardy. Expansion of the scope of copyright, narrowing of privileged conduct, and DRM are closing off the space for creative effort and for consumer access to the results of that creativity.

### 1. First Sale Doctrine

The "first sale doctrine" in copyright law empowers and privileges persons to whom a copyrighted work is conveyed to resell (or to give) it to another.<sup>34</sup> DRM undermines the first sale doctrine by blocking such privileged transfers. If a consumer buys a song in .mp3 format, she easily can give it or sell it to someone else. If she downloads the same song from the Apple iStore, which comes in a DRM-locked m4a format, she cannot do this effectively because the song will not play on the computer, iPod or other device of the transferee. Thus, the DRM interferes with an attempt to employ the first sale doctrine.

To be sure, there is a difference between selling a book and selling a downloaded music file: once someone sells a book, he no longer has it.

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ride" on the effort by the creator. See, e.g., Shubha Ghosh, *When Exclusionary Conduct Meets the Exclusive Rights of Intellectual Property: Morris v. PGA Tour and the Limits of Free Riding as an Antitrust Business Justification*, 37 *LOY. U. CHI. L.J.* 723, 723 (2006).

33. 545 U.S. 913 (2005).

34. *Brilliance Audio, Inc. v. Hights Cross Commc'ns, Inc.*, 474 F.3d 365, 371 (6th Cir. 2007) (describing the first sale doctrine; noting an exception prohibiting unauthorized renting, leasing, or lending of musical sound recordings).

If someone sells an .mp3 file of music, in all likelihood the transferor still has a copy. So now there are two copies of the song, with only one payment to the rights holder having occurred. In economic terms, the non-rival character of the digitally recorded song is much greater than the non-rival character of a book.

## 2. Fair Use

The Copyright Act recognizes the common law doctrine of fair use.<sup>35</sup> It privileges certain conduct constituting prima facie violation of the exclusive rights reserved to the copyright owner by section 106, depending on four statutory factors:

- (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
- (4) the effect of the use upon the potential market for or value of the copyrighted work.<sup>36</sup>

The fourth factor generally is considered to be the most important.<sup>37</sup> Several commentators and courts of appeals have suggested that “transformative uses” are favored by the first factor. In *Campbell v. Acuff-Rose Music, Inc.*,<sup>38</sup> the Supreme Court reversed a court of appeals determination that a rap group’s parody of a copyrighted song was not fair use. The Court observed that transformative works – those that add something new, in terms of expression, meaning, or message – generally are entitled to breathing space under the fair use doctrine.<sup>39</sup> Such works “lie at the heart of the fair use doctrine’s guarantee of breathing space within the confines of copyright.”<sup>40</sup> Accordingly, a finding of transformative use diminishes the importance of the other factors.<sup>41</sup>

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35. 17 U.S.C. § 107 (2000).

36. *Id.*

37. *Mulcahy v. Cheetah Learning LLC*, 386 F.3d 849, 854 (8th Cir. 2004) (observing that the fourth factor is most important; remanding for trial of facts pertinent to validity of copyright).

38. 510 U.S. 569 (1964).

39. *Id.*

40. *Id.* at 579.

41. *Id.* (“the more transformative the new work, the less will be the significance of other factors, like commercialism, that may weigh against a finding of fair use.”).

In *Perfect 10 v. Google*,<sup>42</sup> the district court found that “Google’s use of thumbnails to simplify and expedite access to information is transformative.”<sup>43</sup> Ultimately, however, it found, for purposes of preliminary injunction analysis, that Google’s display of thumbnail images in its search results did not likely fall within the fair use privilege.<sup>44</sup> The court of appeals reversed.<sup>45</sup> Agreeing with the district court that Google’s use of the thumbnail images was *prima facie* infringing, it reversed on the question of fair use. The court of appeals found Google’s use of the thumbnail images to be “highly transformative.”<sup>46</sup> It concluded “that the significantly transformative nature of Google’s search engine, particularly in light of its public benefit, outweighs Google’s superseding and commercial uses of the thumbnails in this case.”<sup>47</sup> The other fair use factors either favored Google or were neutral. Perfect 10 thus was unable to show a likelihood of success on its argument that fair use was not involved – the standard for obtaining the preliminary injunctive relief it sought.

But DRM does not distinguish between transformative uses and pure piracy. It is no easier to make a copy of a song downloaded from Rhapsody for the purpose of extracting two bars of drum rhythm to use as the basis of an entirely different song than it is to make a thousand copies for unauthorized sale of exactly the same representation of the song.

Copyright owners always have an interest in extending the scope of their copyrights and narrowing the scope of privileged uses of those works. When they are able to do either, they almost certainly increase the prices they can charge, because they limit competition, and, depending on the elasticity of demand, they can increase their revenue stream from the copyrighted works. In other words, broader scope for copyright and narrower scope for privileged uses increases monopoly profits for the rights holder.

Two major judicial developments have moved copyright law in the direction desired by rights holders.

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42. 416 F. Supp. 2d 828 (C.D. Cal. 2006), *aff’d in part, rev’d in part sub nom* Perfect 10, Inc. v. Amazon.com, Inc., 487 F.3d 701 (9th Cir. 2007).

43. *Id.* at 849.

44. *Id.* at 851.

45. Perfect 10, Inc. v. Amazon.com, Inc., 487 F.3d 701 (9th Cir. 2007).

46. *Id.* at 721.

47. *Id.* at 723.

In *Eldred v. Ashcroft*,<sup>48</sup> the Supreme Court rejected a challenge to the constitutionality of a legislative extension of the copyright term by users of copyrighted works that had gone into the public domain at the expiration of their copyrights. The challenged statute extended the term of copyright from 50 years after the death of the creator to 70 years after the death of the creator. The plaintiffs challenged the application of this extension of copyright to existing works on the grounds that the statute did not provide an incentive for new creative effort, instead conferring a windfall on owners of copyrights about to expire. The Court rejected their arguments that the statute violated the “limited times” provision of the Patents and Copyright Clause and also held that the extension did not violate the First Amendment.

Justice Stevens, in dissent, argued that the majority undervalued the public interest in free access to copyrighted works after their copyright expired and overvalued the incentives resulting from the extension.<sup>49</sup> Justice Breyer, also dissenting, observed,

[t]he statute before us . . . extends the term of most existing copyrights to 95 years and that of many new copyrights to 70 years after the author’s death. The economic effect of this 20-year extension – the longest blanket extension since the Nation’s founding – is to make the copyright term not limited, but virtually perpetual. Its primary legal effect is to grant the extended term not to authors, but to their heirs, estates, or corporate successors. And most importantly, its practical effect is not to promote, but to inhibit, the progress of “Science” – by which word the Framers meant learning or knowledge . . . .<sup>50</sup>

In *Grokster* the Supreme Court held that distributors of software that facilitated peer-to-peer sharing of digital music files could be held liable for copyright infringement.<sup>51</sup> The Court characterized the record as “replete with evidence that from the moment [the defendants] 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>52</sup> The Court accepted the proposition that widespread unauthorized file sharing may make it impossible to enforce rights against all direct infringers, leaving as the only “practical

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48. 537 U.S. 186 (2003).

49. *Id.* at 241 (Stevens, J., dissenting).

50. *Id.* at 242-43 (Breyer, J., dissenting).

51. 545 U.S. 913 (2005).

52. *Id.* at 923-24.

alternative” suits to impose secondary liability on those who facilitate the direct infringements.<sup>53</sup> It sidestepped the parties’ efforts to develop a test for secondary liability based on the balance of infringing versus non-infringing uses of a challenged copying device (including software).<sup>54</sup> It accepted as supporting evidence of intent to promote infringement the failure of the defendants to develop or deploy filtering tools or other mechanisms to discourage infringement.<sup>55</sup>

In *Perfect 10 v. Google*,<sup>56</sup> the district court, relying in part on the *Grokster* standard, rejected an effort to hold search engines and other providers of links to copyrighted material liable for direct infringement of either the display or the public distribution right,<sup>57</sup> although it found that they might be liable for direct infringement for displaying thumbnail images of the copyrighted photographs.<sup>58</sup> The court also found that the plaintiffs were unlikely to succeed on their claim that Google was secondarily liable because of weak evidence that it knew that its search engine generated links to infringing sites and that Google possessed the means to control such infringing sites.<sup>59</sup> The court of appeals remanded for additional factual findings.

Professors Mark Lemley and Philip Weiser argue that a “liability rule” instead of a “property rule”<sup>60</sup> for infringement would ease some of the pressure on the fair use doctrine,<sup>61</sup> which is generally interpreted as all or nothing – an accused infringer is liable for infringement and subject to an injunction unless he can establish fair use, in which case he is not liable at all. Under the Lemley/Weiser proposal, accused infringers could qualify for a judicially recognized compulsory license

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53. *Id.* at 929-30.

54. *Id.* at 934-35 (*Sony* does not require courts to ignore evidence of intent or common-law rules for imputing fault).

55. *Id.* at 939.

56. 416 F. Supp. 2d 828 (C.D. Cal. 2006), *aff'd in part, rev'd in part sub nom* Perfect 10, Inc. v. Amazon.com, Inc., 487 F.3d 701 (9th Cir. 2007).

57. *Id.* at 843-44.

58. *Id.* at 851.

59. *Id.* at 858-59.

60. The standard remedy for violation of a “property rule” is an injunction. The standard remedy for a “liability rule” is damages. A liability rule thus can be understood as a kind of compulsory license, for which a damages award represents a royalty. See Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 783-85 (2007) (explaining and comparing two rules).

61. *Id.* at 783.

by paying damages determined by a court or an administrative agency to be an appropriate royalty for the license.<sup>62</sup>

Despite the recent tendency for major labels to press for expanded intellectual property protection for music, and the willingness of most courts to acquiesce, there is a substantial body of empirical evidence that strong intellectual property protection is unnecessary as an inducement for creative effort. In the 1970s, Landes and Posner argued that copyright protection played only a limited role in stimulating production of literary works.<sup>63</sup> The early explosion of creativity in the PC hardware and software industry came in the 1980s, when it was far from clear that innovations in these fields were protected by either patent or copyright law.<sup>64</sup>

Raustiala and Sprigman analyzed the fashion design industry, where the near absence of copyright protection for designs actually appears to accelerate innovation and creation of new designs.<sup>65</sup> New designs benefit from a bandwagon effect resulting from copying,<sup>66</sup> and planned obsolescence shifts demand to new designs in the next season.<sup>67</sup> Their study is particularly interesting because in Europe, which has strong copyright protection for designs, the nature of the innovative process in the industry is much the same as in the United States, which has weaker protection.<sup>68</sup>

They speculate about the validity of extending their findings to other industries, singling out cuisine, where copyright protection is weak but competition based on innovative recipes is strong.<sup>69</sup> They note that

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62. *Id.* at 841 (summarizing conclusions).

63. See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 41 (2003).

64. See Walter G. Duflock, Comment, "Look and Feel": A Proposed Solution to the Diverging Views between the Software Industry and the Courts, 8 *SANTA CLARA COMPUTER & HIGH TECH. L.J.* 447, 449 (1992), for a discussion of the early uncertainty surrounding copyrights and software following the enactment of the Computer Software Copyright Act of 1980.

65. Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 *V.A. L. REV.* 1687 (2006).

66. *Id.* at 1728-34 (explaining how copying has the effect of "anchoring" a new design in the public mind).

67. *Id.* at 1718-28 (explaining "induced obsolescence").

68. *Id.* at 1743.

69. *Id.* at 1765. In competition among cooks, however, trade secret protection exists and effectively protects new recipes, which can serve their function while remaining secret. See HENRY H. PERRITT, JR., *TRADE SECRETS: A PRACTITIONER'S GUIDE* (2d ed. 2005) (citing cases recognizing trade secrets in recipes). The same is not true of musical works, which must reveal

popular music enjoys some, though not all of the attributes of fashion design.<sup>70</sup> They speculated that stronger copyright protection in the music industry has more to do with political clout than with rational policy choices.<sup>71</sup>

Some analysts of copyright law developments propose greater use of technological protection, DRM, for creative works. DRM is a boon for rights holders. It not only reinforces the expansions of traditional law, it also extends protection beyond what the law allows. It eviscerates fair use and first sale, for example. Worse, copyright law has come to encourage the use of technologies such as DRM that expand protections for rights holders granted by the law itself. The Digital Millennium Copyright Act, enacted in 1998, prohibits technologies that circumvent DRM.<sup>72</sup> It authorizes injunctions and actual or statutory damages for violations,<sup>73</sup> and also authorizes criminal fines and imprisonment for willful violations for commercial purposes or private financial gain.<sup>74</sup>

In *321 Studios v. Metro-Goldwyn-Mayer Studios, Inc.*,<sup>75</sup> the district court held that the anti-circumvention provisions of the DMCA are constitutional and that the seller of software that permitted users to copy DVDs by circumventing DRM violated those provisions.<sup>76</sup> It rejected arguments that liability was avoided because the challenged software only – or primarily – enabled the making of copies of DVDs the user already owned or that were in the public domain.

In *Universal City Studios, Inc. v. Reimerdes*,<sup>77</sup> the district court held that posting software to decrypt DRM-protected motion pictures, and posting links to known sites that provided the software, violated the DMCA.<sup>78</sup> Although these two cases involved video entertainment rather than music, their holdings apply to music DRM as well.

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the details of their melody, harmony, and rhythm to be consumed.

70. *Id.* at 1776 (noting that imitation helps “position” new musical groups in the popular consciousness).

71. *Id.* at 1755 (comparing the fragmentation of the fashion industry with concentration in the music and motion picture industries, which operate through “powerful trade association(s)” such as the RIAA).

72. 17 U.S.C. § 1201.

73. *Id.* § 1203.

74. *Id.* § 1204.

75. 307 F. Supp. 2d 1085 (N.D. Cal. 2004).

76. *Id.* at 1099.

77. 111 F. Supp. 2d 294 (S.D.N.Y. 2000).

78. *Id.* at 341-42.

DRM, thus protected, can be deployed to restrict uses of music, limit the number of times a purchaser can listen to a song, negate the first-sale doctrine's privilege of transferring a purchased work to someone else, and to make it difficult or impossible to make fair use of all or a portion of a purchased musical work.

These developments are skewed in favor of existing rights holders; they do nothing for new creators. At the same time, no deployed technology facilitates obtaining permission from a rights holder to do that which is otherwise prohibited by copyright law or prevented by DRM.

#### D. DRM as a Threat

DRM presents two kinds of threats to maximizing social welfare with respect to popular music. It undermines the policy incorporated in the Patents and Copyrights Clause. It also poses a number of pragmatic problems.

DRM undermines the policy of the Constitution. Copyright law, as § IV.A explains, strikes a balance among interests of creators, intermediaries, and consumers. In doing so, it reserves certain privileges to consumers, such as "fair use" and "first sale." Section IV.C argues that DRM, as usually implemented, curtails these privileges, thus altering the interest-balance framed by the legislature under Constitutional mandate. In his book *Code and Other Laws of Cyberspace*,<sup>79</sup> Larry Lessig explains that computer code, including DRM, enables a system of "perfect" regulation, a system that, unlike traditional legal rules, brooks no violations, expands prohibitions beyond those expressed in positive law or common-law doctrines, and which sidesteps democratic political processes in making law. As Lessig observes, digital code such as DRM can be more of a threat to consumer interests, and the interests of subsequent creators, than legal doctrines expanding copyright protection.<sup>80</sup> Anyone can choose to violate the law and face the consequences. Digital code leaves no choice. The uncertainties of detection, prosecution, conviction and punishment – and their civil-litigation equivalents – are part of a "rule of

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79. LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (2000).

80. *Id.*



law.” Taking choice out of the equation is like implanting a law-abiding enforcement chip in each person’s brain.

New technologies always present new transaction costs, a necessary evil when living in a society driven by technology. Moreover, the new transaction costs, as with digital music technologies, often are orders of magnitude lower than those associated with predecessor technologies. The transaction costs of DRM, however, in addition to being unnecessary, result in sub-optimal levels of creation and consumption, even as it is advocated as a spur to greater creativity. One could surmise that some form of the Second Law of Thermodynamics<sup>81</sup> operates in this realm. DRM creates islands of proprietary entertainment: one vendor’s DRM will not work on another’s. Even when a particular DRM standard encompasses multiple platforms, periodic updates in the software are necessary to preserve security, and glitches in interoperability following the update are inevitable.

[C]onsumers are stumbling over unfriendly systems left and right, at least those that tread outside of the iPod+iTunes garden. Purchase a track on the Zune Marketplace, and it will never play on an iPod, or any number of other devices. Download a song on the Sprint Music Store, and licensing snafus creep up within the Windows Media Player itself. It gets worse, way worse, and despite claims to the contrary, Microsoft’s shift towards Zune leaves PlaysForSure customers and business partners vulnerable to more headaches in the future. Other protection silos come from Sony and RealNetworks, and the Balkanization effect is only getting worse. Want to swim in those shark-infested waters? Digitally-savvy consumers are picking another pond, one that specializes in free, unprotected stuff, despite the occasional sting (corrupted files, virus threats, adware, spyware, etc.). And those that are less savvy usually know someone that is.<sup>82</sup>

A successful repair will likely involve enhancing the music store software, the music jukebox software, and the software in the players with new secrets, then transferring this updated software into the tens (or hundreds) of millions of Macs, Windows PCs and players already in use. This must all be done quickly and in a very coordinated way. Such an undertaking is very difficult when just one company controls all of the pieces. It is near impossible if

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81. The Second Law of Thermodynamics posits that entropy (a measure of disorder) always tends to increase as systems operate. See PAUL A. TIPLER, COLLEGE PHYSICS 341 (1987).

82. Paul Resnikoff, *Paul Resnikoff’s Parting Shot: The Mirage of Interoperability*, DIGITAL MUSIC NEWS, Feb. 8, 2007, <http://www.digitalmusicnews.com/stories/020807parting>.

multiple companies control separate pieces of the puzzle, and all of them must quickly act in concert to repair the damage from a leak.<sup>83</sup>

If DRM imposed additional transaction costs only on purchased music, one could rationalize that consumers always have other choices and they can refrain from buying products that impose costs they do not like. But DRM imposes broader costs than that. It is the author's experience that major vendor DRM software, specifically including that from Microsoft and Sony, erects barriers to the free use of the author's own music – music he wrote, recorded and produced. Microsoft's Zune player restricts the number of Zune-to-Zune downloads and the lifetime of such downloads even for music the owner of all the Zune players owns.

And then there is the infamous Sony BMG DRM approach, which installed a Trojan horse<sup>84</sup> on the computers of every consumer buying popular songs on CDs from Sony. The songs would not play in players provided by other vendors; instead a purchaser had to install Sony's proprietary player software. That installation placed invisible files of the registry, deep within the Microsoft Windows operating system. These files disabled virus protection measures – *all* virus protection measures. Removing the files disabled users' CD drives. To fix the problem, a user had to reinstall the operating system from scratch.<sup>85</sup> This surreptitious sabotage of users' computers occurred every time a user tried to play a song newly purchased from Sony BMG.

Initial efforts to get Sony to respond were met with an angrily defended stone wall.<sup>86</sup> After the stone wall was breached, Sony planned to remove the "rootkit" from future releases, without replacing millions of disks already containing it, and without offering to users with contaminated computers a way to remove the rootkit.<sup>87</sup> Ultimately Sony apologized and denied any intent to make its consumers' computers vulnerable.

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83. Steve Jobs, *Thoughts on Music*, Feb. 7, 2007, [www.apple.com/hotnews/thoughtsonmusic](http://www.apple.com/hotnews/thoughtsonmusic); see also John Markoff, *Jobs Wants Overhaul of Music*, N.Y. TIMES, Feb. 7, 2007, at C1.

84. A "Trojan Horse," as this article uses the term, is a program that is secretly implanted in a target's computer and set to perform some function undesired by the target at a later date.

85. Wade Roush, *Inside the Spyware Scandal*, TECH. REV. 49, 50 (May/June 2006).

86. *Id.* at 53.

87. *Id.*

But the point is not that a major record label intended to commit vandalism; the point is that what starts out as a good faith effort to protect music by DRM easily goes badly awry, in ways that impose sweeping transaction costs on consumers – costs far beyond those associated with not being able to use something one has purchased freely.

These transaction costs could be reduced, of course, if all computer technology employed by creators and consumers of music used the same DRM technology, in other words, if a universal DRM standard existed and were adopted. That is not the case now, and it is unlikely to be the case in the future.

DRM implementations are not standard. Instead, they are fragmented among a constantly shifting set of music rights holders, and hardware and software producers, as § III.B explains. Apple has its own standard that it so far had been unwilling to open up to others. Microsoft has a different implementation. Large record labels have tried their own. DRM is thus, so far, inconsistent with the fundamental goal embraced by the Internet's designers and largely responsible for the Internet's explosive acceptance by suppliers and consumers in the electronic marketplace: open standards that promote interoperability. The designer at any level of functionality can begin his design process confident that if he designs hardware or software that employs open Internet standards for interfaces between layers, the result will interoperate seamlessly with adjacent layers, regardless of who implements them.

Universal standardization of DRM is unlikely. Despite its advertised advantages in many areas, standardization actually has occurred infrequently, even with the striking rise of the Internet as a staple of people's lives. The Internet itself and the implementation of PKE<sup>88</sup> in SSL<sup>89</sup> are the only clear examples. Incentives to agree on standards depend on the market position of a particular firm. Network effects dominate. In other words, a firm with proprietary standards and a large

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88. Public Key Encryption. PKE is a system for encrypting content that does not require a separate communications session for exchange of the key used to decrypt the content. It imposes fewer burdens on users than private-key systems. See SIMON SINGH, *THE CODE BOOK* 268-79 (1999) for a succinct history on the development of PKE.

89. Secure Sockets Layer ("SSL") and its successor Transport Layer Security ("TLS") are built in to most Web browsing software. Triggered by a web address beginning with "https://", they establish an encrypted sub-session as long as sensitive information such as credit card numbers or passwords are being exchanged. See *How Does SSL Work?*, <http://www.ourshop.com/resources/ssl.html> (last visited Sept. 14, 2007).

share of the market has no incentive to agree to a non-proprietary standard because that will make it easier for its customers to migrate to the products and services of other firms. A new entrant, however, has strong incentives to push for open standards because that will make it easier for it to build market share. In the music industry, these natural barriers to standard-setting are reinforced by fears of piracy. An open standard for DRM makes it easier for pirates to crack the standard or for a firm participating in the standard to traffic in unlicensed music.

Steve Jobs argues that the legal obligations imposed on intermediaries with respect to the integrity of DRM systems make it unlikely they will license such systems to others because of an inability to control them, and the possibility that liability for their conduct would flow back upstream to the developer of the protection system. "Perhaps the same conclusion contributed to Microsoft's recent decision to switch its emphasis from an 'open' model of licensing its DRM to others to a 'closed' model of offering a proprietary music store, proprietary jukebox software, and proprietary players."<sup>90</sup>

Nevertheless, major figures within the industry express a commitment to press for interoperable DRM systems.<sup>91</sup>

DRM, whether standardized or balkanized, is unlikely to promote a sound market. "DRM [hasn't] worked, and may never work, to halt music piracy."<sup>92</sup> The future of DRM is clouded by past failures to use technology as a way of closing off parts of the PC and Internet infrastructure. Neither copy protection for computer software nor widespread encryption of Internet communication proved to be viable in the face of consumer resistance to the transaction costs both entail.

Copy protection of desktop computer application software was common in the 1980s as demand began to cluster around a few blockbuster programs such as Lotus 1-2-3, the first major spreadsheet program. Lotus, for example, would allow the Lotus 1-2-3 program to run only when a "key" disk was inserted in the floppy drive of the computer. If a consumer lost or damaged the key disk, she could not use the program even though she had bought it. Eventually, the software industry abandoned this form of copy protection in the face of consumer

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90. Jobs, *supra* note 83.

91. See Eric Pfanner, *Europe to Cool to Apple's Suggestions on Music*, N.Y. TIMES, Feb. 8, 2007, at C11 (quoting a phonographic industry lobbyist, "[t]he good news is that he [Jobs] seems to want to talk about interoperability").

92. Jobs, *supra* note 83.

resistance and flourished with a business model in which lower prices stimulated demand and reduced incentives for illicit copying.

The failure of public key encryption ("PKE") to penetrate significantly into the consumer marketplace provides another example of how strong technological protection of information is at odds with the openness and convenience of the Internet. Scores of commentators and entrepreneurs have extolled the virtues of encryption to protect privacy and to ensure security of e-commerce transactions. But PKE remains cumbersome to use and impairs performance. It has been relegated to occasional use in secure sockets layer ("SSL") transactions performed automatically and relatively transparently in limited stages of e-commerce transactions, as when a consumer transmits her password to a server or sends credit card information. Otherwise, the vast majority of e-commerce transactions and virtually all email communications are unencrypted.

The major labels are beginning to confront the same sort of consumer resistance to DRM for music. In early 2007, the trade press reported indications that some major label might abandon DRM and move to an open standard such as .mp3.<sup>93</sup> Proponents of such a shift argued that DRM interferes with digital download sales because of the inconvenience it causes. Others point out that a shift to an open standard would undercut Apple's dominance of the download market and open up more competition at that level, which would benefit rights holders. If they could negotiate with more than one intermediary, they would get better terms.<sup>94</sup> At the end of May 2007, Apple launched a new version of iTunes to make EMI's catalog available without DRM. DRM-free songs were priced at \$1.29, about 30% higher than the traditional 99-cent price for iTunes songs.<sup>95</sup> In the same month, Amazon announced that it would offer DRM-free music sales later in

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93. Victoria Shannon, *Record Labels Contemplate Unrestricted Digital Music*, N.Y. TIMES, Jan. 23, 2007, at C5; *DRM Soul-Searching Continues, Speculation Surrounds Majors*, DIGITAL MUSIC NEWS, Jan. 24, 2007, <http://www.digitalmusicnews.com/stories/012307drm>. MP3 is not the only open format. Advanced Audio Codec (AAC) is a competing compressed format that provides better sound quality than .mp3. AAC is at the core of the Apple iTunes DRM.

94. DIGITAL MUSIC NEWS, *supra* note 93.

95. Alexandra Osorio, *Apple Delivers iTunes Store Upgrade, Prepares DRM-Free Catalog*, DIGITAL MUSIC NEWS, May 29, 2007, <http://www.digitalmusicnews.com/stories/053007apple>.

the year, with music from EMI and 12,000 Indie artists.<sup>96</sup> In July, EMI licensed its music for sale, DRM-free, through Snocap.<sup>97</sup>

## V. THE MARKETPLACE WITHOUT DRM

### A. Abandoning the Maginot Line

DRM is a Maginot Line against piracy. But piracy is not the principal threat to the position of major labels. Competition is. CD sales are plummeting, not because of evildoers ripping songs off CDs by the millions and making illicit copies, but because technology makes it more convenient to get music by downloading it instead of buying it on a CD. Even within the industry, sentiment is developing in favor of eliminating DRM. Steve Jobs argued that, if the major labels license their music to iTunes in .mp3 format, songs downloaded from iTunes would play on any player, not just iPods.<sup>98</sup> One music executive argues that elimination of DRM would double the magnitude of digital sales.<sup>99</sup> The major labels have consistently resisted this new reality. They like to defend their position by saying “No one can compete with free.”

But it is possible to “compete with free.” Apple’s \$2 billion in iPod and music download sales proves it. The fact is, it is cheaper – considering all costs, including convenience – to buy and download a song for \$0.99 from a well designed e-commerce site than to search for and download the same song from an illicit file sharing site, especially considering the risk of viruses and other compromises to consumer computer security associated with dealing with the Internet’s black market. As Steve Jobs points out, major labels themselves sell 90% of their music without DRM (CDs lack DRM).<sup>100</sup> Consumers have been

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96. Press Release, Amazon.com, Amazon.com to Launch DRM-Free MP3 Music Download Store with Songs and Albums from EMI Music and 12,000 Other Labels (May 16, 2007), <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1003003&highlight=>

97. *EMI Licenses Snocap, Offers DRM-free Downloads*, DIGITAL MUSIC NEWS, July 1, 2007, <http://www.digitalmusicnews.com/stories/062907emi>.

98. *Steve Jobs Issues Open Letter, Calls for DRM-Free Downloads*, DIGITAL MUSIC NEWS, Feb. 7, 2007, <http://www.digitalmusicnews.com/stories/020607apple>.

99. *Executives Debate Impact of mp3-Based Sales Shift*, DIGITAL MUSIC NEWS, Feb. 6, 2007, <http://www.digitalmusicnews.com/stories/020607drm>.

100. Jobs, *supra* note 83.

able to rip CDs (copy the music from them) into non-protected .wav and .mp3 formats since the advent of PCs with CD drives preinstalled. The major labels continued to sell CDs, albeit at declining levels once the more-convenient .mp3 format became widely available for downloading.

“[W]hat benefits do [the music companies] get from selling the remaining small percentage of their music encumbered with a DRM system? There appear to be none. If anything, the technical expertise and overhead required to create, operate and update a DRM system has limited the number of participants selling DRM protected music. If such requirements were removed, the music industry might experience an influx of new companies willing to invest in innovative new stores and players. This can only be seen as a positive by the music companies.”<sup>101</sup>

In April, 2007, Apple and major-label EMI announced a deal to distribute EMI music through iTunes without DRM.<sup>102</sup> Other labels criticized the move but may be forced to follow suit. Because Apple combined its elimination of DRM with higher price points, it is possible that more major labels will be drawn in to Apple’s experiment because they have been pushing for more pricing flexibility than iTunes’ commitment to 99-cents per song has allowed.<sup>103</sup> In May 2007, Amazon announced plans to open an online digital music store in which all of the music will be available in .mp3 format without DRM. It expressed its intention to implement the plan with or without major label support.<sup>104</sup> Of course the major labels could thwart this experiment. But Amazon’s position in the marketplace would impose huge costs on any label that revokes Amazon’s rights to sell the songs in .mp3 format.

Some degree of piracy will always exist, but it can be pushed to the margin when entrepreneurs make effective use of new technologies. As Chris Anderson, editor-in-chief of *Wired* magazine, said at the January 2007 Cannes conference on the international music market, some levels of piracy must simply be accepted. “You cannot have zero piracy and if you try to get to zero piracy, you will make the experience of consuming

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101. *Id.*

102. *EMI, Apple Announce DRM-Free Digital Sales Plan*, DIGITAL MUSIC NEWS, Apr. 2, 2007, <http://www.digitalmusicnews.com/stories/040107emi>.

103. *Labels Mull iTunes Pricing Flexibility, DRM-Free Options*, DIGITAL MUSIC NEWS, May 7, 2007, <http://www.digitalmusicnews.com/stories/050707jobs>.

104. *Amazon Confirms Digital Music Store Plans, EMI Jumps Aboard*, DIGITAL MUSIC NEWS, May 16, 2007, <http://www.digitalmusicnews.com/stories/051607emi>.

music so painful [that] you'll have zero industry."<sup>105</sup> The demographic group most likely to seek free music from illicit sources is the population of teenagers who are not yet old enough to have their own credit cards or bank accounts. If they want to buy music, their parents must give them access to credit cards or parental bank accounts. For many, the parental support is not forthcoming, and they have little choice but to get new music from friends or from other sources they do not have to pay, or to do without.<sup>106</sup>

Consumers will buy music even when unlicensed copies of the same music are available in open formats. The transaction costs are less from purchased music files; the risk of getting a virus is less (unless some supplier repeats Sony's mistake); and the most loyal consumers want to reward musicians they like – that's why they buy CDs at live performances.<sup>107</sup>

DRM is a way of defending obsolete forms of music distribution and business models of the past. It ultimately will fail. In the meantime, it gets in the way of development of new models and of consumers and creators taking full advantage of what new technologies make possible, tending to push commerce in music from legitimate channels into illegitimate ones. Just like the real Maginot Line in France, DRM pushes antagonists to new forms of "combat" – Blitzkrieg in the case of the German army avoiding the Maginot Line; obtaining music from unlicensed, but DRM free, sources in the case of music. DRM is counterproductive. It not only undermines sound policy, it subverts the interests of those who promote its use.

## B. New Business Models

Section II of this article explains why old business models for creating, producing, and delivering popular music are dead. It also suggests that the future market architecture for popular music will involve:

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105. Kate Holton, *Music Industry Divided Over Digital Future*, REUTERS, Jan. 22, 2007, <http://www.reuters.com/article/musicNews/idUSL2230340920070124>.

106. The author appreciates this insight from his student, Dan Mullenix.

107. See Perritt, *New Architectures*, *supra* note 2, at 304-20 (explaining variables that influence demand for music, including "altruism" -- a consumer's desire that a favored artist be rewarded).



- (i) increased popular demand, driven by dramatically increased portability of music;
- (ii) an explosion of the number of Indie musicians whose art is readily available to the consuming public; and
- (iii) new forms, and providers, of intermediation to help consumers reduce search costs and to help musicians make consumers aware of their music.

Merely to sketch the new architecture, however, does not address the question of what economic incentives will exist to induce musicians to create music and to induce intermediaries to remain in business. Any advocate of a market in which intellectual property protection is less prominent, either because it is weakened legislatively or judicially or because it becomes progressively less enforceable, and in which DRM disappears, must address this question. The advocates of expanded IP protection and of expanded DRM protection take their positions precisely because they believe that such legal and technological protections are necessary in order to make requisite income streams available to reward creative effort and associated market facilitation. Any advocate of a different approach must address the economic side of the equation. Most of the new business models suggested in the literature depend prominently on continuation and expansion of DRM to enforce licensing terms or to enforce boundaries between protected and unprotected categories of popular music. Obviously these models are not available in a world in which DRM has been abandoned.

Several fundamental scenarios exist.

One, embraced by Villanova Law Professor Michael Carroll, argues that economic incentives in the form they have existed in the popular music market for the last hundred years are unnecessary: music will be created even if the creators do not make money from their creative effort.<sup>108</sup> One of the author's students<sup>109</sup> said, after reading a draft with the preceding sentence in it:

I absolutely concur with this. A true artist creates because she has something within her clamoring to get out and she has to create. It's personal, not financially driven. For example, I've been dancing for 14 years and have only been paid to perform twice. And yet I still dance.

Additionally, one of the author's music collaborators commented,

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108. Michael Carroll, *The Struggle for Music Copyright*, 57 FLA. L. REV. 907 (2005).

109. Jocelyn Floyd, Chicago-Kent College of Law, Class of 2010.

[t]here'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. I would be happy to *spend* money to make Oucho Sparks what it should be.<sup>110</sup>

These incentives operate for thousands of others as well. Even though the current music industry generates some nine billion dollars in annual revenue, most musicians themselves make little or no money. The terms of standard record label contracts are favorable to the record labels and unfavorable to musicians, especially the vast majority of lesser known musicians. The typical musician under a record label contract usually ends up with no income after whatever revenue his effort generates has been used to cover various record label costs and advances.<sup>111</sup> Often he ends up owing the Record Label. The money goes to lawyers, A&R reps and ad agencies; it does not go to the artist. In addition, the costs of old ways of recruiting musicians, getting them under contract, promoting concerts, producing records, advertising them, and distributing their music are so high that a musical work cannot cover costs unless consumer demand for that particular work is in the hundreds of thousands or more. So only those musicians expected to generate that level of demand get a chance, under the old models.

Nevertheless, tens of thousands of musicians around the country spend hundreds of hours a year creating, performing, and recording music. A significant portion – probably most – do it not to get rich or harbor the expectation that they can make a living at it, but they create music because they themselves enjoy music and because they want the social validation for their creative effort that comes from others enjoying it as well. The rock music phenomenon, beginning in the 50s, merged music creation with performance, which previously had been separate entities. The boundary between songwriters and players or singers eroded so that most people now who play popular music and sing songs create their own music rather than playing or singing somebody else's. This means that most of those who want to perform music also create new music to support their performances.

It is also undeniable, however, that many Indie musicians who never make any significant money, and who have no realistic prospect of

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110. See Profile of Tim Sandusky, [www.indiemusicchicago.com](http://www.indiemusicchicago.com).

111. Advances are income to the musician unless the musician is obligated and capable of repaying them.

doing so, nevertheless are motivated by the possibility, however remote, that they will break through and become rock stars.<sup>112</sup> It is hazardous to speculate that their behavior would be unchanged if they perceived no possibility of the market ever permitting them to make a living, perhaps a good living, from their music. Additionally, of course, money is an important symbol in a market economy of acceptance. A market in which the average musician could not receive any money from his music would be a market in which social validation is less available. Perhaps, if one performs music live, the attentiveness and applause of the audience would provide sufficient psychic rewards. On the other hand, when creation takes the form of recorded music, and no one buys the albums or the tracks, the psychic rewards are less tangible.

Accordingly, it is necessary to consider what kinds of revenue streams are likely to exist in the new market structure and to speculate about their magnitude.

Thus, a second scenario assumes that money continues to be important, while recognizing that it may become less available. As Section II pointed out, the inevitable result of dramatically lower costs and reduction in other barriers to entry will be a much more competitive marketplace and falling prices. Already, the default price for a ten or twelve song album has fallen from close to \$20 to between \$5 and \$10. Prices are likely to continue to fall until the average price for a purchased song is closer to \$.10 than \$2.<sup>113</sup>

Prices for live performances may not fall as much, but increased competition resulting from more performing musicians will result in smaller audiences and a reduced share that performance venues are willing to pay musicians.

It is possible that the demand for popular music will increase by as much as the twenty fold necessary to offset the price decline, given that the available leisure time for listening to music vastly exceeds the amount of time now spent listening to music.<sup>114</sup> But simply to assume

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112. The term "rock star" is used in this article as a shorthand for any musician who has achieved wide popularity, represented by record sales exceeding several hundred thousand, positioned on the charts for radio play or downloading, or who can attract a thousand or more to a live performance. It does not signify a musician associated with any particular genre of popular music.

113. Resnikoff, *supra* note 10.

114. Paul Resnikoff argues that increased demand for subscription services combined with underutilization of all the music available mimics a "gym membership" phenomenon, and that the result will be significantly increased revenue. *See id.* (explaining that eMusic's

such an increase in demand is so heroic as to lack credibility. Moreover, if the magnitude of revenue streams from existing product lines remains constant or increases only slightly, the larger number of musicians means that the average share of each still would decline. So, the estimate that an average Indie musician is likely to make at best \$7,500 per year off record sales and performances<sup>115</sup> is optimistic at best.

Optimism, however, may be warranted. Jonathan Coulton represents an example of new business models.<sup>116</sup> Quitting his regular job in 2005, he undertook to become a full-time singer-songwriter, writing at least one new song per week, and relying on the Internet as his sole distribution channel. Forswearing a record-label contract, he sells his CDs on CDBaby and his songs through iTunes, Rhapsody, and Napster.<sup>117</sup> Seventy-five percent of his digital sales occur from his own website. Forty-one percent of his income (\$3,000-\$5,000 per month) comes from digital music sales, 29 percent from CD sales, 18 percent from live shows, and 11 percent from merchandise.<sup>118</sup> By mid-2007, more than 3,000 were visiting his website each day.<sup>119</sup> His experience shows the power of fans who want to be friends with a performer. He responds to every email – dozens per day.<sup>120</sup> More than 50 fans have posted videos featuring his music. He lets fans vote on alternative musical sections for some of his songs, and he arranges tours to locations where more than 100 fans live.

Another musician, Tad Kubler, guitarist for *The Hold Steady*, reports that fans offer to design, print, and distribute posters for live concerts for free.<sup>121</sup>

But probably not everyone can achieve what Coulton and Kubler have. If the estimate is correct – no one can live on \$7,500 per year<sup>122</sup> –

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subscription service caters to heavy-buying customers, who buy subscriptions but do not fully exploit them).

115. See *supra* notes 19-20 and accompanying text.

116. Clive Thompson, *Sex, Drugs and Updating Your Blog: How the Rock 'n' Roll Life Became a Desk Job*, N.Y. TIMES MAG., May 13, 2007, at 42.

117. *Id.* at 45.

118. *Id.*

119. *Id.* at 43.

120. *Id.* at 44.

121. *Id.* at 45.

122. In 2006, the U.S. poverty threshold for unrelated individuals of all ages is \$10,294. See U.S. CENSUS BUREAU, HISTORICAL POVERTY TABLES, <http://www.census.gov/hhes/poverty/histpov/hstpov1.html> (last visited Oct. 21, 2007).

one must consider whether new revenue streams might be available. There are several possibilities.

One possibility that should be discarded as unsupported by experience is the "tip-jar" model advocated by some commentators.<sup>123</sup> This model suggests that altruism by consumers of music<sup>124</sup> will induce consumers voluntarily to pay musicians, either by paying noncompetitive prices for downloads or by simply contributing, as when the hat is passed at a concert. A few sectors exist, of course, in which tips are a regular part of compensation for labor, as in the restaurant industry and the taxi cab industry. But how the social norm of tipping became established and is reinforced in these industries is not well understood, and the close personal proximity in those industries makes the prospect of personal discord apparent as a mechanism for enforcing the tipping norm. Such personal proximity is absent in the marketplace for recorded music and largely absent in most live performances. Being a member of a crowd of 50 or more strangers watching a music performance by individuals with whom a member of the audience is not acquainted personally is far different from the interaction that occurs between an individual diner and the waiter, or between a taxi rider and a taxicab driver who scowls, or worse, in response to a stingy tip. Moreover, the experiment with "shareware" in the early evolution of the market for PC software was a failure in terms of any significant revenue generation.

But there are other possibilities. One is the revenue from "merch" — merchandise. Maybe consumers will like new music so well that they buy tee-shirts and coffee mugs in such quantities that the revenue from such merch sales more than makes up for lost revenue in record sales and gate receipts at live venues. But this is hardly likely. The most that is likely to happen is that a greater percentage of Indie musicians will make sure they have coffee mugs, tee-shirts, and other kinds of merch available for purchase at live performances and through the Web, enabling them to earn modest additional revenue from these co-products of their music.

Far more likely is that new streams of revenue from advertising expenditures will be tapped by some musicians. It has been possible under older business models of course, for an advertiser to "sponsor" a

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123. See Zeb G. Schorr, *The Future of Online Music: Balancing the Interests of Labels, Artists, and the Public*, 3 VA. SPORTS & ENT. L.J. 67, 89 (2003).

124. See Perritt, *New Architectures*, *supra* note 1, at 304-20 (explaining how "altruism," a consumer's desire that a favored artist be rewarded, has a positive effect on music sales).

musician much as advertisers sponsor a NASCAR race car, a tennis player, or a high school soccer team. Major labels have begun experimentation with advertising models.<sup>125</sup> But the past structure of the market for advertising made such sponsorship unlikely for anyone who was not already a rock star. Changes in the market for advertising open up new possibilities. Advertising in print publications and conventional media is declining dramatically.<sup>126</sup> New advertising models are proliferating, centered on the possibility of placing ads in Internet based media, according to the actual, real-time behavior of the targets of the advertising. Google and Yahoo! position a pop-up ad on a Web page according to the search criteria used to retrieve the Web page, and under their models, advertisers must pay only when a target clicks on the ad, or, in some cases, actually purchases something through an advertiser's Web site.

Advertisers will continue to prefer placement of advertising to favor those who attract the most "eyeballs." In other words, they will want to place ads so as to connect the advertisers with those who are already rock stars. Advertisers also want, however, to target ads effectively. Finer granularity of popular advertising, exemplified by payment of only a few cents for each ad view, makes it likely that the concentration of advertising will decline – that more ads will be placed, narrowly targeted to smaller audiences. Advertisers will be more willing to pay a few cents for an ad that appears on the Web page of a largely unknown musician. An advertisement by a pet store selling boxer dogs, for example, might benefit from placement on the download for this author's country song about his first boxer. One might find credible, by analogy, an advertising market in which advertisers are willing to pay ordinary teenagers \$.50 to wear a t-shirt with the advertiser's logo on it for a week – assuming the cost of producing the t-shirt is less than \$.50 and that the advertiser is promoting something to the teenagers' friends.

That does not mean that the platform on which the advertising appears will necessarily be willing to share ad revenue with a musician. But competition among providers of storefronts for musicians – a marketplace heretofore dominated by MySpace – who also provide advertising may provide musicians with additional bargaining power,

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125. Saul Hansell, *Big Labels Offer Free Music to College Students*, N.Y. TIMES, Jan. 22, 2007, at C10.

126. See Seth Sutel, *Newspaper Ads Fall 8.6 Percent in 2Q*, ASSOCIATED PRESS, Aug 31, 2007, [http://biz.yahoo.com/ap/070831/newspapers\\_advertising.html](http://biz.yahoo.com/ap/070831/newspapers_advertising.html).

enabling them to choose only those platforms that offer to share a bit of revenue from advertising with them. Some social networking sites are experimenting with advertising models that permit small suppliers of music to share in ad revenue associated with music streaming.<sup>127</sup>

Under this scenario, even if only a small proportion of musicians actually receive significant ad revenue, the prospect nevertheless might be enough to make up for the disappearing economic incentive of making millions as a rock star.

That, combined with the psychic incentives for creating and performing music likely will be enough to assure a robust, innovative, and creative marketplace for popular music. It is likely that the frequency distribution of suppliers of music will be bimodal in the future: a huge group of moderately successful musicians, marketing their music through the Internet, and a tiny group of rock stars still using traditional mass media to fill concert stadiums.<sup>128</sup>

## VI. CONCLUSION

Technology has killed old business models for popular music. Corporate dinosaurs, threatened by extinction, often cling to rapidly evaporating revenue streams, seeking to block competition by litigation and demagoguery. That traditional behavior is manifest in the music industry. Major record labels never had much to do with promoting art. The new marketplace that is emerging will benefit both consumers and artists. Neither expanded copyright law, captive of the advocates of the past, nor DRM, a Maginot Line against new artistic creativity and entrepreneurship, should get in the way. Music will flourish in any event, and technology will help more people create it and enjoy it, as has always been the case.

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127. *Snocap, Imeem Push Ad-Supported Music Concept*, DIGITAL MUSIC NEWS, June 20, 2007, <http://www.digitalmusicnews.com/stories/062007imeem>.

128. Thompson, *supra* note 116.

