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GETTING TO YES: HOW THE MARKET CAN RESOLVE PEER-TO-PEER

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1. INTRODUCTION

Peer-to-peer file-sharing networks now provide to web users the ability to find and download files from other computer hard drives by typing an appropriate title, word, or phrase. For example, a student interested in the Civil War can find and download material from other user hard drives by entering the phrase "Abraham Lincoln". Peer-to-peer technology evidently has great potential benefit for the content industries, as the technology allows listeners to sample works that they otherwise might not enjoy and develop interests that might otherwise not evolve. The technology can be melded with innovative technologies for search, distribution, and personalized recommendation to present content to a group of potential buyers.

In addition to documents, software, and photographs, file-sharing over P2P networks can enable the unauthorized transfer and copying of copyrighted music, books, and movie files that can be "ripped" from CDs or otherwise loaded to hard drives on personal computers. The unauthorized reproduction of any copyrighted material can displace original sales and licensing opportunities and therefore presents concerns for copyright owners.

Beginning in the year 2000, record labels, music publishers, and movie studios filed copyright suits against Napster, Audiogalaxy, Aimster, iMesh, Kazaa/Grokster/Morpheus, as well as network operators in Bit Torrent. Though the appellants prevailed in early litigation against centralized systems, industry attempts in California to close down two decentralized services, Grokster and Streamcast, have failed in district and circuit courts.¹ Rather, the courts ruled in summary judgment that the particular programs in question had significant, noninfringing uses and therefore qualified for legal protection under the Supreme Court's 1984 landmark decision, *Sony v. Universal City Studios*, which upheld the legality of the videocassette recorder.² Both

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¹*Metro-Goldwyn-Mayer Studios et al., v. Grokster, Ltd., et al.*, 259 F. Supp. 2d 1029 (C.D.Cal. 2003); 2004 WL 1853717; ---F.3d--- C.A.9 (Cal.), 2004, <http://techlawadvisor.com/docs/mgm-grokster.html>.

² *Sony Corp. v. Universal City Studios Inc .*, 464 U.S. 417, 453 (1983).

courts also found that neither software provider had the requisite knowledge of actual infringement or the ability to curtail immediate use to qualify as a contributory or vicarious copyright infringer. The Supreme Court granted certiorari on the matter in December, 2004.

Whatever the significant uses may be, P2P operators have surely profited from infringement by using free content to promote complementary goods and services, including advertising. Indeed, Darrell Smith of Morpheus came to admit as much: "Peer-to-peer file sharing applications already filter those things that their users do not want, such as bogus music files and viruses. This could very easily adopt and implement a filter to eliminate unauthorized copyrighted works as well, but user levels and revenues could decline if popular music or movie files were filtered." Supporters of P2P infringements justify their actions by citing label waste, the purported economic plight of performing artists, and anticompetitive behavior by content owners.

If litigation continues, content owners may conceivably win every future judgment. They nonetheless do themselves no service by drawing out the litigation process. Whatever the outcome of the Supreme Court's decision, labels and studios are finding an obstinate opponent that springs heads like hydrae. Much as the appeal of Kazaa surpassed that of Napster, the bit rate volume at the relatively new BitTorrent came to surpass that of Kazaa. Particularly if content can be located offshore, rights owners may yet lose the game of "whack a mole", as new donors may come to contribute more file-sharing software to perpetuate the system. They are also losing a related game of public relations, having sued over 7000 individual users for uploading music on P2P networks.

Battles won in the ether of the courtroom then may lead to a war lost in a market that is far more complex than legal constructs may grasp. By extending statute and common law, courts cannot in this instance compel market resolutions that make both product and money flow. That choice is left only to the bilateral consent of the buyers and sellers who voluntarily choose to transact in a free market, and forego illegal alternatives. The resulting market void is the central vortex that drives the continued presentation of rogue software and copyright infringement. The industries must now begin to break the Gordian knot by coming to a deeper conceptual understanding of the market.

2. PEER-TO-PEER TECHNOLOGY AND DISTRIBUTED COMPUTING

The growth of P2P is overwhelming. Measured in bandwidth, P2P protocols are the most popular on the Internet. File-sharing programs are also the most popular Internet-based software programs, and have been downloaded nearly 700 million times; an estimated 80 million users per month access P2P file-sharing programs. These networks simultaneously enable artistic diversity, computing efficiency, greater communication, and copyright infringement.

Peer-to-peer file-sharing entail at least four alternative topologies. In the first generation, Napster, Scour, Aimster/Madster, Audiogalaxy, and iMesh routed user requests for

content through central directories that located and accessed donor computers that offered uploaded material for free copy. In a second generation of decentralized topology, KaZaa and Grokster implemented network configurations that routed file requests through directories installed at intermediate points, called supernodes, that were located on interconnected user computers. In a variation, BearShare, Limewire, and Morpheus used open source Gnutella programs to locate material by passing information without supernodes. In a third generation of technology, BitTorrent and eDonkey allow networks to distribute bits of content files on different computers located throughout the network; a facilitating server enables the reconstitution of whole files pulled from the distributed bits near a particular request.

Peer-to-peer topologies are now used legitimately to distribute media content. Each of the major studios now distribute movies through the P2P computing platform provided by ifilm.com.³ Twelve manufacturers similarly use P2P networks for online distribution of video games. Atzio, a new provider of P2P television, will allow users to trade DRM-protected copies of their favorite television shows over the Internet.⁴ Project Gutenberg uses P2P technology to facilitate the distribution and discussion of full literary works⁵ and films⁶ now in the public domain; recipients can comment on or adapt certain works to provide new insights and features. Microsoft has used the Altnet network to distribute promotional videos.⁷

In the music business, P2P file-sharing can complementary functions in networks like Weed (which pays commissions to secondary distributors of works) and Cornerband (which has introduced a highly innovative search mechanism). This word-of-mouth distribution can benefit independent labels and “jam bands” (such as Phish, Widespread Panic, and moe) that permit fans to tape and trade music performed at live concerts.⁸

³At <http://www.ifilm.com> (retrieved January 14, 2005).

⁴At <http://www.atzio.com> (retrieved January 6, 2005)

⁵For example, Project Gutenberg, which “...is the oldest producer of free electronic books (eBooks or etexts) on the Internet. Our collection of more than 12,000 eBooks was produced by hundreds of volunteers. Most of the Project Gutenberg eBooks are older literary works that are in the public domain in the United States. All may be freely downloaded and read, and redistributed for non-commercial use.” <http://www.gutenberg.net> (retrieved August 23, 2004).

⁶ For example, the [Prelinger Archives](#), which was founded in 1983 by Rick Prelinger in New York City. Over the next twenty years, it grew into a collection of over 48,000 “ephemeral” (advertising, educational, industrial, and amateur) films. In 2002, the film collection was acquired by the Library of Congress, Motion Picture, Broadcasting and Recorded Sound Division. Prelinger Archives remains in existence, holding approximately 4,000 titles on videotape and a smaller collection of film materials acquired subsequent to the Library of Congress transaction.” <http://www.archive.org/movies/prelinger.php> (retrieved August 23, 2004).

⁷Martin La Monica, “Microsoft makes P2P play”, CNET NEWS.com, February 26, 2003. The company also has purchased Xdegrees and invested in Groove Networks as part of an integrative P2P strategy designed to promote application software. Sandeep Junnarkar, “P2P boost for Microsoft’s .Net?”, CNET NEWS.com, September 16, 2002..

Artists 50 Cent and Linkin Park catapulted themselves to platinum success by releasing material on P2P networks before hitting radio and the retail stores. Finally, major labels themselves use network research from Big Champagne to track which songs are heavily traded in local areas in order to suggest modifications in radio airplay and store retailing.⁹

Peer-to-peer networking also makes possible *distributed computing* (a/k/a grid computing, edge services computing), a framework that permits integrated processing and storage to occur simultaneously on nodes that are distributed on the network circumference. By concentrating and utilizing available storage and process space on different machines, distributed computing enables cell phones, handheld devices, and ordinary computers to have the same power as massive Web servers.¹⁰ Distributed computing is also a highly efficient means of integrating work effort. It is now used in proprietary corporate networks,¹¹ bio-medical studies,¹² and academic research¹³ for legitimate purposes such as streamed media/video, data processing, document collaboration, backup storage, voice-over-IP telephony, and anonymous publication – as well as charitable¹⁴ and scientific¹⁵ computing clubs¹⁶ in which members of the public may freely engage.

⁸“Jam Bands Redefining Economics of Music Industry,” *Glide Magazine*, July 18, 2003, <http://music.press-world.com/v/1448.html> (retrieved June 12, 2004).

⁹D. C. Chmielewski, “Music Labels Use File-Sharing Data to Boost Sales,” *The San Jose Mercury News*, March 31, 2004, <http://www.mercurynews.com/mld/mercurynews/news/8318571.htm?1c>.

¹⁰J. Borland, “Sun’s Joy rapturous over Jxta”, CNET NEWS.com, June 6, 2001.

¹¹Founded by GlaxoSmithKline and Incyte Genomics, DiaDexus is using open-source Linux-based grid computing to bring genomic biomarkers to market as diagnostics. “With advantages of redundancy, scalability, and ... higher return on investment than traditional computing, distributed computing technologies are turning processing power into an on-demand utility.” S. Keating, “Cluster, Grid Computing: Greater than Sum of Parts”, September 16, 2004, at <http://www.ddd.mag.com/> (retrieved January 5, 2004).

¹²“In 2003, with grid computing, in less than three months scientists identified 44 potential treatments to fight the deadly smallpox disease. Without the grid, the work would have taken more than one year to complete.” At http://www.worldcommunitygrid.org/about_us/about_us.html (retrieved January 5, 2005).

¹³“The Human Proteome Folding project will provide scientists with data that predicts the shape of a very large number of human proteins. These predictions will give scientists the clues they need to identify the biological functions of individual proteins within the human body. With an understanding of how each protein affects human health, scientists can develop new cures for human diseases such as cancer, HIV/AIDS, SARS, and malaria.” At http://www.worldcommunitygrid.org/about_us/about_us.html (retrieved January 5, 2005).

¹⁴The World Community Grid now uses shared computer resources for aid to victims of the Asian tsunami. at http://www.worldcommunitygrid.org/about_us/about_us.html (retrieved January 5, 2005).

¹⁵<http://www.seti.org>.

¹⁶ For example, <http://www.dslreports.com/shownews/44897> (retrieved January 5, 2005)

Regarding media applications, the efficiency of distributed computing could greatly help movie and game services that demand great amounts of transmission bandwidth, as well as on-demand music video and live concert services with needs for wide ranges of capacity and system flexibility. Both types of video applications have attracted the designs of cable operators determined to sell Internet access through set-top boxes generally located in convenient viewing areas.; e.g., Comcast has begun to offer on-demand video from MTV2, BET, and Fuse.¹⁷ Music Choice recently expanded into on-demand music videos that are available to Sprint PCS Vision customers,¹⁸ and programming leader MTV has announced plans to offer a competitive music service that will include video content.¹⁹ In a deal with Universal Music in December, 2004, Gotuit will provide an interactive platform that will allow customers to play video clips in any order, and find desired locations in a particular video.²⁰ As video services attract more audience, P2P technology may attract content providers and distributors anxious to store files efficiently and to conserve bandwidth.

3. COPYRIGHT INFRINGEMENT

These attractive uses of peer-to-peer distribution and grid computing evidently contrast with the abuse of the same technology by copyright infringers. The problem is evidently not so much the presence of a particular technology as the way of defining and enforcing basic property rights. In legitimate networks, the rights to seed, distribute, edit, and exclude content are defined and assigned either exclusively or collectively to a controlled group, and enforcement is made relatively simple through the use of technology. These same rights are poorly enforced in rogue file-sharing networks where copyrighted content is traded without authorization.

At present, well over 90 percent of files now traded on P2P networks appear to be nothing more than unchanged copyrighted works previously ripped and uploaded without authorization from the rights owners.²¹ Network operators profit from this activity by selling advertisements and software to the user base; they can also track activity of consumes and resell the information to sellers. They also may profit by adding a stratum of protected content that does not infringe copyright. Unauthorized downloading can potentially displace sales and licensing opportunities for legitimate product, and further reduce the chances for success of competitive service applications.

¹⁷ P. Resnikoff, "Music Video On-Demand Invades Cable Boxes", Digital Music News, December 2, 2004.

¹⁸ P. Resnikoff, "Music Choice, Sprint Pair on Mobile Music Offering", Digital Music News, December 20, 2004

¹⁹ P. Resnikoff, "MTV Prepares Digital Music Store for 2005", Digital Music News, December 9, 2004.

²⁰ P. Resnikoff, "Gotuit Expands Music VOD with Universal Deal", Digital Music News, December 9, 2004.

²¹ Ibid.

As an economic matter, the primary challenge is to define and enforce clear property rights. Once property rights are so defined, markets can be used to set prices; new technologies, processes, and business models can compete through ‘creative destruction’.²² If the market is to be an enabling system, an economic justification for depriving a copyright owner of his market entitlement exists only when bargaining difficulties and other market flaws impair the market’s ordinary ability to facilitate exchange.²³ .

4. TECHNOLOGICAL COMPETITION AMONG THE MUSIC SERVICES

It is instructive to review the present state of competition for in the online services that now distribute authorized music content.

1. At least Apple, Sony, Napster, RealNetworks, Walmart, Microsoft, Virgin, and MusicMatch have attracted brand name recognition as music providers in the year 2004. The present state of the market is a far cry from 2001 when the initially offered services of MusicNet and Pressplay did not attract much fan interest.
2. None of the major retail services is owned or controlled by any label. While the major labels now provide catalog to these services, each may license independent content as well. For example, market leader iTunes now sells from a catalog of over 1 million songs gleaned from 300 labels, including songs from each of the four major recording companies – Warner, Universal, Sony/BMG and EMI. The Antitrust Division of the Department of Justice in 2003 dropped a two-year investigation of anti-competitive restrictions in label licensing practices.²⁴
3. Online music services have sampling capabilities that facilitate shopping and listening. As the leading subscription service with nearly 600,000 accounts, Real Network’s Rhapsody provides an “all you can eat” streaming service for \$9.99 per month; Virgin recently launched a competing service for \$7.99 with a larger catalog of tracks.

²²J. A.Schumpeter, CAPITALISM, SOCIALISM, AND DEMOCRACY (New York: Harper Collins, 1947).

²³W. J. Gordon, “Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors”, 82 COL. L. REV. 1600 (1982). The author continues: “Only where the desired transfer of resource use is unlikely to take place spontaneously, or where special circumstances such as market flaws impair the market’s ordinary ability to serve as a measure of how resources should be allocated, is there an economic need for allowing nonconsensual transfer.” At 1615. A similar point is made by W. M. Landes and R. A. Posner, “An Economic Analysis of Copyright Law”, 18 J. OF LEG. STUD. 325, 357 (1989). .

²⁴ Statement by Assistant Attorney General R. Hewitt Pate Regarding the Closing of the Digital Music Investigation, at http://www.usdoj.gov/atr/public/press_releases/2003/201946.htm (retrieved October 5, 2004)

4. Yet other services involving “word of mouth” and personalization are now made possible through digital technology. MusicMatch allows friends to send playlists to one another; recipients may sample tunes up to three times for free. Weedshare actually pays 35 percent of sales revenues to customers who distribute songs to other users through email, blogs, or website. Similar superdistribution services are now made available from PassAlong Networks and Wurd Media. OD2 provided a personalized recommendation service where professionals would select monthly tracks to a subscriber based on an analysis of her preferences from the previous month.

5. Service prices are now at competitive levels. The market price of 99 cents per download that now prevails on iTunes, Sony Connect, MusicMatch, and Napster is roughly equal to the related incremental cost of content, bandwidth, credit card services, and administration that these services pay. This parity of price and cost is consistent with what would be expected in a competitive market.

6. The business models provide highly experimental ways of learning buyer tastes. Apple and Sony operate their music services at losses in order to sell playing devices at considerable profit. Yahoo and MusicMatch merged two major platforms in order to promote advertising and music to a wide base of customers. Starbucks allows customers to burn tracks from in-store locations and avoid paying for bandwidth and related distribution services. Music Rebellion allows prices to vary throughout the product cycle. Circuit City recently bought up the digital music platform MusicNow (f.k.a. FullAudio), Target has a distribution deal with Napster, and Best Buy distributes music services from Rhapsody and Napster. McDonald’s, Pepsi, and American Airlines inter alia, have sold music bundled with other merchandise.

7. With distribution platforms now proving their adaptability to consumer tastes, more independent labels are finding their way to market. As the market leader in downloads, Apple’s iTunes now targets “indie” fans with catalog rights to over 300 labels;²⁵ Microsoft now offers content from 3,000 independent labels.²⁶ All-independent catalogs at eMusic and Audio Lunchbox include 3,500 and 4,200 labels;²⁷ other legitimate P2P networks -- Wippit, Weed, IntentMedia, and Cornerband – also sell licensed catalog drawn exclusively from independent labels. Indeed, while major label business financially suffered in 2001-2004, a number of independent labels did very well in the same period,²⁸

²⁵“Are Indies Spurring the iTunes Catalog Lead?” *Digital Music News*, August 12, 2004, <http://www.digitalmusicnews.com/yesterday/august2004> (retrieved August 12, 2004).

²⁶“Microsoft Announced MSN Music Store, Many Players,” *Digital Music News*, October 12, 2004, <http://www.digitalmusicnews.com/yesterday/august2004> (retrieved October 12, 2004).

²⁷“AudioLunchbox Serves Massive Indie Catalog,” *Digital Music News*, October 4, 2004, <http://www.digitalmusicnews.com/yesterday/october2004> (retrieved October 4, 2004).

8. A key obstacle to the faster takeoff of the new music services is the infringing use of peer-to-peer technology. While market leader iTunes has sold over 200 million songs since its inception in April, 2003, P2P file-sharing may have enabled up to 5 billion downloads per day at the end of 2003.²⁹ File sharers now take for free many of the same files that a competitive music service would sell for a reasonable profit. This bypasses the competitive and innovative structure for digital distribution of music that is now evolving. The power of the potent and reactive forces unleashed in the market crucible will be weakened considerably if infringing services continue to preempt the market space and predetermine the outcome.

5. DIGITAL RIGHTS MANAGEMENT AND VERSIONING

Legitimate peer-to-peer technology can implement two important functionalities – digital rights management and acoustic fingerprinting.

Digital Rights Management: Legitimate music services and content owners now use technologies for access protection and digital rights management to protect content. As a protective strategy, access protection and DRM reduce the danger of unauthorized reproduction and distribution, and therefore provide greater incentive for the production and presentation of new content.

However, there is a second dimension to the protection strategy. If successful, DRM eliminates the opportunity for unauthorized redistribution by any buyer. With technological protection against arbitrage, DRM provides to content suppliers the ability to market different versions of digital product. For example, the right to download, copy, and lend a legally accessed movie or sound recording may be priced differently than the right simply to download content without making further transmissions or reproductions. Accordingly, DRM enables versioning – the offering of granular or more personalized options to individual users.³⁰ Versioning allows rights owners to price individual components and extract varying payments from different kinds of users.³¹

Acoustic Fingerprinting: To complement protections, Relatable, Audible Magic, Snocap, and other security services have devised “fingerprinting” (acoustic analysis) technologies that can be used to identify and filter illegal downloads (or require payment

²⁸L. Margolis, “Independent’s Day,” *Christian Science Monitor*, <http://www.csmonitor.com/2003/0411/p13s02> (retrieved September 27, 2004).

²⁹At http://news.com.com/Online+musics+winners+and+losers/2030-1027_3-5133561.htm (retrieved October 5, 2004)

³⁰C. Shapiro and H. R. Varian, *INFORMATION RULES*, (Boston: Harvard Business School Press, 1999), 53-82

³¹W. Gordon, “Intellectual Property as Price Discrimination: Implications for Contract”, 73 *CHI-KENT LAW REVIEW* 1367.

or other consideration before allowing access to copyrighted works).³² Deployed as protective filtering for Napster in 2001, Relatable technology actually identified recordings based on acoustical properties embodied in their respective waveforms. Background library information was provided by Gracenote. Though some errors emerged in the year of deployment, new advances in filtering technology have reduced the problem considerably.

An event in November, 2004 may be an important harbinger of things to come. In that month, Universal Music Group (UMG) entered into a licensing deal with Snocap, a filtering technology company founded by Napster developer Shawn Fanning that will provide a one-stop shop for P2P rights licensing, track catalog, and e-commerce needs.³³ It was also disclosed in November, 2004 that Sony BMG Music had entered into wider talks with Snocap and the Grokster file-sharing network.

Under the envisioned integrated system, Snocap would provide a service to control usage of Sony BMG content on a new file-sharing service, provisionally called Mashboxx, that would be controlled by Grokster. Sony BMG will make some content -- such as music from new artists and low-fidelity versions of content from established names -- available for free downloading; other content will be controlled by fingerprint filtering and require payment. This would provide Sony the ability to use P2P to determine the potential demand for new releases. With a filtering service expected to launch in early 2005, it is currently unclear which any major P2P network will actually take up the offer, which would evidently place them at an immediate disadvantage compared with those services that make no attempt to discourage infringing takings.³⁴

6. SERIOUS LICENSING

If buyer agents are to engage in serious dialog with music labels and publishers, they must understand label costs and the basic economics of rational marketing.

Two roughly consistent estimates of label costs now appear in a recent book, *Promises to Keep*, by William W. Fisher.³⁵ Using the more detailed of the two charts,³⁶ the costs of overhead, artist and repertory, marketing, performer royalties, and profits together accounted for \$7.32 of the typical CD in 2001, or \$0.60-0.73 per track (dividing by 10-12

³²J. Borland, "File Swap Killer Grabs Attention," *CNet News.com*, March 3, 2004; John Borland, "New Tool Designed to Block Song Swaps," *CNet News.com*, April 21, 2004. Indeed, Napster was eventually required to apply Relatable technology to filter infringing tracks based on 34 distinct audio characteristics, "Napster, Bertelsmann's Digital World Services Working on Secure Service," *Digital Media Wire* (February 16, 2001), http://www.digitalmediawire.com/archives_021601.html.

³³P. Resnikoff, "SnoCap Hangs Shingle, Offers One-Stop P2P Backend", *Digital Music News*, December 3, 2004.

³⁴P. Resnikoff, "P2P Execs Ponder File-Swapping Issues", *Digital Music News*, December 9, 2004.

tracks per album). These amounts exclude the costs of manufacturing, distributing, and retailing, as well as royalties paid to the publisher of the song.

Record labels now charge legitimate music services a licensing rate of \$0.65 for the right to distribute a single recorded track for permanent download. The difference between this wholesale rate and the familiar retail amount on iTunes (i.e., \$0.99) pays for publisher royalties, bandwidth, credit card use, and administrative operations of the music services. The licensing fee of \$0.65 is comparable to the margin earned in store and club sales, as discussed above.

This equality of the contribution in the digital, store, and club marketing channels is consistent with hard-nosed management and straight-up competition. The Internet now is generally useful as a technology for distributing content, but it is not yet capable generally of breaking most acts. If labels fail to recover the same margin from the new distribution channel, the profitability of any migration of business from store to internet would evidently be a losing proposition. From a financial perspective, it would then be incumbent upon the label to block migration altogether.

However, while present licensing practices are now consistent with a reasonable market benchmark, licensing rates may decrease in the future for a number of important reasons:

First, as the infrastructure widens, labels may increasingly turn to digital venues to break new acts, thereby avoiding the present bottleneck channels – radio, retail outlets, and promotional video—that consume considerable amounts of resources. The industry now spends \$100 million per year for independent promotion on radio stations that provide airplay for only a small fraction of the recorded catalog at a major label. Moreover, radio audiences are dwindling in number, particularly among teenagers and young adults who are more likely to buy music played over the air.

For their part, major retail outlets may actually worsen the bottleneck problem; they often demand a demonstrated potential for radio play as well as compensation for favorable positioning in the store. Record labels that break acts through promotional video on MTV and VH1 must invest the resources in recording the video. If the Internet channels can be built out, the music business may increasingly break acts through recommendation, sampling, and word-of-mouth and reduce their licensing rates as marketing costs decline.

Secondly, the overhead costs identified above are fixed costs that do not change as volume increases. If the digital market is able to stimulate more demand, unit costs decrease even if marginal costs do not. If costs can be monetized over a wider base of sales, it is quite possible that unit licensing rates may decline. Besides generally shifting favorably, the demand curve may also become more price-elastic (i.e., responsive to

³⁵Stanford University Press (Palo Alto) 2004.

³⁶Id., at 264.

changes in price). When elasticity increases, a seller should more readily lower price in order to stimulate greater demand.

Thirdly, labels may willingly reduce licensing rates for a number of related applications - testing the market, promoting an act, and selling backup songs that build fan interest and loyalty. They also may reduce prices for legacy works where prospective A&R and marketing costs are no longer incurred. It is difficult to imagine how alternative compensation systems discussed below would offer the appropriate granularity of different rates.

Finally, independent labels and artists themselves will be able to reach local and national audiences. Even though every act is unique, general competition for the consumer dollar will drive down prices. The capability for wider production and distribution will increase as the digital infrastructure deepens.

7. ALTERNATIVE COMPENSATION SYSTEMS

Several critics have brought forth a number of “alternative compensations systems” that purportedly solve the problem of P2P infringement. In these proposals, users may freely download music, movies, and other forms of content through any file-sharing network.³⁷ Rights owners would be compensated for the takings from the proceeds of a levy assigned to a number of playing devices and services -- burners, disks, portable players, broadband connections, and possibly personal computers themselves. The appropriate rates and royalty structures would be determined by arbitration panels or tribunals administered by the Copyright Office. The idea is imperfectly likened to provisions for levying under the Audio Home Recording Act of 1992 (AHRA) and the Cable Compulsory Licensing Act of 1976.

Specific proposals vary. Neil Netanel of UCLA would allow noncommercial takers to take everything they want except software.³⁸ Terry Fisher of Harvard confines his domain to music and movies that can be monitored in real time, but allows commercial takings as well.³⁹ Professing voluntarism, Jessica Litman suggests that content owners be permitted to “opt out”; she disqualifies record labels entirely from receiving any compensation and therefore guarantees that they will indeed opt out.⁴⁰ Fred von Lohmann of the Electronic Frontier Foundation advances the idea that five dollars a

³⁷For a kind review, see J. Gratz, “Reform in the ‘Brave Kingdom’; Alternative Compensation Systems for Peer-to-Peer File Sharing”, at <http://www.joegratz.net/files/JosephGratz-ReformInTheBraveKingdom-Dec19.pdf> (retrieved October 5, 2004)

³⁸N. W. Netanel, “Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing”, 17 HARV. J. LAW & TECH., December, 2003.

³⁹Supra note 35 and surrounding text.

⁴⁰J. D. Litman, “Sharing and Stealing”, at <http://ssrn.com/abstract=472141> (retrieved October 5, 2004)

month (the equivalent of eight permanent downloads) is sufficient compensation for licensing rights because it seems like a fair price.

As a straight legal matter, no proposal has anything to say about foreign takings. Foreign levies represent a political logjam -- Congress evidently cannot levy a fee on foreign computers or ISP subscriptions, the Copyright Office has no ratemaking authority over them, and no foreign government can reasonably be expected to take up the task of taxing its citizens to recover “due royalties” for American media companies.

More fundamentally, each proposal lacks basic equity. Despite the rhetoric, each proposal is a compulsory tax placed on users; i.e., consumers would be charged levies for the purchase of subscriptions and computer equipment regardless of their actual use of any technology or general taste for online entertainment. Computer users who have no interest in popular music would be harmed by a system of taxation that reduces their wealth and which would possibly stifle their purchases and upgrade of equipment. Herein is a crucial difference with AHRA levies that were imposed only on the sale of digital recorders and tapes; these devices then were specifically related to devices used exclusively for the act of copying.

Each proposal presents a potential administrative and political nightmare. The long-run administration costs for setting and revising license terms through copyright tribunals or arbitration panels are considerable. Moreover, as consumers download increasing amounts of content, copyright administrators will need to reconvene hearings annually just to adjust the levy percentage to keep up with increasing revenue requirements. If the market fills out rapidly, levies must increase accordingly, or be extended to yet other devices. This should be seen both as a potential drag on network growth.

Finally, the economic problems posed by proper allocation are daunting.

1. The panel would face the daunting task of parsing out a fixed pot of revenues to contending uses and determining the relative worth of each. If Netanel’s idea were seriously considered, the panel would need to consider the relative worth of a novel, a movie, a song, a photograph, and a comic strip.
2. By Fisher’s proposal, two hours of content would be compensated equally, regardless of whether the work was a feature length movie, a news documentary, a recorded album, concert video, or television programming. This arithmetic rule fails to consider any relative costs of production and is devoid of any economic meaning.
3. In the foreseeable event that content downloading outgrows anticipated levy dollars, compensation per individual work would necessarily diminish. Content owners then fight for a revenue pot that bears no direct relation to the value of underlying content, or the effort used to produce it. The uncertain nexus between individual effort and anticipated just deserts harms the incentive of a content provider to invest the resources needed to produce and bring commercial wares to market.

4. No author offers any credible discussion of label costs, nor any means of determining whether collected revenues true up to adequate compensation. Fisher suggests that major label cost estimates are irrelevant because internet marketing is about to take over more traditional means of promoting product (sic). Von Lohmann bases his suggested “fair compensation” by ignoring costs
5. Moreover, each proposal establishes a full and expansionary market for permanent downloads. No proposal considers the need for granular licensing for alternative services – streaming, and temporary downloads of various durations – which some customers may actually prefer to P2P file-sharing. Free market licensing is particularly useful to assign different rates to the different types of service, including streaming, permanent and temporary downloads, and playlist recommendations.

8. TOWARD MARKET RESOLUTION

There are eight compelling reasons for the music industry to strike deals with legitimate P2P services:

Promotional Instruments: Peer-to-peer services have broad consumer appeal in a developing market and can be used as promotional devices to “jump start” fan interest. File-sharing can be complemented with playlist distribution, blogging, superdistribution, and personalized recommendation. This enables major labels, independents, and artists to test market demand for new acts.

Installed Base and Lock-In: The largest P2P services have user bases vary more extensive than any music service. As a P2P network attracts more users, the larger shared catalog would gain popularity at the expense of smaller rogue upstarts that may lack substantial catalog.

To create a “virtuous cycle”, labels could actually use promotional strategies to build up the size of the user base. For example, a service operator can offer a free subscription to new members for a limited number of weeks or months. This would enable the network to maintain rapid growth in its shared catalog and enhance its commercial appeal. The positive feedback that leads to more growth in the network then is a conceivable antidote to migration to new systems that continue to share files illegally. Conceivably, customers may actually be willing to pay a premium to purchase subscription from a larger legitimate P2P system.⁴¹

⁴¹ From an economic perspective, customers who forego the digital services for any of these alternatives actually suffer switching costs resulting from an inferior P2P selection.

Ancillary Products: As the base grows, P2P operators can profit through the sale of enhanced software, proprietary content, club memberships, complementary services, and product upgrades. P2P distributors may extend lock-in with complementary services for long-term customers, large buyers, successful distributors, or customer upgrades.

Music Video: The transport and storage efficiencies of P2P networks are particularly useful for entertainment platforms that distribute recorded videos, movies, or games, as well as live concerts and other short interval events, where physical capacity may otherwise be inadequate. As explained above, this application could be relevant to cable and video providers who will more aggressively move into the market in the upcoming year.

Distributed Computing: Service operators may also monetize their costs by selling computing services that have nothing to do with music, movies, etc. Demonstrating creative piggybacking, the Society for Extraterrestrial Information (SETI) provides to users a handsome space-age screensaver in exchange for access to available processing power on the user's computer. SETI uses the available space to perform calculations based on data obtained through the Hubbell Space Telescope. The network's efficiency can grow as more customers download the screen-saver and agree to make computer capacity available. By distributing popular content, private networks can increase nodal penetration and construct similar systems for monetizable uses.

Public Relations: However legitimate its claims may be in court, record industry suits against over 7000 individual users has eroded goodwill of its fan base. A P2P music service would be a "killer application" to restore appeal of record labels to a younger generation. Lawsuits for copyright infringement would hopefully diminish and the labels will organize to aggressively promote a new technology.⁴²

Publisher Interests and Independent Labels: A wide P2P network will enable independent labels with different sounds to present material without having to negotiate the channel bottlenecks of radio, retail, and video. Consequently, the P2P services will enable independent upstarts to more directly compete, to the potential gain of music fans who enjoy new sounds, and the music publishers who own rights to underlying compositions.

Integrated Distribution Channels: Through integrators such as INTENT MediaWorks, content owners may benefit from coordinated distribution of works over alternative channels – peer-to-peer, cable, satellite, download web sites, etc. Intent uses digital rights management to promote content in each sector in various versions, and therefore enables the simultaneous construction of alternative complementary business models that can maximize overall profits. Intent complements its distribution services with customer tracking technology that allows the collection of information in different markets. In January, 2005, INTENT entered in eight distribution contracts with telecom carriers, hardware and software manufacturers for carrying live TV shows, independent films and

⁴² The RIAA is the first trade association to have attracted organized boycotts of its members, replete with appropriate apparel, housewares, auto goods, cards, prints, and tote bags. See <http://www.boycott-riaa.com>

music videos in platforms that included P2P networks, DSL-TV, PC-to-TV replay, and satellite TV & radio.

9. TOWARD COLLECTIVE ACTION

The process for legitimate licensing could be expedited with some limited statutory provision, collective action, and bilateral engagement.

First, the Distributed Computing Industry Association recently recommended to the Copyright Office and the House Judiciary Committee a preliminary statute -- the Peer-to-Peer Distribution of Copyrighted Works Development Act. The act would first direct interested copyright owners to register works for identification with the Copyright Office. The act then requires ISPs and hardware and software companies to deploy protective systems in order to monitor content delivery. Finally, the act provides for competitive pricing and revenue sharing through private negotiations of content licenses.

As a facilitating device for disclosing risks and encouraging competitive responses, P2P software developers and distributors formed the Consumer Disclosures Working Group in June 2004. The Group suggested that protections be established for copyright infringement, as well as a number of other prevalent P2P problems. Problems might be resolved by in the following general manner:

1. Copyright infringement: Digital rights management, acoustic fingerprinting, and watermarking
2. Data Security: Internal P2P software requiring the user to take several proactive steps before her files are uploaded to a network.
3. Pornography: Use of search term/metadata filtering and file type filtering to block access to images and videos.
4. Spyware: Use of third party spyware applications now available to Internet users generally, and possible integration of such capabilities directly into software distributed by P2P operators.
5. Viruses: Anti-virus protections bundled with P2P software programs.

These protections regarding copyright infringement, invasion of privacy, and the distribution of pornography and spyware are potentially widened through a cooperative effort of ten producers in the distributed computing industry. In a joint venture, the cooperative *P2P Revenue Engine* will demonstrate feasible business practices with functionalities that include digital rights management (Digital Containers), acoustical fingerprinting (Relatable), use monitoring (MediaGuide), advertising support (AlmondNet), payment processing (Clickshare), content tracking (Peppercoin), and payment tokens to unlock authorized files (P2P Cash). Shared Media Licensing will provide test content, eDonkey will provide software, and Intent Media Works will construct service options with advertising, subscriptions, and unit downloads.

The market approach to licensing might be expedited further with an industry commitment to enter binding arbitration for royalty setting; procedures can be modeled upon related methods established at the Copyright Office.⁴³ Upon some days of a written license request, the copyright owner must advise the prospective licensee of a reasonable license fee, or some additional information that must be supplied. If the parties are unable to reach agreement within some defined time afterward, the prospective user may apply for arbitrators to determine a reasonable fee retroactive to the date of the request. Parties and arbitrators may draw upon experts to value prospective catalogs.

A particularly useful institution for content licensing would be a buyer's collective – a consolidated negotiating agent that can negotiate use rights for material owned by labels, publishers, and studios. Comparable institutions in the music market include Radio Music Licensing Committee and Television Music Licensing Committee, which negotiate contracts for member radio and television stations for music performance rights controlled by ASCAP. With a collective agency, buyers and sellers may proactively adapt positive licensing -- users can be given a menu of options and the right to construct individual terms of use, both at the time they acquire the content and later on.⁴⁴

10. CONCLUSION

From this economist's perspective, a market-based approach that combines private agencies, government administration, and judicial and legislative oversight should permit matters time to evolve and new information to surface. Market rules designed to meet specific emerging needs of individual players can potentially be open-ended enough to allow modification as more information becomes available. The incrementalist approach is purposely and wisely limited -- restricting considerations, limiting classifications, forsaking measurement, leaving options open, and learning-by-doing. Incrementalists then forsake the spectacular imagined gains from an immediate fix for the prosaic benefits of slow judgment and reversible errors.

⁴³U.S. Department of Justice, Antitrust Division, Second Amended Final Judgment, at <http://www.usdoj.gov/atr/cases/f63000/6395.html> (visited May 5, 2001)

⁴⁴D. J. Gervais, "E-Commerce and Intellectual Property: Lock it Up or License?"; at <http://www.copyright.com/News/AboutArticlesIntellectualProp.asp> (visited June 15, 2001).