

CANADIAN QUANDARY:

Digital Rights Management, Access Protection, and Free Markets

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1. INTRODUCTION

Technology protection measures (TPMs) entail software or hardware controls that can monitor, regulate, and price uses of digital files that contain copyright-protected content. Electronic monitoring here is generally administered through attached rendering software or containment that allows to authorized users the rights to access and copy underlying works. Depending on the price that a user pays, rights owners may also limit use by number of plays, duration of access, temporary or partial uses, lending rights, and the number of devices on which the file may be accessed. Containment can also be complemented with watermarks or flags that signal whether the work is copy-protected.

Among the TPMs, access and copy protection entail technological safeguards that shield a protected work from unauthorized attempts respectively to open or copy, while digital rights management may limit the actual number of times that a work may be accessed.¹ Statutes may minimally disallow the *actual act* of cracking protections; this is equivalent to outlawing lock-picking in anticipation of a burglary. Statues may also disallow the *trafficking or manufacturing of devices* that can be used to do the same; this is equivalent to banning the tools that could be used to pick the locks.

The device ban is the more controversial one, as it would apparently disallow some uses of circumvention tools to crack protection for justifiable uses, such as reaching copyright protected material that has entered into the public domain. The economic rationale behind disallowing the tools is compelling nonetheless. The reproduction leading to the copying or unauthorized access of digital files is done in the privacy of a

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home or office, and the subsequent distribution of perfect copies of the infringed product can be achieved anonymously and easily on the Internet. It is not then practical to monitor private conduct or to institute lawsuits against identifiable individuals in order to deter sequential copies and retransmissions. If private enforcement to be made efficient, the more effective legal remedy is to target the manufacture and distribution of circumvention tools. In reference to other protections of media, the device ban should be likened to measures that disallow “black boxes” to decode scrambled cable signals or devices that circumvent the Serial Copy Management System

Examined as market facilitators, access protection and DRM may then reduce the dangers of unauthorized reproduction and distribution of copyrighted works, and therefore provide greater incentive for digital presentation of new content and software. However, there is a positive side for economic consideration as well. By eliminating arbitration, DRM may also enhance the range of producer offerings, deepen service versions, and enable more market combinations and organizational modes. In particular academic and library uses, agents can then be expected to come to accommodative licensing arrangements and institutions that enhance transaction efficiency yet further. The upshot is that a free market may drive digital techniques toward beneficial ends in a manner that the harshest critics might have not appreciated.

In 1997, a slate of national signatories (including Canada) agreed to ratify the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty. Per the respective Article 11 and Article 8,² each treating party must provide “adequate legal protection and effective legal remedies against the circumvention of effective technological measures” used by authors, performers, or producers of phonograms “in connection with the exercise of their rights.” The treaty commitments came into force in 2002 with the signing of the requisite number of parties. While a great number of nations have passed enacting legislation, Canada has yet to pass the requisite act required by its signature to the treaties.

¹47 U.S.C. § 553a and 17 U.S.C. §1002(c).

2. ISSUES IN CANADA

In an attempt to comply with its WIPO commitment, the Canadian government in 2005 introduced Bill C-60. With the election call in late 2005, the bill died on the order paper. Section 34.02(1) of the bill would have outlawed the elemental act of circumventing technological measures designed for copyright protection, but established no equivalent protection for the related circumvention of access protections nor the trafficking of tools that could be used to circumvent any protection – access or copyright. In its limited provision, the proposed bill would have been entirely incongruent with legislation enacted in the U.S., Germany, Greece, the Netherlands, and the U.K., as well as the EU Copyright Directive.³

Compared with legislation implemented by other WIPO signatories, the anti-circumvention provisions of Canada's Bill C-60 then would have outlawed certain direct acts of piracy, but only where copyright infringement itself could be proven, and not permitted any action against the manufacture or distribution of the actions or tools related to the circumvention of owner controls for copy or access protection. As explained above, the law would require content owners to locate and monitor the actions of individual computer users for their particular private actions,⁴ or attempt to oversee the acts of service providers or distributors for constructive knowledge. Such limited protection would be very inefficient.

The facts of the present marketplace support the hypothesis that Canada leads in broadband penetration but lags in copyright protection. Indeed, studies in the U.S., Japan, and France show the two are related; broadband users are far more likely to download files.⁵ With a 2004 rate of broadband penetration (38%) that exceeded that of

²World Intellectual Property Organization, Copyright Treaty, Article 11; Performances and Phonograms Treaty, Article 18; adopted December 20, 1996, Geneva, Switzerland.

³B.B. Sookman, et al., Technological Protection Measures -- Proposals for Amendments to the Copyright Act, March 2, 2006, 28.

⁴Id., 30-32. See comments by Mihaly Ficsor, Jorg Reinbothe and Silke von Lewinski, and Jane Ginsburg.

⁵OECD, *Report on Digital Music: Opportunities and Challenges*, 17, at http://www.oecd.org/document/46/0,2340,en_2649_201185_34994926_1_1_1_1,00.html

the U.S. and every country in Europe,⁶ Canada also had in the same year the highest measured ratio of P2P users as a percentage (1.2%) of total population, easily outdistancing U.S. (0.9%), France (0.6%), and Germany (0.6%).⁷ In 1998-2003, sales of audio product (expressed in constant U.S. dollars) fell at the fastest rate (31.4%) of any OECD country except Denmark (43.0%).⁸ A Pollara study commissioned by the Canadian Recording Industry Association found that most Canadians (22%) who bought less music admitted that the prime reason for doing so was downloading.⁹

Compared with the U.S., some 37% of Canadian music consumers admitted in 2003 to downloading music with file-sharing software; the corresponding U.S. figure was 18%.¹⁰ The mean numbers of downloaded files per month in the two countries were 67 and 26 works per user.¹¹ Among people who burned CDs, per capita takings in Canada outpaced the U.S. by a factor of three.¹²

The consequence of Canada's overall lax behavior is ironic. An educated and wealthy nation, Canada's combined record on weak copyright protection and customs governance earned the nation in 2004 a ranking on the U.S. watch list for weak protection of intellectual property.¹³

Without the statutory protection of TPMs, Canada now lacks the ability to prosecute a number of actions against circumvention recently seen in the U.S.¹⁴ In *Real Networks, Inc. v. Streambox, Inc.*, 2000 WL 127311 (W.D. Wash. 2000), the plaintiff obtained an injunction against a circumvention technology that otherwise would have

⁶Canada lagged only Korea (75%) and Taiwan (54%).

⁷OECD, *supra* note 5, Annex Table 3.4, 108.

⁸International Federation of Phonographic Industries, 2004, 176

⁹G. Henderson, A National Dialogue on the Need to Safeguard and Promote Products of the Mind, Canadian Recording Industry Association, 2005, 5

¹⁰International Federation of Phonographic Industries, *The Recording Industry in Numbers* (2004); 27.

¹¹*Id.*

¹²*Id.* Fewer Canadians appear to have owned the equipment to burn CDs.

¹³B. McKenna, U.S. puts Canada on Piracy Watch List, *Globeandmail.com*, May 1, 2005.

¹⁴B. B. Sookman, *Technological Protection Measures: Do the Anti-Tampering Protections Go too Far or Not Far Enough?*, 19-23.

permitted uses to crack protection to make permanent copies of streamed files. In *Universal City Studios Inc. v. Corley*, 273 F. 3d 429 (2nd Cir. 2001), motion picture studios stopped the distribution of a descrambling technology that cracked protection of movies encrypted with their content scrambling system. In *321 Studios v. Metro Goldwyn Mayer Studios* 307 F. Supp. 2d 1085 (N.D.Cal. 2004), the court held against a decoding technology that would have decrypted DVDs for the purpose of making backup copies that would purportedly be confined – with no technological protection whatsoever -- only to home use. In *U.S. v. Elcom Ltd.*, 203 F. Supp 2d 111 (N.D. Cal. 2002), the U.S. Department of Justice prosecuted a defendant for selling an anti-circumvention tool that would have defeated copy controls from electronic books distributed using Adobe's Acrobat eBook Reader.

3. CONSUMER CHOICE AND VERSIONING

Critics argue that anti-circumvention protections may prohibit legitimate uses of works. In most jurisdictions this has been addressed by passing strong protections for anti-circumvention devices, but providing exemptions that allow particular acts of circumvention (as the U.S. Digital Millennium Copyright Act has done in six specific domains¹⁵), or by authorizing administrative reviews intended for the same purpose (as the U.S. Copyright Office performs every three years).¹⁶ By contrast, Bill C-60 opted to set the level of protection so low that no such exemptions would even be required. The problem with such an approach is that it eviscerates entirely the application of anti-circumvention rules, which can be quite efficient, for the sake of anomalous exceptions.

¹⁵ 17 U.S.C. § 1201(d)-(j) now provisionally relaxes use restrictions for nonprofit libraries, archives, and educational institutions; encryption research; protection of personal identifying information and security testing; use and trafficking restrictions for access circumvention devices for prevention of access of minors to the Internet material, and § 1201(a)-(b) use and access/copy circumvention devices for purposes related to law and enforcement and reverse engineering.

¹⁶ 17 U.S.C. 1201(a)(1)(C). In conducting its rulemaking, the Librarian was to consider 1.) the availability for use of copyrighted works, 2.) the availability for use of works for nonprofit archival, preservation, and educational purposes, 3.) the impact on criticism, comment, news reporting, teaching, scholarship, or research, and 4.) the effect on the market for other copyrighted works. *See also* Committee on Commerce, House of Representatives, Digital Millennium Copyright Act of 1998, H.R. Rep. No. 105-551, 37 (1998).

In any event, critics who fear the loss of consumer uses often fail to consider countervailing market forces that serve to control the potential abuses that they imagine. For example, whether “space shifting” or “burning” is legally an exception or not, a content owner unwilling to allow buyers to move music tracks off of a hard drive will surely lose market appeal. However such actions are viewed, content providers who heedlessly hinder customer control actually reduce the value of the product that they sell in the market. In a fiercely competitive and expansive sector for the entertainment dollar, doing so will reduce consumer demand, the user base, and producer profits.¹⁷ Consequently, the ability to monetize the value of each service may lead producers to offer a great number of consumer rights that legal “fair use” does not cover.¹⁸

But TPMs may actually provide positive benefits to consumers. With DRM, content owners may design attractive menus of diverse services with different prices. For example, the ability to download, burn, and lend a legally accessed movie would be priced differently than the ability simply to view the work without making further transmissions or reproductions. By presenting complex combinations of product features, rights owners may price discriminate by pricing individual components differently and thereby by extracting varying payments from different kinds of users.¹⁹

In economic parlance, DRM enables *versioning* – the offering of granular or more personalized options to individual users.²⁰ For example, movie studios make film release available at the first-run box office to the most eager viewers; while more patient

¹⁷D. Friedman, “In Defense of Private Orderings: Comments on Julie Cohen’s “Copyrights and the Jurisprudence of Self-Help’,” *Berkeley Technology Law Journal*, vol. 13, 1998, p. 1151.

¹⁸ A. Okerson, Associate Director of the Yale University Library, continues to stand by comments that she made in 1997 concerning libraries and fair use, “The market has brought librarians and publishers together; the parties are discovering where their interests mesh; and they are beginning to build a new set of arrangements that meet needs both for access (on the part of the institution) and remuneration (on the part of the producer) ... [Price issues notwithstanding], libraries are able to secure crucial and significant use terms via site licenses, terms that often allow the customer’s students, faculty, and scholars significant copying latitude for their work ..., *at times more than what is permitted via the fair use and library provisions of the Copyright Act of the U.S.*” [emphasis mine]. Ann Okerson, “The Transition to Electronic Content Licensing: The Institutional Context in 1997,” *Scholarly Communication and Technology Conference of the Andrew W. Mellon Foundation*, Emory University, April 24-25, 1997, p. 1, <http://www.library.yale.edu/~okerson/mellon.html>

¹⁹ W. Gordon, “Intellectual Property as Price Discrimination: Implications for Contract,” *Chicago-Kent Law Review*, vol. 73, 1998, p. 1367.

²⁰C. Shapiro and H. R. Varian, *INFORMATION RULES*, (Boston: Harvard Business School Press, 1999), 53-82

individuals may view the same movies on pay-per-view, cable, rented video, or Netflix. The prospective use of differing versions and prices is particularly appropriate for content industries, where vast production costs that are sunk upfront must necessarily be recovered through imaginative marketing of the resulting product.²¹

With versioning, smaller and first-time users may gain from having “no frills” service, free previews, or time-limited introductory offers. However, this will happen only if these products cannot be repackaged and made available to high-end users, who could otherwise be expected to choose a more deluxe version with a higher price. For their part, the more intense users of any product can be expected to wind up paying more,²² but they may benefit nonetheless because producers have greater incentives to innovate and introduce more deluxe features in order to monetize more of the high-end base.

As noted, if versioning is to operate effectively, resale or arbitrage between low- and high-end markets cannot be permitted. Therefore, DRM protections that stop the resale or redistribution of content from one market segment to another are useful to this end result. Presenting the economic concept, Terry Fisher – now an academic critic of digital rights management -- would have once concurred; Fisher wrote in 1988, “judges should watch for situations in which unauthorized use of copyrighted material undermines price discrimination schemes [i.e., versioning] and should be chary of holding such uses fair.”

Protection against circumvention is actually a social contract that facilitates the buildout of the digital network. As more uses of digital technology emerge, these enabling networks evolve due to positive synergies between content, hardware, and distribution technology. For example, as more users have digital access to preferred music titles, more player software will be installed and more users will switch to broadband to accommodate easy download. As the installed consumer base widens, more music content can be profitably digitized and transmitted. The availability of more content will lead yet more users to install more accommodating software and broadband

²¹W. W. Fisher, “Reconstructing the Fair Use Doctrine”, 101 HARV. L. REV 1661, 1742 (1988).

service, which will encourage production and digitization of yet more content, etc. Each component of the model then is a network good that increases in value as the size of the overall system expands.²³

However, the ongoing development of these interrelated network effects depends critically upon the willingness of content owners to make material available for digital distribution in the first place. Indeed, serious reductions in network synergies can result if major record labels or movie studios were instead to decline to distribute their key wares through the newly emerging digital platforms. This makes access protection a critical element of a network strategy. Beyond the means of any one player to implement, social contracts regarding circumvention may resolve the problem by enforcing collective compliance among people who individually may have reasons to circumvent controls.²⁴

4. THE MUSIC SERVICES

Nowhere are the potentialities of DRM made more evident than in the evolving market for music services. Beginning in the year 2003, a number of events have reordered the constellation of suppliers and services considerably, as new entrants pushed early leaders for customers and long-term market position. The below discussion deals with the U.S. market:

In April, 2003, Apple Computer first launched an innovative Internet music store, iTunes, that was soon to become the market leader in legitimate downloads.²⁵ Encoded with Advanced Audio Coding, individual songs at iTunes cost 99 cents apiece.²⁶ The key

²²A. M. Spence, "Optimal Nonuniform Price Schedules", J. PUB. ECON. (1977). The resulting price schedule can usually be expected to be volume-discounting. That is, producers will generally charge less money for each succeeding unit of production or day of storage.

²³ The theory of network goods is more fully introduced in M. Katz and C. Shapiro, "Systems Competition and Network Effects", J. ECON. PERSPECTIVES, 8, 93.

²⁴M. Olsen, THE LOGIC OF COLLECTIVE ACTION: THE THEORY OF PUBLIC GOODS (Cambridge: Harvard University Press, 1972).

²⁵J. Borland, "Apple Unveils Music Store", Tech News, CNET.com, April 28, 2003; "iTunes Sells 1.5 Million Songs During Past Week: Five Times Napster's First Week Downloads", Yahoo!Finance, November 6, 2003.

innovation of Apple was its light-handed but elegant rights management system, called Fairplay, that allowed buyers to transfer tunes to Apple iPod players, burn unlimited numbers of CDs, and transfer downloaded songs to up to three other hard drives²⁷

A competitive a la carte download service with some additional attractive features is Musicmatch, which provides downloads in order to complement its popular music management jukebox.²⁸ With free jukebox software, basic users of Musicmatch may buy a 99 cent download; deluxe users can choose an upgraded service that has faster burn speeds and avoids upgrade ads. With considerable jukebox functionalities, Musicmatch also offers a personalization service (which Apple lacks) that monitors the record of an individual's downloads in order to make personalized recommendations, and two radio services that track user preferences to compose interactive "radio stations" with personal content.

In a legitimate relaunch since October, 2003, Napster offers a different combination of downloading and streaming services.²⁹ For 99 cents a track, Napster users may choose individual songs for download (and burn). Users may also purchase an optional service that enables streaming and tethered downloading of tunes supplied by 40 interactive radio stations.³⁰ Free services for all Napster users include music videos, thirty second samples, online articles, Billboard charts, inter-user email, and browsing of playlists and recommendations; there is no digital personalization.

At the moment, Real Networks' Rhapsody offers the leading alternative model to downloads a la carte.³¹ The key competitive feature here is "all you can eat" interactive streaming, which is made available for \$9.95 per month; individual burns at Rhapsody

²⁶With one-click purchase and no subscription fee, the iTunes Music Store includes no general streaming service, but 30 second samples are available for free. With Apple's networking technology, Rendezvous, several Mac users on a wireless network can share collections through streaming. *Id.*

²⁷J. Borland, "Apple's Music: Evolution, not Revolution", Tech News, CNET.com, April 29, 2003

²⁸Forrester Research, "Commentary: Facing the Music", Tech News, CNET.com, October 20, 2003; Musicmatch 8.1", Tech News, CNET Reviews.

²⁹J. Borland, "Napster Launches: Minus the Revolution", Tech News, CNET.com, October 9, 2003

³⁰*Id.*

are available at 79 cents apiece. The Rhapsody service also offers access to 50 commercial-free stations. As another primary attractive feature, the software (Real Player 10) now accommodates music purchased from all formats, including iTunes.³²

A first run service in 2001, MusicNet now offers customized download/subscription services, radio, and video that individual companies may brand and redistribute to retail customers. With access to MusicNet, wholesale buyers may construct retail offerings to appeal to different market niches. With a catalog of over 1.2 million songs pulled from twenty-five thousand different labels, the wholesaler now also distributes through Yahoo!, AOL, Virgin Entertainment, HMV, Trans World Entertainment, Cdigix, and Synecor; it now provides more music for ultimate sale than any one retail service.

A second generation of providers followed in the next year. Over 180 new services launched globally. In the U.S., Sony launched in May, 2004 a competitive download service, called Connect, to promote tracks for its leading Walkman player.³³ Walmart, a competitive nemesis in the 1990s that has used music as a strategic loss leader to attract people into retail stores, introduced a download service at 88 cents per track for a similar strategy for its digital stores.³⁴ A third major entrant, Microsoft, came to provide a music service to win customers back from iTunes.³⁵ Fourth, a great number of advertisers (e.g., Starbucks, McDonald's, Pepsi, American Airlines, Citibank, and The Gap) have come to sell or give away music tracks in order to promote other products. Finally, retail outlets have partnered with music services to offer one-stop shopping for music fans; e.g., Target distributes Napster, and Best Buy distributes Rhapsody and Napster.

³¹Real Networks purchased Rhapsody in 1993 from Listen.com, which originally conceived the service as an all-streaming subscription service (i.e. a "celestial jukebox") with unlimited monthly use. Rhapsody eventually came to enter into licensing agreements to permit burning as well.

³²J. Borland, "Real Offers New Tech, Song Store", Tech News, CNET.com, January 7, 2004.

³³R. Shim, "Sony Unveils Music Store: Gadgets at CES", Tech News. CNET.com, January 7, 2004.

³⁴At <http://musicdownloads.walmart.com> (retrieved January 13, 2004)

³⁵ J. Borland, "Microsoft Music Stores to Open Next Year", Tech News, CNET.com, November 17, 2003. Any advantage for a music service will widen with the adoption of Microsoft's Windows Media Center, which would allow a PC interface with home TVs and stereos. S. Musil, "Week in Review: That's Entertainment", Tech News, CNET.com, January 9, 2004

Perhaps the most interesting play in 2004-2005 was made by Yahoo!, which uses music to attract eyeballs and sell advertisements in a strongly recovering market.³⁶ As a particular aggressive player in the past two years, Yahoo! Music now serves over twenty-five million users per month. Yahoo! entered the music sector in 2001 with a buyout of the programmable online radio chain Launch Media. In 2004, Yahoo! doubled its listening audience with an acquisition of the aforementioned Musicmatch. Finally, Yahoo! announced in May 2005 a new beta release of a competitive subscription service, Music Unlimited, with deeply discounted introductory rates (as low as four dollars and ninety-nine cents per month).³⁷ Playing for platform openness, Yahoo! is also developing an audio search engine feature that can search for tracks over all available services, and has designed its Music Engine to accommodate user plugins that will include podcasting.³⁸ Both AOL and MSN now similarly have integrated music service and online search

Seven general models then seem now to prevail among the strongest survivors in the U.S. market – downloads plus hardware (Apple), downloads plus combined with software (MusicMatch/Yahoo!), downloads plus interactive radio (Napster), streaming plus burning (Rhapsody and Yahoo), music plus merchandise (Target and Best Buy), music plus advertising (Yahoo! and AOL), and wholesaling (MusicNet). Reflecting the dynamics of vigorous competition, the market then has moved some distance from the original business models of the two first music services – MusicNet and Pressplay – which were controlled by the major record companies. Jointly owned by these companies, MusicNet (Warner, EMI, BMG) and Pressplay (Universal, Sony) originally allowed full sampling through streams and downloads, but disallowed permanent sales; access to all rented downloads ended at termination of service (although Pressplay permitted a limited number of burns for an additional fee).³⁹ As subscriptions trailed and illegal file-trading continued, the importance of music ownership and related portability became evident to all, particularly Steve Jobs at Apple). Roxio integrated Pressplay into

³⁶Knowledge@Wharton, “What’s Holding Back Online Music?”, Tech News, CNET.com, July 12, 2003. e

³⁷Insight, “Yahoo! Music Engine Really Rather Good”, May 19, 2005.

³⁸Digital Music News, “Music Search Engines Offer Interesting Possibilities”, May 18, 2005

Napster after buying it from Universal and Sony, while MusicNet widened the range of offerings to its wholesale buyers to include permanent downloads.

5. THE ECONOMICS OF THE MARKET

There are seven general points to be made regarding competition in the market for music services. First, content protection works. Catalogs at the major services have increased from early amounts of 300,000 songs to well over one million.⁴⁰ This has happened because labels feel safe enough with the security that services provide. With a growing online catalog, the number of people who use legitimate networks appears equal to the number who use file-sharing, the global base for subscription services has increased from 880,000 in 2004 to 2.2 million in 2005, and digital sales increased as a percentage of total label sales from 1.5% in 2004 to 5% in 2005.⁴¹

Second, versioning works. That is, focused shoppers locate favored songs through a la carte downloads, listeners-at-large are attracted to non-interactive streaming, and the most dedicated browsers can insist upon the full browsing capabilities of interactive streaming. Differentiated versions may combine services and features regarding ownership rights, service length, pricing, personalization, and complementary components. With no abiding certainty of where buyer tastes reside, rival providers now come to “learn by doing” the particular features that consumers want most. Under such conditions, new ideas can come to market and continue to challenge and displace existing business models.

Third, the use of digital rights management is indeed responsive to consumer tastes. At their outset, MusicNet, Pressplay, and Rhapsody were all-streaming services that did not permit permanent downloading and burning. In varying ways, each has now made this important accommodation. In the same respect, CD tracks, once battered down with strict anti-copying protections, now accommodate (through Microsoft’s Windows Media Audio Format) limited burning, temporary sharing, and additional “second session”

³⁹J. Borland, “Pressplay to Offer Unlimited Downloads”, Tech News, CNET.com, July 31, 2002.

⁴⁰IFPI Report, 15.

content that provides a pleasant listener experience on the PC.⁴² With ongoing feedback from the market, DRM is improperly conceived as a lockdown of content in a manner that is unfriendly to consumers.

Fourth, both sampling and personalization are essential if a digital market is to be the truly empowering “celestial jukebox” that Paul Goldstein conceptualized.⁴³ For \$10 per month, an iTunes user can own 10 songs; for the same monthly amount, a Rhapsody user can listen to over one million. The potential for streaming is illustrated further by research at Listen.com, where the average user listens to about 200 different songs per month, but only 13 percent opted for even one burn.⁴⁴ The market for streaming will expand greatly with the availability of home entertainment and wireless telephone equipment that will enable remote access inside the home and portability beyond it.

Fifth, no *a la carte* service by itself will prove particularly profitable. The market for download services is now vigorously price-competitive; the prevailing market price of ninety-nine cents per download is roughly equal to the related cost of licensed content, bandwidth, credit card services, and administrative activities that these services pay to labels and service providers.⁴⁵ With per song royalties of about one cent, streaming services enabled through upfront subscription fees of \$10 per month may now have wider profit margins. However, price competition here (e.g., Yahoo! vs. Rhapsody) should winnow down profit margins to competitive levels.

Music providers will survive through combinations that bundle music with some other product. For example, Apple has sold over five hundred million download tracks at a virtual loss in order to sell its iPod playing device at a considerable profit. Sony BMG maintained a similar strategy for the Walkman. From the search engines, AOL Music and Yahoo! Music have merged radio webcasting, downloads, and advertising services.

⁴¹Id., 19, 15, 3.

⁴²J. Borland, “Copy Protected CDs Take Step Forward”, Tech News, CNET.com, September 12, 2003.

⁴³P. Goldstein, COPYRIGHT’S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX, Stanford, California: Stanford University Press, 2003,

⁴⁴J. Borland, Apple Unveils Music Store, Tech News, CNET.com, April 28, 2003.

⁴⁵Knowledge@Wharton, “Online Music’s Winners and Losers”, Tech News, CNET.com, December 27, 2003.

While subscription services Rhapsody and Napster now serve over one million customers with an “all you can eat” streaming service, the same fans may choose to download subscription tracks to portable players for an additional fee.

Sixth, the music services easily accommodate independent labels. As the market leader in downloads, Apple’s iTunes now targets indie fans with rights to 600 labels; Microsoft now offers content from 3000 independent labels. Recent launches by eMusic and Audio Lunchbox respectively feature catalogs of 3500 and 4200 labels. Wippit, Weed, IntentMedia, and Cornerband) now sell licensed catalog drawn exclusively from independent labels. With more openness, thirty percent of all track downloads sold in a recent period on the music services were licensed from independent labels, in contrast with the offline counterpart of twenty percent.⁴⁶

Seventh, a market lock may indeed evolve if producers do not continue to work out standards to enable “mix and match” compatibility between different service providers and player devices. Indeed, if all devices and services were interoperable, a prospective buyer could build up a catalog without worrying about later obsolescence of any one device or service option. However, with a seventy percent market share among playing devices, Apple’s iPod playing device is designed -- through its DRM technology Fairplay -- to accommodate only tracks sold through its Apple iTunes. The additional compatibility with different services would evidently spur sales of Apple’s iPod device but reduce the sales of its iTunes downloads. However, since the iPod is very profitable tracks are not, it is surprising that Apple has not accommodated additional steps toward interoperability.

6. FILE-SHARING AND RECORD SALES

As a final matter for economic concern, unauthorized downloading harms the market by depressing legitimate sales and reducing the chances of success of interesting service applications. Indeed, well over 90 percent of files now traded on P2P networks appear to

be nothing more than unchanged copyrighted tracks and movies that were previously ripped and uploaded without authorization.⁴⁷ As examined below, this unauthorized downloading can potentially displace sales and licensing of legitimate product. MORE

Networks with free taking and viral reproduction now compete directly for customers with streaming and downloading services that have fully licensed copyrighted works for distribution through central servers. In an amicus brief in support of the petitioners in *MGM v. Grokster*,⁴⁸ legitimate music service providers, which now face direct competition from the illegal file-sharing networks, point out that their services took several years and hundreds of millions of dollars to develop, license, and refine. Evidently, file-sharing can reduce the chances of survival of competitive service applications described above. Music piracy then harms business models and market evolution in a more profound manner than the simple displacement of legitimate purchases and immediate licensing opportunities.⁴⁹

On June 13, 2005, the Organization for Economic Co-operation and Development (OECD) released its *Report on Digital Music: Opportunities and Challenges*, which explores a number of issues related to the future of music.⁵⁰ Though professedly agnostic on the relationship between file-sharing and CD sales, the report seems to conclude that other factors -- the emergence of other forms of entertainment, changing demographics, declines in the number of releases, a growing inferiority of music product, and changing customer tastes -- are the real culprits behind the overall decline in CD sales in its 29 member countries.⁵¹

⁴⁶ “Independent Record Labels Eye New Group,” MSNBC.com, <http://msnbc.msn.com/id4631891> (retrieved April 10, 2004).

⁴⁷ Id.

⁴⁸ Amicus Brief, Napster LLC, et. al., Section I.B, 6 http://www.eff.org/IP/P2P/MGM_v_Grokster.

⁴⁹The potentially harmful effects upon future licensing appears to have been the focus of proprietary expert testimony submitted on behalf of the plaintiffs by Prof. David Teece, who confirmed the label plans to move in the digital market had been displaced by illegal file-sharing made possible through Napster.

⁵⁰At http://www.oecd.org/document/46/0,2340,en_2649_201185_34994926_1_1_1_1,00.html

⁵¹Id. 75-81.

However, a cross-sectional analysis of different OECD countries in the same report may shed more light on the correlation between record sales and broadband.⁵² The three OECD countries with the largest decline in audio sales volume (constant U.S. dollars) in 1999-2003 are Denmark (-44.3%), Germany (-30.3%), and Belgium (-28.1%); the OECD countries with the largest increase are the U.K. (+32.2%), Australia (+18.1%), and Ireland (+9.1%). Here we actually have an interesting laboratory of diverse data points to test some relationships.

To my knowledge, these differences in business volume are not explained by differences in the number of releases. Nor is it evident that these differences occur because Danes, Germans, and Belgians have more readily migrated their entertainment dollars to alternative forms of digital entertainment than had citizens of Australia, Ireland, and the U.K. Nor should the continentals be more readily turned off to new sounds coming out of the major labels and their foreign distributors.

Rather, the reason may be more pedestrian – broadband penetration is generally higher in Denmark (18.8%), Belgium (15.6%), and Germany (8.4%) than in U.K. (10.5%), Australia (7.7%), and Ireland (3.4%). By rapidly hastening the speed by which digital content can be downloaded on the internet, broadband is a primary enabling transmission mode for file-sharers. Therefore, if file-sharing has an effect upon record sales, it would seem to follow that broadband penetration and the decline in sales might be correlated with one another.

The chart on the next page derives the results of a common statistical test derived from the presented OECD data on sales volume in 1999-2003 and broadband penetration in 2004.⁵³ Column 1 lists the countries in the OECD in alphabetical order. Column 2 lists the percent change in CD sales in each in the years 1999-2003. Column 3 ranks the countries by the size of their drop in Column 2. Column 4 lists the penetration of broadband in each country in the year 2004; Column 5 lists the corresponding rank.

From these numbers, it is possible to estimate a test statistic – the Spearman rank correlation coefficient – which is based on the sum of squares of the corresponding

⁵²Id. Annex 3, Table 3.2.

country ranks. If sales growth and broadband penetration are interdependent, the test should show that the sum is small as a consequence of reasonable equality between corresponding ranks. However, if growth and penetration are independent, the sum should be larger since the ranks generally do not correspond. With a sum of squared residuals of 1966, the resulting test statistic is computed $STATISTIC = 1 - 6 * SUM/[N^3 - N]$, where N = sample size of 29.

With a value of 0.51, the Spearman coefficient is significant at 5%. This means that we can accept -- with no more than 5 percent chance of error -- the hypothesis that an increase in broadband penetration and decline in CD sales are correlated with one another.

ABOUT THE AUTHOR

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In the [technology](#) sector, Dr. Einhorn worked at Bell Laboratories and the U.S. Department of Justice (Antitrust Division) and consulted to General Electric, AT&T, Argonne Labs, Telcordia, Pacific Gas and Electric, and the Federal Energy Regulatory Commission. He has advised parties and supported litigation in matters involving [patent damages](#) and related valuations in semiconductors, medical technologies, search engines, e-commerce, wireless systems, and proprietary and open source [software](#).

Litigation support involving media economics and [copyright damages](#) has involved [music](#), movies, television, advertising, branding, apparel, architecture, fine arts, video games, and photography. Matters have involved Universal Music, BMG, Sony Music Holdings, Disney Music, NBCUniversal, Paramount Pictures, DreamWorks, Burnett Productions, Rascal Flatts, P. Diddy, Nelly Furtado, Usher, 50 Cent, Madonna, and U2.

⁵³Broadband numbers for the OECD are found at http://www.oecd.org/document/60/0,2340,en_2825_495656_2496764_1_1_1_1,00.html#timeseries (retrieved June 23, 2005).

Matters involving trademark damages have included the Kardashians/BOLDFACE Licensing, Oprah Winfrey/Harpo Productions, Madonna/Material Girl, CompUSA, Steve Madden Shoes, Kohl's Department Stores, *The New York Observer*, and Avon Cosmetics. Matters in publicity right damages have involved Zooey Deschanel, Arnold Schwarzenegger, Rosa Parks, Diane Keaton, Michelle Pfeiffer, Yogi Berra, Melina Kanakaredes, Woody Allen, and Sandra Bullock.

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Country	% ch. Sales	Rank	% Pen. BB	Rank
Australia	18.08	26	7.7	20
Austria	-20.56	9	10.2	15
Belgium	-28.13	4	15.6	7
Canada	-26.15	6	17.8	5
Czech	-19.05	11	1.6	25
Denmark	-44.32	1	18.8	3
Finland	2.97	23	15	8
France	6.6	24	10.6	13
Germany	-30.29	3	8.4	16
Greece	-5.8	18	0.4	29
Hungary	-5.71	19	3.6	22
Iceland	-11.11	15	18.3	4
Ireland	9.09	25	3.4	23
Italy	-7.65	16	8.1	19
Japan	-22.31	8	15	9
Korea	-24.27	7	24.9	1
Mexico	1.13	22	0.8	27
Netherlands	-26.57	5	19	2
New Zealand	-4.17	20	4.7	21
Norway	-11.64	14	14.9	10
Poland	-43.89	2	2.1	24
Portugal	-14.73	12	8.2	18
Slovak	40	28	1.1	26
Spain	-6.42	17	8.4	17
Sweden	-0.42	21	14.5	11
Switzerland	-14.29	13	17.3	6
Turkey	125.53	29	0.7	28
U.K.	32.22	27	10.5	14
U.S.A	-20.11	10	12.8	12

7. DIGITAL RIGHTS MANAGEMENT AND P2P LEGITIMACY

Notorious due to its use in file-sharing communities, peer-to-peer (P2P) networking now allows users to copy contents from one computer directly to another without routing bits through central servers. However, it is improper to associate unreservedly either P2P networking or file-sharing with unlawful acts of copyright infringement. Certainly not a copyright minimalist, Dean Garfield of the Motion Picture Association of America aptly made the point; “the challenge with p2p is not the technology, but the business model of those who have chosen to use the concepts of distributed computing for their own illicit purposes.”⁵⁴

As discussed in the companion piece to this paper entitled “File Sharing at Madison and Vine: The New Convergence” (please email me at mae@mediatechcopy.com), there is no reason why P2P technology cannot be used to distribute authorized works protected by TPMs. If so protected, copyrighted files can then be traded on P2P networks for a unit fee, made available to subscribers, affixed with advertising messages, or otherwise transacted. Depending on the preferences of the content owner, protection can be restrictive (e.g., to a number of particular uses) or lenient (e.g., unlimited use); the titles and/or content of tracks can be playlisted, blogged, e-mailed, and superdistributed. For a wider application, file-sharing networks may facilitate the exchange of customer-generated works (co-created works, mashups, and multimedia works) that increase audience interest and build new user communities.

In the legitimate P2P sector, musicians or advertisers may be attracted to Intent Media Works, which operates a multi-faceted technology platform called Palladium.⁵⁵ After protecting works with digital rights management, Intent Media directly seeds material in file-sharing networks and takes subsequent measures to ensure that these

⁵⁴D. Garfield, Public Comments, Peer-To-Peer File-Sharing Technology: Consumer Protection and Competition Issues: Announcement of Public Workshop and Request for Public Comment and Participation, FTC File No. P03 4577, at <http://www.ftc.gov/os/comments/p2pfileshare/OL-100030.pdf> (retrieved March 20, 2005).

⁵⁵“Whitepaper: Palladium Platform Distribution Technologies”, [at http://www.intentmediaworks.com/Technology/Palladium.htm](http://www.intentmediaworks.com/Technology/Palladium.htm) (retrieved October 5, 2005).

seeds appear near the top of Internet search engines. Users may then exchange files freely but must receive permission to open them. Intent then facilitates a number of business models for its artists -- review and purchase, pay per view, subscription, and advertising supported. For participating advertisers, Palladium offers a range of options -- e.g, placing ads on information pages, having ads inserted along with a song or video, or embedding the ad with the content itself .

Alternatively, P2P users can use superdistribution models to promote favored acts through e-mail, blogs, or websites. Service provider Weedshare pays up to 35 percent of sales revenues to listeners who “superdistribute” songs to other users.⁵⁶ Following a different model, each user on the World Media network gets paid 10% for recommending a sale, and up to 5% for owning a track that is later distributed.⁵⁷ After settling with the recording industry for \$4.1 million, iMesh instituted a new business model centered around a menu of customer subscription fees based on perceived willingness to pay; users of iMesh5.2 can interconnect with all the P2P networks.⁵⁸

Besides enabling community and recommendation, P2P technologies such as Bit Torrent now allow content producers to efficiently store chunks of large content files on unused computer space near the point of final use. In so distributing the content, Bit Torrent reduces the demand for network capacity (i.e., streaming servers, data centers, local caches, and dedicated bandwidth) that would otherwise be necessary to accommodate file transfer from a central server. The potential efficiencies of this so-called “data swarming” here are particularly considerable for high-bandwidth files, such as movies, games, and videos -- which may consume over 1 GB of capacity (as distinguished from 3-4 MB for a song compressed by MP3.). Moreover, by concentrating and utilizing available storage throughout the network, data swarming technology can enable cell phones, handheld devices, and ordinary computers to have the same power as massive web servers.

For example, game distributor IGN efficiently scaled its online distribution

⁵⁶at <http://www.weedshare.com> (retrieved October 5, 2005).

⁵⁷at <http://www.worldmedia.com> (retrieved October 5, 2005).

⁵⁸“Report from CEO Marty Lafferty”, DCIA Newsletter, September 25, 2005, at <http://www.dcia.info>

network with P2P services provided by Red Swoosh, which enables faster delivery (by a factor of three) and savings of forty thousand dollars per month.⁵⁹ A competitor, Trymedia Systems, now uses its P2P network to distribute over two hundred million copies of legitimate video games from more than one hundred top game producers.⁶⁰ Movie distributor ifilm.com now distributes content from each of the major film studios over P2P networks mediated by the aforementioned RedSwoosh. Atzio, a new provider of P2P television, will allow users to trade DRM-protected copies of their favorite television shows.

Finally, large P2P networks also make possible the easy provision of distributed computing (also known as grid computing, edge services computing), which allows integrated data processing on computer nodes distributed on the network circumference. Storage space is “donated” on available capacity on connected machines. This can be efficient for three reasons; distributed systems do not require investments in expensive hardware, processing speed in a distributed system is much faster, and distributed systems are readily scalable and easily ramped up to higher levels of processing power in a matter of seconds.

The most spectacular success for distributed computing so far may have emerged at the Society for Extraterrestrial Information (“SETI”). A stand-alone network, SETI provided to users a space-age screensaver in exchange for access to available processing power on the users’ computers. The distributed network uses the available space to perform calculations based on data obtained through the Hubbell Space Telescope at a computer speed (fifteen Teraflops = trillion calculations per second) that exceeds IBM’s fastest machine ASCIWhite (twelve Teraflops) at a small fraction of the cost. On another test, SETI@home average fifty-four Teraflops, exceeding the sum of the Top Four registered supercomputers. In addition to SETI, distributed computing is now used in proprietary corporate networks, bio-medical studies, and academic research for legitimate purposes such as streamed media/video, data processing, document collaboration, backup

(retrieved October 5, 2005).

⁵⁹At http://www.redswoosh.com/home_real_customer_stories.php (retrieved February 22, 2005).

⁶⁰Distributed Computing Industry Association, “Trymedia Tops 200 Million Game Downloads”, February 21, 2005, at <http://www.dcia.info/>, (retrieved February 21, 2005).

storage, voice-over-IP telephone, pay-per-use, anonymous publication, and charitable and scientific computing clubs

In combination, revenues from advertising and distributed computing may be practical means of monetizing licenses for music. If support dollars can be earned from P2P networking, online services may actually make music downloads available at a lower unit price, or through a blanket license with no unit price at all. However, this is possible so long as the underlying content cannot be stripped from its designated use; e.g., a music file must stay affixed with the advertising message that supports it. Accordingly, TPMs will still be necessary to ensure the persistent access control needed to secure the integrity of content from breakdown.

8. LIBRARIES AND LICENSING

We now consider how access protection and DRM may affect demand for and usage of copyrighted materials by libraries, schools, and research institutions, which are “knowledge factories” with secondary creators who work up and produce more intellectual property. The discussion highlights a number of alternative ways in which rights owners can ensure compensation while minimizing user transaction costs.

At the first triennial review of the DMCA,⁶¹ researchers and educators voiced concerns that access protection could actually threaten their ability to adapt content through partial copying,⁶² excision for criticism and parody,⁶³ searching,⁶⁴ dissemination, and transformation. The librarians’ points are considerable, as a discouraging effect from complex licensing requirements could indeed dissuade libraries from investing in the startup costs of new technology, network distribution, customer

⁶¹Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies (hereafter Triennial Review), 64 Fed. Reg. 226, Docket No. RM 99-7, May 2, 2000; at <http://www.loc.gov/copyright/1201/hearings> (visited May 19, 2001).

⁶²17 U.S.C. 107(3).

⁶³Campbell v. Acuff Rose, 510 U.S. 569 (1994).

⁶⁴A. W. Appel and E. W. Felten, Initial Comments, Triennial Review, *supra* note xx, February 17, 2000. at <http://www.loc.gov/copyright/1201/comments> (retrieved May 19, 2001).

support personnel, and file storage systems.⁶⁵ That said, it would then be a particularly bad market decision for a digital publisher of academic materials to affix excessive library lending fees, deny permission to archive, refuse rights to reserve use, implement cumbersome passwords, restrict browsing, disallow academic criticism, and fail to make promotional material available for preliminary review.

In the same context, a reputation for price gouging will reduce demand for any online service as a whole and lower the market price that a provider may charge. Finally, the editors of a scholarly journal, who find it incumbent to maximize readership to attract contributions of material, may actually choose to switch publishers if readers become dissatisfied. Accordingly, though some unfortunate examples can be expected to continue,⁶⁶ content suppliers would be better advised to attempt to construct e-licensing strategies that maximize ease of use. It is then no surprise that publishers frequently accommodate librarian requests that ask that the publisher voluntarily reinstate the ‘public good’ clauses of the Copyright Act into the electronic content license, allowing fair use copying or downloading, interlibrary loan, and archiving for the institutional license and its customers.”⁶⁷ Indeed, digital technology actually accommodates negotiation; e.g., university librarians at the LIBLICENSE web site may online propose contract modifications to meet their specific needs.⁶⁸

A useful instrument that accommodates efficient access to content through digital technology is the *site license*. For periodic fees, site licensors may provide to any designated computer location unlimited access to their content with no additional charge imposed per number of users, transactions, or other measures of units of use. Rather,

⁶⁵Upfront costs for a digital library host service have been estimated at \$100,000 for a base of 200 digital journals. *Id.*, 45.

⁶⁶Writes one critic: “We access several journals online from one publisher whose password protects their site. It is set up for one user at a time. So all journals are tied up while one person look at one, although he/she could browse all of them. They are all unavailable while that one person uses the collection.” American Library Association, *Triennial Review*, *supra* note xx, at 22.

⁶⁷A.S. Okerson, “Buy or Lease? Two Models for Scholarly Information at the End (or the Beginning) of an Era”, 125 *DAEDALUS* 55, 73 (1996). At <http://www.library.yale.edu/~okerson/daedalus.html> (retrieved June 26, 2001).

⁶⁸<http://www.library.yale.edu/~llicense/index.shtml> (retrieved June 26, 2001).

licensed context will be priced most efficiently at short-run marginal cost (i.e., zero) and face minimal (if any) transactions costs.⁶⁹ Indeed, Ann Okerson, Associate Director of the Yale University Library, sums up the case: “Price issues notwithstanding], libraries are able to secure crucial and significant use terms via site licenses, terms that often allow the customer’s students, faculty, and scholars significant copying latitude for their work ..., at times more than what is permitted via the fair use and library provisions of the Copyright Act of the U.S.”⁷⁰

As a prime example of site licensing, college libraries now pay to Elsevier’s Lexis Nexis Division license fees that guarantee simultaneous unlimited access to the company’s 1200 scholarly journals. Fees are based on the number of attending student, and have optional sublicenses that cover off-campus access by professors. The access mechanism of Lexis Nexis is protected through IP validation, which allows access only to computers with Internet Protocol addresses that subscribing institutions supply beforehand. Summarizing the Elsevier position:

Elsevier’s goal is to give people access to as much information as possible on a flat fee, unlimited use basis. [Elsevier’s] experience has been that as soon as the usage is metered on a per article basis, there is an inhibition on use or a concern about exceeding some budget allocation.⁷¹

⁶⁹Admittedly, blanket licenses can be “tie in” arrangements that unduly restrict users to make inefficient “all or nothing” choices. *BMI v. CBS*. 441 U.S. 1, 99 S. Ct. 1551, 60 L. Ed. 2d 1 (1979). However, these concerns are better resolved by appropriate antitrust authorities and are not a matter for copyright administration.

⁷⁰A. Okerson, “The Transition to Electronic Content Licensing: The Institutional Context in 1997”, *Scholarly Communication and Technology Conference of the Andrew W. Mellon Foundation*, Emory University, April 24-25, 1997, 1, at <http://www.library.yale.edu/~okerson/mellon.html>. Ms. Okerson continued: “The Yale Library, for example, is now party to a number of licenses that permit substantial amounts of copying and downloading for individual learning, research, in-the-classroom learning, library reserves, coursepacks, and related activities. Interlibrary loan and transmission of works to individual scholars are matters that still need a great deal of work. However, the licenses of 1996 and 1997 represent significant all-around improvements and surely reinforce the feeling that rapid progress is being made.” At 6

⁷¹Quoted in A. Odlyzkso, “Stronger Copyright Protection for Cyberspace: Desirable, Inevitable, and Irrelevant”, at <http://www.research.att.com/~amo> (retrieved June 26, 2001)

Following the Elsevier model, a great number of database providers (such as Silver Platter) seem to have moved from pricing schemes based on minutes of connect time and geographic restriction to flat fee systems that featured free access.

However, site licenses and flat-fee payments are not useful for one-time access, or a limited number of specific uses, that are sometimes necessary to accommodate occasional users. More preferred here are *transactional licenses*, i.e., pay-per-use or short period contracts that can be entered instantaneously on the Internet. In this respect, the College Division of Houghton Mifflin engaged in a joint venture with Copyright Direct, a permissions tool of Yankee Rights Management, to provide to users instant access to on-line material on a transactional basis. The Division also had worked with Reciprocal to provide “secure containers” to permit related information on relevant rights and permissions to be carried online with the related content.⁷²

Finally, Internet technology enables a wider scope for particular custom-made licenses. For example, journal publishers now may make content available through *generalized subscriptions* that permit access to bundles of a prespecified number of articles that may subsequently be chosen.⁷³ This generalized subscription model was found to be a particularly popular alternative to traditional subscriptions to bound journals, as few readers take the time to read everything in any particular issue

Licensing could prove more difficult if rights must be acquired simultaneously from several different content providers, as would be the case – for example – in a film course.⁷⁴ However, before instituting fair use or otherwise reassigning property rights by administrative fiat, we should here recognize with Robert Merges the great potential for

⁷²A.R. Adler, Statement before the Senate Judiciary Committee Concerning S.487: The Technology, Education, and Copyright Harmonization Act of 2001, March 13, 2001, at <http://www.publishers.org/home/congrpt/s487testimony.htm> (retrieved May 11, 2000).

⁷³M.S. Bonn et al., “A Report on the PEAK Experiment: Content and Design”, D-LIB MAGAZINE, June, 1999, Vol. 5, No. 6, at <http://www.dlib.org/dlib/june99/06bonn.html> (retrieved June 6, 2001).

⁷⁴Regarding the holdout problem, “at a major university, the highly ranked cinema program recently tried to develop a distance education film course. The institution was committed to invest \$600,000 in the effort. Part of the course involving the use of film clips ranging from 5 to 30 seconds. Negotiations for rights went on interminably. Permissions had to be gotten from, and payments had to be made to, copyright owners and actors. Some people never responded, others demanded a great deal of money, some simply said no. In the end, after losing a substantial amount of money, the failure to secure the rights to film clips less than a minute long shut down a promising program.” G. A. Heeger, University of Maryland University College,

*subscription agents, copyright collectives, rights clearance centers, and “one-stop shops”*⁷⁵ to negotiate complex contracts that accommodate online requests, and otherwise facilitate collection when sole source, single use, or general subscription licensing is impractical.⁷⁶ Through electronic rights management, transactional licensing though these organizations will move from a domain of letters, emails, and faxes to full online functionality where relevant information is submitted – and permissions obtained - through web interfaces.

For example, Rightsline.com now offers one-stop online licensing to 1160 diverse members of the International Licensing Industry Merchandisers’ Association, including a wide range of properties in film, music, sports, and publications.⁷⁷ The Media Image Resource Alliance now provides on-line access to licenses for over 60,000 photographs.⁷⁸ Info2clear in Europe provides online licensing for text reproductions, online views, and controlled downloads that may eventually implicate choice of language.⁷⁹ A provider of online software, Publiotech, allows users to obtain rights to “package on the fly” (i.e, combine dissimilar documents for composite deliveries made to final customer accounts) with instant licensing and royalty payment.⁸⁰

On the user side, *library consortia*, which accommodate efficient negotiation, have exploded in the past ten years. Since inception in 1997, library membership in the

Testimony, Concerning the Technology, Education, and Copyright Harmonization Act of 2001, House Judiciary Committee, U.S. House of Representatives, Washington, D.C., March 13, 2001.

⁷⁵University consortia are teams of libraries that negotiate collectively on behalf of a group of individual members. Subscribing agents are commercial agents who negotiate usage contracts on behalf of one or many licensees. Copyright collectives negotiate contracts on behalf of their rights holders, e.g., in photo-reproduction or musical performances. Rights clearance centers grant licenses based on individual terms specified by the owner. “One-stop-shops” are a coalition of separate collective management organizations which offer a centralized source for a number of related rights, e.g. photos and music, that would be particularly useful in multimedia production. At http://www.wipo.org/about-ip/en/about_collective_mngt.html. (retrieved June 26, 2001).

⁷⁶R. P. Merges, “Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations”, 84 CALIF. L. REV 1293, 1392 (1996).

⁷⁷<http://www.rightsline.com/facts.htm> (retrieved June 16, 2001).

⁷⁸V. S. Perlman, Reply Comments, Triennial Review, *supra* note xx

⁷⁹<http://www.info2clear.com> (retrieved June 16, 2001).

International Coalition of Library Consortia has grown more than fourfold, with estimated cost savings for its members ranging from 25 to 33 percent.⁸¹ Consortial activity in the U.S. has been financed largely by state governments (e.g., Ohio, California, and Virginia), which have been “willing and eager to provide additional funding to support broad-based [university] consortia designed to improve access to serious electronic information for the benefit of the public citizenry.”⁸²

9. PRIVACY

Yet another concern with digital right management is the capacity for online businesses to record individual transactions to construct dossiers and data bases on online consumer behavior. Sometimes enhanced by data overlays from offline sources, collected information may include, *inter alia*, shopping preferences, surfing behavior, membership information, household income, domicile, financial details, health information, marital history, and car and home ownership.⁸³

In the offline world, customer profiling is now made routine through supermarket savings cards, white pages, surveys, contest entries, financial and census records, motor vehicle data, credit card transactions, phone records, credit records, product warranty cards, subscriptions, and public records.⁸⁴ However, digital technology makes data collection, personalization, and concentration considerably more efficient. For example, Experian boasts a consortium database on catalog shopping with 590 titles, 65 million households, and 600 million transactions,⁸⁵ Claritas offers 62 detailed demographic lists (including Blue Blood Estates, Young Literati, New Empty Nests, Mobility Blues, and

⁸⁰Information Today, “Publitech Software for Creating, Managing Digital Publications”, 15 (6), 1998, at <http://www.infotoday.com/IT/jun98/news6.htm> (retrieved January 23, 2003).

⁸¹A. Okerson, “Strength in Numbers: Library Consortia in the Electronic Age”, Section III.C (2000), at <http://www.library.yale.edu/~okerson/strength-numbers.html> (retrieved January 18, 2004).

⁸²*Id.*

⁸³At <http://www.epic.org/privacy/profiling> (retrieved October 18, 2002).

⁸⁴*Id.*

⁸⁵*Id.*

Shotguns and Pickups).⁸⁶ The Direct Media List Services enables granular breakdowns from “Catholics who subscribe to Newsweek” to “adults above the age of 55 who subscribe to any of Hearst’s twelve magazines”.⁸⁷ Amazon.com monitors both book purchases and browsing, and extends greater discounts to first time visitors.⁸⁸

Critics contend that these practices intrude upon consumer privacy⁸⁹ and consequently reduce trust in digital commerce. Indeed, 89 percent of American respondents in a Harris Poll in the year 2000 were uncomfortable with web tracking that combined responses with user identities, while 88 percent supported “opt in” requirements that would oblige websites to secure positive consent before gathering data from a particular visitor.⁹⁰ Moreover, 62 percent of Americans who did not shop online in the year 2000 did not do so because of concerns regarding privacy and security of their personal information.⁹¹

There are four cautions that must be drawn regarding the asserted need for privacy. First, because search for new products entails time and effort, free markets work better when supplying producers and retailers may more readily reach prospective buyers, and vice versa.⁹² Digital techniques and virtual sales agents that accommodate easy exchange

⁸⁶Id.

⁸⁷Id.

⁸⁸At <http://news.bbc.co.uk/1/hi/business/914691.stm> (retrieved October 19, 2002).

⁸⁹J. R. Reidenberg, “Privacy in the Information Economy: A Fortress or Frontier for Individual Rights”, 44 FED. COMM. L.J. 195 (1992); J.R. Reidenberg and F. Gamet-Pol, “The Fundamental Role of Privacy and Confidence in the Network”, 30 WAKE FOREST L. REV. 105 (1995); J. E. Cohen, “A Right to Read Anonymously: A Closer Look at Copyright Management in Cyberspace”, 28 CONN. L. REV. 981 (1996). The latter writes: “[Profiling] is a well-established practice through which businesses of all types seek to learn as much as possible about customers who show interest in their products or services. For transactions that occur in “real” (as opposed to digital) space, however, the ability to profile one’s customer base is limited to some extent by customers’ willingness to self-report – for example, by filling out product registration cards.” At 988.

⁹⁰BusinessWeek/Harris Poll: A Growing Threat, BusinessWeek Magazine, March 2000, reported at <http://www.epic.org/privacy/survey/default.html> (retrieved October 19, 2002).

⁹¹“Privacy Concerns: Is It Time for the Government to Act?”, Wirthlin Report, January 2001, reported at <http://www.epic.org/privacy/survey/default.html> (retrieved October 19, 2002).

⁹²With full knowledge of customer tastes, it would be possible for, e.g., British Airways to inform likely Anglophiles of attractive tourist packages, and to skip the likely Anglophobes. Personal profiling would

of information then reduce transaction costs and enhance economic efficiency. Perhaps unintentionally, privacy advocate Julie Cohen apparently concurs: “Profiling in the digital age holds out, for the first time, the tantalizing promise of ‘perfect’ information, because digital communications can be structured to create detailed records of consumer purchases and reading activities.”⁹³

In this respect, the right to guard one’s personal information is essentially the *right to conceal* information from other parties in the market.⁹⁴ Moreover, the right to proscribe data gathering is the *power to require* others to withhold information as well. If market information is less available, buyers and sellers must spend more time and effort trying to communicate with one another. Much like unlisted telephone owners, online privacy imposes a market cost by reducing information flow.

Indeed, a good number of consumers will find data collection and profiling to be a convenient part of online shopping. Put metaphorically, “some people may be troubled if a pizza delivery firm keeps a record of their address and favorite toppings; others may feel it saves them time.”⁹⁵ With transactional ease, a buyer from Domino’s may order a pizza anywhere in the U.S. without ever having to reenter a credit card number or food preference. As data profiling increasingly builds on previous information, the collective savings in time and energy may be more profound. Indeed, the explosive growth of discount credit cards is the consequence of bank research into each consumer’s debt repayment habits.

Second, contemporary advertising now appears most intrusive precisely because advertisers lack personal information on their prospective buyers. National advertisers of consumer products now hawk their wares on broadcast media based on imperfect

economize on British Airway’s marketing efforts, and conceivably provide more trips and/or save dollars for tourists. Shopper information can be reasonably acquired by observing how consumers visit and behave on websites operated by, inter alia, the Windsor Castle, Tower of London, the Tate Gallery, or even other airlines.

⁹³J. E. Cohen, “A Right to Read Anonymously: A Closer Look at Copyright Management in Cyberspace”, 28 CONN. L. REV. 981, 988 (1996).

⁹⁴R. Posner, “The Economics of Privacy”, Papers and Proceedings, American Economic Association, May, 1981.

⁹⁵J. Chessen, “Information and Privacy”, American Bankers Association, Washington, D.C., p. 13 (2000)

demographic conjectures regarding where their best prospective buyers may actually arise. A good number of ad purchases are wasteful, and a large number of viewers find media advertising annoying or useless. Internet advertising targeted to specific buyers based on anticipated interest would be a more efficient way to reach some individuals and avoid others, and would be particularly advantageous for suppliers of niche products who might be unable to afford mass marketing media.

Third, the loss of consumer trust at a commercial website can lead to reduced traffic and business revenues. If the demand for privacy is important, web sites will have economic incentives to design more sophisticated privacy protections and add-on features. Moreover, online businesses find it in their collective interests to establish standards and safeguards for information gathering. Operators that choose not to participate in privacy programs are going to limit their market and the number of people that visit them.

Fourth, merchandisers may willingly buy data from other web sellers. If monetized, their financial interests then provide incentives to others to gather more information and for service providers to expedite exchange. If consumer data has a residual value in a newly formed secondary market, shoppers that provide market information provide a social and financial benefit, and can therefore expect lower prices from retailers and website operators anxious to attract their business and additional worth.

It is then appropriate that concerned individuals be allowed to withhold information. However, withholders of personal information should expect to pay some premia for online purchases if they fail to contribute the additional value of their information. Accordingly, a great number of digital products can be sold with privacy versioning; i.e., a menu of services that vary to the degree to which the operator may subsequently resell personal data. Indeed, any blanket requirement to impose greater privacy standards upon an online business can be expected to increase prices paid by all users.

Government bodies have some role to perform to protect citizen privacy.⁹⁶ Legislatures and regulatory agencies may reasonably enact specific rules against, *inter*

⁹⁶Privacy Online: Fair Information Practices in the Electronic Marketplace: A Federal Trade Commission Report to Congress, Federal Trade Commission, Washington, D.C. (2000). In a recent speech,

alia, misuse of social security numbers,⁹⁷ financial and medical records,⁹⁸ profiled activities of minors and students,⁹⁹ telephone usage or other customer proprietary network information (CPNI),¹⁰⁰ or sales of online content records.¹⁰¹ In an initiative adopted in 2001, the Federal Trade Commission (FTC) advocated particular reforms for improving privacy enforcement.¹⁰² Law enforcers may prosecute fraudulent representations or other deceptive practices.¹⁰³ Courts may establish guidelines for

Commissioner Timothy Muris did not seem to express any great support for the idea of legislation. T. Muris, "Protecting Consumers' Privacy: 2002 and Beyond", The Privacy 2001 Conference, Cleveland, Ohio, October 4, 2001, at <http://www.ftc.gov/speeches/muris/pri visp1002.htm> (retrieved June 4 2002).

⁹⁷Proposed legislative protection in the 107th Congress included Identity Theft Protection Act of 2001 (H.R. 220), Personal Information Privacy Act of 2001 (H.R. 1478), Social Security Number Privacy and Identity Theft Prevention Act of 2001 (H.R. 2036, S. 1014), Social Security Number Protection Act of 2002 (H. R. 4513), Social Security Number Privacy Act of 2001 (S. 324), and Social Security Number Protection Act of 2001 (S. 451). For hyperlinks, see http://www.epic.org/privacy/bill_track.html (retrieved October 18, 2002).

⁹⁸Proposed bills implicating financial and/or medical privacy included the Medical Information Protection and Research Enhancement Act of 2001 (H.R. 1215), Consumer's Right to Financial Privacy Act (H.R. 2720), National Consumer Privacy Act (H.R. 2730), Financial Information Privacy Protection Act of 2001 (S.30), and Financial Institution Privacy Protection Act of 2001 (S.450). For hyperlinks, see *id.*

⁹⁹Proposed bills include the Student Privacy Protection Act (S. 290) and the Family Privacy and Security Act of 2002 (S. 2137). For hyperlinks, see *id.*

¹⁰⁰The Federal Communications Commission recently issued a Notice of Proposed Rulemaking, "Rules and Regulations Implementing the Telephone Consumer Protection Act of 1991", regarding whether to modify its present rules regarding customer proprietary network information (Fed. Reg., October 8, 2002 (Vol. 67, No. 195), 62667-62681).

¹⁰¹Records of cable subscribers and video rentals are now protected respectively in the Cable Act and the Video Privacy Protection Act.

¹⁰²Itemized concerns for Commissioner Timothy Muris included creating a national "do-not-call" list, beefing up enforcement against spam (chain letters, pyramids, "get-rich-quick" schemes), helping victims of ID theft, ending pretexting (fraudulently obtaining personal financial information), encouraging accuracy in credit reporting, enforcing privacy promises, increasing enforcement on children's privacy, encouraging consumers' privacy complaints regarding fraudulent and deceptive business practices, enforcing telemarketing restraints, restricting the use of pre-acquired account information, holding workshops on new and emerging technologies, and enforcing the Gramm-Leach-Bliley Act that requires financial institutions to provide privacy notices and allows consumers to choose whether their financial institutions may share their personal information. <http://www.ftc.gov/opa/2001/10/privacyagenda.htm> (retrieved October 19, 2001).

¹⁰³In October, 2002, the Federal Trade Commission settled cases against American Student List and National Research Center for College and University Admissions for collecting marketing dossiers on students under the pretext of college admission and scholarship opportunities. In August, 2002, the New York Attorney General filed suit against the Student Marketing Group for much the same issue. At <http://www.epic.org/privacy/profiling> (retrieved October 18, 2002).

contract liability, tortious defamation, and admissibility of evidence gathered under electronic or commercial monitoring.

Beyond tactical safeguards for particular abuses, it is not clear that general government regulation about data collection from online shoppers, such as the FTC's once-advocated privacy standards¹⁰⁴ or a European initiative that would require customers to "opt in" to a program,¹⁰⁵ is necessary or useful. First, web sites now have considerable market incentives to protect privacy of their visitors, as wary customers may choose to avoid such sites altogether by confining purchases to "bricks and mortars" stores. Second, a number of available protections now enable consumer self-help; Watchdog groups, such as EPIC, monitor commercial websites, suggest improved language for privacy concerns,¹⁰⁶ and provide access to programs that enable "snoop-proof email", anonymous remail, anonymous surfing, protection against pop-ups, "cookie busting", secure instant messaging, encryption, password generators, firewalls, and disk file erasing.¹⁰⁷

As a sensible palliative toward resolving privacy concerns, Ira Magaziner – former policy advisor to President Clinton – set forth four standards for a voluntary code:¹⁰⁸

1. Sellers and other web site operators must notify visitors of any information that they will collect and how it will be used.
2. A person visiting a web site has the opportunity to "opt out" of any individual use, as well as all.
3. Visitors may look up the information on himself/herself to ensure accuracy.
4. A seal (e.g., Internet Business Standards Association's Golden Seal¹⁰⁹) is devised to assure consumers that a visited web site complies with the specified code on gathered information.

¹⁰⁴Federal Trade Commission, *Privacy Online: Fair Information Practices in the Electronic Marketplace*, May, 2000, at <http://www.ftc.gov/opa/2001/10/privacyagenda.htm> (retrieved October 19, 2002).

¹⁰⁵At <http://news.bbc.co.uk/1/hi/sci/tech/1653907.stm> (retrieved October 19, 2002).

¹⁰⁶<http://www.epic.org/reports/surfer-beware.html> (retrieved October 18, 2002).

¹⁰⁷<http://www.epic.org/privacy/tools.html> (retrieved October 18, 2002).

¹⁰⁸I. Magaziner, "Creating a Framework for Electronic Commerce", Progress and Freedom Foundation, July, 1999, at http://www.pff.org/ira_magaziner.htm (retrieved June 4, 2002), 5-6.

Rather than legislate standards, Magaziner would not stop buyers from visiting noncomplying sites. He would instead rely upon self-help and market outcomes to determine the overall appeal of market privacy.

Regarding standards, the Platform for Privacy Preferences (P3P) recently specified a standard computer-readable language that allows web sites to encode privacy policies.¹¹⁰ With a standard XML format, P3P allows users to configure browser agents to reflect individual preferences.¹¹¹ User preferences can be matched with encoded website warnings that are capable of providing service or warning of a possible discrepancy.¹¹² Major elements of the P3P protocol would describe contact information, buyer access to personal information, categories of collected data, purposes of collection, and organizations having access.¹¹³

Critics, such as EPIC, caution that P3P will result in a sequence of “endless popup windows” that will unduly burden users who set high privacy preferences, driving them off the web or forcing them to capitulate to a lesser standard.¹¹⁴ Indeed, EPIC would

¹⁰⁹The Golden Seal is the imprimatur of the Internet Business Standards Association, which holds participating online businesses to a published code of conduct regarding honesty, disclosure, and dispute resolution (<http://www.internetstandards.org/codeofconduct.html> (retrieved January 23, 2004))

¹¹⁰For a discussion and criticism of P3P, see L.F. Cranor and J. R. Reidenberg, “Can User Agents Accurately Represent Privacy Notices?” Discussion Paper 1.0, August 30, 2002, Telecommunications Policy Research Conference, Washington, D.C.

¹¹¹As an example, Microsoft implemented a P3P user agent as part of its Internet Explorer 6 Browser (IE6) that permits six alternative cookie-blocking settings, customized design with additional capabilities, and a “View Privacy Report” that directly displays an HTML translation of a complying site’s policies. A previewed version of Netscape’s Navigator 7 has similar capabilities, and AT&T released a public beta of an IE add-on called the Privacy Bird, which visually signals a match (or mismatch) between a site’s policy and the user’s expressed preferences.

¹¹²“A sample P3P transaction might look something like the following. Joe Surfer configures his P3P enabled web browser to say that he does not want to disclose his home address unless he is purchasing a product that will be delivered to his home. When Joe then connects to a popular news site that requires the disclosure of his home address before he can view content on the web site, Joe’s P3P-enabled browser will block access to the site. If other popular news services also require home addresses, Joe’s P3P-enabled browser will prevent Joe from receiving news over the Internet. Or he will have to give up his choice to keep his home address private.” Electronic Privacy Information Center, “Pretty Poor Privacy: An Assessment of P3P and Internet Privacy”, at <http://www.epic.org/reports/prettypoorprivacy.html> (retrieved October 19, 2002).

¹¹³Id.

¹¹⁴Id.

prefer a common legislated privacy standard that would be simpler and more transparent, but more restrictive of information gathering. From an economic perspective, there is no compelling reason to reduce choice by mandating such protective standards, and negate the preferences of many consumers who may be less guarded about their privacy. In simple truth, people who find themselves burdened by the data entry requirements of P3P have other protections and shopping alternatives at their disposal. To permit their control of others would negate one of the key benefits of the Internet – an individual's ability to provide information to an efficient market.

10. LEVIES AND DOWNLOADS

A number of governments have implemented levies on equipment ranging from MP3 players and blank disks to personal computers and peripheral equipment for the purpose of generating royalties for content owners. For its part, the Copyright Board of Canada in 2003 imposed a levy on the sale of blank CD-Rs, but declined to impose levies on blank DVDs, removable memory cards, blank audio tapes, and MiniDiscs. While focused levies on dedicated playback equipment may provide some supplemental royalty income, government legislators will here burden all consumers with their surcharges, even if they do not use music. Indeed, Germany confirms that 50% of blank CDs were used for purposes that were entirely legal.

However money is collected, copyright administrators must then determine a fair way of apportioning collected revenue among different content types. For example, the U.S. at present divides collected levies from digital audio tape according to the relative number of tracks sold in the current market. This allocation disregards the potential ability of the copyist to take music from previously released oldie tracks with some continued appeal. The problem of allocation will increase considerably if movies, books, and other forms of digital compensation are duly compensated as well; there is no apparent way to assign royalties efficiently between these different sectors.

11. ALTERNATIVE COMPENSATION SYSTEMS

Yet more problematic than levies are the broader “alternative compensation systems” that several law professors seem to believe are capable of entirely replacing copyright and market pricing. Under these proposals, users would be permitted to freely download music, movies, and other forms of content through any file-sharing network they choose.¹¹⁵ Rights owners would be compensated *entirely* from the collected proceeds of a levy affixed upon a wide 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 copyright tribunals administered by a government agency, such as the Copyright Board.

Specific proposals vary. Neil Netanel of UCLA would allow noncommercial takers to take everything they want except software.¹¹⁶ Terry Fisher of Harvard confines his domain to music and movies that can be monitored in real time, but allows commercial takings as well.¹¹⁷ Professing voluntarism, Jessica Litman suggests that content owners be permitted to opt out; she then disqualifies record labels entirely from receiving any compensation and therefore guarantees that they will indeed opt out, thus defeating entirely her plan.¹¹⁸ Based on his subjective judgment, Fred von Lohmann advances the idea that five dollars a month (the equivalent of five permanent downloads on iTunes) is a fair and just price for licensing user rights to make an unlimited number of downloads on P2P.¹¹⁹

¹¹⁵For 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)

¹¹⁶N. W. Netanel, “Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing”, 17 HARV. J. LAW & TECH., December, 2003.

¹¹⁷W. W. Fisher, *Promises to Keep*, ch. 6 (Stanford University Press)

¹¹⁸J. D. Litman, “Sharing and Stealing”, at <http://ssrn.com/abstract=472141> (retrieved October 5, 2004)

¹¹⁹F. von Lohmann, “Is Suing Your Customers a Good Idea?”, Law.com, September 29, 2004 (retrieved February 16, 2005).

These schemes – and others like them – are badly thought out, impractical, inequitable, and overreaching. Despite the false claim of voluntarism, each proposal is a compulsory levy placed on all users of devices and services regardless of the actual use of online music or other entertainment. Indeed, a great number of people would prefer to stay away from P2P due to present concerns about spyware and pornography. In fact, such users who have no interest in using P2P technologies would be harmed by government takings that tax their purchases of new equipment and services.

More generally, the levy system would rather place government in top command with authority to set royalty fees, adjust them in response to changing use patterns, and allocate the collection pot to contending rights owners. In the foreseeable event that the level of content downloading outgrows the available pot of levy dollars, compensation per individual work would necessarily diminish. Copyright administrators here will need to reconvene hearings annually just to adjust the levy percentage to keep up with the industry's revenue gap. It will be necessary to hire one or more forecasting teams simply to anticipate future demands and revenue requirements of entertainment product with a demand that is inherently uncertain. If demand expands rapidly, levies must increase accordingly, or be extended to yet other devices, possibly burdening equipment sales and network expansion.

For their part, content owners in different private sectors would then need to fight continually for their respective share of revenues; the problems posed by proper allocation are considerable as the panel faces the daunting task of valuing contending uses without a corresponding free market. Indeed, if Netanel's idea were seriously considered for a moment, the panel would need to consider the relative worth of a novel, a full length movie, a recorded song, a music video, a photograph, and a comic strip. Netanel did not begin to suggest a method for doing this.

Fisher's proposal is a maze of contradictions. He first professes his support for a "semiotic democracy" where all content can be accessed for free comment and

modification.¹²⁰ After realizing that the relative valuation here is hopeless without an underlying market, Fisher narrows his scheme only to those works that can be represented in minutes of duration – i.e., movies, music, and television programs.¹²¹ By his determination, two hours of content would be compensated equally regardless of its underlying nature; e.g., a two hour news documentary, a two hour feature length movie, and a two hour CD would be compensated with equal amounts. This crude arithmetic rule fails to consider relative costs of production and is devoid of any economic meaning.

Fisher contends that the average American household in his scheme would end of paying no more than \$250, roughly half of the \$470 the average household currently pays for access to recorded entertainment, and would receive, in return, *unlimited amounts of ad-free music and movies*.¹²² Apparently, no legislator has yet taken up his offer. However, I do understand that Fisher's idea have generated some interest in Brazil.

No author offers any credible discussion of how to cover actual producer costs, nor any means of determining whether collected revenues actually true up to adequate compensation for the takings. Moreover, no proposal considers the need for licensing alternative services – e.g., streaming, advertising-based distribution, and temporary downloads of various durations – which some customers may actually prefer to downloading. Therefore, if a levy action were to permit free downloading (as is commonly envisioned), it would simultaneously preempt space from other business models that may otherwise be imaginatively conceived, combined, and readopted. As such, a levy system would then deeply weaken the opportunities and incentives for innovators to produce new technologies that come to recognize consumer preferences for important service features; it may preserve the very same “dinosaur” technologies that a market should always attempt to supersede.¹²³

¹²⁰Fisher, 28-31.

¹²¹Fisher, Ch. 6.

¹²²<http://www.lessig.org/blog/archives/002247.shtml#002247>

12. DIGITIZATION AND ITS DISCONTENTS

The academic criticism of TPMs has reached a level of polemic that casts into doubt the quality of the reasoning. Canada's major participant in the critical movement appears to be Prof. Michael Geist, who shares his thoughts on copyright in editorial articles written for the *Toronto Star*.

Without any careful evidence of his underlying legal reasoning, Professor Geist warns that anti-circumvention legislation has “steadily eviscerated fair use rights such as the right to copy portions of work for research or study purposes, since the blunt instrument of technology can be used to prevent all copying, even that which current copyright law permits.”¹²⁴ Putting aside the fact that the fair use rights don't exist in Canada, Geist is quite wrong, as TPMs only protect against the immediate reproduction of another electronic copy in order to deter the taking – at virtually no cost -- of a perfect duplication that can be reproduced and distributed repeatedly with no deterrent. Rather, Geist's fair use rights, which here apparently implicate the taking of quotes from documents for the purpose of subsequent reference or modification, are not harmed at all for any person – even of modest intelligence -- who will simply type the quote from a printout of a protected document to another file. Indeed, this is exactly what I did with Prof. Geist's quote, which I viewed originally in a protected document available from the *Toronto Star*.

Regarding protected works (e.g., books) that fall into the public domain (another Geist concern), the author fails to mention that the entire protected work may legally be printed out, reproduced, and freely distributed to all readers and buyers at any sustainable price. Moreover, it is possible to allow an exemption from anti-circumvention protection for any person who cracks protection in order to access a public work. Indeed, an exemption regarding public domain can be permitted through the enabling statute or subsequent administrative procedures.

¹²³R. P. Merges, “Compulsory Licensing vs. the Three Golden Oldies: Property Rights, Contracts, and Markets”, 10, POLICY ANALYSIS (Cato Institute: Washington), January 15, 2004.

¹²⁴M. Geist, “TPMs: A Perfect Storm for Consumers”, *Toronto Star*, January 31, 2005.

Prof. Geist entirely misunderstands the critical music service, Apple iTunes. He refers to Apple iTunes as a model of a service that uses “TPMs to protect their songs” but “leaves the legislation out of it.”¹²⁵ In fact, Apple’s successful application of DRM technology Fairplay directly depends, as much as any, on legal protections against its circumvention. Moreover, if DRM can be criticized at the present moment, the present incompatibility of players and music is the most substantial weakness; Apple has been the major offending party. Here the recording industry would concur with Prof. Geist; standards are to be encouraged to promote general use.

12. CONCLUSION

Lawrence Lessig points out that there is “regulation of behavior in cyberspace, but that regulation is imposed primarily through [computer] code [i.e., access protection and DRM].”¹²⁶ In Lessig’s view, law is sometimes necessary to defeat the anti-social uses of such regulation by digital providers.¹²⁷ From an economist’s perspective, the same code is an efficient monitoring technology that enables the enforcement of the very property rights that law generally attempts to preserve in a free market economy. To restrict the exchange of legal property rights is to interfere with an enabling operative that lowers transactions cost and spurs greater investment.

While the duration and scope of copyright can reasonably be questioned, property rights must be preserved if prices are to allocate resources to competing ends and provide the signals that direct future investment in innovations. More generally, the price system is a means for ferreting out impacted information:

“The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never existed in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess

¹²⁵ M. Geist, “Music Industry doesn’t need more government protection”, Toronto Star, January 21, 2005.

¹²⁶ L. Lessig, CODE AND OTHER LAWS OF CYBERSPACE, Basic Books, 1999, 20.

¹²⁷ Id., 43.

Fundamentally, in a system where the knowledge of the relevant facts is dispersed among many people, prices can act to coordinate the separate actions of different people in the same way as subjective values help the individual to coordinate the parts of his plan.”¹²⁸

From this economist’s perspective, it is then procedurally rational to affirm, rather than diminish, the application of property rights *particularly* in new market applications that are now evolving. More than anything else, adaptive pricing of disparate functionalities would permit necessary time for matters to evolve and for more information to come to the foreground

The content industries are now evolving into innovative systems that test new arrangements for production, distribution, and retailing. This rapid innovation – which implicates processes, relationships, business models, organizational structures, and methods of presentation – involves the interaction of agents with limited information. In the paradigm of Schumpeterian economics, market processes then enable the cadences of ‘creative destruction’ of the old through new ideas, products, processes, and organizational modes.¹²⁹ The market is a means for managing the complexity of this system and an arena that enables the continual feedback that permits agents to learn

In this regard, the potent and reactive forces unleashed and filtered in the market crucible will be weakened considerably if infringing services are permitted to preempt licensing space from rightful content owners and market space from new services. For its part, the government should not distort the outcome by unevenly taxing, subsidizing, or allowing takings in any chosen part of the market. For any asymmetric entitlement creates an uneven playing field and an outcome that may have little to do with actual costs or consumer preferences. If permitted to take copyrighted material, unrestricted file-sharing unavoidably kill in the cradle the birth and development of other significant noninfringing innovations -- new ideas, business models, relationships, and organizational structures -- that may actually have even greater appeal to some number

¹²⁸ F.A. Hayek, “The Price System as a Mechanism for Using Knowledge,” at <http://www2.sju.edu/faculty/watkins/hayek.htm> (retrieved January 24, 2004).

¹²⁹ J.A. Schumpeter, *CAPITALISM, SOCIALISM, AND DEMOCRACY* (New York: Harper Collins, 1947).

of listeners. It is difficult to ignore the analysis of the present market by reciting a precedent from a previous Supreme Court decision.

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.