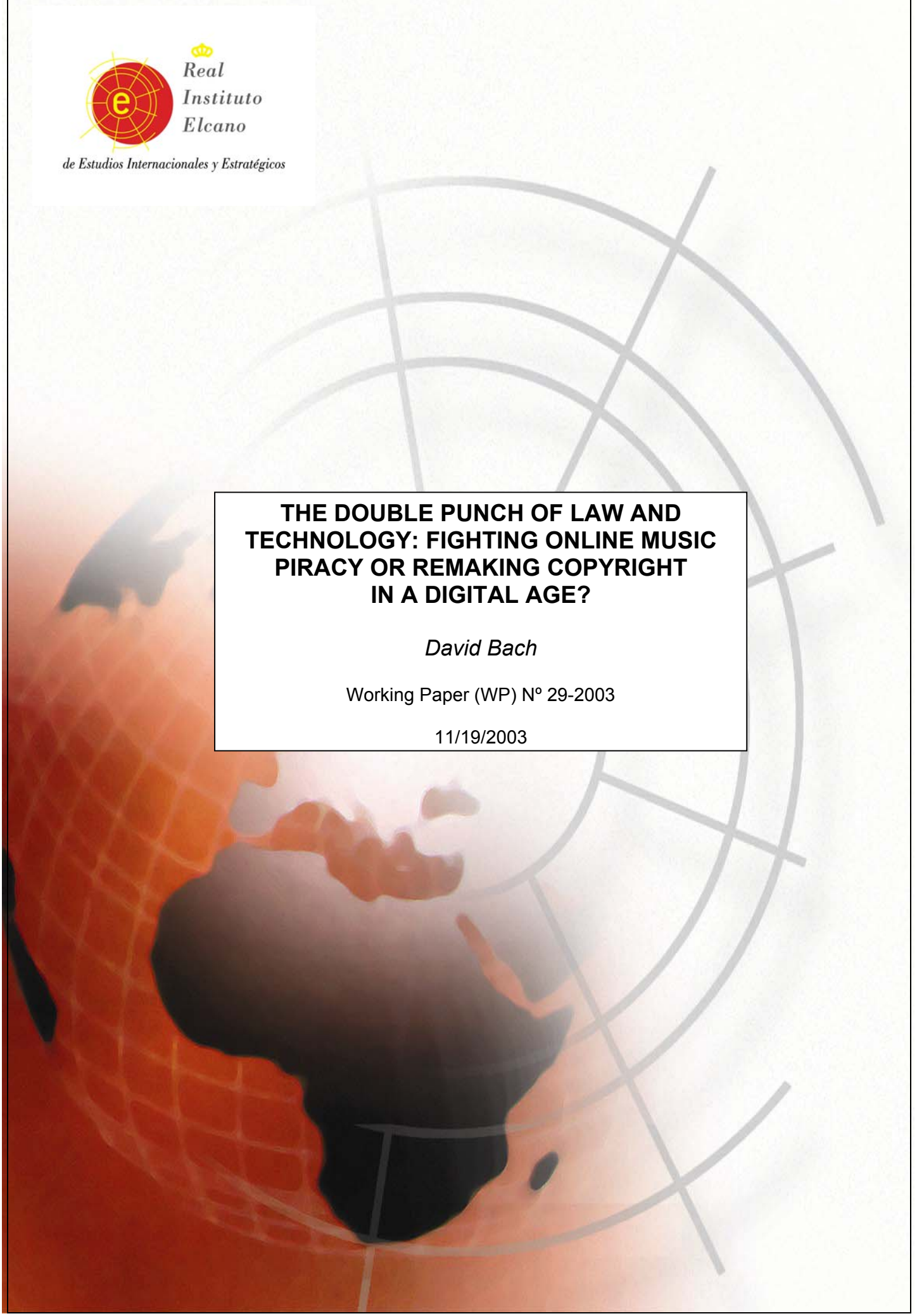

THE DOUBLE PUNCH OF LAW AND TECHNOLOGY: FIGHTING ONLINE MUSIC PIRACY OR REMAKING COPYRIGHT IN A DIGITAL AGE?

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The double punch of law and technology: fighting online music piracy or remaking copyright in a digital age?

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Summary: For the recording industry the case seems clear. Music sales are down for the third straight year. CD sales are now almost 20% lower than in 2000. Despite their successful campaign against Napster two years ago, online music sharing through peer-to-peer service such as KaZaA and Gnutella continues to flourish. To re-establish its pre-Napster margins, industry thinking goes, the record labels have to put an end to illegal music sharing over the Internet once and for all. Hence, the recent decision by the industry-leading Recording Industry Association of America (RIAA) to take the fight directly to file sharers, not merely to commercial file sharing services.

Introduction

For the recording industry the case seems clear. Music sales are down for the third straight year. CD sales are now almost 20% lower than in 2000. Despite their successful campaign against Napster two years ago, online music sharing through peer-to-peer service such as KaZaA and Gnutella continues to flourish. To re-establish its pre-Napster margins, industry thinking goes, the record labels have to put an end to illegal music sharing over the Internet once and for all. Hence, the recent decision by the industry-leading Recording Industry Association of America (RIAA) to take the fight directly to file sharers, not merely to commercial file sharing services.**[1]**

The legal battle between the mighty recording industry and a group of mostly students, who account for the lion's share of illegal music sharing, is fascinating in itself. Attempting to thwart any David vs Goliath sympathies for file sharers, the recording industry has sought the moral high ground. Online music sharing, the recording industry argues, amounts to organized theft that threatens not only the survival of commercial music but also the very foundation of artistic and intellectual creativity.

To most, such allusions are mere rhetoric. After all, online music sharing primarily threatens the recording industry's monopoly over music distribution on which its business model has rested for decades and from which it has profited handsomely. But in a very real sense the current battle over music piracy is indeed about much more. It is a battle over the heart of the emerging information society, a battle over who gets to own what and on what terms in the digital age. Intellectual property law has long been regarded as an arcane and mundane body of rules, accessible only to a few practitioners and of relevance only to inventors and a few major corporations. But in an information age, intellectual property rules define what *is* property. As an increasing number of goods and services are digitized, these rules set the terms of exchange, commercial and non-commercial, in economy and society.

This paper assesses the technological, business, and political drivers of current intellectual property dynamics in the advanced industrial economies, particularly in the

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area of copyright.**[2]** Its central thesis is that copyright producers –especially the music, motion picture and publishing industries– are pursuing a two-pronged strategy to defend their core assets and business models against the challenge posed by digital network technologies. Through a set of technologies –dubbed Digital Rights Management (DRM)– industry seeks to recreate control over information distribution. Because virtually any electronic lock can be broken at some point by somebody, the second part of the strategy dramatically strengthens the legal position of copyright owners. New laws criminalize the development of electronic lock-breaking circumvention technologies and provide copyright holders with an array of new legal tools to enforce their rights.

This 'double punch' of law and technology is fundamentally altering the balance of producer and consumer rights upon which copyright has traditionally rested. Worse, many of the crucial decisions are no longer taken on the national level, depriving diverse stakeholders of an ability to shape the direction of critical policy. With respect to legal aspects, decision-making in this area has moved up, taking place on the international level and –in the case of Europe– the level of the European Union. DRM technologies, in turn, are developed on the firm level and are often deployed without consumers' knowledge. The result is the real possibility that information technologies –far from creating an information paradise accessible to all– will lead to a shrinking 'information commons' resting on universal pay-per-view and pay-per-use.

The challenge for policy makers is to balance the legitimate interests of copyright holders to control their property with the public interest of broad availability and diffusion of information. Yet the politics of intellectual property policymaking –particularly the simultaneous upward and downward shifting of decision-making responsibilities– make this an increasingly difficult undertaking. As a first step, we must broaden the basis of discussion. Music royalties are certainly important, but the underlying issues are too vital for a large number of stakeholders to remain on the sidelines as recording industry and music pirates fight it out.

To help establish a basis for broadened discussion, this paper provides an analytic map of the critical drivers and issues. Its main goal is to locate the current debate over online music sharing in a larger context of digital challenges, business strategies and public policy. The paper proceeds as follows. The following section examines the digital challenge and shows that digital technologies are a double-edged sword –they not only make copying easier but also provide copyright holders with new defences and measures of control. Section three sketches the double punch of law and technology, epitomized by the provisions of the Digital Millennium Copyright Act (DMCA) in the United States. In law as well as in practice, copyright appears to depart from balancing producer and consumer interests, instead giving way to publicly sanctioned, unrestricted private enforcement. There are several reasons to be concerned about this development, outlined in section four. The departure from balancing, I argue, is in large part rooted in the politics of intellectual property rights making. In section five, I show that copyright policy making in recent years has been characterized by forum shopping and elite bargaining that have been very favourable to industry interests. Against the background of these political drivers, I assess the potential to fight music piracy in a balanced fashion, and sketch some elements of a strategy to do so in section six. The final section concludes by looking ahead to future challenges.

Copyright and the Digital Challenge: From Napster to Digital Rights Management

Ideas and information have a peculiar character that has occupied policy makers and thinkers for ages. As Thomas Jefferson remarked,
'If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself, but the moment it is divulged, it forces itself into the possession of everyone, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.'**[3]**

In this passage, Jefferson beautifully describes two characteristics of information goods that economists call their non-rivalrous and their non-excludability. The former means that my consumption does not diminish your ability to consume, and the latter implies that I cannot control who consumes after my initial release of the product. These characteristics led Jefferson to conclude, 'Inventions then cannot, in nature, be a subject of property'.**[4]** To nevertheless provide economic incentives for creative enterprise, societies have deliberately created intellectual property rights. These rights grant authors and innovators temporary monopolies over the expression of their ideas to foster the production and distribution of knowledge and innovation. For a 'market of ideas' to flourish, authors and innovators must exert some control over the distribution of their works in order to charge a price for them.

Piracy and counterfeiting are of course as old as intellectual property law itself (Spar, 2001). But technological limitations and sufficient law enforcement have until recently rendered piracy a manageable nuisance, rather than a potent threat to the system. The non-commercial copying of a few analog records and tapes at home, for example, barely affected the music industry's bottom line. Not only was such copying time-intensive, the quality of copies was also poor. Piracy on a scale where it made commercial sense, in turn, was fairly easily detectable.**[5]** Occasional irritation about illegal copying notwithstanding, the recording industry has profited handsomely from its *de facto* monopoly over the physical distribution of music.

Napster and Perfect Copies
Digital network technologies, however, pose a fundamental challenge to the existing order. Digital technologies permit perfect copying of information at a marginal cost of zero. The Internet enables the rapid transmission of such information around the world in real time, also at marginal cost zero. Anybody with a personal computer and a moderately fast Internet connection can therefore engage in copying and distribution of music on a scale that dwarfs the abilities of previous professional music pirates.

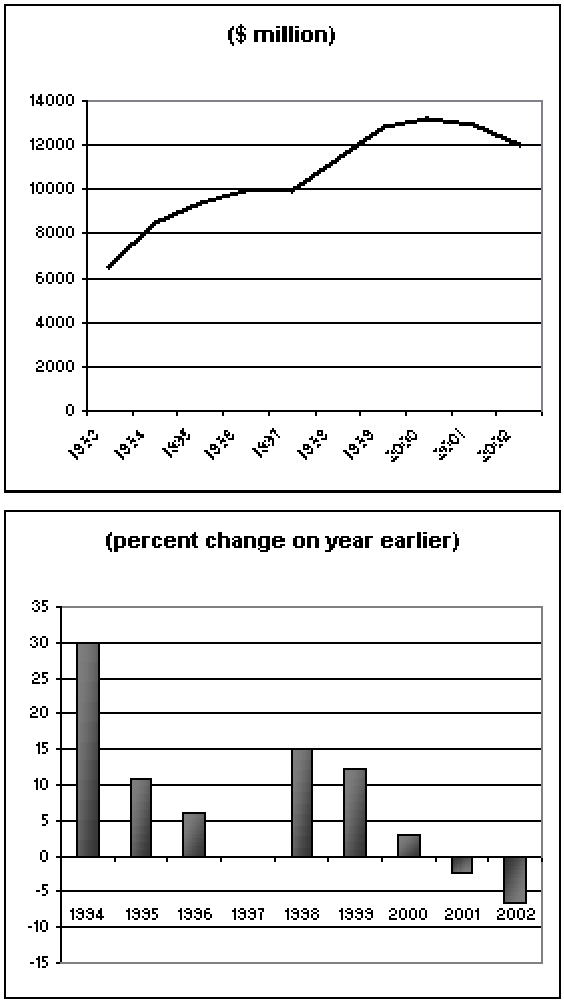
MP3 digital file compression technology made the exchange of music over the Internet technically feasible, even with limited bandwidth.**[6]** Napster made it simple and fun. Written by Shawn Fanning, a college dropout, the free Napster software gave users access to all music files stored on the computers of everybody else connected to the service. The more people connected, the more everybody benefited. Four months after Fanning had e-mailed the software to a few friends, Napster had one million users. Another five months later, five million had signed up. And on its first birthday, the Napster community counted twenty million users, making it the most quickly diffusing online service in history.**[7]**

That Napster almost immediately became the target of a legal assault by the recording industry and individual artists is well known. Less than two years after its creation, a court

order permanently shut Napster down, charging it with widespread facilitation of copyright infringement. But others were quick to take its place. While also relying on so-called peer-to-peer (P2P) technology, services such as KaZaA and Gnutella are technically even more advanced than its famous predecessor. In contrast to Napster, these services no longer rely on a central database of available songs, making it infinitely harder to shut them down through a targeted action. After a short dip in online music sharing after Napster went offline, Internet-enabled music piracy has continued to prosper. By some recent estimates, 35 million Americans alone download music from the Internet.**[8]**

After some initial uncertainty whether online music sharing indeed diminished legal music sales, there is now little doubt that rampant downloading is significantly affecting the industry's bottom line.**[9]** Surveys indicate that frequent users of file-sharing services spent considerably less on CDs than comparable groups who do not download on a regular basis. Worldwide music sales in the first half of 2003 alone were down by almost 11% compared with the same period one year earlier.**[10]**

Figure 1. US compact disc sales, 1993-2002



Source: RIAA

Despite their prominence, Napster and its successors are not the only challenge to the music industry enabled by digital technology that is affecting the bottom line. The ability to make perfect copies at near zero cost has given a new boost to commercial piracy as well. Copying CDs is not only easier and feasible on a much larger scale than copying audiotapes; it also avoids the problem of diminishing quality. Predictably, in countries where Internet and particularly broadband Internet penetration is fairly low, users buy

pirated CDs from street vendors rather than downloading from their homes. In Europe, for example, Spain, Italy, Portugal, and Greece –laggards in Internet adoption– have the biggest markets for pirated CDs, with illegal sales amounting to more than one quarter of total CD sales.**[11]** The situation is even worse in Eastern Europe, the Middle East and Latin America. The biggest source of pirated CDs and the highest percentage of illegal copies can be found in East Asia, however, with China's 90% piracy rate leading the pack.**[12]** All in all, experts estimate that one in three CDs sold worldwide is pirated.

Shocking as the numbers on commercial CD piracy may be, online music sharing *à la* Napster is by far the bigger challenge to the music industry. Commercial pirates challenge the record industry's monopoly over music distribution, but not the distribution model itself. Internet-based file sharing, however, rests on a separation of music from its physical carrier. Once loaded into a computer and made available over the Internet, music becomes non-rivalrous and non-excludable, much like the way Jefferson characterized the nature of ideas. Yet markets require scarcity for their proper functioning. As Brad DeLong and A. Michael Froomkin have argued, markets only allocate resources efficiently when goods are rivalrous, excludable, and transparent (DeLong and Froomkin, 2000). Information goods –including digitized music separated from its physical carrier– tend not to exhibit these characteristics, making market failure the norm, not the exception.

We can already see the breakdown of markets in this environment. An increasing number of file-sharing service users now believe that music *ought to be* free and that there is absolutely nothing wrong with downloading music off the web.**[13]** In fact, the music industry's problem increasingly is not the fight against file-sharing services, but the fight against the Napster mentality, that is, the expectation that music is available free of charge. The recent lawsuits against individual users are as much about changing people's perception of file sharing as they are about setting precedents of tough enforcement.

The lack of scarcity as a consequence of lifting music off its physical carriers also haunts efforts to establish legal online music distribution services. A central issue that has beleaguered these efforts for years is pricing. Should services be based on monthly subscriptions or should users pay per song? I return to the prospect for legal services below. Suffice it to say at this point that there is absolutely no reason why downloading a song should cost 99 cents, as is becoming a quasi industry standard, other than it being roughly the cost of a CD divided by the average number of songs.**[14]** The marginal cost of distributing one more copy of a song online is zero. Supply and demand cannot help firms set prices when goods are non-rivalrous and non-excludable.

In sum, Napster and Internet-based music sharing is not simply a new and more efficient form of piracy. It is an all-out assault on the model of music distribution upon which the recording industry rests. Moreover, by enabling the separation of the information from its physical carrier, digital technologies essentially take us back to the problem faced by Jefferson and his contemporaries more than two centuries ago –how to provide economic incentives for the production of goods that tend to be non-rivalrous and non-excludable?

DRM and (Almost) Perfect Locks

So far, the discussion certainly suggests digital technologies are a one-way threat to copyright. But digital technologies are a double-edged sword. The very same technologies that can undermine intellectual property can also grant a measure of control far greater than anything familiar from previous eras.**[15]** Dubbed 'digital rights management' or DRM, these technologies are a set of electronic locks for digital content such as music, video and text. Content is not distributed as raw data but rather inside a secure container. Accessing the content requires a key and control over key distribution grants de facto control over content distribution.

An example of DRM is the Content Scrambling System (CSS) that is built into every DVD player. Contrary to most music CDs, data on DVDs is encrypted and requires a decryption key for playback. DVDs can therefore not be copied as easily as music CDs. The obvious problem with DRM is the need for uniform standards, however. Lock and key have to go together. In the case of DVD players, America's motion picture industry has been able to force manufacturers to incorporate the industry's CSS standard into every device. This influence stems from the motion picture industry's controlling of critical DVD technology patents that every manufacturer must license. Predictably, incorporation of CSS is a licensing condition (Samuelson, 2003:43).

The recording industry has not enjoyed the same influence over equipment manufacturers as their Hollywood colleagues. Its Secure Digital Music Initiative (SDMI) has so far not led to the ubiquitous adoption of a single standard.**[16]** Some industry representatives have therefore called on policy makers to mandate all devices capable of playing digital music to be equipped with DRM. In the meantime, multiple corporate solutions are competing in the market place. Microsoft's technology, embedded in its Windows Media Player 9, is an industry leader, but some providers of legal online music services have decided to go with Microsoft's competitors instead, fragmenting the market.

DRM as such of course does not restrict copying. All it does is return a measure of control to content producers, such as the recording or motion picture industries. What industry does with this measure of control is a matter of corporate strategy. In the case of music, for example, DRM provides record companies almost limitless latitude. It can be used to prevent any copying, to permit only a single copy, to prevent burning of songs onto CDs, or to only permit playback during the first 48 hours after purchase, to name only a few. In short, it gives the record industry close control over what users actually do with the industry's products.

What should we make of DRM? The answer depends on one's perspective. At least three distinct views should usefully be distinguished. The first is the officially stated position of copyright industries; the second is a microeconomic point of view; and the third stems from sceptics who are concerned about consumer rights in the emerging information society.

According to the recording, motion picture and publishing industries, DRM are simply tools to combat piracy and counterfeiting. Anybody who downloads music from the web without paying royalties is committing theft, the reasoning goes, and DRM is merely a way for owners of intellectual property to defend their rights. This reasoning seems to have convinced a large number of policy makers in many countries and makes possible the 'double punch' strategy, as I will explain below.

A second perspective takes DeLong and Froomkin's observation about the character of information goods as a starting point. If the problem is indeed that information goods are non-excludable and non-rivalrous, then DRM may just be the saviour of markets. In other words, DRM enables information goods to function more or less like conventional goods, re-establishing excludability and thus an artificial notion of rivalry and scarcity. One set of technologies challenged the status quo by separating music from its physical carrier; a second set of technologies now re-establishes that status quo by wrapping music inside an electronic container whose distribution can again be controlled. The only point of DRM, in short, would be to prevent market failures on a massive scale.

From a sceptical consumer rights point of view, finally, a different picture emerges. As Pam Samuelson (2003:44), a leading copyright expert, has remarked,
'The main goal of DRM mandates is not, as the industry often claims, to stop 'piracy' but to change consumer expectations. In the content industry's view, consumers don't have rights; they have expectations.'

The expectations Samuelson is referring to are about what consumers may and may not do with digital content. If content providers do not give consumers permission to burn legitimately downloaded songs onto a CD, consumers may just have to accept it.**[17]** If listening to a song five times during a 48-hour period were a lot cheaper than purchasing a right to unlimited listening, consumers had better adjust their listening patterns. DRM, in short, gives the music industry a set of tools to initiate a paradigm change in the entertainment and information industries. Rather than selling physical music carriers and leaving it up to consumers what to do with them, the industry would exert much greater 'after sales' control over consumers and their consumption.

Each of these perspectives has credence. As shown above, digital network technologies have made copyright infringement vastly easier, seriously impacting legitimate music sales. DRM is certainly one way to turn the tables on pirates. It is also true that DRM –by re-establishing excludability and rivalry– seeks to resolve the underlying tension between information goods and copyright. It might thereby enable established business models, policies and law enforcement strategies to continue to work, or at least to minimize adjustment costs.

Yet a strong case can also be made that DRM is indeed about fundamentally changing the relationship of producers and consumers of digital information, as Samuelson and others suspect. There are several indications that content producers are employing DRM for much more than merely fighting piracy or ensuring that markets work properly. To curb the re-import of DVDs produced for foreign markets, for example, Hollywood is equipping discs with regional codes. DVDs produced for the Asian market will not work in a European player and vice versa.**[18]** The goal here is market segmentation and differential pricing, not preventing unlawful copying.

Similarly, the few successful legal online music services are using DRM to offer diverse products. MusicNet, a joint venture by America Online and RealNetworks, for example, offers AOL users three different subscription levels. Listening to twenty songs a month online and downloading another twenty costs US$3.95 a month. Unlimited listening and downloading comes at US$9.95 a month. In both cases, however, users cannot burn downloaded songs onto a CD. The right to burn ten downloaded songs per month increases the monthly fee to US$17.95. In addition to these existing subscriptions, AOL is considering a variety of other packages, including *à la carte* burning.**[19]** Only with DRM do service providers have the ability to control which songs users may listen to while being online, which songs they can download to their own computers and which songs they can burn. It is evident that industry is beginning to deploy DRM for much more than just battling piracy.

To the recording and motion picture industries, DRM could be a panacea. Not only does it help them turn the table on pirates; it also provides the capability for a set of product and marketing strategic options that are truly unprecedented. The only problem is that electronic locks, like all locks, can be broken. Where there is encryption, there are hackers trying to crack and get around it. To make the world 'safe for DRM', copyright holders have therefore pursued a complementary strategy of getting policy makers to put in place swift penalties against code breaking and code breakers. These two elements – DRM and sweeping laws banning tampering with them– constitute the double punch of law and technology that could fundamentally remake copyright. Having shown that digital

technology as such is not a nemesis of copyright, and that it can in fact be deployed to dramatically strengthen right holders' control, the following section turns to recent legal developments in Europe and the United States that constitute the other half of the double punch.

Copyright Reform, Anti-circumvention Provisions and the Threat to Fair Use

The rapid rise of the Internet and electronic commerce accelerated already ongoing efforts in Europe and the United States to adopt copyright for the digital age.**[20]** One aspect of the information revolution, however, is that many regulatory issues can no longer simply be settled in the domestic realm as digital goods and services cross borders at the click of a mouse. Animated by influential copyright holders, European and American governments therefore sought a new international copyright treaty through the World Intellectual Property Organization (WIPO), a Geneva-based United Nations affiliate.**[21]** The treaty's provisions have been incorporated into US law through the Digital Millennium Copyright Act (DMCA) and are becoming law in Europe as national governments implement the European Union Copyright Directive (EUCD).

The bulk of the WIPO Copyright Treaty, completed in 1996, consists of fairly uncontroversial provisions to ready copyright for the digital age.**[22]** These include classifying computer software as literary works to make it eligible for copyright protection, extending protection to certain aspects of databases and guaranteeing authors the exclusive right of authorizing commercial rental of their works.

The really critical provisions, however, relate to rights management technologies. Articles 11 and 12 require signatories to ban the circumvention of technological mechanisms owners of copyright may deploy to protect their works and to criminalize the development or distribution of circumvention technologies. In other words, the provisions not only make it illegal to tamper with an electronic lock, they also criminalize merely telling somebody how a lock may be broken.

The implementation of these WIPO provisions in the United States through the Digital Millennium Copyright Act (DMCA) has been highly controversial among copyright experts. Already broadly worded in the law, the courts have interpreted the DMCA's anti-circumvention clauses even more broadly (Samuelson, 1999).**[23]** Paradoxically, in its five years of existence, the Act has made headlines not for enabling decisive action against commercial piracy but primarily for publicity surrounding legal actions against scientists and researchers.**[24]** US software companies, manufacturers of electronic books (or e-books) and the Recording Industry Association of America (RIAA) have on several occasions prevented researchers from presenting work on electronic security systems and encryption at scientific conferences because publications of their findings could aid others in circumventing DRM systems. In the most chilling case, a Russian programmer, Dmitry Sklyarov, was arrested by the FBI and jailed for several weeks after he had presented work on Adobe's e-book DRM system at a conference in Las Vegas.**[25]**

Even more worrying from a public policy point of view, however, is the DMCA's encroachment on what in American law and jurisprudence is called 'fair use' of copyrighted material. Historically, copyright has always been about balancing the legitimate interests of both producers and consumers. One tool for such balancing are fair use exceptions. Copyright statutes include instances of permitted, 'non-infringing' copying of copyrighted materials. Making a copy of a videotape one has purchased to avoid carrying the original back and forth between a city residence and a summer home, for example, is entirely legitimate. Similarly, one need not pay royalties to photocopy an article from the newspaper in order to mail it to a friend. Quoting protected works in academic publications or other reviews is another instance of non-infringing use.

The combination of DRM and the DMCA's anti-circumvention provisions puts such fair use in jeopardy, however. Nothing in the law prevents the owner of a legitimately purchased CD from uploading a few songs onto her laptop to listen to them at work, for example. But an increasing number of ordinary audio CDs now come with copy protection, making such perfectly legal copying technically impossible. Worse, if the CD owner went on the Internet to learn how to circumvent the electronic lock that prevents him from exercising his fair use right, he would commit a criminal act. The person posting such information on the web would of course also be in serious trouble.**[26]**

In short, while the DMCA does not alter fair use exceptions in law, it is changing them in practice. By technically demarcating what is and is not possible, DRM systems are imposing consumption patterns. While consumers legally still have the right to engage in certain practices not permitted by DRM, doing so would entail circumventing these systems, which is illegal.

Europe's implementation of the WIPO Treaty provisions is very similar to that of the United States.**[27]** Mirroring the DMCA's language, Article 6 of the EUCD bans the use, development and commercial marketing of circumvention technologies.**[28]** Yet Europe's law in practice differs from America's in two important respects: *first*, European courts have considerably less leeway interpreting the law, making an overly broad interpretation of the anti-circumvention provisions and the targeting of individual researchers and consumers less likely**[29]**; and *secondly*, Europe's law –more clearly than the DMCA– specifies that the provisions are aimed in particular at commercial piracy and the development of circumvention technologies for commercial purposes.**[30]** Enacted just over two years ago, it is still too early to tell exactly how Europe's courts will interpret and enforce the EUCD, and whether it will shake up Europe's intellectual property landscape the way the DMCA has done in the US.**[31]**

Despite the important difference between European and American recent copyright reforms, the implementation of the WIPO Treaty provision banning circumvention technologies provides a solid legal foundation for an increasing reliance of DRM to protect copyright in the emerging information society on both sides of the Atlantic. If the American experience is an indicator of things to come, however, the double punch of law and technology appears better suited to change consumer expectations and to dramatically alter the balance of producer and consumer rights than to effectively curb piracy. The following section analyzes potential implications of the double punch for competition, consumer rights and the character of the information society.

The Double Punch and Reasons for Concern

The double punch of law and technology consists of the deployment of electronic locks for digital content via DRM technologies and a new set of legal provisions that make tampering with these locks a crime.**[32]** The recording, motion picture and publishing industries are clearly pursuing this strategy in their quest against piracy and policy makers have so far been willing to go along. As shown, however, to industry, the double punch has significant appeal beyond just curbing piracy.

There are three reasons in particular why policy makers and other stakeholders should give the double punch a second look. Policy makers should consider: a) its effects on competition; b) its effects on the balance of consumer and producer rights; and c) the implications for the character of the emerging information society.

The Terms of Competition: Strengthening Incumbents and Maintaining the Status Quo
The double punch of law and technology is above all an attempt by incumbents to maintain the status quo in their industries. For decades, the business models of the major

record labels, Hollywood studios and publishing houses have rested on controlling the production and physical distribution of discs, tapes and paper that contain information. Digital network technologies provide an almost infinitely configurable set of tools to disseminate information and therefore a potentially limitless number of challenges to the incumbents' core business. So far, incumbents appear to respond to these challenges by seeking the enclosure of information in electronic containers, thereby trying to replicate the offline basis of their success in the new online environment.

By supporting the double punch, policy makers are adopting an inherently status quo bias in one of the most dynamic market environments of memory. The terms of competition in the emerging information markets are therefore heavily tilted in favour of incumbents, to the detriment of new entrants, innovative new business models and quite possibly consumers. In light of the rapid diffusion of broadband Internet access and the hassle of going to a store to buy a plastic box that contains a dozen music files, it is a testament of incumbents' strength that CD sales have not dropped significantly more than they already have.

Balancing Consumer and Producer Rights: Is 'Fair Use' a Right or Deadweight Loss?
Intellectual property has always been a means to an end –to foster the growth of knowledge and information available to the public.**[33]** As a matter of principle, intellectual property rules have therefore sought to balance incentives for authors and innovators with the public's interest in availability and broad diffusion. One tool for such balancing, as noted above, are consumer rights under the rubric of 'fair use' exceptions.**[34]**

Fair use exceptions are not merely an externality. Their anchoring in law is a conscious attempt by policy makers to foster innovation, creativity and public discourse through limited, uncontrolled use of copyrighted material. That is precisely why many fair use exceptions cover library uses, academic work, quotation for the purpose of public debate and satire. Fair use exceptions thus constitute the core of consumer rights and are meant to mediate and balance copyright holders' temporary monopolies.

For a long time, technological limitations made it painless for copyright owners to 'grant' fair use exceptions. Trying to collect royalties every time a reader made a photocopy of an article to send to a friend was simply not feasible at a cost that made economic sense. Likewise, since there was no way of cost-effectively preventing an owner of a CD from lending it to a friend there was really no point objecting to such practice. Many of the rights consumers have become accustomed to have therefore essentially been self-sustaining as a result of available technologies' limitations.

Digital technologies are changing firms' calculus, however. DRM gives copyright owners sweeping control over their products after the initial sale, and they enable such control at extraordinarily low cost. Whereas it was not feasible to charge newspaper readers for a photocopied article, it is feasible to charge a reader a fee to access an article sent by a friend. Similarly, whereas the recording industry could not reasonably charge for a tape recording off the radio, online services such as MusicNet and Rhapsody can fairly easily charge consumers for every track they want to burn onto a CD, and they are doing just that.

The double punch thus clearly raises the question whether previously tolerated fair use exceptions constitute basic consumer rights, or if they were merely the result of economic deadweight loss that new digital technologies help eliminate. This question is neither an economic, nor a legal or technological question. It is fundamentally a political question that requires a broad discussion among an array of diverse stakeholders. Law and technology can be adopted to reflect a new political consensus. As it currently stands,

however, developments in law and technology are driving the political discussion, not vice versa.

The Emerging Information Society: Towards Universal Pay-per-Use and Sweeping Information Enclosures?

In a market society, property rights regulate what can be owned, by whom and on what terms.**[35]** Owing to the digitization of goods and services, intellectual property rules become the property rights of the information age. For this reason, a growing number of commentators fear that the double punch is only the beginning of a sweeping transformation that goes far beyond specific business models and their effects on fair use rights. These commentators liken the double punch's effects on information access and use to the dynamics of the land enclosure movement in pre-industrial England, a process characterized by dramatic social and economic dislocations (eg, Boyle, 2002, 2003; Benkler, 1999; Lessig, 2001). While the comparison is perhaps somewhat overblown, it is useful to briefly reflect on the argument to get a sense of what may be at stake.

For centuries, England's aristocrats had permitted peasants to live on and utilize their lands in exchange for a share of their crops. A set of economic and technological changes –specifically new techniques for textile production and access to new markets due to falling transport costs– fundamentally altered the calculus on which the previous order had rested. England's aristocrats forced the peasants off the lands and used it to raise sheep and sell wool instead. Marking their assertion of authority, landowners enclosed their properties with walls and hedges that still characterize England's countryside today. While peasants could certainly climb the walls, doing so constituted illegal trespassing, which became punishable by law. Landowners' physical enclosure of their property, backed by legal safeguards, fundamentally changed economy and society. Land suddenly became seen as a tradable commodity and England saw the rise of a land market as well as a new class of landed entrepreneurs. The flipside was the formation of a substantial landless class of former peasants that moved to the cities to avoid starvation. There, they became a cheap labour pool, the very urban proletariat on which the industrial revolution would later thrive.**[36]**

Are there parallels between England's land enclosure movement and what the double punch may do to information? There are certainly some. England's aristocracy had owned its land long before the enclosures. However, the economic and technological context made it insensible to exert control over how that land was used. The peasants consequently treated it as a commons, a resource to be shared by many. Similarly, long before the digital age, copyright has given recording companies, movie studios, and book publishers' ownership over the information contained in their products. Yet ownership had meant control over distribution, not control over use. The latter was neither technologically feasible, economically sensible, nor normatively justifiable. The digital revolution appears to alter this calculus. Just as England's aristocrats fenced off their lands and deployed the law against trespassers, copyright owners are enclosing information and have won strong legal sanctions against suspects attempting to climb the electronic fences.**[37]**

The parallel can also be extended to the consumer side. England's peasants learned the hard way that they had never really owned the land they had lived on and had lived off for generations. The peasants had little recourse when the rightful owners asserted control over access to and use of their land. Similarly, contemporary music enthusiasts have grown up using 'their' records and CDs however way they wanted. No wonder so many have a hard time understanding why the recording industry all of a sudden can control where, when and how many times a user may listen to a song he 'bought'. Owners of Hollywood movies on videotape always had the right to fast forward through the commercials at the beginning. Using DRM, Hollywood studios are now beginning to disable the fast forward function on DVD players during commercials, even if the

consumer legitimately bought the disc in a store.**[38]** And tampering with the electronic lock that disables these discs' fast forward function of course constitutes a crime under the DMCA.

Given some parallels between the two cases, commentators see copyright owners' deployment of both legal and technological means to assert sweeping control over the terms of access and use of copyrighted material as endangering the 'information commons', the amount of information previously held in the public domain for the benefit of all. Just like the original enclosure movement divided society into landowners and a landless class, the future may bring a sharp division among information haves and information have-nots (Benkler, 1999, 2001).

Despite a few parallels, there are of course many differences that set the two cases apart. England's aristocrats did not rely on peasants as customers the way the music industry needs KaZaA users. Land is a scarce and finite commodity whereas information clearly is not. Medieval peasants had virtually no political rights but today's consumers of music, movies and books constitute a broad cross-section of democratic societies.

The comparison's value thus lies not in predicting an outcome but rather in illustrating what may be at stake in current debates. Intellectual property rules –in law and in practice– define what is property in an information age. To the extent that the double punch of law and technology is much more than merely a legitimate fight against piracy –and there is good reason to believe it is more– we should be very conscious that we are putting in place essential pillars for the emerging information society. Do we want to somehow replicate the current balance of producer and consumer rights in the new digital environment or are we ready to accept an asymmetric pay-per-use model of information access? Critics are right to point out that the music industry and other copyright holders may well decide that universal pay-per-use is not in their interest.**[39]** But are we –as a society– comfortable leaving a question as important as this up to the strategic marketing and product design departments of a few major companies?

The Politics of Copyright: Elite Bargaining and International Forum Competition

Given that so much appears to be at stake, how come the debate over the future of copyright in the digital age has been cast almost exclusively in terms of fighting Internet-enabled piracy? It is well known that concentrated and highly organized interests tend to have greater influence on policy than diffuse and unorganized actors. Two aspects of contemporary copyright in particular have shaped the debate in the incumbents' favour. For one, copyright is a highly technical and complex body of law, privileging a small group of experts. Secondly, owing to the rise of markets that cut across states and political boundaries, crucial decisions are increasingly made on the international level. In light of these dynamics, it will be difficult to channel the current debate into a broad dialogue about the role of intellectual property rights in the information age.

While copyright rests on a few fairly simple principles, actual copyright law and jurisprudence are incredibly complex. Periodically –often prompted by new technologies– copyright has been renegotiated, leaving a convoluted set of rights and responsibilities that only copyright lawyers fully understand. As the law got more complex, the US Congress increasingly relied on copyright lawyers working for industry to draft necessary new statutes (Litman, 2001). This process, as Jessica Litman (2001:62) contends, has left copyright with a clear bias in favour of incumbents, often to the detriment of new market entrants and consumers. Looking ahead, she argues,

'Current stakeholders have controlled the playing board for nearly a century, and would doubtless prefer to keep it that way. Although they squabble with one another over

specifics, they have managed to unite in fierce opposition to copyright revision bills drafted without their participation. The 1990s saw an astonishing increase in copyright-related campaign contributions –making it increasingly unlikely that Congress would support a movement to divest copyright stakeholders of responsibility for drafting copyright legislation.'

When legislators have intervened in the past to safeguard the public interest, they have done so generally through specific exemptions and exceptions, as noted above, not positive consumer rights. As a result, consumers are often fully unaware of their rights and consequently have not mobilized when recent reforms began to do away with established fair use privileges.

Even worse for consumer and new entrants, incumbents are even more influential in the international arena where many crucial decisions are now taken. In the 1980s, intense lobbying by a highly influential group of American and European industry leaders led governments to address growing international piracy and counterfeiting through trade policy (Sell, 1995, 2003). The result was the Trade-Related Aspects of Intellectual Property (TRIPS) agreement, concluded under the Uruguay Round in 1994. The treaty makes protection of intellectual property mandatory and gives the World Trade Organization (WTO) a critical role in international enforcement. TRIPS has awarded domestic trade authorities important roles in intellectual property policy, and trade policy makers have tended to favour producer interests even more than traditional copyright, patent and trademark officials (Doern, 1999).

The TRIPS agreement also put significant pressure on the previously noted World Intellectual Property Organization to embrace a more producer-friendly agenda. WIPO had historically focused on coordinating international patent, trademark and copyright registration systems and had been particularly concerned with facilitating knowledge flows from North to South. With the WTO's assumption of a central role in the field of international intellectual property policy, WIPO saw its continued relevance threatened. Seeking to affirm its place, WIPO's secretariat quickly launched a diplomatic conference on two new copyright treaties for the digital age. One of these treaties is the previously noted WIPO Copyright Treaty that called on signatories to criminalize circumvention of electronic locks and to ban circumvention technologies. Both treaties are noteworthy for their pro-producer orientation. Challenged in its position by the WTO, WIPO has thus responded by offering powerful copyright holders an even better deal than TRIPS.**[40]** Copyright holders, as a result, can increasingly shop for the most receptive policy forum, further reinforcing their position.

Fighting Music Piracy While Maintaining the Balance

The politics of copyright make it unlikely that the double punch of law and technology can be undone. Technical complexity, intense lobbying and the ability to 'forum shop' internationally give powerful copyright owners a clear edge over new entrants and consumers. These politics notwithstanding, it may not even be sensible to try to undo the double punch. After all, enclosing information in electronic containers re-establishes product excludability, making it less likely that markets will fail. As we have seen, however, the double punch also grants producers a basis for sweeping control over patterns of consumption. Resisting the temptation to employ the double punch to this end will surely be difficult. In fact, there is already evidence copyright owners are beginning to curtail consumer rights.

The goal for policy makers therefore must be to ensure that copyright owners deploy the power of the double punch only to combat piracy and to stimulate a dynamic and properly functioning market, but not to undermine consumer rights or to keep new entrants out.

With respect to public policy, achieving this outcome requires fostering competition in the industry and strengthening the position of consumers. But public policy alone is unlikely to suffice. It is critical that the large number of stakeholders currently caught in the middle between the recording industry and music pirates take a stand. Given their position in the heart of the controversy, a special role and responsibility falls to artists, authors and the organizations that represent their interests.

The Role of Artists
Prominent artists' support for the record industry's legal pursuit of Napster was critical to legitimize in the eyes of many the fight against online music sharing. Four years later, as it becomes apparent that the recording industry is mixing the fight against piracy with aggressive efforts to cement the industry status quo, artists and the organizations that represent them should now weigh in on the side of competition and consumer rights.

In the spring of 2000, the rock band Metallica and the rapper Dr Dre launched independent copyright infringement lawsuits against Napster, adding considerable clout to the lawsuit initiated by the record labels.**[41]** Soon thereafter, seventy popular artists took out full-page advertisements in major US newspapers to oppose online music piracy and to demand respect for their creative work.**[42]** These statements enabled the Recording Industry Association of America (RIAA) –the organization that represents the five major record labels– to portray its fight as being on behalf of the entire music industry and especially on behalf of the artists. It was clear that in the battle for public opinion, touting a grave threat to artistic creativity would be more effective than citing falling profits for multi-billion dollar record companies. In the eyes of many, the positions of prominent artists and the major labels became hard to distinguish, and the artists' popularity legitimized the RIAA's tactics.

The coalition of artists and record labels is noteworthy because the two are frequently at odds. With almost 90% of the recorded music market under the control of the big five labels, artists often complain they are forced to submit to unfavourable terms. Many artists had initially hoped the Internet would break the big five's stranglehold on the industry. For a new digital music market to flourish on the Internet, however, the challenge posed by Napster and online piracy first had to be countered. In fact, many industry observers viewed the court-ordered shutdown of Napster as a way of granting industry incumbents some additional time to adjust to the digital challenge, develop innovative new business models that take advantage of new technological opportunities, and then compete with new entrants on a level playing field.

Several years later, however, the incumbent record companies are still far from establishing viable online services, in large part because they resist cutting into their established business of selling CDs on which their market power rests. Instead they are deploying the double punch to maintain the pre-digital status quo. The recent, high profile law suits against hundreds of individual file sharers who never benefited commercially indicate that the recording industry still believes it can turn back the clock and get the genie of online file-sharing back in the bottle. Were it only intended as a one-time strong reminder that illegal music downloading is copyright infringement that can lead to serious legal consequences, the strategy of suing individuals might have some limited success. But RIAA lawyers are already preparing future rounds of lawsuits and stirring considerable concern with their demand that Internet Service Providers take on de facto law enforcement and monitoring roles in support of the recording industry.**[43]** Aggressively suing your customers is generally not a good strategy to keep them and the artists certainly know this.

Just like the artists themselves, organizations that represent their interests and collect royalties on their behalf are caught between consumers and the recording industry. To

defend artists' ability to receive fair compensation for their work, organizations such as Spain's Sociedad General de Autores y Editores (SGAE) and its counterparts in other countries have launched their own campaigns against music piracy. While the recording industry and artists' organizations have thus been allies, or at least are perceived that way in public, the latter –just like artists themselves– should have little interest in a dramatic alteration of the copyright status quo made possible by the double punch. Over the past century, the development of sophisticated and reliable royalty collection systems has proved that compensating authors and artists does not require tight post-sale control over ordinary consumers' usage of copyrighted material. Recent efforts –led by BMI of the US, Germany's GEMA, France's SECAM, Italy's SIAE and SGAE– to develop a 'FastTrack' system for cross-border royalty tracking are an important step towards a balanced digital future.**[44]** The choice ahead is not merely one of all-out piracy or universal pay-per-view, and organizations representing artists have both an interest in making this clear and evidence to back it up.

New Entrants and Competition

A wave of new entrants is currently trying to seize the space left open by the incumbent record companies' persistent failure to establish viable online music distribution services. Several of these demonstrate that innovative online music distribution services can satisfy the interests of consumers, artists and the recording industry. The most prominent of these is Apple's iTunes music store. Launched in April 2003, it has become the most successful legal online music service. While its 99 cents a song downloads represent only a fraction of all music downloaded on a given day, iTunes now accounts for roughly 70% of all legally downloaded music. Steve Jobs, Apple's CEO, sums up the strategy:

'We're going to fight illegal downloading by competing with it. We're not going to sue it. We're not going to ignore it. We're going to compete with it.'**[45]**

The secret of iTunes' success, according to Jobs, is that the service offers high quality, reliable, one-click downloads that are coupled with liberal usage rights. Users can listen to songs whenever they want as often as they want and they can even burn them on CDs. The successful parallel marketing of Apple's iPod, a mobile music player with huge storage capacity, and the simplicity of the iPod / iTunes interface has given users compelling alternatives to CD burning. iTunes are encoded in Advanced Audio Coding format or AAC, rather than MP3. While Apple touts the standard's superior sound quality, the real reasons for its reliance on AAC is that it has some moderately strong DRM built in.**[46]**

New services such as iTunes demonstrate that artists were right to believe the Internet could indeed revolutionize music distribution while at the same time guaranteeing respect and reward for artists' creativity and hard work. The success of iTunes thus provides artists and the organizations representing their interests with an opportunity to reinsert themselves into the debate and simultaneously take issue with online piracy and the recording industry's coercive tactics.

But the success of iTunes also has important implications for public policy, for, ultimately, successful new business models and the mobilization of artists will not solve all problems. iTunes demonstrates that the future of the music industry should be determined by market competition and not decided in court rooms. Policy makers need to abandon their bias in favour of the pre-digital industry status quo and instead take steps to encourage competition.

An additional reason for iTunes' success is that Apple not only boosts a high profile but also has committed considerable financial resources. The company has therefore managed to get fairly good deals from the major record companies, enabling it to offer an

extensive music library from which customers can download and burn on CDs. Independent start-ups such as Listen.com, in contrast, bargain from a much weaker position. In fact, when Listen.com's Rhapsody service only offers a song for streaming and not for download, or when it does not permit a song to be burned, Listen.com is only following its contractual obligations. Given such discrepancies, competition authorities should scrutinize the relationships between record labels and third-party online service providers, particularly the extent to which incumbents may seek to unfairly keep new entrants out through tight restrictions on what they may offer.

To strengthen competition, there are also things policy makers should not do. As noted above, having failed to develop universal industry standards through its Secure Digital Music Initiative (SDMI), the RIAA is now lobbying policy makers to mandate by law the embedding of specific DRM technologies in certain products. Policy makers should resist such calls, as they are likely to further strengthen the incumbents' already strong position. Similarly, policy makers should stick to previous policies that limit Internet Service Providers' liability and not require them to become *de facto* copyright enforcement agents.

Bolstering Consumers
A second major emphasis of public policy should be strengthening the position of law-abiding consumers. The recording industry has launched a successful media campaign to impress upon consumers what they may not do with copyrighted material. The recent wave of lawsuits against non-commercial file sharers is clearly designed to intimidate consumers. What is necessary as a counterpoint to these tactics is a concerted effort to inform consumers what rights they actually have. Only informed consumers can effectively participate in a contest among different visions for the future of music. Pam Samuelson warns that the recording industry's current strategy aims at changing consumers' expectations about what they may legitimately demand from a service provider. Many consumers simply do not know for example, that their inability to burn legitimately downloaded songs onto a CD has to do with the pricing and marketing strategies and not with copyright. As long as vast information asymmetries prevail between producers and consumers, the 'market for music business models' is likely to remain uncompetitive. In other words, we need strong, informed consumers to let the market determine the future of digital music.

Looking beyond the immediate case of online music, it is clear there will be more copyright disputes in the information society, not fewer. To clarify consumers' rights and responsibilities, it would be desirable if policy makers began moving away from establishing consumer rights through negative exemptions and exceptions from copyright obligations, and instead defined a positive set of rights that cut across industries and types of media. This is certainly not likely to happen overnight. In the short run, policy makers should therefore assure that consumers can actually exercise their rights vis-à-vis copyright owners. As noted above, the DMCA's anti-circumvention clauses and similar provisions in European law make it illegal for consumers to acquire tools to enjoy certain fair use rights, for example. In this respect, recent efforts in the United States to modify the DMCA and permit consumers to circumvent electronic locks to exercise fair use rights are an important first step to re-establishing a more balanced situation.**[47]**

The Prospects for a Balanced Fight Against Piracy
This section has sketched some elements of a strategy to ensure the legitimate fight against music piracy does not undo the balance of producer and consumer rights on which copyright has traditionally rested. The case of iTunes shows that online music distribution can respect the interests of artists and consumers at the same time. The recording industry still has time to establish serious online businesses. After all, in many other areas of e-commerce incumbents who adapted to the new environment are now thriving. But policy makers should make it clear that the recording industry cannot expect

to use the fight against piracy as a way to stifle competition and innovation. Strengthening consumers and promoting competition is the best hope for a fair and balanced contest over the future of music in a digital age.

Conclusion

The highly polarized and publicized conflict between the recording industry and online music piracy has promoted extreme positions. While the recording industry and its lobbyists warn of an end to property and creativity, proponents of file sharing portray the technology as a last bulwark against total domination of the music industry by a handful of corporate giants. The reality is of course different. Digital network technologies are not by nature the antithesis of property, nor are they anything else by nature –it all depends on what they are used for. At the same time, there is no reason why current developments must inevitably lead to dramatic media concentration and near perfect control over consumer access to information through ubiquitous embedded electronic monitoring. There are many ways of balancing diverse legitimate interests. Real competition between different propositions about the future of music would be the best way out of the present situation.

As this study has argued throughout, much more than merely the issue of online music piracy is at stake. Underneath lies a much broader debate about the future of property in a digital age. The music controversy is the first instance where what used to be a purely academic debate about copyright in a digital age plays out on centre stage. Solving or at least containing the problem of online piracy without letting the recording industry impose draconian control measures on consumers would therefore be an important signpost for the future. But it could of course also go the other way. The motion picture industry is closely watching how file sharing is affecting online music and the music industry. While DVD encryption provides an initial line of defence, bandwidth and file storage limitations are the main reasons online movie sharing has not yet reached Napster-like dimensions. Hollywood is currently reviewing its own legal arsenal, knowing it is probably only a matter of time until movie file-sharing becomes a mass phenomenon.

In the information society, intellectual property conflicts such as the one over online music will become more common, not less. Movies and electronic publishing are obvious additional areas of current concern. Even more important in the long run is the ongoing debate over the scope and extent of gene patents. In a not too distant future, patients might see themselves confronted with serious intellectual property questions about their own genes as customized drugs become commonplace.

Intellectual property rules will be an important cornerstone on which new information markets will rest. Citizens and consumers, therefore, urgently need a better understanding of their current rights and responsibilities. Otherwise, rules governing property in the emerging information society will be made exclusively by a small group of experts with fairly narrow interests. Too much is at stake to leave the settlement entirely up to a handful of corporate executives and their lawyers. We urgently need a broad societal debate that goes way beyond the narrow issue of music file-sharing. The need to address certain policy question on the international level makes it difficult for diverse stakeholders to engage critical questions, but it does not make it impossible. The stakes may not be as high as they were for England's peasants during the enclosure movement, but they are certainly high enough to make the recording industry's bottom line only one factor among many.

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[1] Frank Ahrens, 'Music Industry Sues Online Song Swappers', *The Washington Post*, September 9, 2003, p. A1.
[2] The three most important categories of intellectual property are copyright, patents and trademarks. In the digital environment, copyright has assumed a central role.
[3] Thomas Jefferson, as quoted in Vaidhyanathan, 2001, pp. 23-24.
[4] *Ibid*.
[5] In some instances, such as audiotape piracy in South East Asia and parts of Latin America, detection alone of course did not put an end to piracy. Nevertheless, the problem was 'manageable', particularly within the industrialized countries, in large part because few pirated tapes were exported back into high margin markets.
[6] MP3 reduces the size of a music file to roughly one megabyte per minute, with quality closely resembling that of CDs. For a short history of MP3, see Spar, 2001, pp. 337-41.
[7] For historical accounts of Napster and its legacies, see Menn, 2003, and Merriden, 2001.
[8] Amy Harmon and John Schwartz, 'Many see no wrong in music-file swapping', *International Herald Tribune*, September 20, 2003, p. 13.
[9] Early studies had suggested that downloading actually increased music sales, as it served as a way to listen in prior to buying. Recent studies suggest that music sales have declined disproportionately among high school and college students, groups that also account for a disproportionate share of music file-sharing services.
[10] 'Global sales of recorded music down 10.9% in the first half of 2003', International Federation of the Phonographic Industry, October 1, 2003. Music piracy is unlikely to be the only factor accounting for declining music sales. The general economic slowdown in the US and Western Europe certainly matters as well, making it difficult to estimate the 'net effect' of music piracy.
[11] See International Federation of the Phonographic Industry, *The Recording Industry Piracy Report 2003*, London, July 2003.
[12] *Ibid.*
[13] See Mark Landler, 'Piracy is rampant globally', *International Herald Tribune*, September 29, 2003, p. 8.
[14] Apple's iTunes music store as well as the new Napster 2.0 each charge 99 cents per song.
[15] This is the central argument in Lessig 1999.
[16] On SDMI and its failure, see Spar *op cit*, pp. 351-59.
[17] Currently, for example, consumers expect to be able to copy songs from a legal CD they bought onto their computer, transform them into an MP3 file, and put them on a mobile player for a workout. In contrast, DVD encoding has already ensured consumers do not expect to be able to do the same with a movie.
[18] Unless a consumer disables the region code recognition system in his DVD player, a practice the motion picture industry –so far– tolerates.
[19] Nate Mook, 'AOL Launches Own MusicNet Service', *BetaNews*, February 27, 2003. Other services are pursuing similar strategies. For US$9.95 a month, for example, users of Listen.com's Rhapsody can listen to any song in its online archive, though songs are not for download. Burning a CD costs an additional US$0.79 per track and is only available for certain songs.
[20] Both American and European officials were working on White Papers on the issue, for example. See Information Infrastructure Task Force – Working Group on Intellectual Property Rights, *Intellectual Property and the National Information Infrastructure*, US

Department of Commerce, Washington, DC, September 1995. For the European perspective, see Commission of the European Communities, *Green Paper of 27 July 1995 on Copyright and Related Rights in the Information Society* [COM(95) 382 final], Brussels, July 2995.

[21] A particular influential forum of copyright holders' interests was the International Copyright Coalition (ICC), a forum led by the US National Music Publishers Association (NMPA) that also counts national authors and artists associations such as Spain's SGAE, France's SACEM and Germany's GEMA among its members.

[22] See *WIPO Copyright Treaty*, available at **http://www.wipo.int/clea/docs/en/wo/wo033en.htm**.

[23] For a comprehensive analysis of the DMCA and the origins of its specific provisions, see Litman, 2001.

[24] For a critical overview, see Electronic Frontier Foundation, *Unintended Consequences: Five Years under the DMCA*, available at **http://www.eff.org/IP/DRM/DMCA/20031003_unintended_cons.php**.

[25] Lawrence Lessig, 'Jail Time in the Digital Age', *The New York Times*, July 30, 2001, p. A17.

[26] This scenario is unfortunately not a theoretical construct. In late September 2003, technology firm SunnComm introduced new copy protection for CDs by BMG. When a few days later a Princeton University computer science graduate student published a paper explaining that simply holding down the shift key during the initial playback would disable the program, SunnComm threatened to sue him for making the information public. Only a quick public outcry made the company reconsider. See Lisa Napoli, 'Shift Key Opens Door to CD and Criticism', *The New York Times,* October 13, 2003.

[27] In fact, both the EU and the US tried being the first to implement the WIPO Treaty to set an implementation precedent. The US ended up beating the EU by three years.

[28] See *Directive 2001/29/EC of the European Parliament and of the Council on the harmonisation of certain aspects of copyright and related rights in the information society*.

[29] For an assessment of some key underlying differences between American and European courts and judges in this respect, see Kagan, 1997.

[30] The European Commission has recently proposed a second directive to facilitate the harmonization of intellectual property rights enforcement across member states. In its elaboration of the proposal, the Commission explicitly states that the proposed directive targets commercial pirates and not casual online file sharers. See *Proposal for a Directive of the European Parliament and Council on measures and procedures to ensure the enforcement of intellectual property rights*,COM (2003) 46 final, available at **http://europa.eu.int/eur-lex/en/com/pdf/2003/com2003_0046en01.pdf**.

[31] At the time of writing, only Austria, Britain, Denmark, Germany, Greece and Italy had implemented the Directive. See Bernhard Warner, 'Internet copyright law goes into effect', *Yahoo! News UK & Ireland*, October 31, 2003.

[32] For a similar argument about the complementing protection through East Coast (legal) code and West Coast (software) code, see Lessig, 1999, especially chaps. 4 and 10.

[33] Thomas Jefferson, for that reason, referred to exclusive copyright and patent monopolies as a 'necessary evil' to foster science and the arts.

[34] The term 'fair use' stems from American jurisprudence. European law does not have an articulated fair-use doctrine as such, although many of the same exceptions are part of European law.

[35] Gary Libecap defines property rights as 'the social institutions that define or delimit the range of privileges granted to individuals to specific assets'. See Libecap, 1989.

[36] The enclosure movement thus led to the commercialization of two critical ingredients to any capitalist system –land and labour. Both were henceforth tradable in markets, making the rise of a market-based capitalist order possible. For a fascinating analysis of these developments, as well as an account of the extent of social dislocation, see Polanyi, 1944.

[37] Staying with the metaphor for a moment, one way of interpreting the DMCA's broad anti-circumvention clauses is that it bans building ladders that could be used to climb fences. England's aristocracy did not go quite as far.
[38] See Dan Gillmor, 'Paranoia, stupidity and greed ganging up on the public', *The Mercury News*, May 4, 2002. A similar battle is raging over digital home recording devices, such as TiVo. Hollywood and the major broadcasting studios want to ban features on these devices that let consumers automatically skip commercials in their personal digital television recordings. See Bill Carter, 'Skipping Ads? TV Gets Ready To Fight Back', *The New York Times*, January 10, 2003, p. C1. Recently, Hollywood appears to have gained the upper hand. See Eric A. Taub, 'ReplayTV's New Owners Drop Features That Riled Hollywood', *The New York Times*, July 21, 2003, p. C3.
[39] Such a model might alienate consumers, for example, especially in a transition phase. Companies might find more or less complex subscription services preferable.
[40] Contrary to TRIPS, however, the WIPO Copyright Treaty is not legally binding. While it has been incorporated in US and European law as well as in a few other countries, it will not provide for the set of international mandatory minimum standards that TRIPS is credited with.
[41] Christopher Jones, 'Metallica Rips Napster', *Wired News*, April 13, 2000; and 'Dr Dre Raps Napster Users', *Wired News*, May 17, 2000.
[42] Brad King, 'Musicians Unite for Copyrights', *Wired News*, July 12, 2000; and ' "Artists Against Piracy" Launches National Media Campaign', *internetnews.com,* July 11, 2000.
[43] See David McGuire, 'Verizon, Record Companies Duel Over Net Piracy', *Washington Post*, September 16, 2003, andJames Pearce, 'Australian ISP in "world first" music industry court case', *ZDNet Australia*, October 21, 2003. Most Internet Service Providers are strongly opposed to policing their customers on behalf of the music industry. See Tobias Buck and Raphael Minder, 'Internet operators say tighter law is unfair', *Financial Times*, November 3, 2003.
[44] See the FastTrack website at **http://www.fasttrackdcn.net**.
[45] Steve Jobs as quoted in Leander Kahney, 'Buck a Song, or Buccaneer?', *Wired News*, October 21, 2003.
[46] While experts can break AAC's electronic lock fairly easily, this has not been a main concern, as consumers already enjoy considerable freedom over what they can do with their 99 cent tracks. iTunes and iPod also support MP3, however.
[47] Several members of the US Congress, for example, have introduced legislation that would provide exemptions from the DMCA on the basis of existing fair use principles. See Paul Eng, 'Fighting Back Tech Companies, Consumers Weigh in on Digital Media Future', *abcNEWS.com*, October 22, 2002.