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# Copyright Technologies and Clashing Rights

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## INTRODUCTION

As the Internet and personal computers have given most consumers in advanced economies the ability to make unlimited numbers of perfect, cost-free, copies of digital works, copyright law has become increasingly difficult to enforce. Billions of songs are shared without authorization every year, over peer-to-peer file-sharing networks, streaming sites and 'file lockers', with unauthorized downloading of music and films being the most common offence committed by 10–25-year-olds in the UK (Wilson et al. 2006). Pirate Parties demanding copyright reform have successfully stood in local and national elections, with Swedish voters electing two Pirate members to the European Parliament and Icelanders sending three Pirate Party members to the world's oldest legislature, the Althing.

Right holders, claiming 'the answer to the machine is in the machine' (Clark 1996), have persuaded governments around the world to target new copyright regulation at personal computers, media devices and Internet Service Providers. In particular, new legal protection has been given to Technological Protection Measures that

restrict access to digital works, while more recently some governments have required ISPs to police the behaviour of their users. The potential sanctions range from warning letters, through restrictions on connection speed, to disconnection.

As well as effectiveness challenges, these measures have also raised difficult questions related to human rights. The Universal Declaration of Human Rights and its implementing of international and regional covenants and conventions give authors a right to protection of their 'moral and material interests'. But they also give individuals rights to freedom of expression (International Covenant on Civil and Political Rights § 19), privacy (ICCPR § 17), 'to take part in cultural life' and 'to enjoy the benefits of scientific progress and its applications' (International Covenant on Economic, Social and Cultural Rights § 15). Can automated restrictions on the use made of digital works, and on individuals' access to the Internet, support all of these rights?

This chapter assesses the outcome and broader lessons of these attempts to regulate the technology underlying the control of creative works. It first sets out the public policy objectives of copyright, including the

Anglo-American incentivization of creativity, Continental European protection of authors' rights, and balancing these considerations with the maximization of social welfare and the protection of human rights. The latter includes protection of freedom of expression and privacy, as well as broader economic, social and cultural rights in international law – all of which can be difficult to take into account in technologies that attempt to restrict copying or block access to infringing copies. The chapter then considers the economic impact of new digital playback and copying tools, linked via the global Internet.

Encouraged by right holders, governments and intergovernmental organizations have attempted to shape the development and use of these digital technologies. This chapter traces the co-evolution of these legal provisions and 'Technical Protection Measures', analysing the institutional political economy that has resulted in poor outcomes that over-privilege the interests of right holders against those of technology innovators, users and society. It suggests mechanisms for policy makers to take better account of these interests in future, and suggests that technological 'magic bullets' are unlikely to play a significant role in more balanced outcomes.

## PUBLIC POLICY OBJECTIVES

Since the 18th century, governments have granted exclusive rights of reproduction to authors in an attempt to incentivize the creation of printed books 'for the Encouragement of Learning' (Statute of Anne 1710) and 'To promote the Progress of Science and useful Arts' (US Constitution 1787). The continental European approach to 'author's rights' additionally emphasizes the natural right of individuals to control their works (Hugenholtz 2002, 241).

Most governments have now recognized non-economic 'moral' rights, such as the right to be identified as the author of a work,

and to object to distortion or mutilation of a work (Berne Convention art. 6bis 1886). Economic and natural rights are both included in article 27 of the Universal Declaration of Human Rights, which declares: 'Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author'.

However, there are significant social costs to providing these exclusive rights to authors. Information goods are non-rivalrous in consumption; as Thomas Jefferson wrote in 1813, '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' (Jefferson 1854, 180–181). This is one reason why most copyright protection is time-limited – although the copyright term has been greatly extended in most countries, for example in the US from 14 years (renewable once for another 14 years) in the original Copyright Act of 1790, to 70 years after the death of the author in 1998.

Information goods are recognized as essential to democracy, education, research and other public goods. Copyright also has the potential to stifle freedom of expression. Hence copyright policy must try to balance the rights of authors and their incentives to create against potential social losses resulting from over-protection. In the US this led the courts to develop a 'fair use' doctrine that allows certain uses of copyright works without prior authorization, so long as this does not damage the commercial market for the work. In the EU, an exhaustive list of optional exceptions is included in the 2001 Copyright Directive, including parody, research and news reporting. The 30 member states of the European Economic Area have implemented different combinations of these exceptions in national law, creating an extremely fragmented 'single market' for copyright works (Hugenholtz 2000). While such an enumeration of exceptions gives greater legal certainty – Lessig has characterized fair use as the right to take

expensive, lengthy and uncertain legal actions (2008, 187) – it can significantly constrain innovation in areas unforeseen by legislators (Hugenholtz 2013).

### **Human Rights**

Copyright interacts in several areas with the UN's 'Bill of Rights' developed following the Second World War: the Universal Declaration (UDHR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), and the International Covenant on Civil and Political Rights (ICCPR).

Amplifying article 27 of the UDHR, article 15 of the ICESCR declares three rights: 'to take part in cultural life'; 'to enjoy the benefits of scientific progress and its applications'; and 'to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author'. Article 15 emphasizes the social nature of copyright: to protect author's rights, but also to enable everyone to participate in cultural life and benefit from scientific progress.

The authors of the ICESCR and ICCPR excluded a right of property, although this is included in the regional versions of these treaties. For example, Article 1 of the First Protocol to the European Convention on Human Rights (ECHR) states: 'Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law'. The European Court of Human Rights has interpreted this to include copyright (Helfer and Austin 2011, 516).

Most recently, the EU's Charter of Fundamental Rights includes a specific article specifying 'Intellectual property shall be protected' (§17(2)). This is most plausibly read as an explicit confirmation that copyright protection is included within the more

general right to the protection of property – an important, but qualified right to be balanced against conflicting public interests (Griffiths 2011). As the EU Court of Justice observed in *SABAM v. Netlog* (Case C-360/10): 'The protection of the right to intellectual property is indeed enshrined in Article 17(2) of the Charter ... There is, however, nothing whatsoever in the wording of that provision or in the Court's case-law to suggest that that right is inviolable and must for that reason be absolutely protected' (§41). There is greater scope for state interference with the right to property in Article 1 Protocol 1 of the ECHR than other qualified rights (ARTICLE 19 2012, 10).

These property rights sit within the wider human rights framework and must be balanced with others, particularly freedom of expression and privacy. As the England and Wales Court of Appeal has stated:

copyright is antithetical to freedom of expression. It prevents all, save the owner of the copyright, from expressing information in the form of the literary work protected by the copyright ... It is stretching the concept of freedom of expression to postulate that it extends to the freedom to convey ideas and information using the form of words devised by someone else. Nonetheless there are circumstances ... where this freedom is important'.

The court determined that:

rare circumstances can arise where the right of freedom of expression will come into conflict with the protection afforded by the Copyright Act... we consider that the court is bound, insofar as it is able, to apply the Act in a manner that accommodates the right of freedom of expression. (*Ashdown v. Telegraph Group plc* [2001] EWCA Civ 1142 §§30–31, §45)

Freedom of expression can be greatly damaged by technologies that prevent lawful uses of copyright works, or the blocking of Internet sites or users alleged to be infringing copyright without a full judicial proceeding (La Rue 2011). The US Digital Millennium Copyright Act (DMCA) encourages websites to immediately take down content when served with notice, but users are rarely in a

position to make use of the DMCA's put-back provisions (Lemley 2007). The EU's E-Commerce Directive (2000/31/EC) does not even include put-back provisions.

Demands from right holders that ISPs disconnect allegedly infringing customers and block access to infringing sites are particularly dangerous for freedom of expression. In a report to the UN Human Rights Council, the UN's Special Rapporteur on Freedom of Expression said he was 'alarmed by proposals to disconnect users from Internet access if they violate intellectual property rights' (La Rue 2011). A report for the Organization for Security and Cooperation in Europe (Akdeniz 2011, 35) stated:

Since blocking mechanisms are not immune from significant deficiencies, they may result in the blocking of access to legitimate sites and content. Further, blocking is an extreme measure and has a very strong impact on freedom of expression and the free flow of information. Participating States should therefore refrain from using blocking as a permanent solution or as a means of punishment ... Blocking of online content can only be justified if in accordance with these standards and done pursuant to court order and where absolutely necessary. Blocking criteria should always be made public and provide for legal redress.

The European Court of Human Rights has determined:

The right to Internet access is considered to be inherent in the right to access information and communication protected by national Constitutions, and encompasses the right for each individual to participate in the information society and the obligation for States to guarantee access to the Internet for their citizens. It can therefore be inferred from all the general guarantees protecting freedom of expression that a right to unhindered Internet access should also be recognised. (*Yildirim v. Turkey*, no. 3111/10, 2012, § 31)

Copyright laws to some extent 'internalize' a balance with freedom of expression through limits such as: the protection of expression, not ideas; term limits; and exceptions and limitations. This has been the justification for the US Supreme Court's rejection of a significant tension between copyright and the

First Amendment (and that both are explicitly specified in the US Constitution as mechanisms to promote free speech). But Pamela Samuelson's comment still rings true: 'all too often in recent years, when courts have perceived a conflict between intellectual property rights and free speech rights, property has trumped speech' (2001, 2028). The First Amendment has a limited impact on private action (although it can be argued copyright enforcement implicates this (Yu 2010, 1398)), but European governments have no such excuse given their ECHR 'positive obligations' to secure their citizens' rights.

In some cases, courts also need to take account of the 'external' conflicts of copyright law with rights to freedom of expression (Birnhack 2003). These external considerations are important in ensuring the interests of users and future authors are taken into consideration alongside those of authors and other right holders (Helfer and Austin 2011, 509). The right to impart, seek and receive information is a critical underpinning of democracy, and of other civil and political rights (UN Human Rights Committee 2011).

The main tension between privacy and copyright comes with the introduction of enforcement mechanisms that involve covert surveillance, by public or private bodies. Under the ECHR, such measures require a clear justification, and must be proportionate to their goals and include safeguards against abuse. The EU Court of Justice in its *Promusicae* case (C-275/06) acknowledged this 'fair balance.' It has been especially stressed by the European Data Protection Supervisor in his opinion on the Anti-Counterfeiting Trade Agreement, which emphasized that some proposed ACTA measures were 'highly invasive,' entailing 'generalised monitoring of Internet users' activities' affecting 'millions of law-abiding Internet users, including many children and adolescents' (EDPS 2010, 3).

Intellectual property rights have also become a key part of global discussions on a 'right to development'. Many low-income

countries have complained about the high price of software and textbooks resulting from international intellectual property agreements. These types of copyright-protected goods are essential for development in a global knowledge economy. As the Government of Pakistan told the United Nations Commission on Human Rights in 2001:

[T]he fundamental objectives of these agreements are not being realized. There may perhaps be reasons to believe, at best on theoretical grounds, that in the long term, benefits could accrue in the form of increased investment, innovation and transfer of technology. However, it is painfully evident that in the short and medium term, the costs being borne by the developing countries are higher than the gains, and that the balance between the rights holder (mostly from the developed countries) and the user of intellectual property has shifted dramatically in favour of the former.

The production of copyright policy in private, government-facilitated corporate discussions worked reasonably well pre-Internet, when the main affected parties had at least partial representation. It has become increasingly problematic as sanctions against the unrepresented user have become the main topic of behind-closed-doors discussion. It violates a core democratic right of interested parties to participate, in the words of the United Nations Committee on Economic, Social and Cultural Rights, in ‘any significant decision making processes that have an impact on their rights and legitimate interests’ (Helfer and Austin 2011, 513). Without care, copyright enforcement measures can also damage individual freedom of expression and privacy, which are core civil and political rights that underpin democracy itself.

## THE ECONOMIC IMPACT OF TECHNOLOGY

Technological shifts during the 1980s led to intensive discussion of the ‘modernization’ of copyright law. The World Intellectual

Property Organization, the United Nations agency responsible for global copyright treaties such as the Berne Convention, debated model copyright laws during the 1980s to respond to the still-novel personal computer, as well as new audio and video recording equipment. But it was the arrival of the Internet as a mass medium in the mid-1990s, and especially the development of file-sharing software such as Napster, that drove government and industry discussions concerning the impact on copyright law of users’ abilities to share copyright works without permission on a grand scale.

Data on levels of such sharing are difficult to gather, and are often modelled using proxies such as levels of peer-to-peer file-sharing traffic on large networks. Cisco Systems estimated such traffic would see a compound annual growth rate of 23% between 2010 and 2015 (2011, 9). Market research companies conduct frequent surveys asking respondents about their downloading behaviour. One of the largest recent surveys, covering 8,000 adults across 13 countries, found that 29% had downloaded music without payment (Synovate 2010).

It is difficult to use such statistics to produce accurate estimates of economic effects, especially on the wider economy. Different types of downloading activity are legal in different jurisdictions. Survey respondents may be afraid to report illegal activity, or exaggerate it. The rate at which consumer access to infringing copyright works reduces expenditure on legitimate works is extremely hard to measure (Hargreaves 2011b, 1–2). Infringement has a complex range of economic impacts, some positive, for different stakeholders, as analysed in Table 30.1 from the US Government Accountability Office (GAO).

The GAO found that even within the US government, three widely used estimates of the costs of infringement (from the Federal Bureau of Investigation, Customs and Border Protection, and the Federal Trade Commission) could not be substantiated (2010, 19). It found



**Table 30.1 Economic impact of copyright infringement**

<i>Stakeholder</i>	<i>Positive effects</i>	<i>Negative effects</i>
Consumers	Perceived benefits from lower prices of pirated goods	
Industry	Increased sales of legitimate goods based on consumer 'sampling' of pirated goods	Lost sales Lost brand value or damage to public image Cost of IP protection Decreased incentive to invest in research and development
Government		Lost tax revenue due to illegal sales of pirated goods Cost of IP enforcement
Economy as a whole		Lower economic growth as a result of reduced incentives to innovate Lost revenue from declining US trade in countries with weak IP rights regimes

*Source:* GAO (2010, 9–10).

that it is 'difficult, if not impossible, to quantify the net effect of counterfeiting and piracy on the economy as a whole' (p. 15).

An independent review for the UK government concluded that 'sales and profitability levels in most creative business sectors appear to be holding up reasonably well ... many creative businesses are experiencing turbulence from digital copyright infringement, but ... at the level of the whole economy, measurable impacts are not as stark as is sometimes suggested' (Hargreaves 2011a, 6). The review noted that music industry revenues have continued to grow year-on-year, up 5% in 2009 (with rising live performance revenues compensating for a limited stabilization at radically reduced levels of revenues from the sale of recorded music), as did book sales from 2004 to 2009 (p. 74).

As a matter of policy, copyright is a limited monopoly, rather than a market intervention to promote competition. Most information goods also have high fixed costs but low marginal costs of production. It is therefore unsurprising that many industries structured around copyright ownership are highly concentrated. The three major record labels (Sony, Universal Music Group and Warner Music Group) control around three-fifths of the world market. There are only five major US film studios, which control three-quarters of the world market (Patry 2012, 111–112).

The limited interventions that have been made by competition regulators have been at the periphery, for example with attempts by the European Commission to increase competition between the national collecting societies that collect royalties for music performances in each member state.

## TYPES OF CODE REGULATION

From its inception, Anglo-American copyright law regulated reproduction of creative works to ensure the remuneration of authors and later songwriters, performers and directors. This was effective because all of these industries required capital-intensive investment in printing presses, radio and television broadcast networks, and vinyl, videocassette and optical disk reproduction equipment, encouraging market concentration and creating significant barriers to entry to those seeking to ignore the law. Expensive reproduction machinery presents an easy seizure target for civil and criminal action against those failing to comply with requirements to gain approval from right holders for making copies.

A range of new reproduction technologies throughout the 20th century was first seen as a significant challenge to copyright regulation, but then successfully developed into new industries that ultimately benefited

rights holders. Player piano rolls, phonograph records, jukeboxes, radio and cable television were all developed in the US with the aid of copyright exemptions and compulsory licences, while the video rental industry depended on the first sale doctrine permitting a wide variety of uses for lawfully owned works (Ginsburg 2001; Lesk 2003; Litman 2001, 106–107).

Home audiotape and video-recording equipment became mass-market items during the final third of the 20th century, for the first time putting cheap high-quality reproduction machinery into consumers' hands. Industry lobbyists complained furiously that 'home taping is killing music' and that 'the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone' (Anderson 2009). The executive secretary of the American Federation of Television and Radio Artists, Howard Wayne Oliver, told the US Congress that the electronics revolution could 'undermine, cripple, and eventually wash away the very industries on which it feeds and which provide employment for thousands of our citizens' (Litman 2001, 106–107). It was only a close (5–4) decision by the US Supreme Court in the 1984 *Sony v. Universal Studios* case that protected the manufacturers of technologies with 'substantial non-infringing uses' from liability for copyright infringement by users.

Primitive attempts were made to limit the capabilities of these technologies, with restrictions on Amstrad tape-to-tape recorders (*CBS Songs Ltd v. Amstrad Consumer Electronics plc* (1988) 11 IPR 1; *Australian Tape Manufacturers Association Ltd v. Commonwealth of Australia* (1993) 25 IPR 1 at 4). The Cartrivision system prevented consumers from rewinding rented videotapes for viewing a second time, requiring the payment of a fee to a rental store with specialist equipment (Patry 2009, 144).

The first sophisticated attempt to regulate home copying through regulation of home copying technologies came with the introduction of the Digital Audio Tape (DAT)

standard. The Recording Industry Association of America opposed the US sale of DAT recorders in the late 1980s, threatening legal action against anyone selling DAT machines (Patry 2009, 95). The recording industry (particularly CBS Records) lobbied Congress for a legal requirement for DAT machines to implement a system called CopyCode, which would prevent the reproduction of pre-recorded music. CBS's opposition weakened when they were bought by DAT manufacturers Sony.

Eventually rights holders settled for a requirement that DAT recorders implement a Serial Copy Management System (SCMS) that prevented the reproduction of first-generation copies. This became part of the US Audio Home Recording Act of 1992, which also levied taxes on recorders and blank media (Ginsburg 2001, 1628). SCMS was also included in the later MiniDisc and Digital Compact Cassette formats. At the same time, the US introduced a ban on the supply of devices that assisted with unauthorized decryption of satellite programmes. This provision was later included in the North American Free Trade Agreement (§1707(a)).

### **Technological Protection Measures and Rights Management Information**

The UK was the first country to introduce a more general legal provision that banned devices designed or adapted to circumvent copy-protection (or even the publication of information intended to enable circumvention). While these provisions did not immediately influence other countries' legal frameworks, they had a strong impact at the World Intellectual Property Organization (WIPO).

The UN agency debated including in their model copyright law provisions a requirement of copy-protection functionality in all devices used to access copyright works. However, because of concerns about the impact on



competition and innovation, WIPO developed provisions closer to the new UK law (Ficsor 2002). WIPO's 'Internet treaties' (the Copyright Treaty and Performances and Phonograms Treaty), agreed in 1996, both contain provisions that parties 'shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures'. By increasing rights holder control over uses of works, technological protection measures (TPMs) are likely to increase their revenues (Halderman and Felten 2006).

The US used this broader language to ban the circumvention of 'effective access controls', as well as circumvention devices and services. The European Union mirrored this restrictive language in Article 6 of its Copyright Directive (2001/29/EC). However, some member states that joined the EU in 2004 gave users more flexibility in national laws, allowing them to circumvent access controls in order to make legitimate use of copyright works (Gasser and Ernst 2006; Kerr 2010).

Because all access to and use of digital works involves temporary reproduction within computing devices and communication networks, copyright has a much greater impact on the use of digital than analogue works. It has moved from regulating duplication to regulating access. This has given rights holders much greater influence over the design of digital media technologies than they ever had over paper mills, radios, televisions or videotape players. It has been backed up by anti-circumvention laws that cover all access to protected works, the seeming consequence of ambiguous language in WIPO's Internet treaties (Cunard et al. 2003).

Also included in these treaties are protections for 'rights management information' that identifies a copyright work, its author, or terms and conditions of use. This information can be used to protect the moral rights of authors, such as attribution. It can also facilitate lower transaction costs in acquiring rights to use specific content. These rights-management provisions have

been much less controversial than the equivalent anti-circumvention provisions, mainly because they do not prevent users of such works from exercising their fair use/dealing rights under copyright law.

While WIPO and its members were busy giving legal protection to content-protection mechanisms, TPMs initially received little support from major technology companies and were easily hacked. The mechanisms tested in the 2000 Secure Digital Music Initiative (SDMI) challenge were immediately broken by just one academic research team (Craven et al. 2001). Widely deployed systems, such as the Content Scrambling System used in the DVD video format, were so easily circumvented they became a joke. Many came from small companies with a greater appetite for risk than large right holders, eager to gain market share (and power) for their platform. This encouraged the deployment of poorly-tested systems that could easily be broken and sometimes threatened the security and privacy of users (Halderman and Felten 2006).

Only later did rights holders get support from the major companies producing computing hardware (e.g. Intel and Apple) and operating system software (Microsoft and Apple). These were the only companies that could introduce even vaguely effective digital 'locks'. But while these technology giants all now include TPMs in their core product lines, market developments – particularly the triumph of the unprotected MP3 music format, driven by ease of use and interoperability – have rendered them irrelevant in the music market. New high-definition restricted video formats such as HD-DVD, designed with much greater care and industry input than earlier TPMs, are still being broken (Waters 2007).

Rights holders with hardware divisions (such as Sony) had a strong incentive to push the use of protected formats best suited to their own players and recorders (Halderman and Felten 2006). But ironically, the market power that Apple gained with the success of the iTunes Music Store allowed the company

to demand better access to unprotected content from the major recording labels. Very little music is now sold in TPM-protected formats, although Apple still applies it to TV programmes, films and applications in the iTunes store.

### **Infrastructure operators**

In addition to statutory protection for Technological Protection Measures and Rights Management Information, rights holders have attempted to co-opt the operators of Internet infrastructure into copyright enforcement action. This has included lawsuits against the operators of peer-to-peer systems such as Napster, Grokster, Kazaa and The Pirate Bay; attempts to gain injunctions requiring Internet Service Providers to block access to infringing sites; and legislation to introduce ‘notice and takedown’ liability safe harbours.

The operators of the first peer-to-peer file-sharing systems were obvious targets of legal action for right holders. In the first major case, *A&M Records v. Napster* (239 F.3d 1004), the US Court of Appeals for the Ninth Circuit found that Napster was liable for contributory and vicarious copyright infringement. Napster claimed its system was ‘capable of substantial non-infringing use’, a defence under the 1984 Supreme Court *Betamax* decision. But the court found that Napster, which indexed the files being shared by its users, could segregate and prevent infringing uses. By not doing so, it was guilty of contributory infringement, since it ‘had actual knowledge that specific infringing material is available using its system’ (p. 1022).

The trial court ordered Napster to prevent the trading of copyrighted works using its system. The company agreed to pay a \$26m settlement to rights holders, and attempted to design a subscription service that would use audio fingerprinting software to block infringement. Because the company could not meet the ‘near perfection’ standard

demanding by the trial judge, it instead shut down the network (Samuelson 2006). In the meantime, a judge blocked the sale of the company to Bertelsmann, which led to its bankruptcy (Evangelista 2002).

Later generations of peer-to-peer systems were designed so that operators could claim to be lacking such actual knowledge of infringement. Grokster, Streamcast and Sharman Networks (running KaZaa systems) and The Pirate Bay (running a search engine and tracker for the BitTorrent system) were still, however, found by courts to be ‘inducing’ (in the US), ‘authorizing’ (in Australia) or ‘assisting’ (in Sweden) infringement.

In the US, the Supreme Court found that ‘one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties’. Grokster distributed an e-newsletter promoting users’ ability to access popular copyright music, didn’t use filtering tools, and profited from increased advertising revenue as infringement increased. The Court decided that the *Betamax* defence was not relevant given this active inducement (Ginsburg and Ricketson 2006, 5). Grokster then settled with the plaintiffs, stopping distribution of its software and support for the associated network. It agreed to pay up to \$50m in damages, but lacked the resources to meet this promise (Leeds 2005).

The Australian Federal Court reached its decision because it found that Sharman had given ineffective warnings to users about infringement, but taken no technical measures to reduce it. Since Sharman’s business model depended on maximizing sharing, it did ‘authorize’ infringement – an Australian and UK law concept developed to fill gaps in the general principles of joint tortfeasorship and vicarious liability (Ginsburg and Ricketson 2006, 10–11). Sharman Networks ultimately agreed to pay \$100m to settle the case and became a legal download service (BBC 2006).

In Sweden, a district court found that Pirate Bay's monitoring of the location of tracker file components and search facility for torrents meant that the site operators were criminally liable for assisting users in making copyright works available (Carrier 2010). On appeal, the four defendants were sentenced to several months each in prison and fines totalling 46 million kronor.

In all of these cases, the on-going relationship between the P2P system operators and users was a key element in a finding of liability. Unlike the sale of tape-to-tape recorders, these organizations' relationships with their users continued post-sale, with upgrades and even help lines as well as the provision of server capabilities. This principle was included in Australia's Copyright (Digital Agenda) Amendment Act 2000, reflecting existing case law, since an ability to prevent infringement and a commercial benefit from an ongoing relationship are both relevant to liability (Ginsburg and Ricketson 2006, 14).

More generally, there was widespread concern as the Internet industry developed in the 1990s that intermediaries such as ISPs could become liable for hosting or carrying infringing material from third parties. Many legal systems include principles such as vicarious and contributory liability (for example, the US) and authorization of distribution (UK and Australia), which could have led to serious damages being awarded by courts (OECD 2011, 10–11). In response, many jurisdictions created 'safe harbours' that protected intermediaries against liability so long as they took specific actions to reduce infringement. These are often known as 'notice and takedown' regimes (created in Title II of the US Digital Millennium Copyright Act and articles 12–15 of the EU's E-Commerce Directive), since they protect service providers from liability until they have 'active knowledge' (usually supplied by notice from a right holder) of infringing content. At this point providers must expeditiously remove or block access to such content. The DMCA further requires that providers will identify

infringing customers in response to a subpoena, and terminate the accounts of repeat infringers. Both regimes specifically protect ISPs that merely transmit or temporarily cache data for their users; the DMCA also explicitly protects 'information location tools' such as directories and search engines.

One question that has remained somewhat open is the extent of these safe harbours, and particularly the scope of 'actual knowledge' of infringement. In reviewing US cases, Ginsburg (2008, 20–21) suggested that some courts had required an 'immense crimson banner' rather than a red flag identifying infringement. In *Perfect 10 v. CC Bill*, the Ninth Circuit found that the use of domain names such as 'illegal.net' and 'stolencelebritypics.com' did not in itself provide knowledge the featured photographs were infringing, since it could simply be an 'attempt to increase their salacious appeal' (488 F.3d 1104, 2007). However, the use of specific movie, TV programme or record titles might raise greater concern, especially if those titles had been repeatedly included in takedown notices or uploaded by a user that had previously posted infringing content.

A further question is how well these regimes will adapt to new Internet technologies and business models, in particular in the US, where the DMCA safe harbour is limited to specific types of intermediaries (Lemley 2007) and courts have so far refused to impose any obligation on intermediaries to use more sophisticated technology that might automatically identify infringing works, such as YouTube's ContentID system. Viacom's attempts to force YouTube to undertake such proactive monitoring have to date been decisively rejected by US courts (*Viacom Int'l Inc. v. YouTube, Inc.*, No 1:07-cv-02103-LLS (S.D.N.Y. Apr. 18, 2013)):

If, as plaintiffs assert, neither side can determine the presence or absence of specific infringements because of the volume of material, that merely demonstrates the wisdom of the legislative requirement that it be the owner of the copyright, or his agent, who identifies the infringement by giving the

service provider notice ... The system is entirely workable: in 2007 Viacom itself gave such notice to YouTube of infringements by some 100,000 videos, which were taken down by YouTube by the next business day.

The E-Commerce Directive explicitly prevents a general monitoring requirement being placed on intermediaries, or a requirement to 'seek facts or circumstances indicating illegality'. On this basis, as well as the rights to freedom of expression and privacy in the EU Charter of Fundamental Rights, the EU Court of Justice rejected attempts by a Belgian collecting society to obtain injunctions imposing filtering systems on an ISP (*Scarlet v. SABAM*, Case C-70/10) and a social networking site (*SABAM v. Netlog*, Case C-360/10). Samuelson (2006) suggested that *Grokster* was a Pyrrhic victory for rights holders, since it leaves open the possibility of P2P system operators avoiding liability for 'inducement' by operating the same technology, while avoiding making any statements encouraging its use for infringement.

That said, the DMCA and E-Commerce Directive both allow rights holders to take action for injunctive relief against intermediaries; and this is explicitly required by Article 8 of the Copyright Directive. A recent test case in the UK saw movie studios obtain a High Court order against the country's largest ISP, British Telecom, requiring BT to block customer access to a site, Newzbin2, that allowed users to search for indexes of infringing Usenet files. The judge agreed with the applicants that the order would be justified 'even if it only prevented access to Newzbin2 by a minority of users'. The judgment referred to a number of similar orders granted by courts in Denmark, Belgium, Italy, Sweden and Austria ([2011] EWHC 1981 (Ch) §96).

Injunctions have subsequently been extended to the other largest UK ISPs, and to additional sites such as The Pirate Bay. The latter stated in May 2013 that 8% of its traffic was now coming through proxy services that enable the circumvention of blocks, with one of these services receiving the most visits

from countries attempting to block The Pirate Bay (TorrentFreak 2013).

More aggressive enforcement action was taken by New Zealand and US law enforcement agencies against the streaming 'cyberlocker' site Megaupload. The US Department of Justice indicted the operators of Megaupload on the basis that they had committed, conspired to, and aided and abetted infringement, as well as committing racketeering, money laundering and wire fraud (*U.S. v. Dotcom*, No. 1:12CR3, ECF Doc. 34, at 2–3 (E.D. Vir. Feb. 16, 2012)). New Zealand anti-terrorism police arrested the defendants, and they are currently on bail waiting for an extradition hearing. US, New Zealand and Hong Kong authorities also seized associated domain names, computer servers and other electronics, bank accounts and vehicles (Martin and Newhall forthcoming).

A New Zealand court has since ruled that the warrants used to raid residences were unlawful, and that the FBI acted illegally by cloning seized hard disks and sending them to the US. Remarkably, New Zealand's prime minister has declared that he was 'quite shocked' to discover that the Government Communications Security Bureau had illegally wiretapped the defendants; an investigation is underway (Saarinen 2012). Chief Executive Kim Dotcom has meanwhile launched a new encrypted locker service,

**Table 30.2 Visitors to PirateReverse.info, Jan–May 2013**

Country	Visits
1. United Kingdom	4,263,214
2. Netherlands	1,543,514
3. Finland	880,837
4. United States	771,856
5. Belgium	413,590
6. Italy	238,912
7. Canada	174,967
8. Brazil	163,224
9. India	155,063
10. Australia	143,993

Source: TorrentFreak (2013).

Mega, which has no ability to monitor the content being shared by its users.

### **'Three Strikes'**

A more recent rights holder strategy has been to lobby for the introduction by ISPs of 'three strikes' or 'graduated response' schemes, either by statute (Taiwan, France, South Korea) or through negotiations following legal action (Ireland) or threats of such (US). Under these schemes, ISPs send warnings to customers alleged by right holders to have been detected committing copyright infringements. After several such warnings to an individual customer, ISPs take further action such as requiring customers to review an 'educational' website about infringement, reducing bandwidth, imposing download caps, blocking access to specific sites or peer-to-peer protocols, or terminating customer accounts (Yu 2010).

Irish ISP Eircom agreed to introduce such a scheme after legal action by four multinational record companies, who wanted to require Eircom to monitor all subscriber traffic for evidence of infringement. The Irish Data Protection Commissioner investigated this scheme after 300 users claimed they had wrongly been accused of infringement (McIntyre 2011), but took no further action.

The first version of France's so-called HADOPI three-strikes law was found to be unconstitutional, because it allowed users to be disconnected by an administrative agency. The revised law, approved by the Constitutional Council, allowed for judicial ordering of disconnection. However, this provision was repealed following political controversy and doubts that the system was cost-effective (*Décret n° 2013-596 du 8 juillet 2013*). The UK's Digital Economy Act 2010 includes powers for the government to introduce 'obligations to limit Internet access' and 'injunctions preventing access to locations on the Internet', although for now these are not to be introduced following the

High Court's Newzbin2 injunction, which was issued under earlier legislation.

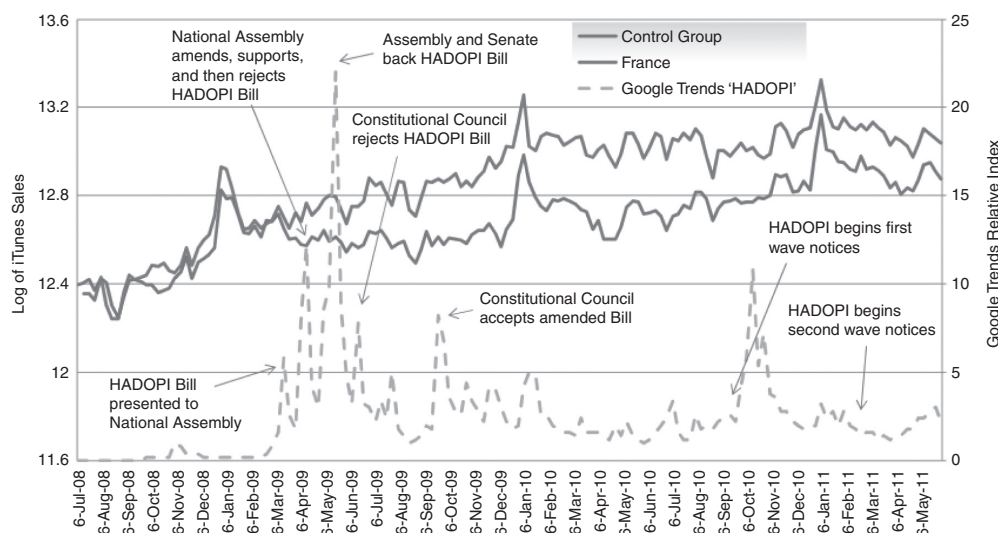
In its first nine months of operation the HADOPI agency received 18m notifications from rights holders, identified around 900,000 alleged infringers, and sent 470,000 first warnings and 20,000 second warnings (Columbus 2011). As Patry observed of earlier takedown notices in the US, they are sent by outsourced companies 'who rely on automated processes, indirect evidence of infringement, but who have a direct financial incentive to send out as many notices as possible' (2009, 169). HADOPI has been so unpopular that the current French government has threatened to scrap the agency. Its budget has been cut from €11.8m in 2011 to €8.5m in 2013, with a review underway (Farivar 2012).

A recent review suggests that HADOPI has led to iTunes song and album sales increasing in France by 22.5% and 25% relative to a control group, suggesting increased annual revenues of €9.6m (Danaher et al. forthcoming). Interestingly, this data (see Figure 30.1) shows that sales increased before any sanctions were imposed, likely as a consequence of increased public awareness following intense media discussion of the law.

Internet Service Providers were very successful in lobbying for notice and takedown regimes during the late 1990s, protecting them from broader liability for copyright infringement by their users. They have been less successful in resisting 'three strikes' regimes. The industry costs associated with these regimes can be significant. An Industry Canada study showed that sending a single notification of alleged infringement cost large ISPs C\$11.73 and small ISPs C\$32.73 (2006). The UK government estimated that the three-strikes regime in the Digital Economy Act would cost ISPs £290m–£500m (Department for Business 2009, 13).

This difference in political efficacy may reflect the fact that ISPs have more divided interests with three-strikes regimes than over secondary liability protection. Peer-to-peer traffic is often the largest single category of





**Figure 30.1 iTunes single track unit sales trends (four majors combined), France vs. control**

Source: Danaher et al. (forthcoming, 13).

data flowing over ISP networks, which can lead to significant congestion and bandwidth usage charges. Many ISPs are trying to develop businesses as premium content providers, and some are part of larger telecommunications companies that supply cable TV and other paid-for video content. Both of these provide incentives for ISPs to reduce customer copyright infringement, even where they are protected from secondary liability.

## INSTITUTIONAL POLITICAL ECONOMY

Copyright policy has traditionally been settled in 'dark, smoky rooms' between major corporate stakeholders, facilitated by government (Litman 2001). This produced reasonably stable outcomes so long as these stakeholders were themselves the major target of regulation. Litman characterized this as a process in which publishers, movie studios, record companies and TV broadcasters 'jointly controlled the playing field', and that it was now 'nearly impossible to wrest

that control away' (2009, 313). Upstart market entrants were the main innovators, breaking in using radical new technologies and often initially paying little attention to copyright concerns (Wu 2010).

This pattern has been reproduced in the last two decades. Individual developers and start-ups developed MP3 storage and peer-to-peer distribution systems that became extremely popular but were subject to extremely adverse legal decisions. They gained legitimacy when adopted by companies such as Apple and Spotify that were eventually able to overcome great resistance from the major record labels, revolutionizing the music market. Innovative business models squashed by rights holders during the 2000s, such as My.MP3.com (Ginsburg 2001, 1617), have been resurrected in forms that give less control to rights holders.

This has also been a problem at the international level. After becoming frustrated with the influence of developing countries at the World Intellectual Property Organization (WIPO), major rights holders shifted the debate to the GATT trade discussions. Here they successfully pushed the process that led



to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), created as part of the establishment of the World Trade Organization (Drahos and Braithwaite 2003, 108–147).

TRIPS contains a broad range of provisions concerning copyright term, scope and enforcement. However, it came too early to include anti-circumvention provisions protecting Technological Protection Measures (TPMs). These provisions were taken up enthusiastically in the US during the 1990s. President Clinton's Intellectual Property Working Group proposed a new Copyright Act chapter to ban circumvention devices or services, acknowledging that this 'provision will not eliminate the risk that protection systems will be defeated, but it will reduce it' (Intellectual Property Rights Working Group 1995, 177).

The chair of the working group, Bruce Lehman, was also the US representative to WIPO, and saw this route to get international agreement on these provisions as a way to bypass Congressional objections (Samuelson 1997). At WIPO, the US pushed detailed model provisions on circumvention devices or services. However, in the run-up to the finalization of the Internet treaties, the developing world – led by South Africa and with significant input from civil society groups – resisted this language. As a result, Articles 11 and 18 of the Copyright Treaty and the Performances and Phonographs Treaty, respectively, contain much more generic language (Ficsor 2002).

Further development of protection for TPMs has taken place in bilateral negotiations of Free-Trade Agreements (FTAs) with less powerful developing-world nations, and in multilateral groupings of advanced economies. Broad anti-circumvention provisions have subsequently appeared in US free-trade agreements with a wide range of countries (Brown 2006) and more recently in EU free-trade agreements (such as art. 10.12 of the EU–South Korea FTA agreed in 2010). They are also included in article 27(5) of the Anti-Counterfeiting Trade Agreement

(ACTA) agreed in 2010 by the US, EU, Japan, Canada, Australia, Mexico, Morocco, New Zealand, Korea, Singapore and Switzerland – although the European Parliament has since blocked EU implementation of ACTA.

During a decade of discussions at WIPO over a proposed broadcasting treaty, civil society and developing country representatives complained of exclusion from key decision-making processes, a lack of transparency, and even of public-interest briefing papers being thrown into a lavatory rubbish bin (Gross 2007). Most recently, negotiations over ACTA took place in secret for two years between rich-world economies, with negotiating texts circulated by the US government to industry representatives but withheld from civil society groups as 'classified in the interest of national security' (Love 2009).

Even academic copyright experts complain of being ignored. Amsterdam University's Institute for Information Law wrote to the European Commission in 2008, warning that two studies it carried out for the EC had been 'almost entirely ignored' in a way that 'seem[s] to reveal an intention to mislead the Council and the Parliament, as well as the citizens of the European Union' and that 'reinforces the suspicion, already widely held by the public at large, that its policies are less the product of a rational decision-making process than of lobbying by stakeholders' (Hugenholtz 2008, 2). Two independent reviews for the UK government felt the need to emphasize that policy should be based on evidence and not 'lobbysmics' (Gowers 2006; Hargreaves 2011a, 18). As Professor Jessica Litman has written: 'the copyright war has been intensely polarizing. The conflict has been protracted and venomous. The middle ground seems to have disappeared' (2009, 317).

This is not only a theoretical problem. The exclusion of major stakeholders (users and bodies responsible for fundamental rights, and to a lesser extent ISPs and technology companies) from negotiations over Internet-era copyright reform has produced unbalanced

and impractical outcomes, at the national and international level. And it has allowed rights holders to block innovative new business models that could have increased revenues for creators while better meeting consumer needs, but perhaps threatened short-term revenues (Patry 2009, 171–199). In some cases, large rights holders have merged with telecommunications providers (such as NBC Universal and Comcast). These conglomerates have the same types of incentives for copyright enforcement as Sony after it purchased Columbia Pictures Entertainment in 1989 (and later Metro-Goldwyn-Mayer).

Civil society groups have campaigned consistently for stronger user protections to be included in new copyright laws, with varying success. The Electronic Frontier Foundation led a successful campaign for a DMCA provision that allows the Librarian of Congress to exempt certain classes of works from anti-circumvention provisions, where users are being ‘adversely affected ... in their ability to make noninfringing uses’ (§1201(a)(1)(c)). As eastern European countries implemented EU law while becoming members, members of the European Digital Rights coalition campaigned for them to make maximum use of flexibilities in the Directive to protect user rights, particularly over anti-circumvention rules (Brown 2003). But generally civil society has been kept out of or side-lined in the negotiations leading to copyright law revisions (Litman 2009), and has had to battle for influence in legislatures and courts. At the OECD, the civil society information society advisory council refused to approve Internet policy-making principles developed in a multi-stakeholder process, since they included liability for copyright infringement in some circumstances for intermediaries (Civil Society Information Society Advisory Committee 2011).

Governments and rights holders have found it extremely difficult to extend effective copyright regulation from a relatively small number of companies to the billions of individual users of the Internet. A UK government review found that downloading

was the most common offence committed by 10–25 year olds, and that 63% of downloaders had full knowledge that it was illegal (Wilson et al. 2006). Courts simply cannot process quickly enough lawsuits against the vast numbers of unauthorized sharers of music, and mistakes and disproportionate punishments seen in such cases have provoked enough negative publicity for the recording industry to cause them to focus on more automated, code-based strategies.

However, these strategies have generally been blunt attempts to bludgeon users of copyright works into compliance, rather than nudge them towards legal use of works. The first has been to file an automated blizzard of lawsuits and takedown notices against individuals, using software to indicate the sharing of copyright works. This software has proven to be ‘notoriously inaccurate, leading to lawsuits against people who don’t even have computers or who are dead’ (Patry 2009, 13) – and even against computer printers. Entirely original videos have been taken down from sites such as YouTube as infringing. It can be expensive and time-consuming for affected individuals to have suits dismissed, or works put back up, especially if a fair use or dealing defence is involved (Patry 2009, 13).

Motion Picture Association of America president Dan Clickman reportedly responded to these problems by stating: ‘When you go trawling with a net, you catch a few dolphins’ (Doctorow 2007). But such an industrial fishing approach is hardly appropriate where, in ‘three-strikes’ systems, inaccurate allegations could lead to individuals’ disconnection from the Internet and all of the online services they rely on (Yu 2010, 139–167).

While courts have found against the suppliers of software and services enabling large-scale infringement via peer-to-peer file-sharing (most notably in the *Grokster* and *Pirate Bay* cases), this has not been enough to stop individual developers from continuing to supply such software. Indeed, P2P systems have continued to evolve in the face of legal action, removing the central points of failure that enabled Napster to be shut down by the Californian courts.

The legal protection of Technological Protection Measures has done little to stop the unauthorized access to and sharing of protected works, but has had a negative impact on competition, interoperability, innovation and security research. TPMs can stop the design and production of compatible or interoperable devices that allow access to protected content, while blocking scientific research into the quality of security mechanisms. They stop users from exercising their fair use or dealing rights, since machines are unable to judge the sometimes-subtle factors that courts would assess in allowing these exceptions (Electronic Frontier Foundation 2010) – meaning, for example, that the World Blind Union is still finding that TPMs are preventing the visually impaired from using text-to-speech software to access protected e-books. They even sometimes threaten the safety of users' computers, and the Internet more broadly – to the point where officials from the US Department of Homeland Security warned that 'in the pursuit of protection of intellectual property, it's important not to defeat or undermine the security measures that people need to adopt in these days' (Mulligan and Perznowski 2007, 1771–1174).

Consumer resistance eventually resulted in the abandonment of TPM restrictions on most downloaded music, although these are still a central part of the strategy of the movie industry, where they may better fit consumer desires to rent rather than own films. It is not yet clear whether the greater efforts to provide consumer-friendly, legal services for online movie access will be sufficient to avoid the widespread infringement suffered by recorded music once sufficient bandwidth becomes widely available to consumers.

## CONCLUSION

Large rights holders have spent nearly two decades trying to alter the nature of the Internet and the personal computer to fit business models relying on scarcity and the control of copies, with little success. After

trying all of the alternatives, they are now finally beginning to work seriously with innovators developing technologies that can remunerate creators without taking control of individuals' PCs or Internet connections.

These alternatives include systems such as YouTube's content ID fingerprinting system, which allows rights holders to choose whether automatically-detected infringing videos should be investigated and taken down, or alternatively to share in the advertising revenues generated by such videos. 'All-you-can-eat' subscription services such as Spotify give paying customers streaming access to very large libraries of licensed musical works, coming close to the 'celestial jukebox' envisaged in the early days of the Internet. Major Chinese search engine Baidu has reached a deal with Universal, Warner and Sony to allow users access to a large catalogue of works on an advertising-supported basis (Xinhua 2011). And a review for the UK government has suggested the development of a 'digital copyright exchange', which would enable the automated trading of licences and reduce the cost of dispute resolution (Hargreaves 2011a, 28–35).

Many of these technologies could have been developed much earlier given cooperation from rights holders. The BBC has complained that it took 'nearly five years' to put together the licences required to launch its iPlayer service. Technology start-ups complain that licensing negotiations can take an inordinate amount of time, have inconsistent results, and sometimes result in threats of legal action (Hargreaves 2011a, 29). The US Register of Copyrights observed:

licensors have rarely turned down the opportunity in the digital age to seek royalties, even where the basis for their request is weak at best. Online music companies rightly complain that they need certainty over what rights are implicated and what royalties are payable so that they can operate without fear of being sued for copyright infringement. (2007)

An international group of experts convened by the civil society group ARTICLE 19 has developed a set of principles on freedom of

expression and copyright, building on international law, which could provide a starting point for a better balancing of these issues. They specifically recommend no user disconnection from Internet access on copyright grounds, strict limits on filtering and blocking, and minimization of intermediary liability, along with a number of other broader principles (ARTICLE 19 2012).

The evolution of digital copyright policy provides an abject lesson in the damage caused to innovation and the public interest of allowing self-interested industry groups to drive policy, excluding other stakeholders, and basing regulatory decisions on 'lobbysomics'. One can only hope that policy makers in future will think more carefully about ways to better incentivize cooperation between *all* stakeholders. There are no technical options that will magically balance the range of interests implicated by copyright policy. Maximizing social welfare while incentivizing creativity and protecting human rights, all in the face of massive technological change, may not be easy, but there is a growing evidence base on which to base better attempts than we have seen so far.

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