

Copyright and New Technologies

Technology Providers as “New” Old Actors in Copyright Law and Policy

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Abstract

This Article examines the role of technology providers as “new” old actors in the three recent institutional turns within copyright law and its enforcement in the digital environment. First, many international technical standards for reproduction or dissemination technologies, *e.g.* CDs, DVDs or Blu-ray Discs, have incorporated various proprietary technologies, including digital rights management technologies, at the expense of other creators, technology providers and consumers. Second, many countries around the world have adopted or are currently planning to adopt so-called three-strike rule regimes requiring internet service providers to disconnect frequent copyright infringers from the internet upon three allegations being made by affected copyright holders. In some countries, the courts have gone even further and have already imposed on internet service providers a variety of duties to monitor their networks under specific circumstances in order to prevent acts of copyright infringement committed by their internet users. Finally, some internet or online service providers have recently entered into agreements with major record labels or other copyright holders to allow unrestricted use of copyrighted works by their premium users. This Article enquires into the interaction between individual institutions and norms within all three institutional turns within copyright law and its enforcement in the digital environment, and their impacts on copyright law and the behavior of individual stakeholders at the present and in the future.

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Introduction

The last two decades in the field of copyright protection¹ have been characterized by the mass disregard of copyright law by millions of individual internet users on peer-to-peer networks.² The severity of this lamentable situation is, as claimed by major copyright holders, especially record labels, evidenced by the steady decrease in their revenues since the late 1990s due to peer-to-peer file sharing.³ As the enforcement strategies

¹ For the purposes of this Article, the term “copyright” is used in a broad sense as it is used in common law countries, where it covers the economic rights of authors, performers, phonogram producers and broadcasting organizations. Accordingly, it covers the exclusive economic rights of author’s rights and neighboring rights as they are classified in civil law countries. In places where the analysis exclusively deals with neighboring rights, the term “neighboring rights” is used to make clear that it concerns only neighboring rights.

² See, e.g., MailOnline, *Illegal File-Sharing Downloads ‘Costs UK £12.5bn and Thousands of Jobs a Year’* (May 29, 2009), available at <http://www.dailymail.co.uk/sciencetech/article-1189509/Illegal-file-sharing-downloads-cost-thousands-British-jobs-year.html> (last visited Feb. 5, 2010); BBC News, *Seven Million ‘Use Illegal Files’* (May 28, 2009), available at <http://news.bbc.co.uk/2/hi/technology/8073068.stm> (last visited Feb. 5, 2010); guardian.co.uk, *Illegal Filesharing: A Problem the Government Can’t Solve?* (Nov. 25, 2009) (written by Charles Arthur), available at <http://www.guardian.co.uk/technology/2009/nov/25/illegal-filesharing-digital-economy-bill> (last visited Feb. 5, 2010).

³ See, e.g., RIAA, *2008 Year-End Shipment Statistics*, available at <http://76.74.24.142/D5664E44-B9F7-69E0-5ABD-B605F2EB6EF2.pdf> (last visited Feb. 5, 2010); IFPI, *IFPI Digital Music Report 2010: Music How, When, Where You Want It*, at 6 (2010), available at <http://www.ifpi.org/content/library/DMR2010.pdf> (last visited Feb. 5, 2010) (“Overall music sales fell around 30 per cent between 2004 and 2009.”); IFPI, *The Impact of Illegal Downloading on Music Purchasing* (2009), available at <http://www.ifpi.org/content/library/The-Impact-of-Illegal-Downloading.pdf> (last visited Feb. 5, 2010) (outlining surveys on the impact of illegal downloading on music sales). See also Martin Peitz and Patrick Waelbroeck, *The Effect of Internet Piracy on Music Sales: Cross-Section Evidence*, 1 (2) REV. ECON. RES. COPYRIGHT ISSUES 71 (2004); Stephen E. Siwek, *The True Cost of Sound Recording Piracy to the U.S. Economy* (2007), available at [http://www.ipi.org/IPI/IPIPublications.nsf/PublicationLookupFullTextPDF/51CC65A1D4779E408625733E00529174/\\$File/SoundRecordingPiracy.pdf?OpenElement](http://www.ipi.org/IPI/IPIPublications.nsf/PublicationLookupFullTextPDF/51CC65A1D4779E408625733E00529174/$File/SoundRecordingPiracy.pdf?OpenElement) (last visited Feb. 5, 2010).

against organizers of peer-to-peer networks⁴ and individual internet users⁵ have, up to now, failed to persuade millions of individual internet users to comply with the strict requirements of copyright law, the major corporate copyright holders' tactics have recently been slightly modified. They have switched the main focus of their attention to increasing the role of diverse reproduction and dissemination technology and service providers in copyright enforcement in the digital environment. In many countries, the leading copyright holders' campaigns for strengthening copyright protection in the fight against the mass unauthorized sharing of copyrighted works on peer-to-peer networks have already led to the imposition of numerous duties on technology or service providers in order to induce them to play an active role in copyright enforcement.⁶

In general, three main recent policy changes, which are directly or indirectly related to strengthening copyright protection and enforcement in the digital environment, can be observed within national copyright laws in several developed countries. The first change is presented by the

⁴ See, e.g., CNNMoney.com, *Hollywood Wins Internet Piracy Battle: The U.S. Supreme Court Rules against File-Sharing Service Grokster in a Closely Watched Piracy Case* (June 27, 2005) (written by Krysten Crawford), available at <http://money.cnn.com/2005/06/27/technology/grokster/index.htm> (last visited Feb. 5, 2010); The New York Times, *Australian Court Rules Kazaa Has Violated Copyrights* (Sept. 6, 2005) (written by Wayne Arnold), available at <http://www.nytimes.com/2005/09/06/technology/06kazaa.html> (last visited Feb. 5, 2010).

⁵ See, e.g., wired.com, *File Sharing Lawsuits at a Crossroads, After 5 Years of RIAA Litigation* (Sept. 4, 2008) (written by David Kravets), available at <http://www.wired.com/threatlevel/2008/09/proving-file-sh/> (last visited Feb. 5, 2010) (by September 4, 2008 RIAA's massive litigation campaign included "more than 30,000 lawsuits targeting alleged copyright scofflaws on peer-to-peer networks"); CBS News.com, *File-Sharing Mom Fined \$1.9 Million* (June 19, 2009), available at <http://www.cbsnews.com/blogs/2009/06/19/crimesider/entry/5097090.shtml> (last visited Feb. 5, 2010); BBC News, *Lawyers Target Thousands of 'Illegal' File-Sharers* (Nov. 27, 2009) (written by Jonathan Fildes), available at <http://news.bbc.co.uk/2/hi/technology/8381097.stm> (last visited Feb. 5, 2010).

⁶ See, e.g., IFPI, *IFPI Digital Music Report 2010*, *supra* note 3, at 24-25 (outlining the adoptions of three-strike rules, also called "graduated responses," in several countries around the world).

mass deployment of technological protection measures and digital rights management systems. Although the technological solutions and their protection had already been available to the copyright holders for some time,⁷ the last decade has brought new developments and tensions concerning their use, especially where they form a part of the technical standards for consumer electronic devices controlled through essential patents held by a few leading established manufacturers.⁸

The other two changes in copyright protection and enforcement would have been unacceptable to the concerned stakeholders a couple of years ago, but their necessity has emerged as a response to recent failures in the enforcement of copyrights directly against individual internet users or indirectly against providers of the software applications necessary for the operation of peer-to-peer file sharing networks. They are, more or less, a reaction of one change to the failure of another. The first is the so-called three-strike rule or graduated response regime, which has been or is to be adopted in several countries, such as New Zealand, France, the United Kingdom and the United States.⁹ Under the three-strike rule, in-

⁷ See, e.g., Branislav Hazucha, Hsiao-Chien Liu and Toshihide Watabe, *Copyright, Protection Measures and Their Acceptance by Consumers*, in GOVERNING INNOVATION AND EXPRESSION: NEW REGIMES, STRATEGIES AND TECHNIQUES 271, 281-9 (Katja Weckström ed., Turku: University of Turku Press, 2013).

⁸ See, e.g., The Register, *China's DVD Format 'Ready by 2008': Blu-Ray Meets the Red Way* (Oct. 12, 2005) (written by Andrew Orłowski), available at http://www.theregister.co.uk/2005/10/12/china_homegrown_dvd/ (last visited Feb. 5, 2010) ("China produced about 70 percent to 80 percent of the world's DVD players. However, Chinese manufacturers need to pay licensing fees to overseas patent holders in the DVD industry."); The Australian, *China Challenges Sony-Led Consortium in Blu-Ray DVD Market*, available at <http://www.theaustralian.com.au/news/china-challenges-sony-led-consortium-in-blu-ray-dvd-market/story-0-1225756134111> (last visited Feb. 5, 2010) ("In just a couple of months since it was launched, the cheaper all-Chinese CBHD players are thought to be outselling Blu-ray players at a rate of about three to one.").

⁹ See, e.g., Office of the Minister of Commerce, *Cabinet Paper: Illegal Peer-To-Peer File Sharing* (Dec. 14, 2009), available at <http://www.med.govt.nz/upload/71039/S92A-Cabinet-Paper.PDF> (last visited Feb. 5, 2010) (New Zealand); The New York Times, *France Approves Wide Crackdown on Net Piracy* (Oct. 22, 2009), available at <http://www.nytimes.com/2009/10/23/technology/23net.html>

internet service providers are expected to disconnect repetitious copyright infringers from access to the internet for a certain time period after two previous warnings of alleged copyright infringements have been made. As the trials and operation of such regimes have caused huge outrage from internet service providers and their customers,¹⁰ some leading internet and online service providers have lately struck deals with several major record labels or other corporate right holders under which the customers of their internet or online services are allowed to use copyrighted content controlled by those right holders with limited or even no restrictions.¹¹

This Article enquires into these changes in copyright law protection and enforcement in digital networks, especially changes in the role played by technology providers as “new” old actors in modern copyright law and policy making. It also examines the role of various well-

(last visited Feb. 5, 2010) (France); guardian.co.uk, *Digital Economy Bill Promises Action on Piracy, Games and ITV Regional News* (Nov. 18, 2009), available at <http://www.guardian.co.uk/media/2009/nov/18/digital-economy-bill> (last visited Feb. 5, 2010) (the United Kingdom); cnet news, *A Year Out, Where's RIAA's Promised ISP Help?* (Dec. 23, 2009) (written by Greg Sandoval), available at http://news.cnet.com/8301-31001_3-10420803-261.html?part=rss&subj=news&tag=2547-1_3-0-20 (last visited Feb. 5, 2010) (the United States); guardian.co.uk, *EU Urges to Crack Down on Internet Piracy* (Jan. 10, 2010), available at <http://www.guardian.co.uk/technology/2010/jan/10/eu-illegal-internet-piracy-filesharing> (last visited Feb. 5, 2010) (the European Union).

¹⁰ See, e.g., The Register, *Kiwis Scrap 'Three Strikes' P2P Policy* (Mar. 24, 2009), available at http://www.theregister.co.uk/2009/03/24/new_zealand_delays_three_strikes_policy/ (last visited Feb. 5, 2010) (“controversial section 92a of the Copyright Act was shown the door by Prime Minister John Key on Monday following public and corporate protests and a well-organized internet ‘blackout’ campaign”); BBC News, *Anger at UK File-Sharing Policy* (Aug. 25, 2009), available at <http://news.bbc.co.uk/2/hi/technology/8219652.stm> (last visited Feb. 5, 2010); BBC News, *Warning Letters to 'File-Sharers'* (July 3, 2008), available at <http://news.bbc.co.uk/2/hi/technology/7486743.stm> (last visited Feb. 5, 2010).

¹¹ See, e.g., BBC News, *Anti-Piracy Music Deal for Virgin* (June 15, 2009), available at <http://news.bbc.co.uk/2/hi/8100394.stm> (last visited Feb. 5, 2010); guardian.co.uk, *HP Deal Strengthens Omnifone's Position in Digital Music Battle* (Jan. 25, 2010), available at <http://www.guardian.co.uk/business/2010/jan/25/hp-bundles-omnifone-music-downloads> (Jan. 25, 2010).

organized interest groups and the broader social atmosphere in designing new institutions for strengthening the protection of copyright holders' proprietary interests in the digital age.

Section I sketches the relationship between copyright protection and the provision of new reproduction and dissemination technologies which can, in some ways, endanger the revenues of incumbent content providers from their copyrighted content. It scrutinizes the mutual interdependency between content providers and technology providers. At the same, it points out the frictions and tensions between the interests of both stakeholders in designing new reproduction and dissemination technologies.

Section II outlines the different ways in which human behavior can be regulated. It relies on the modalities-of-regulation theory developed by Lawrence Lessig and shows the new insights this theory can provide us with regard to copyright protection and the regulation of new reproduction and dissemination technologies. It also examines how the abovementioned changes in copyright law and its enforcement in the digital environment employ different combinations of individual modalities of regulation.

Section III scrutinizes possible ways of regulating new reproduction and dissemination technologies by the law while taking into account the respective likely responses of other affected modalities of regulation, *i.e.* social norms, markets and technology. It enquires into the role of legislation, courts and markets in regulating new technologies. The analysis also focuses on the role of interest groups in copyright policy making and thus examines possible biases which can occur during the copyright law making process or court proceedings.

The Article concludes by calling for cautiousness with respect to imposing any broad duties on technology providers in order to induce them to play an active role as gatekeepers in the protection of copyright holders' proprietary interests in the digital age. The reason for this is that such regimes can place a considerable burden on other stakeholders, especially consumers and those technology providers who want to enter into the market with new technologies and business models.

1. Copyright Protection and New Technologies

The history of copyright protection is intertwined with the introduction of diverse reproduction and dissemination technologies which allowed new ways of making commercial or non-commercial uses of copyrighted works, such as the printing press, sound and video recording, radio and television broadcasting, and internet communication. Technology providers have thus historically played an important role in creating the necessary technological and economic foundations for numerous types of copyright-based entertainment industries. The latter's emergence would not have been possible without the abundant availability of essential technologies which allowed for particular commercial exploitations of copyrighted works. New technologies have steadily reduced the costs of production or dissemination of copyright works so that their commercial exploitation has become commercially viable for the concerned content providers.

At the same time, the labor, time and other limited resource saving features of reproduction and dissemination technologies have brought a recurring need to protect, by law, investors' interests in the commercial exploitation of literary, artistic and scientific works against those who want to directly or indirectly benefit financially from their exploitation. For instance, the invention of copyright was a response to the introduction of printing press technology and the need to set up a legal framework for the early market-oriented regulation of the printing industry.¹² Similarly, the introduction of early sound and video recording technologies, as well as radio and television broadcasting technologies, led to an

¹² See, e.g., AUGUSTINE BIRRELL, SEVEN LECTURERS ON THE LAW AND HISTORY OF COPYRIGHT IN BOOKS (Kessinger Publishing, 2008) (1899); L. RAY PATTERSON, COPYRIGHT IN HISTORICAL PERSPECTIVE 20-179 (Nashville, TN: Vanderbilt University Press, 1968); DAVID SAUNDERS, AUTHORSHIP AND COPYRIGHT 35-74 (London: Routledge, 1992); BRAD SHERMAN AND LIONEL BENTLY, THE MAKING OF MODERN INTELLECTUAL PROPERTY LAW: THE BRITISH EXPERIENCE, 1760-1911 11-42 (Cambridge: CUP, 1999); RONAN DEAZLEY, ON THE ORIGIN OF THE RIGHT TO COPY: CHARTING THE MOVEMENT OF COPYRIGHT LAW IN EIGHTEENTH-CENTURY BRITAIN (1695-1775) (Oxford: Hart Publishing, 2004).

economically significant broadening of the scope of authors' and composers' exclusive rights granted by copyright law, as well as to the grant of new exclusive rights to performers and entities involved in music, video and other related entertainment production and its dissemination through radio or television broadcasting.¹³ As threats to the commercial exploitation of copyrighted works, which were brought about by new reproduction and communication technologies, have significantly changed several times, especially during the last 150 years, the group of stakeholders in copyright policy making has also considerably changed over the same time.¹⁴

The conventional view on copyright policy is that there are two main groups of stakeholders: copyright holders and consumers of copyrighted works.¹⁵ The reality is, however, more complex than it may seem at first glance. The group of copyright holders is not only composed of individual creators, such as authors, composers and other types of artists, but also from a variety of commercial entities, such as record labels, studios, radio and television broadcasters, as well as video game developing and publishing companies, which arrange the delivery of numerous copyrighted works from their creators to consumers in diverse forms on a commercial basis. Over time, many of these content providers were once new types of content providers who struggled with then established content providers. Hence, studios and record labels competed with publishing houses, authors and composers.¹⁶ Soon after, radiobroadcasting com-

¹³ See, e.g., PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX* 49-61 (Stanford, CA: Stanford University Press, 2003); MAKEEN FOUAD MAKEEN, *COPYRIGHT IN A GLOBAL INFORMATION SOCIETY: THE SCOPE OF COPYRIGHT PROTECTION UNDER INTERNATIONAL, US, UK AND FRENCH LAW* 24-279 (The Hague: Kluwer Law International, 2000).

¹⁴ See, e.g., MAKEEN, *supra* note 13 (outlining individual institutional switches and stakeholders in copyright protection from the printing press to information communication technologies).

¹⁵ See, e.g., L. RAY PATTERSON AND STANLEY W. LINDBERG, *THE NATURE OF COPYRIGHT: A LAW OF USERS' RIGHTS* 163-241 (Athens, GA: The University of Georgia Press, 1991) (traditionally distinguishing between authors, publishers and users).

¹⁶ See, e.g., GOLDSTEIN, *supra* note 13, at 49-54.

panies challenged record labels and collecting societies representing the interests of authors and composers.¹⁷ Cable television operators contested with broadcasting companies.¹⁸ There exist many further examples of such confrontations between incumbent and emerging content providers.

Similarly, the group of consumers is not homogeneous either. Individual consumers differ significantly in their preferred ways of consuming copyrighted works. Some consumers like to download sound recordings to their iPods or other types of MP3 players. Others like to listen to their collection of music CDs, while there is still a group of consumers who think that nothing can be compared to the joy of listening to old good vinyl LP records. Moreover, there are people who prefer watching movies or playing video games to listening to any sound recordings.

In addition to the heterogeneous groups of traditional stakeholders in copyright policy, it has recently become more obvious that the providers of reproduction and dissemination technologies and services also have something to say about copyright policy. Since the introduction of the first tape recorders which allowed the public to record radio broadcasts,¹⁹ the claim has regularly been raised by copyright holders or their collecting societies that consumer electronics manufacturers should design their technologies in a more copyright-friendly way.²⁰ But it is only

¹⁷ See *id.* at 57-60; MAKEEN, *supra* note 13, at 33-83.

¹⁸ See, e.g., MAKEEN, *supra* note 13, at 227-79.

¹⁹ The *Grundig Reporter* case, 1956 GRUR 492 (BGH May 18, 1955). See also JAAP H.SPOOR, WILLIAM CORNISH AND PETER F. NOLAN, COPIES IN COPYRIGHT 24-26 (Alphen aan den Rijn: Sijthoff & Noordhoff, 1980); Dirk J.G. Visser, *Copyright Exemptions Old and New*, in THE FUTURE OF COPYRIGHT IN A DIGITAL ENVIRONMENT 49, 50 (P. Bernt Hugenholtz ed., The Hague: Kluwer Law International, 1996); ANDREAS DUSTMANN, DIE PRIVILEGIERTEN PROVIDER: HAFTUNGSEINSCHRÄNKUNGEN IM INTERNET AUS URHEBERRECHTLICHER SICHT 49-50 (Baden-Baden: Nomos Verlagsgesellschaft, 2001).

²⁰ See, e.g., CBS Songs Ltd. v. Amstrad Consumer Electronics Plc. [1988] A.C. 1013, [1988] R.P.C. 567, [1988] 2 All E.R. 484 (a case dealing with the marketing of double-deck cassette recorder in the United Kingdom); Sony Corp. of America v. Universal City Studios, Inc., 464 U.S. 417, 78 L. Ed. 2d 574, 104 S. Ct. 774 (U.S. Sup. Ct. Jan. 17, 1984) (a case dealing with the marketing of Beta-max video tape recorder in the United States).

in the last two decades that views have changed to the point that technology and internet service providers are expected to play a more active role in copyright enforcement in the new digital environment.²¹

The actual role of technology providers in copyright policy has gradually changed as the technology developed from one type of reproduction or dissemination technology to another. This has been affected to a certain degree by the fact that technology providers have often also been content providers. The first copyright holders—printers and binders—were also technology providers. Gutenberg was not only the inventor of the modern movable type of printing technology but also the printer of the famous Gutenberg Bible, which was praised for its high quality and relatively low price compared to those produced with previous printing methods.²² Similarly, the first record labels, movie producers and radio broadcasters controlled essential patents for manufacturing gramophones, movie cameras and radio broadcasting devices.²³

Although technology providers and content providers can be the same persons, splits and reunions between these two commercial activities occur in many cases due to their sometimes conflicting but also more or less mutually dependant interests. Tensions and mutual dependency between their interests are caused by the direct and indirect networks

²¹ See, e.g., Pater S. Menell, *Indirect Copyright Liability and Technological Innovation*, 32 COLUM. J.L & ARTS 375 (2009); Alfred C. Yen, *Torts and the Construction of Inducement and Contributory Liability in Amazon and Visa*, 32 COLUM. J.L & ARTS 513 (2009); Alain Strowel, *Internet Piracy as a Wake-Up Call for Copyright Law Makers: Is the “Graduated Response” a Good Reply?*, 2009 (1) WIPO J. 75 (2009).

²² See, e.g., ASA BRIGGS AND PETER BURKE, *A SOCIAL HISTORY OF THE MEDIA: FROM GUTENBERG TO THE INTERNET* 13-9 (3d ed., Cambridge: Polity, 2009).

²³ See, e.g., WILLIAM BODDY, *FIFTIES TELEVISION: THE INDUSTRY AND ITS CRITICS* 29 (Champaign, IL: University of Illinois Press, 1993); *MAGNETIC RECORDING: THE FIRST 100 YEARS* (Eric D. Daniel *et al.* eds., New York, NY: IEEE Press, 1999); George Brock-Nannestad, *The Development of Recording Technologies*, in *THE CAMBRIDGE COMPANION TO RECORDED MUSIC* 149 (Nicholas Cook *et al.* eds., Cambridge: CUP, 2009).

effects²⁴ of adopting a particular technology for the purpose of reproducing or distributing copyrighted works. The more available the copyrighted content is for acquisition through a particular technology, the more entities have incentives to buy or use such technology. For example, the more available DVDs or Blu-ray Discs are on the market, the more customers decide to buy DVD or Blu-ray Disc players. By increasing the availability of complementary goods—in this case, copyrighted works—by one unit, the value of each device held by consumers is increased. So far, we can see that the interests of content providers and technology providers are mutually supportive. This is also the reason why many technology providers have started to provide content which can be used by their technologies.²⁵

Yet, the experiences with the success of certain technologies on the market show that a technology must be partially or completely open to other competitors in order to be able to acquire a sufficient market share to be adopted as a leading technical standard by the market, be it a *de facto*, *de jure* or other formally adopted technical standard.²⁶ Closed proprietary technologies rarely become widely accepted industry standards. This is because the lack of competition between different manufacturers of compatible devices prevents consumers from benefitting from a variety of compatible devices with lower prices, which is what guarantees the success of a technical standard on the market. Exceptions to this rule are presented by a few closed proprietary technologies which benefitted from a sufficient variety of complementary goods and services provided by other competitors to such technologies.²⁷

²⁴ See, e.g., Oz SHY, *THE ECONOMICS OF NETWORK INDUSTRIES* (Cambridge: CUP, 2001).

²⁵ For instance, companies such as Sony, Nintendo or Philips market copyrighted content along with their consumer electronics devices. Their platforms are often so unique that their prerecorded media can only be played or used on the devices provided by them.

²⁶ See, e.g., *STANDARDS AND PUBLIC POLICY* (Shane Greenstein & Victor Stango eds., Cambridge: CUP, 2007); JEFFREY H. ROHLFS, *BANDWAGON EFFECTS IN HIGH-TECHNOLOGY INDUSTRIES* (Cambridge, MA: MIT Press, 2001).

²⁷ See, e.g., Neil Gandal, Shane Greenstein and David Salant, *Adoptions and Orphans in the Early Microcomputer Market*, 47 J. IND. ECON. 87 (1999) (ex-

In addition to a sufficient variety of available copyrighted works to be used by a technology, the utilities it provides also matter for its success on the market, especially when consumers are required to bear the costs of switching from one technology to another, *e.g.* switching from VCRs to DVDs and then to Blu-ray Discs. In this case, the higher the picture quality is or the more utilities a technology provides, the higher the chances are that more consumers will decide to invest their limited financial resources into the acquisition of it. Accordingly, DVD and Blu-ray Disc technologies offer their consumers much greater durability and picture quality than VCR technologies ever could. The latter utility was significantly increased in Blu-ray Disc technology in order to guarantee a smooth transition from DVD. These benefits allowed them to overcome the fact that they considerably limited consumers' ability to copy DVDs and Blu-ray Discs due to the use of digital rights management (DRM) technologies or to buy prerecorded media in low-cost countries to use in high-cost countries due to the use of region codes.²⁸ To persuade consumers to invest in them, each provider has an incentive to provide technologies possessing more utilities of higher quality than its competitors. In the simple case of recording devices, there is always competition between manufacturers to put devices on the market which have higher recording speeds and larger data storage capacities than those offered by their competitors. This was the case with double-deck cassette recorders, and recently CD, DVD and Blu-ray Disc burners.

To close the circle, content providers are willing to place their copyrighted works only on media used by technologies which guarantee the highest level of protection to their interests. To avoid the creation of a shortage of prerecorded media on the market, which would lead to consumers refraining from buying technology which uses that media, the established technology providers closely cooperate with major content

plaining the adoption of MS-DOS standard by availability of complementary software).

²⁸ See, *e.g.*, Rostam J. Neuwirth, *The Fragmentation of the Global Market: The Case of Digital Versatile Discs (DVDs)*, 27 *CARDOZO ARTS & ENT. L.J.* 409 (2009); Peter K. Yu, *Region Codes and the Territorial Mess*, 30 *CARDOZO ARTS & ENT. L.J.* 187 (2012).

providers when they design their new technologies. The Blu-ray Disc Association, the industry consortium that has developed and licenses Blu-ray Disc technology, thus includes among its members several major studios such as the 20th Century Fox, Walt Disney Motion Pictures Group, Warner Bros. Entertainment and Universal Studios Home Entertainment. The situation was similar with the competing HD-DVD format developed by the HD-DVD Promotion Group.

Some technology providers have gone even further and have entered into the production of copyrighted content. In the past, as mentioned above, it was quite normal for the manufacturers of new technologies used for the consumption of copyright-based entertainment to also produce prerecorded media for their devices. For instance, the 1903 famous movie *The Great Train Robbery* was distributed by the Edison Manufacturing Company for its Kinetoscope technology.²⁹ Later, several purely consumer electronics manufacturers also entered the entertainment business by acquiring established record labels or studios. Over the last three decades, Sony Corporation as a leading consumer electronics manufacturer in the world has acquired several major record labels and movie studios through its subsidiaries, Sony Music Entertainment Inc. and Sony Pictures Entertainment Inc.³⁰

On the other hand, many content providers have also begun to develop the necessary technologies on their own or in close cooperation with major consumer electronic manufactures. This allowed them to control their design in a way that was beneficial to them. But combining the production of technologies with the production of copyrighted content often brings tensions and frictions, since the interest of content providers is habitually to design technologies in such a way as to maximize the gains from the commercial exploitation of their copyrighted works. This frequently results in such technologies preventing some uses of copyrighted works even though it would be technically and economically fea-

²⁹ See, e.g., DAVID ROBINSON, *FROM PEEP SHOW TO PALACE: THE BIRTH OF AMERICAN FILM 80-82* (New York, NY: Columbia University Press, 1996).

³⁰ See, e.g., JOHN NATHAN, *SONY: THE PRIVATE LIFE 180-240* (New York, NY: Mariner Books, 1999).

sible for such uses to be allowed. One of most recent examples is the use of diverse DRM technologies which in various ways restrict the ability of consumers to exploit digital copyrighted works for private non-commercial purposes.³¹

To sum up, there is a close relationship between technology providers and content providers. Many forms of copyrighted works have been created by technology providers just to guarantee the commercial viability and ample adoption of their technologies by consumers. At the same time, many content providers have invested considerably in order to guarantee that new technologies are designed in the way that is most beneficial to their proprietary interests. Furthermore, both groups of stakeholders in the copyright policy making process are heterogeneous. Each of them is composed of various incumbent and emerging stakeholders. Copyright policy is thus shaped by the tensions between incumbent and new content providers within the same, or from different, fields of cultural production, the frictions between content and technology providers, and the struggles between incumbent and new technology providers. The question which then arises is how new reproduction and dissemination technologies should be regulated in order to maximize aggregate social benefits within modern societies and to minimize the social costs brought by such regulation.

³¹ See, e.g., June M. Besek, *Anti-Circumvention Laws and Copyright: A Report from the Kernochan Center for Law, Media and the Arts*, 27 COLUM. J.L. & ARTS 385 (2004); John A. Rothchild, *Economic Analysis of Technological Protection Measures*, 84 OR. L. REV. 489 (2005); Patricia Akester, *Technological Accommodation of Conflicts between Freedom of Expression and DRM: The First Empirical Assessment* (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1469412 (last visited Dec. 15, 2013).

2. New Technologies and Four Modalities of Regulation

Lawrence Lessig in his seminal work *Code and Other Laws of Cyberspace*,³² which has been recently revised in its second extended edition *Code Version 2.0*,³³ distinguishes between four so-called modalities of regulation: law, norms, market and architecture.³⁴ He distinguishes these modalities of regulation pursuant to the way in which they constrain the behavior of individuals. He puts it tersely: “Norms constrain through the stigma that a community imposes; markets constrain through the price that they exact; architectures constrain through the physical burdens they impose; and law constrains through the punishment it threatens.”³⁵

Individual modalities of regulation should not be seen in a vacuum and as completely independent. The opposite is true. To regulate a particular activity, several modalities of regulation in combination are normally used. For example, content providers can regulate consumers’ activities through the prices they charge for their copyrighted works. If they strike an agreement with technology providers, they can also restrict the ways in which consumers can use their copyrighted works. They can do so through the use of technological constraints implemented into technologies, which are essential for such consumption. The consumers can then be asked to pay more for copyrighted works with less restrictive technological prevention measures than for works which they can watch or listen to only once. For instance, the digital television broadcasting system can contain so-called flags, which set up the ways in which the audience can use the received television broadcast, *i.e.* whether the viewers can record it for later watching or whether they can further stream it by devices such as LocationFree TV or Slingbox via the internet to any

³² LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (New York, NY: Basic Books, 1999).

³³ LAWRENCE LESSIG, *CODE VERSION 2.0* (New York, NY: Basic Books, 2006).

³⁴ *See id.* at 123.

³⁵ *Id.* at 124.

place where the users of such devices can access the internet.³⁶ Likewise, digital recording devices can incorporate the Serial Copy Management System or any similar technological measure, which causes the quality of copies to gradually deteriorate, *i.e.* each digital copy has a lower quality than the copy from which it originated.³⁷

The level of regulation can become stronger if the law bans any technology which circumvents such technological protection measures. This is the current state of the law after the implementation of two *1996 WIPO Internet Treaties*³⁸ into national copyright laws worldwide. Law can even require technology providers to implement a particular technological solution into their devices. The U.S. copyright law does so by requiring the manufacturers of digital audio recording devices or digital audio interface devices to conform with the Serial Copy Management System or any similar system.³⁹ Similarly, in the mid-2000s there were several attempts to incorporate, into the digital television broadcasting system, various requirements to recognize flag systems by the manufacturers of consumer electronics, such as TV sets and recording devices allowing the recording of digital TV broadcasts.⁴⁰

A further aspect of Lessig's modalities-of-regulation theory is that the system composed from individual modalities of regulation is not static but dynamic. Each modality of regulation is exposed to ongoing alterations, *e.g.* changes in statutory or case law, social norms, technologies and prices. None of the modalities is immune to the impact of changes in the other modalities, but rather they interact with each other. A change in

³⁶ See, *e.g.*, Randal C. Picker, *From Edison to the Broadcast Flag: Mechanism of Consent and Refusal and the Propertization of Copyright*, 70 U. CHI. L. REV. 281 (2003).

³⁷ See, *e.g.*, Stephen W. Webb, *RIAA v. Diamond Multimedia Systems: The Recording Industry Attempts to Slow the MP3 Revolution – Taking Aim at the Jogger Friendly Diamond Rio*, 7 RICH. J.L. & TECH. 5 (2000).

³⁸ The term "WIPO Internet Treaties" is commonly used for the *WIPO Copyright Treaty* and *WIPO Performances and Phonograms Treaty* adopted in Geneva on 20 December 1996.

³⁹ See, *e.g.*, 17 U.S.C. § 1002 (the U.S. Copyright Act).

⁴⁰ See, *e.g.*, Molly S. Van Houweling, *Communications' Copyright Policy*, 4 J. TELECOMM. & HIGH TECH. L. 97 (2005).

one modality of regulation can lead to counteractions in any other modality. This causes further dynamism between individual modalities of regulation.⁴¹ The change in law can lead to a response in the form of alterations in prices or designs of technologies, and *vice versa*. The responsive changes can strengthen or undermine the effect of original legal change. Conversely, modifications to the law or social norms can cause the success or complete failure of a particular technology owing to their respective impacts on technology or content providers.

Applying Lessig's modalities-of-regulation theory to changes in the role of technology providers in copyright protection and enforcement in the digital environment, we can see the interactions between individual modalities of regulation and their mutual counteractions more clearly. Habitually, recording devices are more expensive than devices which can only play media, since they provide their consumers with more utilities and ways of using copyrighted works. As a reaction to the high level of private copying by analogue reproduction devices, the major copyright holders entered into the 1992 Athens agreement and also into consortia and alliances, which developed several digital media storage technologies, such as DVD or recently Blu-ray Disc technologies. The digital technologies developed in this way have incorporated a variety of copy protection systems which technically prevent them from being used for copying media which contain copyrighted audiovisual works. The reaction of consumers to many such technological prevention measures was to quickly circumvent them. Although the law and technologies are employed to restrict certain types of uses of copyrighted works, many users find these protective measures to be too restricting and consumer-unfriendly. The counteraction from social norms has therefore been that many members of concerned social groups find it normal to disregard such laws and to circumvent the technological protection measures buttressed by those laws.

For this reason, in the late 1990s corporate copyright holders did not want to build any online service which would allow the downloading of authorized copies of sound recordings, movies or other types of copy-

⁴¹ See LESSIG, *supra* note 33, at 130.

righted works before an effective technology was developed to sufficiently protect their proprietary interests. But the non-existence of any lawful online service led to the development of peer-to-peer networks where their users could share digital files containing copies of copyrighted works without any restriction. According to Napster's founder Shawn Fanning, a then student at the Northeastern University in Boston, the main reason for creating Napster was the lack of music files available on the internet for downloading.⁴² Although several years after the introduction of the first peer-to-peer file sharing network the major record labels attempted to build their own paid downloading services to provide the consumers with lawful alternatives, they failed, because their business models were unattractive and too expensive in the eyes of many consumers. The situation was finally changed when Apple launched its iTunes service, which allowed its users to download a music track for less than USD 1.⁴³ The iTunes' success therefore only confirmed several studies, which were conducted before its official launch and showed that the consumers are willing to pay for lawful copies of copyrighted sound recordings, but not more than USD 1 per track.⁴⁴

The emergence of authorized downloading services in the mid-2000s created a new significant source of revenue for copyright holders,⁴⁵ but these revenues have not yet been able to fully recoup the previ-

⁴² See, e.g., BBC News, *The man behind Napster* (Feb. 13, 2001), available at <http://news.bbc.co.uk/2/hi/1167876.stm> (last visited Dec. 15, 2013) ("It was rooted out of frustration not only with MP3.com, Lycos and Scour.net, but also (the desire) to create a music community...").

⁴³ See, e.g., Apple, *Apple Launches the iTunes Music Store* (Apr. 28, 2003), available at <https://www.apple.com/pr/library/2003/04/28Apple-Launches-the-iTunes-Music-Store.html> (last visited Dec. 15, 2013).

⁴⁴ See, e.g., Rajiv K. Sinha and Naomi Mandel, *Preventing Digital Music Piracy: The Carrot or the Stick?*, 72 J. MARKETING 1 (2008); Eric P. Chiang and Djeto Assane, *Estimating the Willingness to Pay for Digital Music*, 27 CONTEMP. ECON. POL'Y 512 (2009).

⁴⁵ See, e.g., IFPI, *Recording Industry in Numbers: The Recorded Music Market in 2012* (2013); RIAJ, *Statistics Trends: The Recording Industry in Japan 2013*, at 8-11 (2013), available at <http://www.riaj.or.jp/issue/industry/pdf/RIAJ2013.pdf> (last visited Dec. 15, 2013).

ous losses in music sales. The main corporate copyright holders blame the use of peer-to-peer networks for sharing copyrighted works without obtaining any authorization from the concerned copyright holders as the main cause of their current lamentable situation. They have therefore attempted to eradicate peer-to-peer file sharing by suing the commercial entities involved in organizing such networks,⁴⁶ as well as individual file sharers.⁴⁷ These attempts have, however, failed due to the clash between two modalities of regulation—law and social norms. The corporate copyright holders have thus been forced to change their enforcement strategies. They have started to campaign in many jurisdictions for the amendment of their national copyright laws in order to require internet service providers to play an active role in copyright enforcement against individual file-sharers under so-called three-strike rules, which combine regulation by law with regulation by technology.⁴⁸

Nonetheless, the first trial or actual operations of three-strike rules have brought about huge opposition from both internet users and internet service providers in several jurisdictions.⁴⁹ As a solution, some internet or online service providers have struck an agreement with several major record labels and other copyright holders to provide their premium users

⁴⁶ See, e.g., *A&M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896, 2000 U.S. Dist. LEXIS 11862 (N.D. Cal. 2000), *aff'd*, 239 F.3d 1004, 2001 U.S. Dist. LEXIS 5446 (9th Cir. 2001); *In re Aimster Copyright Litigation*, 2002 U.S. Dist. LEXIS 17054 (N.D. Ill 2002), *aff'd*, 334 F.3d 643 (8th Cir. 2004); *MGM Studios v. Grokster, Ltd.*, 545 U.S. 913 (U.S. Sup. Ct June 27, 2005); *Universal Music Australia Pty Ltd. v. Sharman License Holdings Ltd.* [2005] F.C.A. 1242 (Fed. Ct Austl. Sept. 5, 2007); *In re Winny*, 65 Keishū 1380 (Sup. Ct of Japan 2011).

⁴⁷ See text accompanying note 5.

⁴⁸ See text accompanying note 6. See also, e.g., Strowel, *supra* note 21; Peter K. Yu, *The Graduated Response*, 62 FLA. L. REV. 1373 (2010); Michael Boardman, *Digital Copyright Protection and Graduated Response: A Global Perspective*, 33 LOY. L.A. INT'L & COMP. L. REV. 223 (2011).

⁴⁹ See, e.g., *The Guardian*, *BT and TalkTalk Lose Challenge against Digital Economy Act* (Mar. 6, 2012), available at <http://www.theguardian.com/technology/2012/mar/06/internet-provider-lose-challenge-digital-economy-act> (last visited Dec. 15, 2013); BBC Newsy, *UK Piracy Warning Letters Delayed until 2015* (June 6, 2013), available at <http://www.bbc.co.uk/news/technology-22796723> (last visited Dec. 15, 2013).

with unlimited access to a broad array of music or other copyrighted works for a moderate monthly fee. This approach attempts to combine all four modalities of regulation in order to achieve a sufficient level of compliance with the law and to maximize benefits for all concerned stakeholders while minimizing the social costs of such regulation.

3. New Technologies and Law

Contemporary markets for various kinds of entertainment, such as sound recordings, movies, television programs or video games, are typically dominated by a few companies which together control more than 80% of their respective worldwide markets. To maximize the income streams from their intangible assets protected by copyrights, the most important worldwide corporate copyright holders frequently try to control any form in which their copyrighted works can be exploited. They habitually challenge any new information or communication technology which can provide its users with a new way of exploiting copyrighted works for private, non-commercial purposes without the need to obtain any authorization from them—the holders of copyrights to the works being exploited. The question then arises as to how the legislators or courts should strike a fair and just balance between the interests of all affected stakeholders in regulating new information and communication technologies when they are asked to serve justice and to protect the legitimate interests of affected copyright holders.

3.1. Three Ways of Regulating New Technologies by Legislation

There are three possible ways of regulating the provision of dual-use technologies and online services through legislation. As the law frequently does not fit new information and communication technologies very well, the first option is to keep the *status quo* and not to broaden the scope of copyright law's application so as to cover new technologies which are capable of substantial copyright non-infringing uses. In this way, a safe harbor for the providers of new technologies and services can

be created in order to avoid the stifling of innovation and technological progress. This can significantly reduce the costs of innovative processes that might be incurred through the copyright liability of the technology provider. It is habitually difficult to predict all possible consequences and implications of new technologies and online services with regard to their possible misuse for copyright infringements by their users, especially the extent of penetration and the size and severity of their misuses and harm caused to copyright holders. Any liability imposed on technology or online service providers will therefore have a considerable negative impact on their incentives to innovate in new border areas which copyright holders may view as clashing with their private interests in strong protection of their copyrighted works.

At the same time, the safe harbors for technology and service providers are regularly perceived by copyright holders as having been created and operated at their expense. They argue that the provision of many new technologies and services would not be economically viable without their mass use for the exploitation of copyrighted works by their consumers without authorization, explicit or implicit, from the concerned copyright holders. The copyright holders therefore claim that the only solution is to grant them broad exclusive rights which would allow them to control the design of technologies and online services.

Accordingly, the second option for the regulation of new technologies and online services is to grant broad exclusive rights to copyright holders in order to allow them to control the utilities of new technologies and services. Timothy Wu suggests that this model resembles a stewardship relationship.⁵⁰ Copyright holders are deemed to be stewards of new technologies and services. The problem with the stewardship model is that many of the main corporate copyright holders stress their private interests at the expense of those of other stakeholders. As they have personal stakes in maximizing profits obtained from the exploitation of their copyrighted works, they frequently put aside business models which can

⁵⁰ See Timothy Wu, *Copyright's Communications Policy*, 103 MICH. L. REV. 278, 329-31 (2004).

be beneficial to the public, and in the long run also to them, but which come at their expense in the short run.

Major corporate copyright holders do not tend to pursue the necessary innovative approaches to business that will lead to new business models. One of the main reasons for this is that they have already invested considerably in an incumbent business model which they have used for some time. Any radical change from one business model to another would lose them the resources which they have already invested in the obsolete model and impose the additional costs necessary to introduce a new one. It is therefore not surprising that the main corporate copyright holders are reluctant to adopt new business models, especially those which are considerably different from the prevailing ones, *i.e.* those which do not allow for the continuation of prevailing ones and which bring the latter's destruction and substitution.

In the ideal world where transaction costs approach zero, economists argue that how rights are originally distributed does not matter from an overall perspective. Through the operation of the market, rights are supposed to be transferred to the party who values them the most.⁵¹ This leads to wealth maximization. Hence, at least in theory, if copyright holders have the right to control the design of new technologies and online services and if technology or service providers value the provision of certain technologies or services in a consumer-friendly way that allows the exploitation of copyrighted works for various non-commercial purposes more than the content providers value their non-provision, the technology or service providers can pay content providers for allowing them to market such technologies or services. Conversely, if the technology or service provider is protected by a safe harbor and the content providers values change in such technologies or services in a copyright-friendly way more than the technology or service providers value their provision as originally designed, the latter can pay the former to change their design.

⁵¹ See generally, Ronald H. Coase, *The Problem of Social Costs*, 3 J.L. & ECON. 1 (1960).

However, the real world is not a world without transaction costs. The converse is true. There are several factors which even increase transaction costs in such a way that the reallocation of originally distributed wealth toward the person who values it the most is often impossible through the operation of the market. The first factor is that not everyone has complete information. There is a difference in the amount and accuracy of information held by individual stakeholders. The irregular distribution of information greatly affects individual stakeholders in their negotiation on the transfer of individual rights.

Although in theory the original allocation of wealth does not matter too much from the viewpoint of maximizing the wealth of society as a whole, it matters a lot from the viewpoint of individual stakeholders. They can view a particular distribution of rights and other limited resources as unfairly allowing others to parasite on the fruits of their investment, labor, time and other resources. As shown above, the corporate copyright holders habitually perceive safe harbors to be unfair to them and the same perception of unfairness can be found on the side of technology and service providers in cases where the broad liability for the copyright infringement committed by the users of their technologies and services is imposed on them. This gives them a sufficient incentive to lobby legislatures in order to tilt copyright law's balance in favor of their private interests. If the power of both industries is equal, the copyright law more or less reflects the interests of both parties. But there might be some differences in the power of individual stakeholders. Moreover, the specialized authority responsible for drafting copyright bills can be captured by one industry, often the main corporate copyright holders. Even if an agreement is struck between both of the main industries, such agreements may at the same time come at the expense of the general public—the consumers of copyrighted works and the respective technologies or online services.

A further factor increasing transaction costs is the division of rights and powers between too many parties. Hence, if there are too many technology providers protected by safe harbor, it will be too difficult for copyright holders to negotiate with all of them to restrain the provision of certain technologies or online services. While content providers can

strike an agreement with many of them, there will always be a technology or service provider which will reject the deal. In the U.K. *Amstrad* case,⁵² the British Recorded Music Industry (BPI) persuaded several manufacturers of double-deck recorders to modify their products in the content providers' favor by limiting the speed of copying from one cassette to another. Amstrad was the manufacturer who resisted and decided to market its double-deck recorder with a higher recording speed than other competitors provided at that time.

Similarly, when too many copyright holders can control the design of new technologies and online services, it is very difficult for technology or service providers to conclude an agreement with all of them. In the U.S. *Sony* case,⁵³ there were three main groups of copyright holders. The first group was composed of those who agreed to allow the recording of their television broadcast by Sony's Betamax video tape recorder. The second group represented those who were indifferent and did not mind the recording of their copyrighted works by Betamax users. The third group encompassed those who were against the marketing of Betamax and therefore decided to sue Sony for indirect copyright infringement. We can thus see that it is often very difficult to find agreement in an overly dispersed group of right holders. This leads to a creation of gridlocks which are hard to overcome. In the Napster case, the operator of Napster's centralized peer-to-peer network tried to obtain licenses from the concerned record labels for a reasonable license fee, but they ultimately failed.

⁵² *Amstrad Consumer Electronics Plc. v. British Phonographic Industry Ltd.* [1986] F.S.R. 159, [1986] 1 F.T.L.R. 73; *CBS Songs Ltd. v. Amstrad Consumer Electronics Plc.* [1988] 1 Ch. 61, [1987] 3 All E.R. 151, [1987] 3 WLR 144, [1987] R.P.C. 429; *CBS Songs Ltd. v. Amstrad Consumer Electronics Plc.* [1988] A.C. 1013, [1988] R.P.C. 567, [1988] 2 All E.R. 484.

⁵³ *Universal City Studios, Inc. v. Sony Corp. of America*, 480 F. Supp. 429 (C.D. Cal. Oct. 2, 1979); *Universal City Studios, Inc. v. Sony Corp. of America*, 659 F.2d 963 (9th Cir. Oct. 19, 1981); *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 78 L. Ed. 2d 574, 104 S. Ct. 774 (U.S. Sup. Ct. Jan. 17, 1984).

Consequently, the third option in regulating new technologies and services is a continuum between the two abovementioned models. It attempts to strike a fair and just balance between the interests of copyright holders, technology and service providers, and the public—consumers. Under this model, the provision of new technologies or services is allowed under certain conditions. The regulation of new technologies or services can be created by law or by agreement between individual industries or representatives of all the affected stakeholders. As the legislative process brings with it the additional costs of establishing such a system, well-organized interest groups will only campaign to change the law when the interests of other stakeholders are not sufficiently organized. The more the interests of other stakeholders are dispersed, the easier it is for the well-organized interest group to tilt the balance of a new law in their favor.

On the other hand, when the interests of the other main stakeholder is also sufficiently organized, corporate interest groups will switch to private ordering in which the two different industries can come to an agreement beneficial to both sides at the expense of consumers, an unorganized group with dispersed interests. When the agreement is struck between the two industries—copyright-based entertainment industry, on the one side, and consumer electronics manufacturers or Internet service providers, on the other—it is much easier to approach the legislature with a proposal to change the law in a way reflecting the content of their agreement. This is also the main reason why the direct representatives of consumers' interests are often missing in private ordering schemes. It is regularly said that their interests are already represented either by copyright holders or by technology or service providers. This is not always true, however. As a response to this negative situation, movements for the protection of users' rights with regard to private, non-commercial uses have recently emerged in several jurisdictions worldwide. We will see to what extent this will help to change the current negative situation concerning the representation of consumers' interests in the future.

A further problem with an agreement between the representative organizations of individual industries is that they primarily represent the main stakeholders within a particular industry. There are always small-

and medium-size independent entities which are rarely members of such elite clubs. Many of them are either new comers or do not agree with policies adopted by the major players within the industry. Accordingly, the agreements between representative organizations of individual industries can also come at the expense of independent companies and new entrants into the market.

3.2. Role of Courts in Regulating New Technologies

As mentioned above, the laws rarely sufficiently address new information and communication technologies which allow new ways of using copyrighted works for private, non-commercial purposes. The question thus arises as to what courts should do when a dispute occurs and they are approached by one party to adjudicate it. Should they dismiss the case due to a *lacuna* in the law, or should they reinterpret the law in a way they think that the legislature would have if it had foreseen the dispute? Due to the division of powers between the legislature, administration and judiciary, the courts are supposed to interpret the law and not to create it. That is the task of legislature.

Nevertheless, it is often hard to say that there is no relationship between the provision of technologies which can be used for copyright infringing and non-infringing purposes, and the use of such dual-use technologies in committing acts of copyright infringement. This is the main reason why the German federal courts have regularly found a causal nexus between the provision of dual-use consumer electronic equipment and their usage for copyright infringing purposes by customers.⁵⁴

As the nexus between providing dual-use technologies and their use for unlawful purposes can hardly be overlooked, special tests have been designed by the courts in several jurisdictions to sort the good apples out from the bad. The tort laws in many jurisdictions thus require that a technology provider must do something more than merely providing a dual-

⁵⁴ See, e.g., the *Grundig Reporter* case, 1956 GRUR 492 (BGH May 18, 1955); the *Personalausweise* case, 1965 GRUR 104 (BGH May 29, 1964). See also DUSTMANN, *supra* note 19, at 52.

use technology to be found liable for the wrongdoing of users of that technology. A closer relationship needs to exist between the technology provider's activities and the technology users' wrongdoings. For this purpose, the German courts have developed a so-called adequate causation doctrine (*adäquater Kausalsammenhang*).⁵⁵ Accordingly, when the marketing of tape recorders which allow their users to record radio broadcasts was examined by the German Federal Supreme Court (Bundesgerichtshof) in the 1950s in the *Grundig* case,⁵⁶ the Court had no other option than to conclude that there was adequate causation between the technology provider's activities and the copyright infringing activities of the tape recorders' users. The Court, however, thought that banning any new technology at the early stages of its development could considerably stifle further technological progress, which is essential for the development of modern societies. The Court therefore found a solution in the creation of a safe harbor for technology providers under certain conditions. A technology provider can qualify for this safe harbor protection only when it takes *technologically* and *economically feasible* precaution measures to restrict the possibility that its technologies will be used for copyright infringing purposes by users.⁵⁷

Contrary to the German federal courts, the courts in common law jurisdictions have habitually been reluctant to impose any duty of care on technology providers in order to induce them to prevent the use of their technologies for copyright infringing activities by their customers. There are several reasons for the common law courts' stance and inactivity. The most obvious reason stems from the traditional distinction between common law torts and statutory law torts to which the copyright infringements belong. While the courts are quite active in common law tort cases, their interpretation of statutory torts is commonly very limited. It is quite literary and heavily dependent on the actual text of the relevant statutory provisions and legislative history of their adoption.

⁵⁵ See, e.g., the *Grundig Reporter* case, 1956 GRUR 49.

⁵⁶ 1956 GRUR 49.

⁵⁷ See *id.*

While the courts in the U.K., Canada or Australia have developed the doctrine of authorization which originates from the copyright holders' exclusive right to authorize others to use their copyrighted works in ways specifically identified by copyright laws, the U.S. federal courts several times have expressly stated that indirect copyright liability doctrines are derived from the common law. But this is only partially true. Although the creation of indirect copyright liability doctrines by the federal courts were heavily inspired by common law tort doctrines, the indirect copyright liability doctrines have over time developed into independent doctrines which live their own lives now. This can be seen in the courts' refusing to recognize any duty of care imposed on technology providers under the U.S. copyright law in cases dealing with dual-use technologies, such as video tape recorders in the *Sony* case⁵⁸ and decentralized peer-to-peer networking technologies in the *Grokster* case.⁵⁹ Similarly, the courts in the U.K., Canada and Australia reject any imposition of the duty of care on dual-use technology providers without the existence of any closer relationship with their customers using such technologies to commit acts of copyright infringement, such as in the case of double-deck tape recorders in the *Amstrad* case⁶⁰ or recently in the *KaZaA* case⁶¹ with regard to a provider of decentralized peer-to-peer networking technology.

The traditional stance of courts in common law jurisdictions can also be supported by public choice theory.⁶² As the political deals are struck through the adoption of individual legislation, the courts should accept them and should not considerably change the agreed solution

⁵⁸ 464 U.S. 417.

⁵⁹ 545 U.S. 913.

⁶⁰ [1988] A.C. 1013.

⁶¹ [2005] F.C.A. 1242.

⁶² See, e.g., George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 359 (1971); JAMES M. BUCHANAN AND GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* (Ann Arbor, MI: University of Michigan Press, 1962); *TOWARDS A THEORY OF THE RENT-SEEKING SOCIETY* (James M. Buchanan, Robert Tollison and Gordon Tullock eds., College Station, TX: Texas A & M University Press, 1980).

through broad statutory interpretation. At the same time, it should be pointed out that the public choice theory also shows the shortcomings of the legislative process. The problem occurs when groups of individual stakeholders differ considerably as to their size and organization. Well organized and small interest groups of private industries can often prevail in shaping legislation in their favor at the expense of large, dispersed groups of customers whose interests are rarely sufficiently represented in the legislative process. This feature of the legislative process allows legislation which significantly affects the interests of a few powerful corporate players to be exposed to the so-called minoritarian bias.

Recent trends in the regulation of new technologies and online services under copyright law have even augmented the possibility of minoritarian biases in favor of extending the copyright holders' entitlements to various uses of their copyrighted works for commercial, as well as non-commercial purposes. The legislatures in many countries are in favor of adopting, as statutory law, the previous private agreements between affected industries, *i.e.* between the representative organizations of corporate copyright holders on the one side and technology or online service providers on the other. Although one may argue that technology providers sufficiently protect the interests of customers, this is not always the case. Technology providers constantly promote their own interests, which can be many times inconsistent with those of their consumers.

The result is that many new technologies considerably restrict the possible uses of copyrighted works for private non-commercial purposes without remuneration being paid to copyright holders. In this regard the courts, owing to their conservative nature, can play an important role in protecting the public interest against such restrictions. As the courts are less open to any form of capture by narrow, opportunistic interest groups, they can do so by adopting a minimal and very narrow interpretation of the relevant statutory provisions or by striking down some such restrictions. For instance, the French Constitutional Council struck down in June of 2009 the French law introducing the three-strike rule due to the presumption of guilt and lack of judicial supervision over revoking an

individual's internet access.⁶³ Although in the end the three strike rule was adopted in France in the same year,⁶⁴ several important features were implemented in order to guarantee the protection of internet users' fundamental rights and freedoms in France. Nevertheless, after a few years of its operation, the French three-strike rule regime was abrogated in the middle of 2013 for failing to benefit the authorized services as originally promised.⁶⁵

The threat of opening the litigation floodgates is also one of the hidden reasons behind the common law courts' unwillingness to recognize that technology providers have any duty of care to prevent the use of their technologies for copyright infringing purposes. This is in the line with the general abstention of the courts, especially those in jurisdictions closely akin to the English common law tradition, from interfering with competition on the market in ways that would create any market entry barriers. Simultaneously, several courts consider the broadening of negligence liability which occurred particularly in the second half of the twentieth century in many common law jurisdictions as having gone too far and created too heavy a burden for third parties being held liable for a principal's wrongdoings.⁶⁶

The burden placed on technology and service providers by the imposition of any duty of care can be seen in the change brought by new

⁶³ See Conseil Constitutionnel decision No. 2009-580DC, J.O., July 10, 2009, p. 9675 (Fr.), available at <http://www.conseil-constitutionnel.fr/decision.42666.html> (last visited Dec. 15, 2013). See also Strowel, *supra* note 21, at 79-84.

⁶⁴ See Loi 2009-1311 du 28 octobre 2009 relative à la protection pénale de la propriété littéraire et artistique sur internet [Law 2009-1311 of 28 October 2009 on the Criminal Protection of Literary and Artistic Property on the Internet], J.O., Oct. 29, 2009, p. 18290, available at <http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000021208046&dateTexte=&categorieLien=id> (last visited Dec. 15, 2013). See also Strowel, *supra* note 21, at 80.

⁶⁵ See, e.g., ZDNet, *Hadopi: Watchdogs face-off over control of a dying three-strikes process* (Sept. 13, 2013) (written by Valéry Marchive), available at <http://www.zdnet.com/hadopi-watchdogs-face-off-over-control-of-a-dying-three-strikes-process-7000020660/> (last visited Dec. 15, 2013).

⁶⁶ See, e.g. *CBS Inc. v. Ames Records & Tapes Ltd.* [1981] 2 All E.R. 812, [1981] 2 W.L.R. 973 (Ch.).

digital technologies. Analogue reproduction technologies, such as audio or video cassette recorders, did not provide technology providers with many technologically and economically feasible precaution measures at their advent. Accordingly, the judgment of the German Federal Supreme Court in the *Grundig* case created a *quasi*-safe harbor for technology providers at least for the meantime. The final result of the approaches adopted in civil and common law jurisdictions for technology and service providers was therefore almost the same at least during the analogue era.

Over time, the situation has, however, considerably changed. The digital technologies allowing various technological protection measures and digital rights management have again tilted the balance back in favor of copyright holders. The main problem with the new technological developments is that it is not clear who should adopt them and how. Should copyright holders be the ones who do something to protect their private interests, or should technology providers be obliged to adopt them? Should technology providers adopt state-of-art technologies or should they do more? Where should the border line which determines what the technology providers are obliged to do be drawn?

The early approach at the beginning of commercial use of digital technologies in consumer electronics was that it was the task of copyright holders to adopt necessary technological protection measures. However, the problem of technological protection measures is that they do not work if the technological equipment used for reading media or receiving data containing copyrighted works (*e.g.*, radio or TV broadcasts or their streaming via the internet) do not recognize them. In such cases they would become completely obsolete. It is thus generally acknowledged that the technology providers should have at least some duties to adopt technological protection measures and to recognize digital rights management technologies. Similarly, safe harbors were designed in many jurisdictions for those internet service providers who just passively arrange communication on digital networks or provide storage facilities for their users. Although these laws require from technology or internet service providers some degree of cooperation with copyright holders in the latter's fight against mass copyright infringements committed by individual customers, the imposition of any ongoing duty to monitor and

filter on the technology or internet service providers was expressly or implicitly rejected by the law at that time in many jurisdictions.

But this approach has been recently attacked on several levels and has even been partially changed with regard to the duties of internet service providers by courts' decisions in several jurisdictions. Although there are minor nuanced differences between individual jurisdictions, in general the courts in those jurisdictions require internet service providers to adopt some available precaution measures. For instance, in order to impose such a duty the Australian courts require the more active involvement of an internet service provider in the copyright infringing activities of its users than the mere provision of standard internet services.⁶⁷ The U.S. Ninth Circuit also found that "a computer system operator can be held contributorily liable if it 'has *actual* knowledge that *specific* infringing material is available using its system,' [...] and can 'take simple measures to prevent further damage' to copyrighted works, [...] yet continues to provide access to infringing works."⁶⁸ Likewise, the French courts in several cases have found internet service providers liable when they were notified several times about infringements of a particular copyrighted work and did not adopt any measure to prevent other occurrences of copyright infringement with regard to the same work.⁶⁹ In Belgium, the courts went a bit further and imposed an ongoing monitoring and filtering duty on the internet service providers despite the fact that Article 15 of E-Commerce Directive⁷⁰ explicitly bans the imposition of such a

⁶⁷ See, e.g., [2005] F.C.A. 1242.

⁶⁸ *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1172 (9th Cir. 2007) [**references omitted**].

⁶⁹ See, e.g., Jane C. Ginsburg, *Separating the Sony Sheep From the Grokster Goats: Reckoning the Future Business Plans of Copyright-Dependent Technology Entrepreneurs*, 50 ARIZ. L. REV. 577, 606-7 (2008) (outlining the French cases).

⁷⁰ Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ("Directive on electronic commerce").

duty on internet service providers. The Court of Justice of the European Union has therefore recently ruled out such practice.⁷¹

These changes in the position of internet service providers can considerably affect the position of entities manufacturing various consumer electronics and communication devices. The question arises as to what extent any duty of care should be imposed on technology providers. Is there any limit of that duty? What should the relationship between technology providers and copyright holders be in the consumer electronics industry?

3.3. Role of Markets in Regulating New Technologies

As pointed out by Lord Templeman in the *Amstrad* case in the analogue era and as also explained in Section I above, there is a mutually beneficial relationship between consumer electronics manufacturers and copyright holders in the marketing of consumer electronics which allow consumers to exploit copyrighted works for various private non-commercial purposes. Both parties considerably benefit from the network effects caused by the broad penetration of particular technology within society. To put it more bluntly, the more pre-recorded media are available on the market, the more devices capable to play them the consumers will buy. Conversely, the more consumers have such devices, the more they will buy pre-recorded media. To achieve this stage, the devices' utilities play a crucial role in persuading consumers to buy them. The more utilities they have, the easier they can be marketed to their final users. The mutual dependence between the marketing of consumer electronics devices and prerecorded media was also one of the main reasons why several of the main consumer electronics manufacturers habitually approached the main corporate copyright holders with their devices, on which development they were working at that time.

⁷¹ See, e.g., *Scarlet Extended SA v. SABAM*, C-70/10 (Court of Justice of the EU (Third Chamber) Nov. 24, 2011); *SABAM v. Netlog NV*, C-360/10 (Court of Justice of the EU (Third Chamber) Feb. 16, 2012).

Concurrently, copyright holders have conventionally attempted to influence the design of consumer electronics devices so that their interest in the maximal protection of their copyrighted works is reflected in the final product as much as possible. This has worked, but only to some degree. When the first video tape recorders were designed, various consumer electronics manufacturers approached the major studios and other important corporate copyright holders affected by those technologies. The responses from the copyright holders often were that the presented devices did not sufficiently protect their interests in limiting the use of their copyrighted works, particularly with regard to making copies. Objections of this kind forced some manufacturers to rethink and redesign their technologies. With regard to the others, they did not work. In such cases, some of the major corporate copyright holders often decided to protect their interests before the courts. This was the case with Betamax video tape recorders marketed by Sony in the late 1970s and early 1980s.

But the market organization and structure have already significantly changed since the early 1980s. Some important consumer electronics manufacturers, such as Sony and Technicolor (former Thomson Multimedia), have considerable stakes in the music, movie and other entertainment industries. This involvement extensively affects their stance on the design of new consumer electronics devices in a more copyright-friendly way. To avoid the doom faced by Betamax technology, the main consumer electronics manufacturers regularly attempt to create new industry standards from scratch in agreement with other major manufacturers and corporate copyright holders. This was the case with CD and DVD technologies, and more recently with Blu-ray Discs. Private agreements of this kind between the main technology providers and corporate copyright holders have become quite frequent and have often even been supported by some national governments as best solutions to the problems brought by new technologies and innovations to the protection of copyright holders' legitimate interests in the digital environment.

As shown above, the problem is that these agreements are frequently made at the expense of consumers and new entrants. On the one side, consumers are considerably restricted in their ability to use such technologies to make private copies of prerecorded media. On the other, new

entrants can be significantly restricted by the established technology providers which often control a huge number of essential patents for implementing such technical standards. The newcomers have only two options: either pay a considerable amount of royalties to the holders of essential patents or attempt to develop their own technical standards, which can be almost impossible due to the network effects of technical standards in the field of consumer electronics. Accordingly, while the production of newcomers is extensively levied by the payment of royalties for essential patents,⁷² the established technology providers rarely have to pay anything to other holders of essential patents, since they often enter into cross-licensing agreements.

This situation led China to threaten to develop their own format as a response to demands that their manufacturers pay large royalties to the foreign companies controlling the essential patents for the implementation of the DVD format. The solution was found in reducing the royalties demanded by the consortium controlling the DVD format. A similar situation with Blu-ray Disc technology has led China to develop its own competing standard which is based on Toshiba's HD-DVD format. Due to the large size of the Chinese market and the lack of any regional restriction in the Chinese standard, this initiative was seen as a threat to the interests of the main studios to the protection of their audio-visual works, although it used a copy-protection system similar to that used in Blu-ray Disc technology.⁷³ At the same time, disregarding this standard would mean the major copyright holders abandoning a considerable part of the huge Chinese market, where the local technology has become the leading standard.

To sum up, the markets play an important role in designing new technologies and determining their features. Nonetheless, the current situation in the market, with significant concentration and integration between industries, means that consumers' interests are reflected only to

⁷² See, e.g., The Register, *supra* note 8 (“The licensing fee accounts for 40 percent of the rough cost of each DVD player.”).

⁷³ See, e.g., Michael Murphree and Dan Breznitz, *Innovation in China: Fragmentation, Structured Uncertainty, and Technology Standards*, 2013 CARDOZO L. REV. DE NOVO 196, 210-2.

a limited degree during the design of new technologies. This mainly happens when their interests are consistent with the interests of other major players. A similar situation exists with regard to the interests of new entrants and marginal players on the markets.

Conclusion

In the history of copyright protection, technology providers have played an important role in creating new types of entertainment industries based on various forms of the commercial exploitation of copyrighted works. They have significantly affected many key institutional turns within copyright law especially within the last 100 years. Although legislators and courts have habitually rejected the direct or indirect imposition of any duties on technology providers who have not directly commercially used copyrighted works in the past, the situation has drastically changed in the last two decades. This Article enquired into several such institutional turns in copyright law, the tensions between concerned stakeholders and the respective policymaking processes. It pointed out several flaws and shortcomings in those institutional turns. Although copyright plays an important role in protecting certain results of human creative intellectual labor, it can raise considerable barriers to designing new multimedia communication technologies or can even completely stifle the progress of some information and communication technologies for several years.

This problem is even more amplified by the fact that there are a number of minefields which have been created by several types of proliferated intellectual property rights. Each company who wants to introduce an innovative product into the market must successfully pass through all of these minefields. On the one side, the patents essential for the implementation of technical standards are powerful tools in the hands of their holders and allow them to shape the structure of the entire market for the affected technologies. On the other side, there is a minefield created by copyrights to works which can be exploited by using multimedia technology for private non-commercial purposes without any authorization obtained from the copyright holders. The main problem is that any of the

powerful holders of intellectual property rights can completely doom a new technology at its advent, especially when the technology can affect the intellectual property right holder's private interests in maximizing its income streams from the use of its intellectual property rights.

As the analysis in this Article has shown, the cases which occur when innovators attempt to get through these minefields are often hard ones. They frequently become battlefields where the contravening public and private interests of various stakeholders clash. Therefore, legislators and courts should be careful in broadening the scopes of individual types of intellectual property rights and strengthening the level of their protection in order to settle these disputes and to serve justice within modern societies. In each case, the policy makers should carefully balance the interests of all affected stakeholders to promote creativity and technological progress not only in one economic area but throughout the entire economy.