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DOES TECHNOLOGY TRUMP INTELLECTUAL PROPERTY?: RE-FRAMING THE DEBATE ABOUT REGULATING NEW TECHNOLOGIES

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Abstract

Does technology trump intellectual property rights (IPR)? In the Metro-Goldwyn-Mayer Studios v Grokster case, Justice Breyer believes this to be so. This article will analyse whether Justice Breyer's belief has valid legal and empirical bases in light of the different cases and legislations that seek to resolve the challenges brought about by new technologies vis-à-vis IPRs. This article argues that the proposition that law favours technology over IPRs requires further qualification in order to prevent one from falling into the traps of technological determinism, instrumentalism and the belief in the neutrality of technology. A re-framing of the debate is needed which goes beyond the traditional technology versus IP dichotomy and focuses on the main goal of technological development and IP protection, which is to advance innovation in its broadest sense.

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1. Collision Between Technology and Intellectual Property

Tensions arising from the introduction and use of emerging technologies and the protection of intellectual property rights (IPRs) are not new. In fact, the concept of intellectual property (IP) as it is known today originated from and was a response to the disruptive technology of the printing press.[1] What is noteworthy is that conflicts between information and communications technology (ICT) and IP are increasing and becoming more pronounced over the last two decades especially with the growing use of the Internet as a transnational communications medium. For those who belong to the ICT field, there is a common concern that the pendulum of regulatory solicitude has swung too far in favour of IPRs, and that technological innovations are being severely curtailed by the encroachment of overly broad and pervasive IP laws.[2] With the numerous attempts by IPRs owners to call for protection through legislative, judicial or technological means at the first sight of new technologies that threaten their traditional ways of doing things,[3] there is a sentiment within the ICT community that technology per se is distinct from and should not be beholden to IP laws, and, in case of conflicts, technology should be favoured over IPRs. This belief finds support in Justice Breyer's opinion in the *Metro-Goldwyn-Mayer Studios v Grokster*[4] case where he says that when there is a clash between technology and IP, the law "leans in favour of protecting technologies".[5] This article will analyse whether Justice Breyer's statement has valid legal and empirical grounds in light of the different legal responses – in the form of case law and legislations – that seek to resolve the challenges brought about by new technologies vis-à-vis IPRs. This article argues that the proposition that "law favours technology over IPRs" requires further qualification and contextualisation in order to prevent one from falling into the traps of technological determinism, instrumentalism and the mistaken belief in the neutrality of technology. What is needed is a re-framing of the debate which goes beyond the traditional dichotomy between technology versus IP and focuses on the main aim of both technological development and IP protection, which is to advance innovation in its fullest sense. Part II of this article analyses the major court decisions involving technology and IP and observes an apparent deference by the courts toward technology. Part III examines the lack of success of recent techno-centric legislations. Part IV discusses why the apparent legal deference towards technology deserves

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[1] *Sony Corporation v Universal City Studios* (1984) 464 US 417, 430 (henceforth *Sony*); see J Reichman and J Franklin, "Privately Legislated Intellectual Property Rights: Reconciling Freedom of Contract with Public Good Uses of Information" (1999) 147 *University of Pennsylvania Law Review* 875-970; see N Lucchi, "The Supremacy of Techno-Governance: Privatization of Digital Content and Consumer Protection in the Globalized Information Society" (2007) 15 *International Journal of Law and Information Technology* 192-225, at 200.

[2] J Wiener, "The Regulation of Technology, and the Technology of Regulation" (2004) 26 *Technology in Society* 483-500, at 486.

[3] J Ginsburg, "Copyright and Control Over New Technologies of Dissemination" (2001) 101 *Columbia Law Review* 1613-1647, at 1614.

[4] *Metro-Goldwyn-Mayer Studios v Grokster* (2005) 545 US 913 (henceforth *Grokster*).

[5] *Ibid*, 960.

significant qualification and why a re-framing of the debate is necessary. Part V concludes by highlighting the common goal shared by technology and IP.

2. Judicial Response

2.1. Deference toward Technology

There are a number of technology-IP conflicts that have been brought before the courts. It is worth noting that these court cases are generally considered to be IP law decisions rather than technology ones.[6] While these cases have a strong technological dimension, the courts' discussions mainly revolve around IP law issues such as contributory infringement, authorisation and fair use, and invariably the central concern of the courts is striking the right balance in the intellectual property bargain.[7] This is not surprising given that the plaintiffs in these cases are IPRs holders who are resorting to IP principles to bring technological developments under the thumb of IPRs. Much of the discourse then has been about IP, with technology being a mere peripheral concern.

However, despite the great reliance by courts on IP laws, judges and judicial bodies across different jurisdictions have a strikingly uniform response to the conflicts between technology and IP - they frequently rule in favour of promoting technological development over the increased protection of IPRs. In her review of US jurisprudence in this area, Ginsburg comes to a similar conclusion –

> a review of past confrontations between copyright and new technological means of dissemination suggests that courts often are reluctant to restrain public availability of new technologies, even when those technologies appear principally designed to exploit copyrighted works.[8]

2.2. Technology "Trumps" IP

The landmark cases of *CBS Songs v Amstrad Consumer Electronics*,[9] *Sony Corporation v Universal City Studio*,[10] and *MGM v Grokster* offer valuable judicial insights about the relationship between technology and IP as well as provide guidance on the regulation of technology. In the *CBS Songs* case, which involved an attempt by the British music recording industry to block the distribution of double-speed, twin-deck tape recorders in the 1980s, the UK House of Lords was cognisant of the complimentary and interdependent relationship between technology and IP.[11] When

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[6] See P Akester, "Copyright and the P2P Challenge" (2005) 27 *European Intellectual Property Review* 106-112.

[7] R Nimmer, "Breaking Barriers: The Relations between Contract and Intellectual Property Law" (1998) 13 *Berkeley Technology Law Journal* 827-890, at 830; Ginsburg, see note 3 above, at 1613; see J Reichman, "Legal Hybrids between the Patent and Copyright Paradigms" (1994) 94 *Columbia Law Review* 2432-2558, at 2437 and 2503.

[8] J Ginsburg, see note 3 above, at 1616.

[9] *CBS Songs Ltd v Amstrad Consumer Electronics* (1988) 2 *Weekly Law Reports* 1191 (henceforth *CBS Songs*)

[10] *Sony*, see note 1 above.

[11] *CBS Songs*, see note 9 above, at 1045-1046.

asked to prohibit the use of a new technology, Lord Templeman ruled that "There is nothing express or implied in the [copyright law] which inhibits the invention, manufacture, sale or advertisement of electronic equipment capable of lawful or unlawful reproduction".[12] When considering the value of technology in relation to IPRs, the House of Lords was more emphatic: "The rights of B.P.I. are derived from statute and not from the Ten Commandments. Those rights are defined by Parliament, not by the clergy or the judiciary. The rights of B.P.I. conferred by the Act of 1956 are in no way superior or inferior to any other legal rights".[13] In explaining its reluctance to regulate technology, Lord Templeman held that it is the legislature and not the courts that has the authority to place restraints on technology.[14]

Similarly, in *Sony*, the US Federal Supreme Court ruled that "there is no basis in the Copyright Act upon which respondents can hold petitioners liable for distributing [video cassette recorders (VCRs)] to the general public".[15] The Court explained that:

> The judiciary's reluctance to expand the protections afforded by copyright without explicit legislative guidance is a recurring theme. Sound policy, as well as history, supports our consistent deference to Congress when major technological innovations alter the market for copyrighted materials. Congress has the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated by such new technology.[16]

Like other courts faced with the same conundrum of regulating technology for the sake of protecting IPRs, the Court balked at the idea because to do so would be tantamount to making technologies such as VCRs akin to contraband.[17] In crafting the standard of "capable of substantial non-infringing use",[18] it seems the Court was applying a commonsensical and liberal approach to regulation that finds it difficult from a public policy standpoint to impose restrictions on the free development of technology. Clearly, courts such as the one in *Sony* are working under the assumption of the "neutrality of technology"[19] - where it is not the technologies themselves but how people use them which are the proper subjects of control.

In the other landmark US case of *Grokster*, which involved online peer-to-peer (P2P) file-sharing technologies, the Court found issue not with P2P technology itself but with how it was being used unlawfully.[20] The Court wanted to clearly distinguish

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[12] *CBS Songs*, see note 9 above, at 1052.

[13] *Ibid*, 1057.

[14] *Ibid*, 1061.

[15] *Sony*, see note 1 above, at 421.

[16] *Ibid*, 431.

[17] *Ibid*, 441.

[18] *Ibid*, 789.

[19] This is different from the concept of technological neutrality. See B Koops and others (eds), *Starting Points for ICT Regulation: Deconstructing Prevalent Policy One-Liners* (The Hague: TMC Asser Press, 2006), at 77.

[20] *Grokster*, see note 4 above, at 937.

"between the uses of Grokster's and Streamcast's software products (which this case is about) and uses of peer-to-peer technology generally (which this case is not about)".[21] The Court was very careful in highlighting this distinction because,

> We are, of course, mindful of the need to keep from trenching on regular commerce or discouraging the development of technologies with lawful and unlawful potential….The inducement rule, instead, premises liability on purposeful, culpable expression and conduct, and this does nothing to compromise legitimate commerce or discourage innovation having a lawful promise.[22]

In the earlier P2P file-sharing case of *Napster*,[23] the Court made a similar qualification, "We are compelled to make a clear distinction between the architecture of the Napster system and Napster's conduct in relation to the operational capacity of the system".[24] For Ginsburg, *Napster* is "best understood as an attempt to tame a new technology into copyright friendliness, rather than as an endeavour to suppress it altogether".[25] This distinction between technology and its potentially unlawful uses needs to be kept in mind especially when considering other cases where the courts seem to be privileging IPRs over technology.[26] Reading these cases carefully in light of the distinction, it becomes readily apparent that what is being declared unlawful is not the technology per se but its illegal use. Similar to the rulings in *CBS Songs* and *Grokster*, the Court in *Sony* was unwilling to protect IPRs at the expense of technological advancement because that

> would enlarge the scope of respondents' statutory monopolies to encompass control over an article of commerce that is not the subject of copyright protection. Such an expansion of the copyright privilege is beyond the limits of the grants authorized by Congress.[27]

In his concurring opinion in *Grokster*, Justice Breyer provided a thorough exposition of the relationship between technology and IPRs, and what the judiciary's response should be when conflicts between the two arise. Justice Breyer's explanation is illuminating because he elucidates the underlying legal bases and public policy rationales for the judicial preference for technology, which are normally left unsaid and often obscured by the inordinate attention given to the IP law aspects of these cases. He takes note of the public policy against *ex ante* regulation of technology because it may "chill technological development".[28] In the *Sony rule*, Justice Breyer

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[21] *Grokster*, see note 4 above, at 948; see J Ginsburg and S Ricketson, "Inducers and Authorisers: A Comparison of the US Supreme Court's *Grokster* decision and the Australian Federal Court's *KaZaa* ruling" (2006) 11 *Media and Arts Law Review* 1-25, at 6.

[22] *Grokster*, see note 4 above, at 937.

[23] *A&M Records, Inc. v Napster. Inc.* 2002 US App. LEXIS 4752 (henceforth *Napster*)

[24] *Napster*, see note 23 above, at 1020.

[25] J Ginsburg, see note 3 above, at 1638, 1641-1642.

[26] See P Akester, see note 6 above; J Ginsburg, see note 3 above, at 1638.

[27] *Sony*, see note 1 above, at 421, 429 and 456.

[28] *Grokster*, see note 4 above, at 957 and 960.

recognises that courts have a responsibility to be "strongly technology protecting",[29] and the "innovation-protecting objective"[30] of judicial rulings are a matter of vital public interest. Affirming the notion of neutrality of technology, he explains that "*Sony's* standard seeks to protect not the Groksters of this world… but the development of technology more generally".[31] Similarly, by emphasising the *Sony rule's* forward looking nature, he affirms the important ICT principle of technological neutrality.[32] Justice Breyer came to a radical conclusion that was repeatedly implied but had never been explicitly verbalised by other courts that faced a similar dilemma - i.e. in case of conflicts between technology and IP, the law "leans in favour of protecting technology".[33] This observation appears to imply a general solicitude that courts should have for nascent technologies over IP – "copyright laws are not intended to discourage or to control the emergence of new technologies".[34]

Despite the apparent deference by courts toward technology, Justice Breyer is mindful that resolving the tensions between technology and IP also involves public policy issues that principally fall within the competence of legislatures.[35] As Ginsburg points out, "when courts have curtailed the scope of copyright protection, Congress often has stepped in to assure copyright owners some form of compensation from the new means of exploitation - if not always control over it".[36]

3. Legislative Response

3.1. Techno-centric Legislation

The conflicts between technology and IP have similarly played out in the legislative arena. Time and again, legislatures have been called upon to resolve problems that arise due to technological advances.[37] Lawmakers generally aim to ease the tensions between technology and IP by recalibrating the delicate IP balance through statutory (mainly IP) enactments.[38] In the past, striking a balance was more straightforward because the subjects of regulation have generally been distinct commercial actors

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[29] *Ibid*, 957.

[30] *Grokster*, see note 4 above, at 959.

[31] *Ibid*, 955.

[32] *Ibid*, 958; see C Reed, "Taking Sides on Technology Neutrality" (2007) 4:3 *SCRIPTed* 263-284, available at http://www.law.ed.ac.uk/ahrc/script-ed/vol4-3/reed.asp (accessed 17 July 2011).

[33] *Ibid*, 960; see J Ginsburg and S Ricketson, see note 21 above, at 7; but see J Ginsburg, see note 3 above, at 1617 and 1619 (where she makes a distinction between those cases where the IP owners try to eliminate technology and those where they participate in it - in the first class they fail but in the second they succeed).

[34] *Grokster*, see note 4 above, at 957; J Ginsburg, see note 3 above, at 1616, 1619, 1623 and 1626 (see the piano rolls, cable television and portable MP3 player cases)

[35] *Grokster*, see note 4 above, at 965.

[36] J Ginsburg, see note 3 above, at 1616 and 1626.

[37] See J Litman, *Digital Copyright* (New York: Prometheus Books, 2001), at 36; see L Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (New York: Vintage Books, 2002), at 181.

[38] See J Ginsburg, see note 3 above, at 1614.

operating within specific physical locations, and there were technical limitations in the technologies themselves that did not require fundamental changes to IP laws or extensive technological regulation.[39] Historically, "law more rarely attempts to direct technological change due to the view that markets do a better job, in the absence of market failure, at determining which technologies will be adopted".[40] But with the challenges and complexities brought about by rapid digitisation, convergence and use of global communications networks over the last two decades, attempts by legislatures to preserve the IP bargain have a tendency to spill over outside the IP realm, and has resulted in laws that seek an *ex ante* control of technologies per se. Not only are the technology-focused provisions of the US Audio Home Recording Act of 1992 (AHRA), the WIPO Copyright Treaty (WCT),[41] the US Digital Millennium Copyright Act of 1998 (DMCA), and the European Directive on the harmonisation of certain aspects of copyright and related rights in the information society (InfoSoc Directive),[42] legally and democratically problematic, but they have proven to be ill-conceived regulatory tragedies.[43] These laws have not only failed to achieve the right private-public balance within the IP context but they have also impeded technological development, competition and market innovation.[44]

With the advent of digital audio recording devices, particularly the Digital Audio Tape (DAT) format, the AHRA was a pre-emptive response by the US Congress to preserve the IP balance.[45] The AHRA required the implementation of the Serial Copy Management System (SCMS) in all devices and made the circumvention of the SCMS illegal.[46] SCMS was a copy protection measure that permitted users to make one digital copy but imposed a technological restriction that prevented second generation copying. The AHRA was significant because "for the first time, Congress reinforced exclusive legal rights by providing for technological measures to protect those rights, and then by granting additional legal protection to those technological measures".[47] At the time of its adoption, the AHRA was seen as an innovative and significant legal

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[39] I Brown, "The Evolution of Anti-Circumvention" (2006) 20 *International Review of Law Computers & Technology* 239-260, at 243; see J Litman, see note 37 above, at 36.

[40] A Cockfield, "Towards a Law and Technology Theory" (2004) 30 *Manitoba Law Journal* 383-416, at 407.

[41] 20 December 1996.

[42] *Directive 2001/29/EC (22 May 2001) on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society*, [2001] OJ L167/10.

[43] See G Dinwoodie, "Private Ordering and the Creation of International Copyright Norms: The Role of Public Structuring" (2004) 160 *Journal of Institutional and Theoretical Economics* 161-180, at 162-163.

[44] N Lucchi, see note 1 above, at 224; P Akester and R Akester "Digital Rights Management in the 21st Century" (2006) 28 *European Intellectual Property Review* 159-168, at 165; M Favale, "Fine-tuning European Copyright Law to Strike a Balance between the Rights of Owners and Users" (2008) 33 *European Law Review* 687-708, at 696 and 707.

[45] S Elkman and A Christie, "A Negotiated Solution to Audio Home Recordings?: Lessons from the US *Audio Home Recording Act of 1992"* (2004) 27 *University of New South Wales Law Journal* 123-146, at 127.

[46] J Ginsburg, see note 3 above, at 1628; I Gonzalez, "Recording Industry Association of America, Inc. v Diamond Multimedia Systems, Inc." (2000) 15 *Berkeley Technology Law Journal* 67-84, at 69.

[47] J Ginsburg, see note 3 above, at 1628.

response to the threat posed by digital recording technologies to IPRs especially since it came about through the cooperation of the content and technology industries.[48] However, in the years immediately succeeding the AHRA's enactment, the problems of large-scale digital piracy that the AHRA was meant to address never came to pass: the DAT format was not widely adopted by consumers and it did not become a mass-market product as anticipated.[49] In hindsight, it may be said that in addition to other factors, the copy protection measures built into DAT devices proved to be their commercial undoing.[50] Furthermore, when the AHRA faced its first real test - when the US music recording industry sought to curtail the sales of portable MP3 players in the *RIAA v Diamond Rio case*[51] - the legislative solution embodied in the AHRA was judged by the court to be inapplicable and inappropriate.[52] The AHRA proved to be a failed legislative response to the challenges of new technologies because not only did it seek to control the technology itself rather than its specific uses, but it was adopted *ex ante* when no real conflicts had yet arisen.

3.2. The Case of Anti-circumvention Legislation

A similar critique can be made of the technological protection measures (TPM)[53] provisions contained in the WCT and its legislative progeny - the US DMCA and the European InfoSoc Directive.[54] The WCT's anti-circumvention provisions have two principal aims: to prohibit the act of circumvention of any TPMs and to restrict the dissemination of circumvention technologies and information.[55] Despite its controversial origins and problematic implementation on both the international and national levels,[56] the WCT was initially trumpeted as a significant, future-oriented international legislation that foresaw and secured the development of a global digital content economy.[57] However, experience over the last fifteen years with various TPMs such as digital rights management (DRM) has proven quite the opposite. DRM has by and large proven to be not only technically unworkable because it is easily

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[48] J Cunard, "Past as Precedent: Some Thoughts on Novel Approaches to the Nexus of Digital Technologies and the Arts" (1996) 29 *Leonardo* 245-247, at 247; J Litman, see note 37 above, at 36; S Elkman, see note 45 above, at 128-129.

[49] S Biegel, *Beyond Our Control?: Confronting the Limits of Our Legal System in the Age of Cyberspace* (Cambridge, MA: MIT Press, 2001) at 301.

[50] J Litman, see note 37 above, at 60; see S Elkman, see note 45 above, at 146.

[51] *Recording Industry Association of America v Diamond Multimedia Systems*, 180 F.3d 1072 (9th Cir. 1999) (henceforth *RIAA v Diamond Rio*).

[52] I Gonzalez, see note 46 above, at 77.

[53] I Brown, see note 39 above, at 239.

[54] *Ibid*, 245.

[55] J Ginsburg, see note 3 above, at 1631; I Brown, see note 39 above, at 246.

[56] See I Brown, see note 39 above, at 240-243; see T Rychlicki, "An Opinion on Legal Regulations on Reverse Engineering and Technological Protections Measures" (2007) 13 *Computer and Telecommunications Law Review* 94-99, at 95.

[57] S Von Lewinski and J Reinbothe, "The WIPO Treaties 1996: Ready to Come into Force" (2002) 24 *European Intellectual Property Review* 199-208, at 208; see M Favale, see note 44 above, at 689.

cracked,[58] but also a commercial flop and a public relations debacle for content owners and media providers that sought to implement them.[59] Ironically, the content and media industries, which successfully lobbied for the grant of legal protection against technological circumvention, are abandoning DRM. The general trend now is for digital content to be distributed sans DRM.[60] As well as being a technological and market failure, DRM has proved to be detrimental to public concerns such as "freedom of expression, privacy, competition law, academic research and consumer protection".[61] The Electronic Frontier Foundation found that the DMCA has had a negative effect on free expression and scientific research, fair use, competition and innovation, and security testing.[62] In fact, in a number of DRM-related cases in the US, companies are utilising the DMCA not to protect their copyrights but to restrict competition.[63] It is no wonder then that DRM has been vilified in the eyes of consumers and is the target of widespread online and offline campaigns.[64]

The failure of anti-circumvention legislations such as the DMCA may be partially explained by the fact that it regulates *ex ante*.[65] According to Ginsburg, "Congress in the DMCA thus varied its pattern of response to new technology challenges by anticipating that online access would supplant old forms of distribution, rather than waiting to readjust the balance ex post".[66] Furthermore, by regulating the technologies themselves, these laws have a tendency to preserve the status quo where "the owners of older technology are trying to block the way to what they see as a threat, thus failing to look for ways to cooperate with or even co-opt the new technology".[67] These legislative responses have tended to artificially delay but never completely turn back the social and economic changes brought about by technological advances.[68]

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[58] P Akester and R Akester, see note 44 above, at 164 (the DVD's DeCSS encryption code was easily cracked).

[59] I Brown, see note 39 above, at 255.

[60] See DRM.info, available at http://drm.info/ (accessed 17 July 2011).

[61] I Brown, see note 39 above, at 240; P Akester and R Akester, see note 44 above, at 165; M Favale, see note 44 above, at 688 (DRM creates access rights)

[62] Electronic Frontier Foundation, "Unintended Consequences: Ten Years under the DMCA", available at http://www.eff.org/files/DMCAUnintended10.pdf (accessed 17 July 2011); but see B Sookman, "Technological Protection Measures (TPMs) and Copyright Protection: The Case for TPMs" (2005) 11 *Computer and Telecommunications Law Review* 143-159 (for an opposing view).

[63] See I Brown, see note 39 above, at 249-250.

[64] I Brown, see note 39 above, at 255-256; see DefectiveByDesign, available at http://www.defectivebydesign.org/ (accessed 17 July 2011); P Akester and R Akester, see note 44 above, at 165.

[65] Ginsburg, see note 3 above, at 1631.

[66] Ginsburg, see note 3 above, at 1634.

[67] N Lucchi, "Intellectual Property Rights in Digital Media: A Comparative Analysis of Legal Protection, Technological Measures and New Business Models under EU and US Law" (2005) 71, available at http://ssrn.com/abstract=723321 (accessed 17 July 2011).

[68] N Lucchi, see note 67, at 71.

4. Re-framing the Debate

4.1. Technology is Not Neutral

On the face of it, the lack of success of different judicial and legislative responses to technology seems to support Justice Breyer's call for legal deference towards technology. It may be argued that lawmakers around the world could have saved themselves the aggravation and avoided the failed attempts at *ex ante* control of technology per se by simply heeding Justice Breyer's admonition to respect the freedom of technological innovation.[69] Nevertheless, despite what the above legal responses to the conflicts between technology and IP seem to imply, one should take care not to arrive at hasty generalisations that come from the other extreme of the technology versus IP debate: that technology always trumps IP, that technology cannot or should not be regulated, or that technological progress for its own sake is always good and should remain unimpeded.[70] One must similarly guard against the temptation to subscribe to the myth of technology's inherent superiority and neutrality and its accompanying technological determinist and instrumentalist mindsets. As Ginsburg says,

> In fact, the judicial and legislative resolution of tensions between the exercise of control under copyright on the one hand and the availability of new technology on the other is far more nuanced, and notwithstanding current critiques, supports a continued role for control in a new technological environment.[71]

In spite of the commonly held assumption of the neutrality of technology (e.g. the oft-quoted "guns do not kill people, people kill people"), technology is never truly neutral because it is inherently charged with crucial social and cultural values and other public interest concerns.[72] Technology is socially constructed and intrinsically embodies those cultural values and resources that were on hand at the time of its making and further adoption.[73]

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[69] See J Chandler, "The Autonomy of Technology: Do Courts Control Technology or do they just Legitimize its Social Acceptance" 6 and 12, available at http://ssrn.com/abstract=993169 (accessed 17 July 2011); see L Moses, "Understanding Legal Responses to Technological Change: The Example of *In Vitro* Fertilization" (2005) 6 *Minnesota Journal of Law, Science and Technology* 505-618, at 508 and 617.

[70] J Wiener, see note 2, at 488; A Murray, *The Regulation of Cyberspace: Control in the Online Environment* (Abingdon: Routledge-Cavendish, 2007), at 53.

[71] J Ginsburg, see note 3 above, at 1616-1617.

[72] M Tiles and H Oberdiek, *Living in a Technological Culture: Human Tools and Human Values* (London: Routledge, 1995), at 54; see J Young, "Surfing While Muslim: Privacy, Freedom of Expression and the Unintended Consequences of Cybercrime Legislation - A Critical Analysis of the Council of Europe Convention on Cybercrime and the Canadian Lawful Access Proposal" (2004-2005) 7 *Yale Journal of Law and Technology* 346-421, at 409.

[73] T Pinch and W Bijker, "The Social Construction of Facts and Artefacts: Or How the Sociology of Science and the Sociology of Technology might Benefit Each Other" (1984) 14 *Social Studies of Science* 399-441, at 404.

Furthermore, to believe that technology cannot be regulated is to fall into the trap of technological determinism,[74] which is founded on two main premises: "(1) that the technological base of a society is the fundamental condition affecting all patterns of social existence and (2) that changes in technology are the single most important source of change in society".[75] A technological determinist worldview is problematic because it fails to take into account the "limitations of the technology itself, social adaptation of the technology, or problems inherent in the vision itself".[76] But, as is shown in the above analysis of the different legislative responses to new technologies, the polar opposite view of instrumentalism, which is the belief that technology is absolutely subject to human agency and control, is also fraught with trouble.[77] Concepts such as "code is law"[78] and "technology as law"[79] have a tendency to trap people within an instrumentalist mindset that sees technological architecture as a mere regulatory variable that can be easily manipulated and controlled.[80] These determinist and instrumentalist mindsets are particularly problematic because the effects of new technologies, including the consequences of laws that attempt to regulate them, are generally unforeseeable and cannot be predicted with absolute certainty.[81] In the context of technology and IP, this is perfectly illustrated in the case of anti-circumvention laws that came too early and, without actual conflicts to resolve at the time of their enactment, applied too broadly and restrictively.

4.2. Beyond the Technology versus IP Dichotomy

This author believes that a re-framing of the debate is needed to go beyond the basic tensions between technology versus IP and to see things in light of the ultimate and deeper goals of encouraging technological advances and protecting IPR, which furthers cultural innovation and human development. In other words, technology and

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[74] F Bar, J Richards and C Sandvig, "The Jeffersonian Syndrome: The Predictable Misperception of the Internet's Boon to Commerce, Politics, and Community" (March 2000), available at http://www-rcf.usc.edu/~fbar/Publications/jeffersonian-syndrome.PDF (accessed 17 July 2011); A Murray, see note 70 above, at 42; see J Chandler, see note 69 above, at 3.

[75] L Winner, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought* (Cambridge, MA: MIT Press, 1977), at 76.

[76] M Elliot and W Scacchi, "Mobilization of Software Developers: The Free Software Movement" (2008) 21 *Information Technology & People* 4-33, at 9-10.

[77] J Griffiths, "What is Legal Pluralism" (1986) 24 *Journal of Legal Pluralism and Unofficial Law* 1-56, at 29; A Murray, see note 70 above, at 46; see A Cockfield, see note 40 above, at 399; see A Cockfield and J Pridmore, "A Synthetic Theory of Law and Technology" (2007) 8 *Minnesota Journal of Law, Science and Technology* 475-514, at 480.

[78] See L Lessig, *Code: Version 2.0* (New York: Basic Books, 2006).

[79] J Reidenberg, "Lex Informatica: The Formulation of Information Policy Rules Through Technology" (1997-1998) 76 *Texas Law Review* 553-584, at 553-554; J Wiener, see note 2 above, at 484; see A Cockfield, see note 40 above, at 406.

[80] D Kostakopoulou, "Floating Sovereignty: A Pathology or a Necessary Means of State Evolution?" (2002) 22 *Oxford Journal of Legal Studies* 135-156, at 138; see J King, "The Pervasiveness of Polycentricity" (2008) *Public Law* 101-124.

[81] G Mandel, "History Lessons for a General Theory of Law and Technology" (2007) 8 *Minnesota Journal of Law, Science and Technology* 551-570, at 563; J Wiener, see note 2 above, at 486 and 496.

IP should not be seen as ends in themselves but as means to support innovation in all its aspects - cultural, social and technological.

A major step therefore in re-framing the approach to regulating new technologies is for them not to be dominated by or framed solely in relation to IP. Technology has other, more important uses that do not directly or primarily involve IPRs including personal expression, knowledge dissemination, community building and social interaction and communication. Contrary to the belief of some IP owners, new technologies are not just novel means, forms and devices for consuming, exploiting or even infringing IPRs. While IP remains significant in promoting innovation and deserves protection, it should not be the sole focus of the discussion.

Another important step in re-framing the approach to technology law and policy is to include and consult with more diverse stakeholders at the early stages of negotiations and deliberations. In this way, other values and interests are properly considered and promoted. Deciding on whether to regulate or not to regulate a new technology and determining the means to achieve this should not be left solely to lawmakers and well-connected lobbies such as the content industry. As seen in the case of anti-circumvention laws, the mere adoption of legislation is never the final word on a particular technological issue and other stakeholders can always take action *ex post facto* to render the enacted law, which is perceived to be lacking in legitimacy, ineffectual through hybrid legal, social, economic or technological means. Since cramming down unacceptable technological policies through one-sided legislation often proves unfruitful in the long run, it would be best for policymakers to have open and inclusive consultations that bring in all possible stakeholders from the start.

It must be borne in mind that a law's effectiveness cannot rest on the mere fact of its adoption but must be perceived to be legitimate and produced through democratic and deliberative processes in order to be acceptable to and followed by all relevant actors.[82] For regulation to be effective, it must compliment rather than disrupt the interactions among the diverse stakeholders who have different and often competing values and interests. [83] In the *Sony* case, the court, instead of restricting a new technology, properly deferred to a market-led solution where the actors effectively governed themselves.[84] What is really noteworthy about the *Sony* decision is that not only did it protect innovation in the consumer electronics industry but it also helped spur the video rental market and the resurgence of the film industry - which ironically benefited the content owners and media providers who were the plaintiffs in *Sony*.[85]

Murray believes that with respect to technological regulation,

> the best regulatory model is not one built upon an active intervention into the settled regulatory environment, the result of which is likely to be extremely disruptive, rather it is one that harnesses, as best as possible, the relationship already in place between the actors.[86]

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[82] See S Moore, "Law and Social Change: The Semi-Autonomous Social Field as an Appropriate Subject of Study" (1973) 7 *Law & Society Review* 719-746, at 729 and 742.

[83] A Murray, see note 70 above, at 52, 238 and 250.

[84] *Ibid*, 237.

[85] *Ibid*, 238-239.

[86] *Ibid*, 244.

This is accomplished through an open, "more cohesive, measured, prudent and non-interventionist approach" to technology policy.[87] Similarly, according to Weiner,

> The study of policy innovation starts from the proposition that there is no single universal best policy design, or best regulatory technology. Instead there are contextual criteria for success, which imply different regulatory designs for different problems, situations, societies, and institutional settings. We must test policy ideas, learn from empiricism, and adapt regulatory technology over time.[88]

In other words, what is needed is a more open, deliberative and consensus-based approach to the challenges of new technologies. There has been some progress in this area but much work still needs to be done. For example, while the OECD's "Communique on Principles for Internet Policy-Making"[89] was lauded for being the result of a multi-stakeholder policy making process, it was similarly criticised for its "over-emphasis on protection and enforcement of intellectual property rights"[90] and was ultimately not endorsed by the civil society groups who participated.[91] It seems that, with regard to re-framing the debate, there are now more participants but the debate still revolves around or is dominated by IP to the detriment of innovation and human development.

5. Promoting Innovation

Despite their myriad conflicts and the deep tensions between them, technology and IP are not mutually exclusive or inherently antithetical to each other since both share the same ultimate objective – greater production and wider dissemination of cultural, social and technological innovation. One must not lose sight of the fact that technology and IP both embody and are a means to promote creativity and innovation. In certain cases, technology must "trump" IP in order to allow an individual as well as society to share the benefits of new techno-cultural creations. At other times, the law must lean in favour of IP. The formulation that one value should trump another value cannot be adhered to as an unyielding principle set in stone since there are often many values and interests involved with any new technology and they are constantly interacting with each other through the shifting and rebalancing of their positions.

It should be remembered that law leans in favour of, not technology or IP per se, but innovation. To say that the law leans in favour of either technology or IP alone is to

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[87] *Ibid*, 54.

[88] J Wiener, see note 2 above, at 495.

[89] OECD, "Communique on Principles for Internet Policy-Making", available at http://www.oecd.org/dataoecd/40/21/48289796.pdf (accessed on 17 July 2011).

[90] "CSISAC Statement on OECD Communique on Internet Policy Making Principles", available at https://www.eff.org/issues/international/attachments/csisac-statement-oecd-communique-internet-policy-1 (accessed 17 July 2011).

[91] K Rodriguez, "EFF Declines to Endorse OECD Draft Communiqué on Principles for Internet Policy-Making", available at http://www.eff.org/deeplinks/2011/06/eff-declines-endorse-oecd-communiqu-principles (accessed 17 July 2011).

confuse the means used for the goals of the law. Legal and policy decisions to regulate or not to regulate technology whether in relation to IP or some other important value such as privacy or security should be the result of open consultation and deliberation among plural stakeholders with varied perspectives. IP remains an important aspect of the discussion but it should not be the dominant concern as it has been for the last two decades and continues to be today. It is only when one starts to discuss issues beyond the problematic technology versus IP dichotomy that one can hope to find the right regulatory balance to the problems brought about by new technologies.