SUBMISSION OF THE ELECTRONIC FRONTIER FOUNDATION TO THE INTERNET GOVERNANCE FORUM ON THE IMPACT OF TECHNOLOGICAL PROTECTION MEASURE REGULATION ON PARTICIPATION IN THE INFORMATION SOCIETY AND THE FREE FLOW OF INFORMATION ON THE INTERNET

Overview

Overbroad legal protection for copyright owners' technological protection measures (TPMs) has a very direct impact on the ability of the Internet to facilitate development. Overbroad TPM legal regimes can detrimentally impact both the Openness of the Internet, as well as Access to the Internet in several ways. First, they can restrict freedom of expression, the free flow of information across the Internet, and access to information on the Internet. Second, they can impair the ability to create interoperable technologies that can facilitate participation in the Information Society and provide access to the Internet's resources, for those that do not currently have it.

This is a key issue for Internet Governance. In its current form, the Internet offers the promise of an affordable means of disseminating humanity's collective knowledge to further social and economic development for all the world's citizens. However, whether the Internet will be able to deliver on that promise, and continue to play a vital role in dissemination of knowledge and facilitating participation in the Information Society depends on the interlocking framework of national laws that regulate technological protection measures.

To date, little international attention has been paid to the impact of overbroad legal regulation of TPMs on the ability of the world's citizens to access information that is essential for development, and to create and use technologies that could facilitate full participation in the Information Society. The Internet Governance Forum is ideally placed to review national laws in this arena, foster discussion of alternative approaches, and adopt recommendations for best practices that would allow the Internet to play a vital and productive role in development, in all its dimensions.

This paper describes some impacts of overbroad technological protection measure laws, based on the experience with the United States' Digital Millennium Copyright Act (DMCA) over the last seven years, and identifies key policy issues to be addressed by governments seeking to implement these obligations in ways that promote scientific research, competition and technological innovation that will spur the growth of the Internet, while preserving citizens' fundamental rights. A report documenting DMCA litigation and its impact since 1998 is included in the Appendix as reference material.[1]

[1] See EFF Report *Unintended Consequences: Seven Years Under the DMCA*, version 4, April 2006, attached and available at <http://www.eff.org/IP/DMCA/unintended_consequences.php>

I. OPENNESS ISSUES

The Impact of TPM Regimes on Access to Information on the Internet

As recognized in paragraphs 9-10 of the Tunis Commitment of the World Summit on the Information Society, access to information, and the sharing and creation of knowledge, can contribute significantly to strengthening economic, social and cultural development. The Tunis Agenda also recognized the need for access to information, culture and knowledge for all people (paragraph 90(k)).

The Internet offers the opportunity to make information available to all the world's citizens efficiently and, potentially, on more equitable terms of access than current distribution models for published works. However, overbroad legal protection for rightsholder TPMs may undermine the Internet's ability to play that role in several ways.

First, overbroad TPM legal regimes can override national copyright law exceptions and limitations because they allow rightsholders to use a technical device backed by law, to limit the boundaries for access and use of works. In the United States, the DMCA has effectively eliminated non-copyright-infringing "fair use" of technologically-protected copyrighted works and has banned the tools and technologies that would be needed to make otherwise lawful uses by those who do not possess sophisticated technological knowledge. It has also overridden existing statutory exceptions, including for instance, the exception that permits non-profit organizations to create Braille translations of copyrighted books for blind persons. Under the DMCA it is no longer possible to make use of this exception for technologically-protected e-books. As a result, in order to preserve the possibility of using this exception, the American Foundation for the Blind has been required to seek three year circumvention exemptions from the U.S. Librarian of Congress in 2003, and again in 2006.[2] However, any exemption granted is at best only a partial solution, as it does not extend to the tools and technologies necessary for circumvention for this purpose. TPMs backed by overbroad anticircumvention laws may also hamper efforts by national governments to create new copyright exceptions to meet domestic needs, such as for distance education using the Internet.

Second, overbroad TPM regimes are likely to increase the cost of accessing information. As information increasingly becomes available only in technologically protected form, fair dealing and personal copying exceptions that previously guaranteed access for students and researchers will be technologically precluded. Students and educators will be banned from circumventing TPMs on technologically-protected digital material that they have purchased. Local technology vendors will be banned from producing and selling technologies and devices that educators need if they are to use copyright

[2] See 2002 Submission of American Foundation for the Blind, http://www.copyright.gov/1201/2003/comments/026.pdf and 2006 request for re-grant: <http://www.copyright.gov/1201/2006/comments/discipio_afb.pdf and 2003 Determination of the U.S. Librarian of Congress: http://www.copyright.gov/1201/2003/index.html

exceptions that would otherwise apply to protected digital materials that they have purchased.

TPM regimes have also been used to curtail exhaustion rules and the national copyright law exceptions upon which libraries rely to provide their services. This is likely to preclude the development of libraries of digital books and necessary resources for distance education. TPMs backed by anticircumvention laws may prevent or restrict libraries from copying, sharing or loaning out technologically-protected digital material. For example, unlike a printed book, the TPM permissions on a purchased e-book may prevent its sale, or loan, or restrict how many times it may be viewed.

Third, TPMs are likely to reduce availability of public domain works. TPMs do not expire when the copyright protection term ends, so a work that would otherwise fall into the public domain will not be accessible if it is technologically restricted. TPMs may also be applied to works that would not be copyrightable, for instance, because they are purely factual in nature. Difficult questions arise where a public domain work is stored together with a copyrighted work in a technologically-protected format. U.S. legal academics have disagreed about whether the U.S. anticircumvention laws ban educators from circumventing TPMs on public domain works. However, as a practical matter, it is difficult for educators to find the technical means to do so because of the prohibition on distributing circumvention tools.

Finally, the obsolescence of TPM technologies may also create access barriers to public domain works in the future and preclude national libraries and archives from undertaking preservation of works in which copyright has expired but for which no means of circumvention exist at the relevant time.

This has a direct bearing on the ability of the Internet to provide access to knowledge required for development. As the use of TPMs become more widespread for electronic books and scientific journals, TPM regimes have the potential to restrict developing nations' access to information essential for education and scientific research, increasing the knowledge gap between industrialized and developing countries.

The Impact of TPM Regimes on Freedom of Expression and Scientific Research

As noted in paragraph 4 of the Tunis Commitment of the World Summit on the Information Society, "freedom of expression and the free flow of information, ideas, and knowledge, are essential for the Information Society and beneficial to development." Freedom of expression is one of the fundamental human rights enshrined in the Universal Declaration of Human Rights adopted and proclaimed by the United Nations General Assembly in resolution 217 A (III) in 1948 (Article 19).

Overbroad legal protection for TPMs can restrict freedom of expression and the free flow of ideas and information. In the United States, U.S. copyright owners have used the DMCA in ways that were not intended by the U.S. Congress, to cast a chill on free expression and to impede legitimate scientific research and publication.

In 2001, an inter-industry organization threatened legal action under the DMCA against a Princeton University professor and a team of researchers for violating the DMCA when

they attempted to publish a research paper describing their findings on security vulnerabilities in digital watermark technology. The music industry group considered that the information in the research paper was a "circumvention device" and publishing the paper would be distributing a circumvention device. After the researchers filed a lawsuit to clarify their right to conduct and publish scientific research, the music industry organization withdrew its threat.

The chilling effect of this case on scientific research and publication has been profound. U.S. and foreign scientists have refused to publish research on security technology vulnerabilities, or have removed previously published research from the Internet due to fear of DMCA liability. Further details of these instances are described in the attached report.

In 2005, Princeton University computer science graduate student J. Alex Halderman delayed releasing his findings on security vulnerabilities in the CD copy-protection "rootkit" software on Sony-BMG label music CDs, while he sought legal advice about DMCA liability for doing so. Mr. Halderman had been threatened with DMCA liability in 2003 when he identified security vulnerabilities in a previous version of one of the CD copy protection technologies. As a result, the security vulnerabilities were not made known to the millions of computer users whose computer networks were infected for several weeks, until another security researcher independently identified and disclosed them.

In a public address in October 2002, former U.S. White House Cyber Security advisor, Richard Clarke, admitted that the DMCA had chilled security research and called for DMCA reform. There is growing concern within the U.S. about the impact of the DMCA on computer security research. DMCA reform legislation addressing scientific research is pending before Congress.

II. ACCESS ISSUES

Creation and Promotion of Interoperable Technologies for Internet Access

Overbroad TPM regimes can undermine the ability to create and distribute interoperable technologies, including free and open source software, that may be used to facilitate access to the Internet and participation in the Information Society.

U.S. rightsholders have used the U.S. TPM law to prevent the development and distribution of new uncopyrightable technologies that interoperate with their copyrighted works. This has increased costs for consumers, while simultaneously restricting competition and consumer choice in technology products. For instance, recent DMCA lawsuits have sought to ban after-market refilled printer cartridges, to enforce the use of proprietary garage door openers and to prevent mobile telephone users from switching telephone provider networks.[3]

[3] See *Lexmark v. Static Control Components*, 387 F.3d 522 (6th Cir. 2004); *The Chamberlain Group, Inc. v. Skylink Technologies, Inc.*, 381 F.3d 1178 (Fed. Cir.2004); and Reply Comments

Overbroad TPM regimes also directly inhibit the ability to create new interoperable technologies in three ways. First, legally protected TPMs hamper investigation, because researchers may be unwilling to expose themselves to liability for trying to understand, or reverse-engineer technologies that involve TPMs. Second, they restrict knowledge transfer by imposing punitive civil and criminal sanctions on the distribution of information gained from research-engineering that is necessary to create interoperable systems. Third, overbroad TPM regimes can allow a TPM technology licensor to impose arbitrary conditions on interoperable technology. These conditions could be related to business strategy or could codify an historical accident, and may be completely unrelated to enforcing any legal right of a copyright holder or neighboring rights holder, yet interoperability would, by law, be conditioned on the satisfaction of such arbitrary requirements.

Overbroad TPM regimes have been used to preclude the development and use of free and open source software technologies in two additional ways. First, through the use of licensing terms for particular technological protection measures, or digital rights management systems, which have imposed "robustness" or "tamper-resistance" conditions requiring manufacturers to ensure that their software or devices are resistant to end-user modifications.

Such a requirement is inconsistent with free and open source software, which by definition is modifiable. Its source code is openly available for all to see and improve upon it. Free software licensed under the GNU General Public License (like the popular GNU/ Linux operating system) explicitly requires that the source code of a program incorporating free software must be made available with any distribution of that software. Since free and open source software developers cannot satisfy a robustness design requirement that excludes modification by its users, they will be unable to obtain a license to use the relevant DRM, and will not wish to risk liability under TPM laws in order to reverse-engineer such technologies. It is therefore less likely that free and open source software technologies will develop in a field covered by TPMs backed by overbroad laws. This has been the outcome in relation to DVD players in the United States, where the DVD-Copy Control Association licensing authority's license terms have effectively precluded free and open source software players from the market. A TPM applied to Internet content and backed by overbroad laws could similarly preclude the development and dissemination of free and open source technologies for viewing content delivered over the Internet.

Second, apart from anticircumvention laws alone, the creation of free and open source interoperable technologies is currently at risk from efforts to mandate by law that all products of a certain type implement particular TPMs. This is a particular concern where particular TPMs are embedded in standards, thus limiting consumers' ability to find alternative non-proprietary technologies. Since such mandates typically include an obligation to prevent end-user modification, they also exclude free and open source

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of the Wireless Alliance, U.S. Copyright Office, Docket No. RM-2005-11, at http://www.copyright.gov/1201/2006/reply/14granick_WAreply.pdf.

software from the applications they regulate. For instance, the U.S. Federal Communications Commission's Broadcast Flag technology mandate would preclude the development and use of free and open source software technologies that can receive non-encrypted over-the-air high definition broadcast television in the United States[4].

III. REGULATORY FRAMEWORK

Many countries have obligations to provide legal protection for technological protection measures used by copyright owners under the 1996 WIPO Copyright Treaty (WCT) (Article 11) and the WIPO Performances and Phonograms Treaty (WPPT) (Article 18), or because of obligations in bilateral free trade agreements with trading partners. The WCT and WPPT leave flexibility to signatories in how to implement these obligations in national law. Legal regimes protecting TPMs based on the WCT and WPPT framework have been implemented in the United States, Japan, Australia[5], Europe[6] and elsewhere.

In 1998 the United States enacted the DMCA to implement its obligations under the WIPO Treaties. The DMCA contains a particularly broad implementation of these obligations, and is widely acknowledged to have gone further than what was required by the WIPO Treaties.[7] The DMCA bans both the act of circumvention and tools, technologies and devices that are primarily designed or useful for circumvention, subject to seven specified exceptions.

How countries chose to implement their TPM obligations will determine their citizens' access to information on the Internet, and the impact on scientific research, national education and competition policies and technological innovation.

IV. OPEN ISSUES FOR DISCUSSION

IGF Could Provide a Forum for Discussion and Adoption of a Set of Best Practices for TPM laws

The scope and contours of TPM laws are matters for countries' sovereign legislatures. However, the way that those national laws are implemented will have a direct impact on both the future development of the myriad technologies that form the Internet, and on the ability of the world's citizens to participate in the Information Society and to access

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[4] See *EFF Briefing Paper for WIPO Delegates on Technological Protection Measures and the Development Agenda,* Section V (6), at <http://www.eff.org/IP/WIPO/dev_agenda/EFF_WIPO_briefing_041205.pdf>

[5] However, Australia had not formally ratified the WCT and WPPT at the time of enacting its TPM regime in section 116A of the Copyright Act of 1968.

[6] See Article 6 of Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the Harmonisation of certain aspects of Copyright and Related Rights in the Information Society, and Article 7 of the EU Council Directive of 14 May 1991 on the Legal Protection of Computer Programs (91/250/EEC), and as enacted in national laws.

[7] See WIPO Copyright Treaties Implementation Act and Online Copyright Liability Limitation Act: Hearing on H.R. 2281 and H.R. 2280 before the House Subcomm. on Courts and Intellectual Prop., 105th Cong., 1st sess. (Sept. 16,1997) at 62 (testimony of Asst. Sec. of Commerce and Commissioner of Patents and Trademarks Bruce A. Lehman admitting that section 1201 went beyond the requirements of the WIPO Copyright Treaty).

informational resources that are the building blocks for knowledge transfer and sustainable development.

A number of recent studies and reports have looked at various aspects of TPM regulation in different countries. Amongst others, the British Parliament's All Party Internet Group has recently conducted a review of Digital Rights Management regulation[8], the Australian Parliament's House Standing Committee on Legal and Constitutional Affairs Committee released a report with TPM exception implementation recommendations in March 2006[9], and reports commissioned respectively by the Canadian Government's Canada Heritage unit and the WIPO Standing Committee on Copyright and Related Rights[10] have both conducted reviews of various national TPM laws. However, to date, no analysis has been undertaken of the impact of such regulations on the functioning of the Internet.

The IGF could provide an invaluable forum for reviewing existing TPM laws across the globe, and adopt a set of best practices for TPM laws that would facilitate access to, and the free flow of information on the Internet, for the benefit of all the world's citizens.

2 August, 2006

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[8] United Kingdom All Party Internet Group report on Inquiry into Digital Rights Management, June 2006, at:
< http://www.apig.org.uk/index/APIG_DRM_Report-final.pdf>

[9] Australian Parliament House of Representatives Standing Committee on Legal and Constitutional Affairs, Report on Inquiry into Technological Protection Measure Exceptions, at http://www.aph.gov.au/house/committee/laca/protection/report/fullreport.pdf

[10] *Current Developments in the Field of Digital Rights Management*, prepared by Jeffrey P. Cunard, Debevoise and Plimpton, Washington D.C. for World Intellectual Property Organization Standing Committee on Copyright and Related Rights Tenth Session, 2003, WIPO document SCCR/10/2, at: <http://www.wipo.int/documents/en/meetings/2003/sccr/doc/sccr_10_2_rev.doc> *Technological Protection Measures – Part 1: Trends in Technological Protection Measures and Circumvention Technologies*, report prepared for Canada Heritage, June 2003, by Canadian Law Firm, Nelligan, O'Brien Payne, available at <http://www.pch.gc.ca/progs/ac-ca/progs/pda-cpb/pubs/protection/3_e.cfm>