Vices and Virtues of Intellectual Property Protection

Ways in Which the Internet Challenges Traditional Concepts of Intellectual Property Protection

STP-307: The Internet: Law, Business and Policy

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Introduction

Over the last ten years, the development of multimedia and internet technology has caused an ongoing and controversial debate about the effects the internet will have on all parts of society. Judging from the mere amount of articles, studies, and opinions published during recent years, one of the most prevalent legal implications the internet development appears to have is for Intellectual Property (IP) law. This paper is aims to shed light on the question: What implications does the development and continuing growth of the internet have on IP protection?

In the past, technological innovations have challenged the implementation of IP law. In fact, technological developments spawned the need for IP protection in the first place. To evaluate how the internet challenges and changes the traditional concepts of IP one must recall that history provides a clear record that each time a new technology disrupted and challenged the existing IP rights enjoyed by inventors and authors, IP law was able to balance individual rights and public interest. Therefore, it seems more appropriate to regard the need for an alteration of IP protection caused by the internet as the natural evolution rather than as a revolution of IP protection; albeit at a faster pace than ever experienced before.

When examining IP and the different means by which it is protected one must recognize that IP can by no means be regarded as a uniform legal concept but rather contains a variety of legal fields with different origins and histories. When addressing the impact of the internet on IP protection, each field must be evaluated separately to determine the to what degree the old concepts of IP protection are challenged by the new technology.

This paper will examine the impact of the internet on copyright protection, patent law, and trademark law. Each examination will be conducted with reference to major cases in which the U.S. judicial system determined how the existing federal statutes apply to problems arising with regard to IP protection on the internet.

Copyright--History and Focus of Copyright

Any kind of work that has been expressed in a tangible medium is automatically protected by copyright law in terms of the medium of expression, be it in writing, graphic, recording, dramatic, choreographic, motion picture, or other form. Protection is not granted for the actual idea of the work, but rather the idea in the form through which it is expressed. Most importantly, it gives the author the right to exclude others from copying and using her piece of work without permission.

Copyright, however, did not arise from a concept of natural law but is a rather recent construct in legal history.[1] In response to the need to address new legal problems, it was brought about by the evolution of technology, the invention of the printing press, around 1440.[2] Although initially the owners of the printing presses were protected, in the following centuries the concept of the right of authorship developed and granted the creator of the work a copyright.[3] The first copyright law was enacted in 1709 under Queen Anne of England. In the U.S., copyright is based on Art. I § 8 cl. 8 of the U.S. Constitution.[4] Congress first enacted copyright as federal law through the Copyright Act of 1790, which was succeeded by the new Copyright Act in 1976.[5] Over the years, the Copyright Act has been amended several times to adapt to technological changes, the most recent amendment being the Digital Millennium Copyright Act (DMCA) enacted in 1998.[6]

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[1] Pam Samuelson, *Copyright, Digital Data, And Fair Use in Networked Environments*, http://www.lexum.umontreal.ca/en/equipes/technologie/conferences/ae/samuelson.html, visited Dec 10, 2000.
[2] Comp. Manfred Rehbinder, *Urheberrecht*, 9th ed. 1996, 20-22.
[3] Ibid.
[4] "Congress shall have Power … To Promote the Progress of Science and useful Arts, by securing for limited Times, to Authors and Inventors, the exclusive rights to their respective Writings and Discoveries."
[5] Copyright Act of 1976, Pub. L. No. 94-533, § 303, 90 Stat. 2541; 17 U.S.C.
[6] DMCA Pub.L. No. 105-304, 112 Stat. 2860; 17 U.S.C.

Copyright aims to ensure the creation and dissemination of work for and to the public.[7] The public interest, however, has to be balanced with the needs and interests of the authors in order to provide an incentive for the creation of the work in the first place.[8]

Changes of IP protection through the internet

Considering the fact that copyright law had always to be adapted to new developments renders computers and the internet as a new technology for copying and distribution just as another step on this path of this adaptation. However, data that is transported through the internet exists only in digital form. As such, digitized copyrightable work by its nature can be easily and perfectly transmitted from one computer to another.[9] Since the binary code can be reproduced exactly in the same quality as the original work, the copy is identical to the original.[10] Predictions about the future of copyright differ among the experts Larry Lessig and Mark Stefik, but both authors have argued that in the future copyright owners will increasingly be able to protect their work through digital means.[11]

While currently most information on the internet is still available free of charge and can be copied and distributed at any time, protection of valuable information by software systems, such as the trusted systems technology, can easily be imagined.[12] Stefik realizes that trusted systems "shift the balance and put more power in the hands of publishers", but believes that through certification and government control this form of code will ensure the right balance

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[7] See Harper & Row, Publishers v. Nation Enters, 471 U.S. 539, 558 (1985).
[8] See. Rehbinder, 58; Goldberg, Johnathan Evan, *Now that the future has arrived, maybe the law should take a closer look: Multimedia Technology and its interaction with the fair use doctrine*, 44 Am. U.L.Rev. 919, 939, 1995.
[9] Samuelson, ibid; Comp. Supra note 1; Larry Lessig, *Code and other Laws of Cyberspace*, 1999; Mark Stefik, *The Internet Edge – Social, Technical and Legal Challenges for a Networked World*, MIT Press, 1999; Stefik, *Shifting the Possible: How Trusted Systems and Digital Property Rights Challenge Us To Rethink Digital Publishing*, 12 Berkeley Tech. L.J. 137, 144 (1997); Stefik, *Trusted Systems*, in Scientific American 03/1997, www.sciam.com/0397issue/0397stefik.html.
[10] Nicholas Negroponte, Being Digital, p. 52.
[11] Larry Lessig, p. 127; Mark Stefik, *Shifting the Possible: How Trusted Systems and Digital Property Rights Challenge Us To Rethink Digital Publishing*, 12 Berkeley Tech. L.J. 137, (1997).
[12] which will grant access only if certain information about the consumer is left behind, if certain amounts of money are paid, if the computer system used by the consumer fulfils certain qualifications of security.

between the interests of copyright owners and the public.[13] Lessig fears, however, that trusted systems will erode the concept of "fair use", the unwritten concept that guarantees the public the right to certain types of use of copyrighted material.

This fear also has been expressed by other proponents of the idea that the internet age will not, as is often believed, abolish copyright but rather strengthen it to a degree endangering the right of the public to information, based on the current structure of publishing in the U.S. market (which also applies to the rest of the Western industrial world).[14] It is argued that while some information on the internet may in the future be protected by trusted systems, there will always be an unprotected substitute available to the consumer. However, given the fact that in 1997 almost all of the media outlets in the U.S. were controlled by less than twenty corporations true alternatives would most likely be scarce.[15]

In addition, the potential dangers of trusted systems technology could become most apparent in contract law with the current "take-it-or-leave-it" approach of shrink-wrap licenses for software being only the starting point of taking away the freedom of consumers. Trusted systems would create their own contract law if they turned out as the prevailing method of forming e-contracts. The freedom of the consumer to choose and bargain over price and conditions would be entirely eradicated by the system either dispatching the product if the consumer agreed to its terms or denying access completely. In addition, the consumer could always breach traditional contracts.[16] Since trusted systems could enable the publishers to control not only the sale but also the subsequent use of the product, any consumer lacking advanced programming skills would be bereft of the freedom to breach the contract for its fairness to be determined by the courts.

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[13] Ibid.
[14] See e.g. Mark Gimbel, *Some Thoughts on the Implications of Trusted Systems for IP Law*, 50 Stanford L.R. 1671 (1998).
[15] Gimbel, p. 1684.
[16] Gimbel, p. 1685.

Trusted systems could therefore create a self-executing private law.[17] Unfair terms of contracts would still be subject to the legal system, but if trusted systems become the dominating technology, it will prove very difficult for the law in statute and jurisdiction to keep up with the development of trusted systems.

It remains to be seen how technology and code will develop, but the discussion over trusted systems and the possibilities of code indicate that all predictions of the end of copyright will most likely prove to be without merit. It may however turn out that interests of the consumers of information need to be protected in the future.

The Napster Case

On December 9, 1999, the Recording Industry Association of America (RIAA), representing five major record companies, filed suit against Napster alleging contributory copyright infringement and vicarious liability for such action. The case is still pending and meanwhile the record label Bertelsmann has struck a deal with Napster and dropped its claims. Regardless of the outcome, the case may prove very important with regard to copyright protection in the digital age and may cause several industries to reconsider their business model.

Facts and legal challenges

Napster, founded in early 1999 by the college freshman Shawn Fanning, provides software that enables its users to search for available MP3 files among the "music libraries" of other Napster users online. To download a file from another Napster user, a message is sent via the Napster server to the computer saving the file. This host assumes the role of a server and transmits the file directly to the computer requesting it. Therefore, the MP3 files are transmitted peer-

[17] Ibid.

to-peer and never stored on Napster's servers.[18] Since Napster itself never makes any copies of files, direct liability for copyright infringement cannot be alleged.

Napster was sued for contributory infringement and vicarious liability. A party is contributorily liable if it has knowledge of or reason to know of the infringing conduct of another, and induced, caused, or materially contributed to this conduct.[19] Vicarious liability is given if there is authority to supervise a direct infringer's action; the party has induced, caused, or materially contributed to the infringing activity; and gains a direct financial benefit from the infringing activity.[20]

Both claims cannot be as clearly applied to Napster as it may seem. Assuming that the actions of Napster users are not covered by the concept of "fair use" it will be difficult to show that Napster induced or caused infringement. Though the term "material contribution" has not been defined in an online context,[21] it will be easier to argue that through its software Napster materially contributed to direct infringement since it provided the search platform that enabled such infringement on a broad scale. However, knowledge of infringing activity cannot easily be assumed if there is also some legal use to the technology.

To be held vicariously liable, knowledge of the infringing conduct is not necessary. The argument that Napster has the authority to control the conduct of its users may prove difficult to support since every file transfer is conducted without Napster's involvement. It also appears most unlikely that the court will determine that Napster receives a direct financial benefit form any infringing activity.[22]

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[18] Ariel Berschadsky, *RIAA v. NAPSTER: A Window onto the Future of Copyright Law in the Intenet Age,* 18 J. Marshall J. Computer & Info. L. 755, 760, Spring 2000.
[19] Comp. Berschadsky, p. 765.
[20] Comp. Berschadsky, p. 766.
[21] Berschadsky, p. 771.
[22] Berschadsky, p. 775.

However, even if Napster is held liable under any of the two allegations, the Digital Millennium Copyright Act might still save Napster. Title II of the DMCA provides for four cases under which a provider qualifying as an ISP - i.e. an entity that transmits, routes, or provides connections for digital online communications, between or among points specified by a user, of material of the user's choosing, without modifying the content of the material as sent or received[23] - will be exempt from liability for copyright infringement committed over its network. Napster would qualify as an ISP according to this definition.[24] Which of the exceptions could apply, however, has yet to be determined with Napster relying on another provision than the RIAA. Uncertainty also arises from the lack of definitions with regard to terms in the newly enacted DMCA.[25] Consequently, it is yet unclear how the pending case will be decided.

Evaluation of the case

Regardless of the outcome of the case, it is obvious that others have already improved the software and technology Shawn Fanning created. Even if the court should hold Napster liable according to the claims of the RIAA, "its triumph will be short-lived."[26] Technologies like Gnutella and SafeX already avoid a central server and conduct file transfer purely peer-to-peer providing only the information of the location of the files.

Given the structure of the web with sites like Napster springing up around the world, in the future it is highly unlikely that a victory of the RIAA will stop the kind of activities, which it claims erode the rights of authors and publishers. Although this claim may deserve further consideration given the fact that the music industry grew by 8% in 1999, the first year Napster was operating,[27] current structures of media distribution may not survive the spread of "Napster tech-

[23] 17 U.S.C. 512(k)(1)(A)(2000).
[24] Berschadsky, p. 775.
[25] Comp. Berschadsky, p. 781.
[26] Berschadsky, p. 782.
[27] Comp. Berschadsky, p. 770.

nology." As bandwidth becomes more easily available around the world, not only music can be shared over peer-to-peer connections but also films and television programs.

Considering the profit margins the recording industry extracts from every CD sold, it is not surprising that the RIAA so vigorously opposes Napster's business idea and technology rather than attempts to reach an agreement like Bertelsmann. Although this deal may not hold if the other claimants refuse to join and insist on upholding the lawsuit, it appears to be a smarter move for the future to adapt to the challenges of the internet rather than to fight a lost fight.

Just as when new technology challenged copyright in the past, the market will have to adapt again. This might cause the exit of some traditional players, but may hold opportunities for new business models. Selling music over the internet would save production and shipping costs for the industry and should be performed in a customized way, e.g. song by song, for a relatively low price and could be very attractive to consumers. Combined with the advent of trusted systems technology, the recording industry may in the future have good chances of surviving and, along with the copyrights granted to the artists. The internet will most likely always offer some possibilities of illegal copying but as explained above, trusted systems could vastly increase the control of copyright owners and adequately low prices may provide a sufficient incentive for consumers to buy their music over the internet.

The Case of the Virtual Gamestation – Sony v. Connectix

Another case, which might prove a landmark decision with regard to the scope of copyright protection in the digital age is the case of Sony v. Connectix. The case examines the problem of emulation of software and its admissibility under copyright law and may be important in redefining boundaries between copyright and patent law.

Facts and Findings

Emulation occurs when a software and/or hardware allows for a product, engineered for one standard of software and/or hardware, to imitate similar products in another medium. Essentially, emulation is a form of reengineering software to be adapted to other hardware platforms. Therefore, legal issues dealing with emulation essentially stem from engineering processes required to enable a transformation from the intended consumption device to an alternative application or device. The Virtual Game Station (VGS), produced by Connectix, emulates original Sony Playstation CD-ROM games on personal computers without the need for Sony Playstations. Sony Corporation therefore filed suit against Connectix Corporation alleging copyright infringement and trademark tarnishment.[28]

Sony initially filed in the 9th circuit court claiming that Connectix's use of screen shots, taken from its copyrighted video games, constituted copyright infringement. These images were used to promote the use of VGS to play Sony CD-ROM games. As a result, Sony sought and received a preliminary injunction to prevent the use of "screen shots" as promotional tools.[29]

In order to prove a violation of copyright law, Sony was required to present evidence that the process of reverse engineering violated copyright law. Reverse engineering software can occur in one of four methods:

1. "Reading about the program;
2. Observing 'the program in operation by using it on a computer;'
3. Performing a 'static examination of the individual computer instructions contained within the program;'
4. Performing a 'dynamic examination of the individual computer instructions as the program is being run on a computer.'"[30]

[28] Sony v. Connectix, No. 99-15852, [Judge Canby], at 1702-25 (US Court of Appeals for the Ninth Circuit Court 02/10, 2000).
[29] Gail Dalickas and Robert E. Rosenthal, "Fair Use of Copyrighted Material in the Video Age," *American Lawyer Media, The Legal Intelligencer* June 2000: 5.
[30] 17 U.S.C., at 102(a).

"Methods (2), (3), and (4) require that the person seeking access load the target program onto a computer, an operation that necessarily involves copying the copyrighted program on the computer's random access memory or RAM.[31] Because Connectix copied the Sony BIOS onto the RAM of Connectix computers in order to debug, disassemble, and determine logic processes, Sony argued that this methodology violated copyright law.

However, Connectix argued that since some information held within the code of the Sony BIOS is un-protected by copyright law, to which Sony agreed, copying, disassembly, and input-output bots are the only way to determine the non-copyrighted information. As such, the US Court of Appeals for the Ninth Circuit Court applied the four-part standard of "fair use."[32]

1. The purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
2. Amount and substantiality of the portion used;
3. Purpose and character of the use;
4. Effect of the use upon the potential market"[33]

The court stated that although Connectix did make several copies of the Sony BIOS, including downloading it onto the Internet, it did so in an intermediate phase of development. Because the final version of the VGS does not contain a directly copied portion of the Sony BIOS, Connectix operated in accordance with three of the fair use principles above. Sony was able to satisfy the second stand, but received substantially fewer consideration because the final product did not directly include Sony code or copyrighted ideas. The court therefore held that the reverse engineering process used by Connectix was covered by the concept of fair use and was therefore a permitted use of copyrightable material. The final product, the Virtual Game Station itself, was not claimed by Sony to constitute an infringement of copyright in itself.

[31] Judge Canby, "Sony v. Connectix" 1704.
[32] *17 U.S.C.* S 102(a).
[33] Judge Canby, "Sony v. Connectix" 1711.

Evaluation of the case

The advent of the Internet has changed the supply chain in every industry. Likewise, emulators are now available much easier, faster, and cheaper than in previous markets. In addition, the ease of compatibility between networked systems has also created a more homogenized system of distribution. A former case dealing with emulation was the case of *Coleco v. Atari* in which Coleco which had produced an adaptor plug for Atari games to be played on a Coleco machine, prevailed. In the past however, a consumer had to purchase a Coleco Vision game station, the adaptor plug, and the Atari game cartridge in order to play a game. Now Internet distribution from multiple websites complicates both the regulation and the enforcement issues that plague original product designers.[34]

Although legal precedence is frequent in the area of electronic gaming case law, there had been almost no legal precedent directly attributable to emulation in excess of the Coleco lawsuit. The final resolution was also not entirely documented, and scholars continue to debate the final dispute resolution. Sony v. Connectix is the first case that directly tackles the issue of emulation and therefore offers an opportunity to investigate the issues pertinent to reverse engineering and "fair use" with respect to copyright law.

Fair use is generally applied to circumstances requiring a determination of appropriate use of copyright material. Typically it does not address the situation in which incidental, or intermediate copying is required. However, fair use doctrine has become an increasingly acceptable rule in reverse engineering and design cases. In short, a "formal infringement" is permitted if the result of the production process creates a good or service divested of the copyright material.[35]

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[34] Matthew Brick, *Video Game Emulation: Shouldn't this be illegal?*.

[35] Mark R. Patterson, *When is Property Intellectual?*, Southern California Law Review 1133.73 (July 2000): 1154; Terri L. Lewis, *Reverse Engineering of Software*, Loyola of Los Angeles Entertainment Law Journal 561.20 (2000): 570.

The vices of fair use and reverse engineering techniques surely cause a decrease in sales of the intended consumption platforms, whether this platform is a Playstation or a VCR. No doubt, consumers are already becoming less dependent on these particular platforms, and therefore a clearing market will realize a loss of specified platforms. Likewise, the designers of specified platforms must shift their attention away from product dependent devices, but rather to more generic, yet more sophisticated platforms. Thus, the value proposition of game producers will either be in the volume associated with game sales, or more likely the design and improvement of flexible consumption platforms.

However, the virtues of fair use and emulation will ultimately encourage the market to create and develop the most efficient generic platforms to drive the emulation market. The current ruling of the 9th Circuit Court of Appeals maintains the spirit of copyright law in as much as it provides access for users to unprotected portions of their property. Although the complexity of the software will only increase, the current standard of access, guided by fair use, will serve to stimulate competition. These new industries will improve application connectivity while thriving on fast data through broad bandwidth. Moreover, the current copyright climate continues to protect the "expression of the idea" but allows the idea itself to become manipulated for a greater audience.

The Sony case clearly grants increasing right to the intermediate copyist with the abilities and design ambitions to understand the unprotected portions of a copyrighted program. However, the technical aspects of reverse engineering and the application of traditional "least restrictive means" tests need to be discussed further. For now, "fair use attaches as a matter of law, at least in the Ninth Circuit."[36] On the other hand, ironically, if emulation continues to erode the

[36] Terril Lewis, *An Assessment of the Legality of Intermediate Copying* 579.

legal rights of software companies that depend upon a specialized gaming platform as part of the business model, game emulators may eventually determine the future of video games.[37]

Copyright Section Conclusion

In light of copyright liberalization, courts are indicating a higher necessary standard concerning patent law. In the emulation case the court was displeased that Sony wished "to obtain a lawful monopoly on the functional concepts in its software, it must satisfy the more stringent standards of the patent laws."[38] In a situation where a choice of protection is considered with respect to the idea and its inherent mix with a process, the latter of which is not protected by copyright law, the court chose to “reject efforts to extend legal rights over the protected work to unprotected aspects of the product.”[39]

An overview of patent law and the internet’s implication for this field of law will be examined in the next section. As the case of Sony v. Connectix shows, however, what may in the past have been protected by copyright, written or readable parts of code, may in the future have to satisfy the more stringent preconditions of patent law as a patentable software process--steps of functioning of a program, for example, in order to be awarded protection of IP.

The examination of the cases and the implications of the digital age for copyright intended to show is that it is hardly justifiable to speak of a revolution for copyright or consider everything that held true until now as wrong. Copyright will still be the means to balance rights and interests of authors and consumers. In this context, the concept of fair use is still applicable and will try to fulfill this task. The technology facilitates copying and distribution, but it may also be used to protect and control these actions. While it is yet unclear which way the weight will finally shift,

[37] Matthew Brick, *Video Game Emulation: Shouldn't this be illegal?*.
[38] Judge Canby, "Sony v. Connectix" 1717.
[39] Mark R. Patterson, *The Leveraging Problem* 1154.

it will be copyright law that has to shoulder the task of mediating the interests, just like each technological development in the past.

Patent law

Patents ensure the inventor the exclusive right to produce or use his invention for a certain period of time. Patents are granted in exchange for the disclosure of the knowledge of the inventor to the public. They provide incentives to individuals to invest time, material and creativity to contribute to the public knowledge by excluding others from using or producing the patented invention.[40] The protection of the discoveries of inventors in the U.S. are granted by patent laws, which were enacted by Congress.[41]

In order to be patented an invention must incorporate the following characteristics:

- novel
- useful
- non-obvious
- patentable[42]

The novelty requirement ensures that the invention is adding to the public knowledge (existing knowledge in the field is termed "prior art").[43] The invention must also be of such nature that it would not have been obvious for someone with expertise in the technical field. Such "utility" patents are issued for general types of inventions or discoveries: machines, human-made products, compositions of matter, and processing methods.[44] Prior to the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) accompanying the Uruguay Round of GATT

[40] J. Dianne Brinson and Mark F. Radcliffe, *An IP Law Primer for Multimedia and Web Developers*, http://www2.viaweb.com/lib/laderapress/primer.html, visited Dec 10, 2000.
[41] U.S. Constitution, Article I, Section 8; The main body of law concerning patents is found in Title 35 of the United States Code.
[42] §§ 101 - 103 of Title 35.
[43] J. Dianne Brinson and Mark F. Radcliffe, *An IP Law Primer for Multimedia and Web Developers*, http://www2.viaweb.com/lib/laderapress/primer.html, visited Dec 10, 2000.

renegotiations in 1994, patents were granted for seventeen years from the date of issuance.[45] This term was extended to twenty years.[46]

Anyone who violates a patent is termed an infringer, even if this person was not aware of the existence of this patent. Cases of patent infringement fall under Federal patent law and the exclusive jurisdiction of Federal courts.[47] After a review period of the patent application[48] by a patent examiner[49], patents are granted by a Federal agency, the United States Patent and Trademark Office (PTO).[50] If an application is rejected, the decision may be appealed to the Patent Office's Board of Appeals.[51] A court can also declare a patent invalid upon a successful challenge by a third party. In 1975 the WIPO-administered Patent Cooperation Treaty was incorporated into Title 35.[52] An applicant can now file a single international patent application for all countries which have signed the Treaty.

On November 29, 1999, President Clinton signed a bill containing the American Inventors Protection Act of 1999. The Act makes a variety of long-awaited changes to current patent laws. In addition to reorganizing the Patent and Trademark Office, the Act creates a legal claim against fraudulent invention promoters, lowers various patent and trademark registration fees, establishes a defense against patent infringement actions, extends patent terms to remedy delays in the patent registration process, outlines the domestic publication of patent applications, and creates an inter partes patent reexamination procedure.[53]

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[44] § 101 of Title 35.
[45] § 154 of Title 35.
[46] which took effect June 8, 1995.
[47] § 1338(a) of Title 28 of The United States Code.
[48] A model of the invention used to be required, but today a detailed specification is sufficient; §§ 112 - 114 Title 35
[49] § 1.104 of Part 1 of Title 37 (C.F.R.).
[50] §§ 1-26 of Title 35; Its regulations, pertaining to Patents, are found in Parts 2 - 6 of Title 37 of the Code of Federal Regulations.
[51] §§ 134, 141, & 145 of Title 35.
[52] §§ 351 - 376 of Title 35.
[53] P. Costello, *New Law Creates a Patent Infringement Defense and Restructures the Patent and Trademark Office*, Boston University Journal of Science and Technology Law, Spring 2000 .

The Amazon Case - 1-Click Shopping

In the fall of 1997, Amazon submitted a patent application to the PTO, entitled "A Method and System for Placing a Purchase Order Via a Communications Network." On September 28,1999, Amazon was granted United States Patent Number 5,960,411, now known as Amazon's "1-Click" patent.[54] Shortly after the patent had been issued, Amazon filed a lawsuit against its main competitor, Barnesandnoble.com. Amazon claimed that Barnes & Noble had infringed Amazon's 1-Click Patent by using its patented system for placing orders over the internet, in particular its checkout method.

Since one of the biggest problems of online-companies is that most shopping carts are abandoned at some point during the online shopping process.[55] Amazon intended to make the shopping process easier and faster. In an attempt to avoid shopping carts entirely, Amazon created an "Express Lane", which could be used by customers who had placed an order on this particular site before. Making use of a cookie, the credit card number and shipping information of the shopper are stored on Amazon's server, which is thus able to "recognize" the customer. This method sped up the buying process substantially and was subsequently used by more than half of the customers. Since Barnesandnoble.com also featured an Express Lane, Amazon claimed that this was an infringement on its 1-Click Patent. Amazon underlined the importance of this claim by stating that without the protection of its 1-Click Patent it would lose a crucial means of distinguishing its e-commerce site from those of competitors such as the Barnesandnoble.com.[56]

On December 1st, 1999 the Seattle court granted Amazon a preliminary injunction against Barnesandnoble. Although the company appealed, Barnes & Noble had to remove the Express

[54] U.S. Patent No. 5,960,411; Text of the patent: http://164.195.100.11/netacgi/nphParser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=/netahtml/srchnum.htm&r=1&f=G&l=50&s1='5960411'.WKU.&OS=PN/5960411&RS=PN/5960411.
[55] The State of Online Retailing - A Shop.org. Study by the Boston Consulting Group, April 2000.

Lane from its Web site. Subsequently, the Court of Appeals upheld the decision of the Seattle court and Barnesandnoble's Express Lane was closed immediately, significantly affecting its holiday business.

Unintentionally, through its 1-Click Patent and the following lawsuit, Amazon has initiated a growing movement against software patents. The most avid opponent of software patents is Richard Stallman who heads the GNU Project--Free Software Foundation. He does not approve of this patent because of the restrictions it places on e-commerce. In an article in Linuxtoday on December 13, 1999, he called for a boycott of Amazon because of the restrictions its 1-Click Patent imposes on e-commerce. The movement initiated by Stallman resulted in the creation of websites such as Nowebpatents.org and Noamazon.com and the formation of groups such as the League for Programming Freedom that urges for a ban of software patents.[57]

Vices and Virtues of Patents in Cyberspace

Today there are essentially two areas in cyberspace which are most controversially discussed in connection with patent law: software patents and business method patents. The consequences of the recent practice of the PTO to grant new patents more generously are not obvious for most areas. They are however problematic for the area of software development, especially for the open source (or free software) movements such as the Linux operating system[58].

Many software producers in Europe are using the open source model. Especially in Germany and France this method is growing rapidly. They are claiming that the fact that the source code, a valuable strategic piece of information, is open for anyone to look at and work on contributes to the improvement of the software and to the development of compatible products. It

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[56] Patents: Amazon.com v. Barnesandnoble.com Fed. Cir. to Hear Appeal Over Validity, Infringement Of E-Commerce Patent, E-Business Law Bulletin, August 2000, IP, Vol. 1, No. 10, P. 6.
[57] http://www.gnu.org.
[58] Launched by Linus Torvalds, building on Richard Stallman's GNU Project, and seen by Microsoft as its strongest competitor.

also prevents the creators of a software standard from abusing their monopoly power (as seen in the Microsoft case) and ultimately stimulates demand for the resulting products.

Software patents are particularly harmful for open code projects. If the source code is available for anyone, licensing becomes extremely difficult and costly. Proponents of the open source code are therefore especially concerned about patents forcing them to close their code.[59]

The patentability of Internet business methods has also been subject of much discussion lately. Most articles focus on several broad patents granted by the PTO, such as Priceline.com's reverse-auction method of conducting business,[60] Amazon.com's express checkout system commission,[61] and Doubleclick's "Method of Delivering, Targeting, and Measuring Advertising Over Networks."[62]. These so called "business method patents" have been subject to extensive criticism and debate. Nevertheless, they become increasingly common, which led the PTO and the courts to create an exception to §101 for business methods.[63]

These patents give their holder a monopoly over a way of doing business that, unlike a mechanical or electrical invention, is normally not limited to a particular physical structure. Rather, the invention most often consists of a series of steps to carry out the method and can be expressed in technological terms.[64] Since almost any method of e-commerce fulfills this condition, nearly every method in cyberspace could in principle be patented. Although patents create benefits, they also impose costs on the creative process and could therefore substantially impede

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[59] Larry Lessig, *Europe's 'me-too' patent law: Copying US legislation on IP rights threatens to inhibit software innovation*, Financial Times, July 11 2000
http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT36QMGXJAC&live=true
[60] U.S. Patent No. 5,794,207
[61] U.S. Patent No. 6,029,141
[62] U.S. Patent No. 5,948,061
[63] D.W. Carstens, *The Rush is on; Software Developers VIE for Business Method Patents*, Texas Lawyer September 18, 2000, p. 33.
[64] M.D. Simpson, *Tips for Protecting Business Method Patents in the United States*, E-Trading Legal Alert, August 18, 2000 ,Vol. 1; No. 6; p. 3.

e-commerce by preventing competitors from using patented methods, which are nevertheless essential for e-commerce.[65]

Business method patent holders on the other hand will have to collect evidence in favor of their claim even before one of their competitors challenges their patents or to implement a new method in order to sustain a lawsuit. Otherwise they cannot rely on the patent to receive adequate compensation for the loss of their competitive advantage and will not discourage competitors from challenging their patent.[66]

There are however good reasons for being sceptical about the increasing incentives which expanding patent protection is supposed to provide. A study by the technologist James Besson and the economist Eric Maskin released in 1999 indicated that software patents in the U.S. actually had negative effects on investment in software research and development. They could show that research and development in the software industry actually regressed after an increasing number of patents started to be issued. Since innovation is sequential and complementary in this type of industry, patent protection has the opposite effect than intended.[67]

Since patents on such innovations as described above are becoming increasingly common, it will be necessary to reconsider standards of patentability and the scope of protection that patents grant their innovators.[68] While providing incentives for innovation and creativity is necessary, one has to make sure that the protection of the inventor does not render the activity of competitors in the area prohibitively difficult or even impossible. In the end a government employee decides whether a patent application meets the requirements that the idea to be patented is novel,

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[65] http://www.thestandard.com/article/display/0,1151,8999,00.html
[66] F.Jospeh Nuzzi *Business Method Infringement Damages*, New York Law Journal, July 24, 2000, P. S6
[67] Lessig, Larry, *Europe's 'me-too' patent law: Copying US legislation on IP rights threatens to inhibit software innovation*, Financial Times, July 11 2000
http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT36QMGXJAC&live=true
[68] Novadigm vs. Marimba (software updating) and Lycos vs. Infoseek ("spider" searching) are just two examples of Software companies racing to get patents as part of their efforts to win standards over standards.

useful and non-obvious. But the fulfillment of these criteria is already difficult to determine in the "real" market and even more so with regard to software and electronic business methods.[69]

The PTO has therefore announced a Business Methods Patent Initiative to address some of the criticisms regarding its granting of patents for business models.[70] Experts are however confident that over a period of time the PTO will get more expertise in conducting searches for "prior art."[71]

The main problem therefore is not the difficulty of identifying "prior art" or existing patents but the fact that patents are granted too readily by the PTO in the first place. Representative Howard Berman (D-CA) introduced the bill H.R. 5364 in the House on October 2, 1999. The bill proposes a requirement that all applications for patents on business methods be published within 18 months after filing, even if the patent has not been granted.

Berkeley lawyer Robert Merges has also proposed similar changes to the patent system. He suggests a more open review of patent application, which would also include consulting by competitors and enable the government to determine which ideas truly deserve protection. Another problem, however, is the belief of the U.S. government that strong intellectual-property protection will automatically lead to a stronger economy. There are undoubtedly dangers inherent in overly strong intellectual-property regimes.[72] The legislation should therefore empower patent examiners to reject applications for methods which are too obvious and only differ from established business methods in their use of technology.

Eventually, Congress will have to address this matter and revise the legislation in the field of patent law in order for patents to be granted exclusively for truly novel and non-obvious in-

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[69] http://www.thestandard.com/article/display/0,1151,4296,00.html (April 23, 1999).
[70] J. G. Gatto, B. Lennie, *Cooperation Key to Addressing Contentious Online Patent Issue*, Legal Backgrounder, August 25, 2000, Vol. 15, No. 44 .
[71] V. Slind-Flor, *New patent bill under fire*, IP Today, November 2000
[72] http://www.thestandard.com/article/display/0,1151,4296,00.html (April 23, 1999)

ventions after a sound review process. In order to protect IP, novel business models and new technologies as well as education in copyright law are likely to be far more effective mechanisms than major legislative changes.[73] An example are trusted systems, which were already mentioned above. They allow publishers to specify the required security level to safeguard a document or video.[74]

It will however be very difficult in the future to enforce IP protection on the internet. According to Esther Dyson, value will therefore not be derived from information per se but from surrounding services and the identification, selection and assurance of authenticity of content.[75]

E-Trademark

"In real life, unlike in Shakespeare, the sweetness of the rose depends upon the name it bears". In this comment, Hubert H. Humphrey may have been speaking about the Internet.[76] This is quite true as "names are, after all, the only way to make intuitive sense of the billion pages of the Internet".[77] But the exponential growth of the Internet in the last years has turned the Internet domain name from an "intellectual curiosity to one of the most hotly contested forms of IP".[78] This has raised important questions and major challenges.

Trademark: a brief background

Trademark is a word name, symbol, device, design or other distinctive item used by individuals, to distinguish, identify, and indicate the source of their goods.[79] The U.S. Trademark Law is found in the Federal Trademark Act of 1946 and its amendments, known as the Lanham

[73] http://www4.nationalacademies.org/news.nsf/isbn/0309064996?OpenDocument.
[74] Stefik, Mark, *Trusted Systems*, http://www.sciam.com/0397issue/0397stefik.html.
[75] http://www.eff.org/pub/Intellectual_property/ip_on_the_net.html.
[76] Wimmer, Kurt A., *What's in a Net name?* , The New York Law Publishing Company, The National Law Journal, December 4, 2000.
[77] Ibid.
[78] Oppedahl, Carl. *Remedies in Domain Names Law Suits: How is a domain name like a cow?,* www.patents.com/pubs/jmls.htm.

Act. To register a trademark with the United States Patent and Trademark office, one must "prove actual use or intent to use the goods or work products of services in the stream of commerce".[80] Trademark registration is granted for twenty years, and can be renewed as long as the mark is still in use.[81]

Prior to 1995, an owner of a trademark could assert a claim of trademark infringement, which occurs when there is a likelihood of confusion, mistake or deception as to the affiliation of goods, services or commercial activities with competitor products.[82]

Domain names and trademarks: E-Trademark?

Conflict related to domain names

As mentioned above, the explosion of the Internet and the use of the instead of the digits as a means to navigate on the World Wide Web has de facto multiplied the use of names and by any means the number of related conflicts. Those conflicts can be summarized into four essential categories.[83]

- Cyber-squatting
- Current Use
- Parasite names
- Com V. Org

A cyber-squatter is defined as a person who "intentionally registers domain names containing the trademarks of prominent companies for the use of the domain name."[84] The most

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[79] 15 U.S.C 1127 (1994).
[80] See Jeome D. Drabiak, *Patents, Copyrights, and Trademarks: a Primer on Protecting Intellectual Work Product*, 11 S. L11.U.L.J. 1,22 (1986) Quoted in O'Meara, Kimberly A., *Notes and Comments: Avery Dennison V. Sumpton: The Ninth Circuit raises the bar for successful claims in domain names cases*, Loyola of Los Angeles Entertainment Law Journal (2000).
[81] Ibid.
[82] 15 U.S.C 1125 (a) (1).
[83] Jones, Liza Kitza, *Trademark.com: Trademark Law in Cyberspace*, The Alberta Law Review, December 1999.
[84] Ibid.

famous cyber-Squatter is Dennis Toeppen, who has registered around 240 domain names without seeking the authorization of the people who previously used them in order to resell them [85]

Concurrent use can be defined as a situation where two persons are using the same trademark legitimately to identify their different goods; the problem arises on the Internet, as the same name can only be assigned one domain name.

Parasite domain names can be defined as variants of famous domain names. This variation can be a matter of misspelling, when www.amazon.com as an example is typed www.amazone.com. However, the .com vs. .org problem arises when the same domain name is used but with different TLDs (org, com, edu…). The most famous examples are the two web sites, www.whitehouse.org, and www.whitehouse.com. While the first one is the domain address of the residence of the President of the U.S., the other one is a pornography site.

Solution to these conflicts

The courts have tried to resolve these conflicts by applying the trademark law, but two problems arise. The first, a difference between trademark and domain names described by Lisa Katz Jones in stating, "domain names are unique and global; trademarks are multiple and local. Herein lies the difficulty for trademark law on the Internet: while the Internet transcends borders, traditional trademark protection extends only to marks that have an identifiable locus." More important, however, is the inapplicability of the Lanham Act of 1946 to domain names. Indeed, under the Lanham Act of 1946, the owner could only assert a claim under trademark infringement; the infringement conditions cannot be applied to the cyber-squatter of the domain name, as he is not selling or buying goods, just registering the domain name and reselling it. Courts have relied on the Federal Dilution Act, which has added a section to the Lanham Act, introducing anti-dilution as a second claim that can be asserted by the owner.

[85] The U.S Cybersquatter Case, Intermatic Incorporated v. Denis Toeppen, United States District Court, N.D, Illinois

Solution based on the Federal Dilution Act of 1995[86]

This new law, enacted by the Congress in 1995, added a paragraph to the Lanham Act and gives an "injunctive remedy, for any conduct that dilutes a trademark, regardless of whether the conduct gives rise to customer confusion, the only requirement for this relief being that the trademark is famous," but limiting itself still to commercial activity.[87] Needles to say, determining if a trademark is famous or not is subject to great confusion.[88]

The Toeppen Case

As mentioned above, Dennis Toeppen has registered more than 240 domain names. Two famous domain name cases are related to him, The Intermatic Incorporated, and Panavision.com.[89] In the Intermatic Case, the court started with "welcome to cyberspace", the facts are simple. The plaintiff Intermatic was holder of a trademark registration of its name for the sale of goods in its line of business, electrical and electronic products, and had been in this business since 1941. While trying to register their domain name, www.intermatic.com, they found that it had already been registered under Toeppen's name. They brought charges against Toeppen for trademark infringement and dilution. The legal question in front of the court was the issue "whether the owner of the Intermatic Trademark may preclude the use of the trademark as an Internet domain name by defendant Toeppen, who had no prior use of the Intermatic name prior to registering it as an Internet domain name."[90] The problem faced by the court was the inapplicability of the law, as the Federal Dilution Act still provides that the protection is granted to commercial activity of goods and services and Toeppen was not using the domain name for sales of goods. The court solved this problem by stretching the notion of commerciality as it con-

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1996, in Doris Estelle Long, Anthony D'Amato, *A coursebook in International IP*, West Group 2000.
[86] U.S.C 15 Sec 1125 (c).
[87] Oppedahl, Carl. *Remedies in Domain Names Law Suits: How is a domain name like a cow?,* www.patents.com/pubs/jmls.htm.
[88] Cong. Rec.Dec.29, 1995, S19312, quoted ibid.

cluded that "Toeppen's intention to arbitrage the "www.intermatic.com" domain name constitute a commercial use", and that by using the domain name Toeppen was likely to cause dilution of its mark.

In other cases the courts have been on the side of the domain name holders, these cases include "roadrunner.com, dci.com, ty.com, clue.com, disc.com, regis.com, and juno.com"[91] In addition to contextual problems in interpreting the law, courts in applying the Federal Dilution act have sometimes found that there is no long arm jurisdiction, as in the Hearst Corporation v. Ari Goldberger, showing little understanding of the Internet concept.[92]

Anti-cyber-squatting Consumer Protection Act "ACPA" and ICANN"s Uniform Domain Name Dispute Resolution Policy "UDRP"

As we have discussed, before 1999 the courts relied on the Lanham Act and its amendments to solve the conflict related to domain names, while in the case of Network Solution Inc, the domain name registrar did not have a specific dispute resolution system. Instead, when alerted of a claim against a domain name, NSI would simply put the name on hold until the parties resolved the conflict.[93] The end of 1999 marked the introduction of "two new weapons to assist trademark owners in their battles against Cybersquatters", the ACPA, and the UDRP of ICANN, a private successor of NSI, in charge of the domain names.[94]

ACPA[95]

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[89] Panavision Int'l L.P v. Toeppen, 945 F.Supp.945 F.Supp. 1296, USPQ2d (C.D.Cal.1196) quoted ibid.
[90] Intermatic Incorporated v. Denis Toeppen, United States District Court, N.D, Illinois 1996
[91] Oppedahl, Carl. *Remedies in Domain Names Law Suits: How is a domain name like a cow?,* www.patents.com/pubs/jmls.htm.
[92] The Hearst Corporation v. Ari Goldberger, US District court, S.D, New York, 1997, in Doris Estelle Long, Anthony D'Amato, *A coursebook in International IP*, West Group 2000.
[93] Domain Names and Trademarks, http://eon.law.harvard.edu/property00/domain/main.html
[94] Osborn, Jason M, *Note: Effective and complementary solutions to domain names dispute: ICANN"s uniform domain name dispute resolution policy and the federal Anticybersquatting Consumer Protection act of 1999,* Notre Dame University Law Review, University of Notre Dame, November 2000.
[95] Title 3- Trademark Cyberpiracy Prevention , enacted on November 29, 1999 www.mama-tech.com/antipiracy.html.

The ACPA came as the "firsts steps to address concerns over the misuse of trademarks on the Internet."[96] It explains the Internet and defines domain names in its first section. To establish a claim of cybersquatting under the ACPA, a plaintiff must show:[97]

- Existence of a distinctive mark at the time of the registration of the domain name;
- That the defendant has registered, traffics in, or uses a domain name that is identical or confusingly similar to that mark, and
- That the defendant has bad faith intent to profit from that mark.

UDRP

ICANN, a private sector corporation was formed in 1998, following the Department of Commerce White Paper calling for the privatization of the domain name system, formerly handled by the NIS.[98] One of the functions of ICANN is the UDRP, which requires mandatory administrative dispute resolution for certain disputes between trademark owners and domain name holders.[99] In particular, the UDRP provides a "litmus test" for determining if a domain holder is acting in a bad faith or is hijacking a domain name.[100] Only trademark holders can take their case to one of the ICANN approved arbitration centers, of which the WIPO in Geneva is the most active.[101] Of 1000 cases that have gone to arbitration, trademark owners have won three quarters.[102] One of the winners is Yahoo, that argued against Data Art Corporation for holding several dozen domain names, such as www.ayhoo.com, www.eeeyahoo.com, www.yafoo.com on

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[96] Anticybersquatting Consumer Protection Act, 15 U.S.C.A. 1125 (d).
[97] Anti-Cyber-Squatting Act Does Not Support Plaintiff's Motion for Preliminary injunction Bihari V. Gross, New York Law Journal , October 12, 2000.
[98] Osborn, Jason M, *Note: Effective and complementary solutions to domain names dispute: ICANN"s uniform domain name dispute resolution policy and the federal Anticybersquatting Consumer Protection act of 1999*, Notre dame university Law Review, University of Notre Dame, November 2000.
[99] Ibid.
[100] Flynn, Laurie J, *Trademarks Winning Domain Fights*, The New York times on the Web, www.nyt.com , September 4, 2000.
[101] Ibid.
[102] Ibid.

the basis that they are easily confused with www.yahoo.com.[103] It is important to note that the domain name registrar enforces arbitrators' decisions.[104]

It seems that solutions to domain name conflicts are improving. Needless to say, UDRP is a major improvement from the NSI system. It has several advantages, the most important being its easy enforceability, but it seems that domain name holders are skeptical about this system, as there is a general impression that it favors trademark holders.

Conclusion

From the examination of the three fields of intellectual property law, copyright, patent law, and trademark law, and the relevant cases, one thing has become clear; John P. Barlow's famous quote that due to the development of the internet, "everything you know about intellectual property is wrong", might not be as valid and convincing as it first seemed after all.[105]

Each field faces challenges and new problems need to be solved. On the one hand, copyright owners find their rights threatened by the accessibility and wide usage of technology which enables everyone to make their own "originals." On the other hand, the pendulum may in the end swing in favor of authors and publishers who make use of new technological means of protecting their works. Finally, however, it will most likely still be the concept of "fair use" which will, when applied, to strike the right balance between conflicting interests.

With regard to patent law, discussion and controversy may be needed to determine how far patent law should be applied to software code and e-commerce business methods. In this regard, traditional boundaries between copyright and patent protection may get blurrier and old paradigms may need rethinking. Simplifying a little, one might say that while copyright tradi-

[103] Ibid.
[104] Ibid.
[105] John P. Barlow, *The Economy of Ideas: Rethinking Patents and Copyrights in the Digital Age*, WIRED, March 1994, at 84, 129.

tionally protected the rights of authors of the “fine arts”, patent law served to protect the inventions of mechanical processes and therefore the rights of business and industry.

Today, both copyright and patent law may be relevant when it comes to software. On the one hand, code can be expressed in a written way and may therefore fall within the scope of copyright. The case of Sony v. Connectix, however, shows that it may in the future be patent law which will grant the inventor of software the monopoly over the core of his innovative programming while the rest of the software may be copied for purposes of reverse engineering based on the “fair use” principle. However, the most likely prediction is that the scope of patentability will be determined by the same process as in the past; by finding a compromise between perfect monopoly for the inventor, or programmer in this case, and rights of others to further develop and improve inventions in order to encourage innovation and competition.

Trademark law also has needed and will most likely need further adaptation in the future. The greatest challenge to trademark law may prove the global character of the internet. As mentioned, national trademark stops at national boundaries while domain names and other trademarks used on the web are globally accessible. Of course, ICANN is in the fortunate position of being in the U.S. and will therefore have some control over what kind of domain names are registered in case they conflict with U.S. trademarks. As more and more countries get wider access to the internet more and more trademark conflicts will arise, though, which do not involve the U.S. As it is generally true that “as the economy becomes increasingly global, pressure to harmonize intellectual property law is increasing”, in the field of trademarks it may therefore be most important to work towards international standards.[106]

[106] Maureen A. O'Rourke, *"Toward a Doctrine of Fair Use in Patent Law"*, Columbia Law Review 100 (June 2000): 1250.

This paper aims to convey two main conclusions:

- That each field of IP law is affected to a different degree and in a different way;
- That the conflicts arising out of the new technologies can and will most likely still be resolved by applying old principles and concepts to strike the right balance.

Copyright may face the most radical changes due to the impact of computer and internet technology. However, the debate whether this amounts to a change in degree or a change in kind,[107] appears to be more of academic interest as long as the same concepts, especially "fair use", apply to solve newly arising conflicts. Patent law may need rethinking with regard to its scope but it is still the same conflict between incentives to invest and research and deserved monopoly over the invention. Trademark law may need changes and efforts on an international level as names and terms become more important to find information on the web but the conflicts over the rights to those names remain the same. Possibly, this position may prove false in the end. We hope, however, that, should copyright may truly be dying, there remains enough life to protect our rights over this paper.

[107] Comp. Sheldon W. Halpern, *Copyright Law in the Digital Age: Malum in se and Malum prohibitum,* 4 Marquette Intellectual Property L. R. 1 (2000).

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