MARCO BENNEK

DIGITAL RIGHTS MANAGEMENT – A PROMISING AND THREATENING TOOL TO PROTECT COPYRIGHT IN THE DIGITAL ERA

AN INTERNATIONAL PERSPECTIVE

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ABSTRACT

The purpose of this paper was to analyse the possible impact of DRM systems on the existing Copyright Law. Of special interest were the anti-circumvention provisions provided by the WIPO Treaties, the US DMCA and the EC Copyright Directive.

Concerns were raised regarding the ability of the copyright owner to restrict even lawful uses of the work, the potential of DRM tools to infringe personal data and the limitation of access to the work. The paper recommends the determination of legitimate DRM systems.

Word Length

The text of this paper (excluding abstract, table of contents, footnotes and bibliography) compromises 10439 words.

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I. INTRODUCTION

The invention of new technologies already questioned the efficiency of the existing Copyright Law various times. Video recordings and digital audiotapes raised big concerns among the copyright owners regarding their exclusive right of reproduction.

Digital technology, in contrast to earlier technological inventions, facilitates not only the duplication of copyrighted works but also the distribution of both legitimate and illegitimate copies.[1] Copyright owners as well as several industrial branches, namely the music and movie industry, claim revenue losses blaming this as a result of an increased copyright infringement only made possible by digital technology and the distribution of illegitimate copies on file sharing networks. The International Federation of the Phonogram Industry (IFPI), for example, announced that the number of infringing music files on file sharing networks has doubled within the last year from 500 million in June 2002 to an estimated 1 billion in June 2003.[2] According to the Ministry of Economic Development of New Zealand the losses of the music industry amount to 4.3 billion US $ worldwide and 114 million NZ $ in New Zealand.[3] Although these figures can hardly be proved, it can be taken for granted that the music industry is suffering revenue losses.[4] And the music industry will probably not be the only branch to suffer from the digital technology. The enhancements in this area also allow the sharing of more complex files like audio books or whole films and DVDs. Furthermore, as the Internet is expected to connect more and more users

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[1] James S. Humphrey "Debating the Proposed Peer-To-Peer Piracy Prevention Act: Should Copyright Owners be permitted to Disrupt illegal File Trading over Peer-To-Peer Networks?" (2003) 4 North Carolina Journal of Law & Technology 375, 395.

[2] See the official homepage of the IFPI "IFPI statement on action announced by US recording industry against illegal music uploaders" (25 June 2003) <http://www.ifpi.org/site-content/press/20030625.html> (last accessed 23 July 2003).

[3] See official homepage of the Ministry of Economic Development of New Zealand <http://www.med.govt.nz/buslt/int_prop/digital/ris/ris.html> (last accessed 24 July 2003).

[4] Kimberly Kerry "Music on the Internet: Is technology moving faster than Copyright Law?" (2002) 42 Santa Clara Law Review 967, 970.

worldwide, especially in Asia, the number of infringements will increase rather than decrease.

By filing suits against the operator of file sharing networks, the music industry celebrated their first victory against online copyright infringement. In *A & M Records, Inc. v. Napster, Inc.* the Ninth Circuit held Napster liable for the infringement of the plaintiff's exclusive rights of distribution and reproduction of the caused by its users who shared music recordings online. Though Napster itself did not infringe copyrights directly, it used a centralized server which gave Napster the ability to control the files to be shared and to block unauthorized copies. Because of the fact that Napster did not exercise this control the Ninth Circuit concluded that Napster was secondary liable for the infringement of its users. Though, as the next generation of file sharing networks do not have a centralized structure and hence cannot control the trading of files, this victory is short of being a precedent. Copyright owners only possible legal action is to file suits against individual copyright infringers instead. The Record Association of America (RIAA), for example, filed suits against specific users who unauthorized uploaded music recording. According to the great amount of users of online file trading, courts might be able to judge a few of them but will hardly achieve that the million of users stop their infringing use of digital technology.[5] Even filing enough suits to deter other users from online copyright infringement takes time and causes costs without guaranteeing success. It is not only because of the territorial limitations of copyright law that legal actions against online copyright infringers might not be very promising. Legal actions or remedies are only successful if the infringement took place within the scope of the specific copyright law or was committed by a resident of the legislation. Even filing enough suits to achieve general deterrence would cost both money and time. And even if the

[5] Ann Bartow "Electrifying Copyright Norms and making Cyberspace more like a book" (2003) 48 Villanova Law Review 13, 15.

individual lawsuit is successful, individual users are quite unlikely to have sufficient assets to compensate the damages on the side of the plaintiff.[6]

A promising and more cost-efficient alternative enhancement of the technological protections embedded into the work itself. These Digital Rights Management (DRM) systems have a great potential to protect or even to "overprotect" copyrighted works. The decision of the legislators to extend the protection of copyright to the protection of protection systems of copyright especially by passing anti-circumvention provisions raises great concerns regarding basic rights, such as the free speech, and already existing copyright standards, such as lawful use exemptions.[7] Copyright owners are now in the position to decide how to protect their works. Even if the chosen form of protection does extend existing copyrights, the circumvention of these technological measures can still create civil or even criminal liability.[8] Digital technology not only makes easier to copy and distribute protected works, but also allows the gathering of personal data and the control over the behaviour of specific individuals.[9] It can be used to infringe the copyright as well as to prevent the infringement. The question to be solved is the price for the latter

By using digital technology intellectual property can easily be transferred across national borders. Consequently any successful protection of copyrighted works requires equal international standards of protection for intellectual property. The first step towards equal international standards was made

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[6] Ketherine Elizabeth Macdonald "Speed Bump on the Information Superhighway: Slowing Transmission of Digital Works to protect Copyright Owners" (2003) 63 Louisiana Law Review 411, 421.

[7] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 425.

[8] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 976.

[9] Mark Owen, Elizabeth Kiernan Earl "Data Protection the European Way: A Discussion of the Legislative Framework adopted in the European Union" (2003) 4 Sedona Conference Journal 125, 139.

This paper deals with the question whether the use of DRM systems can prevent the infringement of intellectual property without violating essential rights of the consumer. It argues that the use of DRM systems, though being seen as a powerful instrument in combating copyright infringement, has an enormous potential to restrict basic rights of the consumer. Especially enabling copyright owners to embed a huge variety of DRM systems into their works can easily be misused and results in an extension of the existing copyright law. By providing an anti-circumvention ban without defining the legitimate and illegitimate DRM systems the legislator permits the copyright owner to create and change copyright law just by embedding certain kinds of DRM systems. The paper first gives an overview over the legal framework of the Copyright law by naming international Treaties, the US Digital Millennium Act and the European Community Copyright Directive. In the main part the paper examines DRM systems and their effect on basic consumer rights. It focuses especially on the Law of the European Community.

II. LEGAL FRAMEWORK

The innovations in the digital technology challenge the existing Copyright Law. In fact especially due to the recent technological developments there are only few fields of law worldwide that are growing as fast as Intellectual Property Law.[10] New abilities of distribution, protection and the possibility of multiple unauthorized copying of protected works and the distribution of the copies to an unlimited amount of users without any loss of quality affect the existing exclusive rights of copyright holders. Copyright owners and the publishing industry claim the violation of Copyright and require further legal protection. As the internet plays a major roll in copyright infringement effective legal responses have to be established on an international level. This section of the paper gives an overview over the legal framework of these rights on an international and national level.

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[10] Kamil Idris "International Property Law: Introduction" (2003) 26 Fordham International Law Review 209, 209.

A. Berne Convention for the Protection of Literary and Artistic Works

The first important international treaty regarding the protection of copyrighted works is the Berne Convention for the Protection of Literary and Artistic Works of 1971 (Berne Convention). In Article 9 (1) the Berne Convention grants the author for the first time the "exclusive right of authorizing the reproduction of these works, in any manner or form".[11] It further states that for the purpose of the Convention "any sound or visual recording shall be considered as a reproduction". Though the Berne Convention does not explicitly define the term reproduction, the Convention focuses on analogue technology as at this time copying protected works using other than analogue media was either not possible or not considered to be able to raise big copyright concerns.[12] Consequently the Berne Convention does not deal with the specific problems of digital copyright infringement.

B. World Trade Organisation

By passing the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) in 1994 the World Trade Organisation (WTO) for the first time introduced intellectual property law into the multilateral trading system.[13] The TRIPS agreement specifically aims to establish adequate levels of protection of copyrights on an international level. It further extends the protection of computer programmes by offering the same protection as the Berne Convention for literary works.

C. World Intellectual Property Organisation

In 1996 the Members of the World Intellectual Property Organisation (WIPO) signed the probably most important international Copyright Treaties: the WIPO

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[11] Compare Jane C. Ginsburg "Achieving Balance in international copyright law – The WIPO Treaties 1996: The WIPO Copyright Treaty and The WIPO Performances and Phonograms Treaty: Commentary and Analysis" (2003) 26 Columbia Journal of Law & The Arts 201, 203.

[12] Berne Convention for the Protection of Literary and Artistic Works, Paris Act of July 24, 1971, Article 9 (3).

[13] WTO http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm7_e.htm (last accessed 30 November 2003).

Copyright Treaty and the WIPO Performances and Phonograms Treaty. Both treaties contain similar provisions regarding the protection of copyright and authorize the Parties to implement the proposed measures into national law. In Article 7 the WIPO Copyright Treaty grants the performers the "exclusive right of authorizing the direct or indirect reproduction of their performances fixed in phonograms, in any manner or form". It further contains an anti-circumvention provision in Article 11. It states:

> [c]ontracting Parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.

Similar provisions can be found in the WIPO Performances and Phonograms Treaty. In Article 11 it contains the Right of Reproduction and in Article 18 it bans the "circumvention of effective technological measures...that restrict acts...which are not authorized by the performers or the producers of phonograms concerned or permitted by law". Article 11 WIPO bans any kind of circumvention no matter whether the circumvention was intended to encroach a copyright or not.[14] The WIPO Copyright Treaty provides the legal bases for national implementations such as the United States Digital Millennium Act (DMCA) and the European Community Copyright Directive (EC Copyright Directive). Nevertheless especially Article 11 of the WIPO Copyright Treaty has been criticised for offering legal protection for technological measures that could not be protected by copyright law and for banning not only devices that are specifically manufactured for the circumvention of the protection tools but also the distribution of devices that also offer legitimate uses.[15]

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[14] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 977.

[15] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 977.

D. The law of the United States

Being the biggest market for internet technology and digital technology the US passed several laws responding the increasing threat to copyright owners by digital technology.

1. Audio Home Recording Act of 1992

The first legislative response of the US to the digital technology was the Audio Home Recording Act of 1992 (AHRA). The AHRA specifically targets the infringement of copyright by using the Digital Audio Tape (DAT) Technology. Due to the immense innovations in the digital technology the AHRA is not transferable to today's advanced digital technology.[16]

2. Digital Performance Right in Sound Recordings Act

The Digital Performance Right in Sound Recordings Act (DPRSRA) was passed in 1995 due to the developments in the digital technology. It was meant to enhance the protection of an artist against the infringement of copyrighted digital music and to treat the possibilities of digital distribution of audio recordings.[17] But it contains various exemptions. One of these exemptions the non-subscription broadcast transmission, created a loophole for the MP3 technology.[18] Consequently the DPRSRA offers no protection against it.

3. Digital Millennium Copyright Act

In 1998 the United States of America implemented the WIPO Copyright Treaty by passing the Digital Millennium Copyright Act (DMCA). In its title 17 the DMCA contains provisions regarding copyrights. The DMCA grants the owner of

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[16] Ami K. Jensen "Copy Protection of CDs: The Recording Industry's latest attempt at preventing unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 246.

[17] Kimberly Kerry "Music on the Internet: Is technology moving faster than Copyright Law?" (2002) 42 Santa Clara Law Review 967, 974.

[18] Kimberly Kerry "Music on the Internet: Is technology moving faster than Copyright Law?" (2002) 42 Santa Clara Law Review 967, 974.

copyright in § 106 *inter alia* the exclusive rights "to reproduce the copyrighted work in copies or phonorecords" and "to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending". Both the exclusive right of reproduction and distribution are affected by the recent innovations in digital technology. The DMCA focuses on the liability of online service providers. Firstly, shutting down a single online service provider was considered to be easier and more effective to prevent further infringement of copyright than providing legal steps against every single user of the online service provider. And secondly, apart from the practical aspect as online service providers usually have commercial interests in file sharing, for example by placing advertisements or connecting the user automatically to additional commercial websites. The commercial interest gains importance whenever a Court has to deal with the question whether the infringement of copyright was justified by the fair use doctrine. In § 107 the DMCA limits the exclusive rights of the copyright owner by stating:

> [n]otwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright."

It hereby includes the fair use doctrine,[19] which was already codified in the Copyright Act of 1976, to the digital copyright. Accordingly a user is allowed to copy a protected work as long as there is no infringing use. Whether the use is infringing or not depends on the amount and character of the use, the nature of the copyrighted work, the amount copied in relation to the whole copyrighted work, and the effect of the copying on the potential market for the copyrighted work.[20]

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[19] Jennifer Newton "Global Solutions to Prevent Copyright Infringement of Music Over the Internet: The Need to Supplement the WIPO Internet Treaties with Self-Imposed Mandates" (2001) 12 Indiana International & Comparative Law Review 125, 132.

[20] See DMCA § 107.

The recordings made in the area of musical home recordings and the swapping of these recordings among family members or friends have been considered to be fair use.[21] In other words the Fair Use Doctrine reacts to a situation where the market mechanism fails. It applies in cases where the benefit gained by the unauthorized use of the work does not exceed the price of the copyrighted work. The current copyright laws are flexible enough to cope with the new technological development and especially the fair use doctrine offers sufficient protection against the infringement of copyright even in the digital millennium.[22]

In its second title the DMCA introduces four new limitations for the potential liability for copyright infringement of online service providers. Accordingly to limit its liability any online service provider must meet five conditions:

> [t]he transmission must be initiated by a person other than a provider.
>
> The transmission routing, provision of connections, or copying must be carried out by an automatic technical process without selection of material by the service provider.
>
> The Service provider must not determine the recipients of the material.
>
> Any intermediate copies must not ordinarily be accessible to anyone other than anticipated recipients, and must not be retained for longer than reasonably necessary.
>
> The material must be transmitted with no modification to its content."

The major weakness of the DMCA is that it is mainly based on the school of thought that online service providers have a policing capability. Consequently under the DMCA copyright owners cannot create liability for online service

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[21] Rina Dolmayan "The fair use doctrine: How does it apply to new technology that may impinge on financial interests of the copyright owners?" (2002) 4 Journal of Legal Advocacy & Practice 186, 191; see also the Home Recording Act ""an individual who makes an audio or video recording of a copyrighted work would be exempt form liability if the recording is for the private use of the individual or his family".

[22] Rina Dolmayan "The fair use doctrine: How does it apply to new technology that may impinge on financial interests of the copyright owners?" (2002) 4 Journal of Legal Advocacy & Practice 186, 195.

provider without a centralised structure. The generation of file-sharing services after Napster, the so-called Peer-To-Peer services, avoided a centralised structure and again question the effectiveness of copyright law.

Nevertheless the DMCA also establishes civil and even criminal liability for producing and selling of any device that allows illegal copying of software. In Section 120 (i) the DMCA contains exemptions that permit the disabling of access controls.[23] However the DMCA allows the disabling of those access control tools, but at the same time bans the supply of the tools needed to disable the control tools.[24]

Another important doctrine in this context is the First Sale Doctrine has its legal basis in Title 17 of the US Code Section 109. The First Sale Doctrine emphasises the right of the owner of a particular copy of the work to resell it. Although the First Sale Doctrine acknowledges the in particular the exclusive right of the copyright holder to distribute the work, it reduces this right to the first sale. Like the Fair Use Doctrine the First Sale Doctrine responds to market mechanisms. The legitimate owner of tangible property is allowed to resell the product after using it. The First Sale Doctrine offers the legitimate owner of intellectual property the same possibility. Nevertheless the First Sale Doctrine has to deal with the specific situation of digital technology. Whereas reselling tangible property means that the owner loses its copy, reselling the same product stored in a digital format does not necessarily mean that the owner losses its copy. Digital formats would allow the owner of the work to sell the original file and at the same time to maintain a copy of the product without any loss of quality. In case that the copying of the product was a fair use of the work, the copyright holder has no

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[23] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 55.

[24] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 55.

legal response to this. However, such a broad understanding of the first sale doctrine is not wanted.[25]

E. European Community Copyright Directive

The European Community (EC) implemented the WIPO Copyright Treaty by passing the EC Copyright Directive in 2001. In Article 2 (a) the EC Copyright Directive authorizes the Member States to provide the exclusive reproduction right for authors. The Directive further deals in its third chapter with the "protection of technological measures and rights-management information". In particular Article 6 Number 1 of the EC Copyright Directive authorizes the Member States to provide legal protection against the circumvention of technological measures. In also requires legal protection against:

> (2)Member States shall provide adequate legal protection against the manufacture, import, distribution, sale, rental, advertisement for sale or rental, or possession for commercial purposes of devices, products or components or the provision of services which: (a) are promoted, advertised or marketed for the purpose of circumvention of, or (b) have only a limited commercially significant purpose or use other than to circumvent, or (c) are primarily designed, produced, adapted or performed for the purpose of enabling or facilitating the circumvention of, any effective technological measures.

The Directive hereby seems to protect only the protection tools regardless of whether a copyright exists or not. Hence the EC Copyright Directive has been criticised for going further than the WIPO Copyright Treaty and the DMCA.[26] In fact the protection of such effective technological measures without relying on a valid copyright would result in a situation where the user of the product can be held liable for circumventing the protection measures even if the author of the work died more than seventy years ago. However, the EC Copyright Directive

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[25] Eric Tjong Tjin Tai "Exhaustion and Online Delivery of Digital Works" (2003) 25 European Intellectual Property Review 207, 209.

[26] Joanna Perritt "Protecting Technology over Copyright: A step to far" (2003) 14 Entertainment Law Review 1, 2.

does rely on copyright in Article 6 (3). It defines "effective technological measures" as:

> any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts, in respect of works or other subject-matter, which are not authorised by the rightholder of any copyright or any right related to copyright as provided for by law or the sui generis right provided for in Chapter III of Directive 96/9/EC. Technological measures shall be deemed "effective" where the use of a protected work or other subject-matter is controlled by the rightholders through application of an access control or protection process, such as encryption, scrambling or other transformation of the work or other subject-matter or a copy control mechanism, which achieves the protection objective.

Apart from the reproduction right the EC Copyright Directive also grants the author the exclusive right of distribution in Article 4. But it also provides exemptions as the distribution right

> shall not be exhausted within the Community in respect of the original or copies of the work, except where the first sale or other transfer of ownership in the Community of that object is made by the rightholder or with his consent.

The Directive hereby implements the First Sale Doctrine to the European Community. In Article 6 (4) the EC Directive governs the exemption of private copying as it states that the "Members shall provide appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation" "notwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned". The EC Copyright Directive also recognizes the possible infringement of personal data by using Digital Right Management Technologies. In Recital 57 it requires that any "data about the consumption patterns of protected subject-matter by individuals" as well as the "tracing of on-line behaviour" should "incorporate privacy safeguards in accordance with" the EC Directive on the protection of individuals with regard to the processing of personal data and the free movement of such data (EC Data Protection Directive). In contrast to the DMCA the EC Copyright Directive does

not differ between the circumvention of DRM tools that restrict the access to the work and the tools that regulate the possible uses of the work.

III. DIGITAL RIGHTS MANAGEMENT`

The anti-circumvention provisions implemented by the DMCA and the EC Copyright Directive are thought to respond to the increased infringement of copyright due to the developments in the digital technology. Especially since recognizing that legal actions against individual Peer-To-Peer users are not very promising, the use of Digital Rights Management (DRM) tools might offer technological protection where the legal protection is either extremely cost-intensive or not possible. Nevertheless DRM tools and their unlimited protection might prove effective in the fight against unauthorized copying and distribution . But as well as they are able to secure the interests of the copyright owners, they might be misused to reduce basic customer rights and institutions which have been part of the Copyright for many years. In the following this paper examines specific possible impacts of DRM technology on customer rights and interests.

Digital Technology can influence the online distribution of copyrighted works in various ways. One example is the use of spoofed files. Copyright owners can use, for example, spoofed MP3 files and flood the networks with them. These files suffer from a decent defect and are used to either slow down the connections or to frustrate the users of peer-to-peer networks and to encourage them to buy a legitimate copy instead.[27] Another benefit of MP3 spoofing is that it directly targets user who are willing to download an illegitimate copy. Others who do not infringe copyrights will not be affected in any way. This attempt proved successful but has to cope with further upgrades of peer-to-peer technologies that might include anti-spoof tools.[28] As a matter of fact spoofing cannot prevent the

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[27] Matthew C. Mousley "Peer-to-peer combat: The entertainment industry's arsenal in its war on digital piracy" (2003) 48 Villanova Law Review 667, 691.

[28] Matthew C. Mousley "Peer-to-peer combat: The entertainment industry's arsenal in its war on digital piracy" (2003) 48 Villanova Law Review 667, 692.

illegally copying of copyrighted works. It can only make it harder to download a copy from other user's hard drives.[29]

DRM Technologies can be divided into systems that influence the use of the work and systems that regulate the access to the works.[30] These technologies include, *inter alia*, steganography (digital watermarking) and encryption (technology that allows the copyright owner to determine and limit the access to the product). How these technologies are going to operate is still uncertain.[31] The EC Copyright offers only a broad definition of technological measures that are protected by the anti-circumvention provisions. Nevertheless, the EC Copyright Directive creates civil or even criminal liability for the circumvention of the technological measures. It hereby creates liability although the design and implementation of DRM technologies are not defined yet.[32] Hence, DRM tools can easily be used to guarantee a level of protection that extends the protection granted to the copyright owner by the existing Copyright Law.[33] Especially, essential consumers rights, like the lawful use of the work and protection of costumer's privacy are likely to be affected by legitimising unlimited technological measures. The possible impacts of DRM systems on certain costumer rights will be analysed in the following part of the paper.

1. Digital Rights Management and the lawful use

Although Copyright Law provides the author with the exclusive rights of reproduction and distribution, user of copyrighted works are under certain

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[29] James S. Humphrey "Debating the Proposed Peer-To-Peer Piracy Prevention Act: Should Copyright Owners be permitted to Disrupt illegal File Trading over Peer-To-Peer Networks?" (2003) 4 North Carolina Journal of Law & Technology 375, 398.

[30] Clare Sellars "Digital Rights Management Systems: Recent European Issues" [2003] Entertainment Law Review 5, 5.

[31] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 53.

[32] Julie E. Cohen "Symposium: The Law & Technology of Digital Rights Management" (2003) 18 Berkeley Technology Law Journal 575, 617.

[33] Julie E. Cohen "Fair Use Infrastructure for Rights Management Systems" (2001) 15 Harvard Journal of Law and Technology 41, 49.

circumstances allowed to encroach upon these rights without any authorisation. DRM tools can be used to determine the entire use of a file.[34] The unrestricted use of DRM tools seriously threatens the legitimate uses of the copyrighted work. In Article 5 (1 b) the EC Copyright Directive exempts the exclusive reproduction right for lawful uses without significant economic value. It hereby creates similar exemptions like the US Fair Use Doctrine. These uses, like copying a couple of pages from a book or loaning a music recording to a friend, were legitimate even without the knowledge of the copyright holder.[35] But while using analogue technologies for the copying of parts of the protected work results in a steadily growing loss of quality, the situation in the digital era is different. Without DRM protection digital files are easy to copy and this might result in a situation where the user loans a copyrighted work to a family member or friend and at the same time retains a copy, which quality does not differ from the authorized copy. To avoid any possible misuse of their works copyright owners are likely to embed DRM tools into their works, which also prohibit lawful uses. This kind of technological protection enables to the copyright owner to protect their work not only against possible infringement but also against lawful uses.

Another aspect in this context is the user's ability to save the work in another format for space shifting purposes. Space shifting allows the user to transfer the copy into another storage medium.[36] While copying a hardcopy of a book does not reduce its volume, converting audio formats, like for example songs or audio books, into the mp3 format can reduce the volume immensely. Instead of saving only one of its favourites music albums, the user can now burn a collection of albums on a single blank CD. In *Recording Industry Association of America v Diamond Multimedia Systems, Inc.* the US Supreme Court argued that space

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[34] Brian Leubnitz "Digital Millennium/ Technological Protections for Copyright on the Internet" (2003) 11 Texas Intellectual Property Law Journal 417, 425.

[35] Graham Greenleaf "IP, Phone Home: The Uneasy Relationship between Copyright and Privacy, Illustrated in the Laws of Hong Kong and Australia" [2002] Hong Kong Law Journal 35, 38.

[36] Ketherine Elizabeth Macdonald "Speed Bump on the Information Superhighway: Slowing Transmission of Digital Works to protect Copyright Owners" (2003) 63 Louisiana Law Review 411, 419.

shifting could meet the fair use requirements.[37] And meanwhile the industry produced a variety of mp3-player that are able to play mp3 burned on CDs or even from an integrated hard-drive. While the copyright owner could neither legally nor technically keep the user form listening to its music on a walkman, DRM tools allow the copyright owner to determine the medium on which the work can be accessed. [38]

Thinking of digital distribution of copyrighted works, the use of DRM raises another concern. After purchasing a work in a digital format the copyright owner might determine that the work, for example an eBook, can only be accessed on one and the same hard-drive. Because of the limited economic lifetime of computers due to the immense innovations in the market the DRM might keep even the legitimate user from copying his eBook to new, upgraded computer or hard-drive. And apart from upgrading, the user might be forced to delete the files on the hard-drive due to malfunctions or as a result of a computer virus.

Digital right management allows the author to deny even the copying of a single sentence. This may prevent users from copying the eBook but also complicates fair uses and limits essential rights. Book reviews could therefore only contain cites of the book in accordance with the author. Authors than could deny citations when they fear they could be used for bad critics which has to be seen extremely critically in context with the right of free speech.[39] The EC Copyright Directive takes regard to the special importance and explicitly authorizes the Member States to provide legalize the copying of protected works for criticism, satire, and research.[40] But it creates a conflict between the protection of DRM tools on the one side and the protection of basic rights on the other side.

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[37] *Recording Industry Association of America v Diamond Multimedia Systems, Inc* [1999] 180. F. 3d 1072, 1079 (US Supreme Court 9th Circuit) O'Scannlain.

[38] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 245.

[39] Julie E. Cohen "Fair Use Infrastructure for Rights Management Systems" (2001) 15 Harvard Journal of Law and Technology 41, 43.

[40] See Article 5 Number 3 of the EC Copyright Directive.

According to the anti-circumvention provision the EC Copyright Directive protects a wide range of technological measures that might even restrict lawful uses.

DRM tools also have an impact on the private copying. As DRM tools can restrict any kind of copying they can be used to restrict even "security copies" of the legitimate user. Especially as the Directive does not exactly determine the possible lawful uses, the implementation of the Directive can result in different legal standards in the Member States. The case of a Russian programmer who was held criminal liable under the DMCA in the US and even held in prison because the fear of a possible escape out the US territory demonstrates the need for international standards in the Copyright Law. Being an employee of the Russian firm Elcomsoft the programmer developed a programme, which enables the user to print parts of eBooks stored on the Adobe Reader. Though this programme was lawfully under Russian Copyright law[41] and was addressed to the legitimate users of eBooks the programmer was held criminal liable under the DMCA.[42]

Consequently the uncontrolled use of DRM systems as well as the prohibition of manufacturing or selling of circumvention tools can easily be misused by copyright owners to legally and effectively eliminate even lawful uses.[43] Exclusive rights of the copyright owners protected by DRM technologies are even

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[41] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 991.

[42] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 990 and 991.

[43] Jason Cohen "Endangered Research: The Proliferation of E-books and their potential threat to the Fair Use Clause" (2001) 9 Journal of Intellectual Property 163, 185; Peter S. Menell "Can Our Current Conception of Copyright Law Survive the Internet Age?" (2002-2003) 46 New York School Law Review 63, 67.

likely to override basic user freedoms.[44] Responding, new copyright laws strengthen the position of the creator and lessen the rights of the consumer.[45]

2. *Digital Rights Management and the prolongation of copyrights*

Copyright is limited. The Bern Convention grants copyright for the life of the author and 50 years after his death. The United States and many European Countries even extend the protection up to 70 years after the death of the author.[46] After this period of time the work can be copied without any authorization. The copyright refers to the protected work in general and offers intangible protection. DRM systems can be used to change the situation. DRM systems give the copyright owner the possibility to move copyright from an intangible or more theoretical construct to a tangible and practical obstacle against copyright infringement. By embedding DRM systems into the work itself, copyright protection becomes independent from the copyright itself. While a hardcopy of a book, for example, can easily be copied without authorisation after the copyright has expired, DRM systems still can prevent the same book saved in a digital format digital format from being copied. Even the publisher of a product is at least technically able to embed a copyright protecting tool within actually being the rightholder of the work. Once physically connected to the work, DRM systems create a copyright protection that might even protect a non-existing or already expired copyright. This results in a prolongation of copyright or in the protection of non-existent right. A strict understand of the anti-circumvention provision would even make it possible to establish criminal liability for the legitimate user who circumvents the DRM systems without infringing a single copyright.

3. *Digital Rights Management and the first sale doctrine*

According to Article 4 of the EC Copyright Directive the exclusive right of distribution is limited to the first consensual sale of the work. Again the owner of

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[44] Martin Kretschmer "Digital Copyright: The End of an Era" (2003) 25 European Intellectual Property Review 333, 336-337.

[45] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 52.

[46] See, for example, para 64 of the German Copyright Act; para 302 (a) of the US Copyright Act.

copyrighted product is allowed to resell or even trade it without being required to ask the author for permission. [47] Again DRM tools allow a different treatment of the owner of a hardcopy and the owner of a digital copy of the same product. While the owner of the hardcopy can easily resell the book even by advertising in the internet, the owner of the digital copy might be precluded from this exemption because of the DRM protection applied to its copy. This results an unequal treatment of owners of digital and non-digital intellectual property. From the technological point of view it is possible not only to restrict but also to eliminate the First Sale Doctrine.[48] Transferring the First Sale Doctrine into the digital age has to cope with big difficulties.

In contrast to the owner of the hardcopy, the owner of the digital file can resell the work and maintain a copy of the product at the same time. This happened already before the Digital Era as the owner of a CD, for example, could copy the CD to an audiotape and sell it afterwards. But this results in a lack of quality. Aforesaid the using digital technology the same work can be reproduced unlimited times without any loss of quality. Consequently especially the music, film or eBook industry fears that their consumers resell their products various times and still maintain their own copy. Hence, the exemption to the exclusive distribution right of the author has to deal with the specific aspects of the digital technology.

This unequal treatment, especially when protected by copyright law, may influence the customers in their decision to buy a digital product or not.

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[47] Ketherine Elizabeth Macdonald "Speed Bump on the Information Superhighway: Slowing Transmission of Digital Works to protect Copyright Owners" (2003) 63 Louisiana Law Review 411, 420; Aric Jacover "I want my MP3! Creating a legal and practical scheme to combat Copyright Infringement on Peer-To-Peer Internet Applications" (2002) 90 Georgetown Law Journal 2207, 2248.

[48] Jason Cohen "Endangered Research: The Proliferation of E-books and their potential threat to the Fair Use Clause" (2001) 9 Journal of Intellectual Property 163, 186.

Consequently the First Sale Doctrine should not result in an unequal treatment of both user groups.[49]

4. Digital Rights Management and privacy

Big privacy concerns can be raised regarding the use of DRM tools. DRM tools have a direct impact on privacy. In order to prevent any unauthorized copying from its work the author can protect the work by DRM tools that acquire and transmit information of the consumer to a central server. It is likely that in future the development in the copyright law will increasingly influence the privacy of consumers and internet users.[50] Though it is still unclear how these technologies are going to operate, it is obvious that they at least have an enormous potential to gather great amounts of personal data from each specific customer.[51] DRM technologies can be used to identify both consumer and product in order to control the authorisation of the consumer.[52] So far, the most important tools operating with the transmission of data are the watermarking and the fingerprinting technology

a) Watermark

By using the watermark Technology the author can apply a digital code to the work, which contains data regarding the work itself, the authorisation and identification of the user and the protection of the work.[53] In conjunction with tracking tools this technology allows the author to identify and locate the work

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[49] Ketherine Elizabeth Macdonald "Speed Bump on the Information Superhighway: Slowing Transmission of Digital Works to protect Copyright Owners" (2003) 63 Louisiana Law Review 411, 432 and 433.

[50] Julie Cohen "DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 575; C.J. Alice Chen and Aaron Burstein "Symposium: The Law & Technology of Digital Rights Management" (2003) 18 Berkeley Technology Law Journal 487, 492.

[51] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 54.

[52] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 52.

[53] Clare Sellars "Digital Rights Management Systems: Recent European Issues" [2003] Entertainment Law Review 5, 5.

stored on the computer of the customer via internet.[54] Because of the fact that the watermarking tools operate secretly, the user might not even get to know that the files stored on its hard drive are checked for that purpose.[55] Once found the work the operator can check the authorisation of the user. In case of copyright infringement the operator can now prepare legal action against the infringer. Additionally a "royalty programme" can be used to search the web for files protected by the watermark and charge royalties for the user who is downloading the file.[56] This technology has also the disadvantage that it has to be embedded into the product before selling it on the market. It consequently cannot be used to detect the infringement of already published works

b) Fingerprinting

Another DRM tool that has to be seen critically in the light of privacy is the fingerprinting technology. In contrast to the watermarking technology fingerprints can also be used to detect already published works. The use of DRM technology hereby provides the copyright owner with an infrastructure that enables protection to its work whenever it is accessed online.[57] It is specifically used to detect audio files on the internet. Like policemen compare the fingerprints of potential criminals, fingerprinting programmes search the web for similar recordings. The programmes analyses the sound waves of audio recordings and is able to identify specific songs by comparing the waves with songs stored on database.[58]

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[54] Jeffrey L. Dodes "Beyond Napster, Beyond the United States: The Technological and International Legal Barriers to On-Line Copyright Enforcement" (2002/2003) 46 New York Law School Law Review 279, 291.

[55] Brian Leubnitz "Digital Millennium? Technological Protections for copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 417, 436.

[56] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 439.

[57] Lee A. Bygrave "The Technologisation of Copyright: Implications for privacy and related interests" (2002) 24 European Intellectual Property Review 51, 52.

[58] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 439.

c) Impact of these technologies on customer's privacy

The protection of individual privacy means the "inviolability of each individual's rights over her own person".[59] The possible impact of DRM technologies on the privacy of the consumers is immense.[60] Both aforesaid tools are constructed for surveillance and detection purposes. These tools as well as any form of "surveillance and compelled disclosure of information about intellectual consumption" have the potential to threaten the individual rights of personal integrity and self-definition.[61] Especially in the internet age the protection of personal data is a big task to accomplish. Every time a user is connected to the internet very big amounts of data will be saved on another server. Cookies are saved automatically on each user's hard drive to facilitate the next visit of certain web pages. Recordings of credit card transactions or other forms of cashless payments offer detailed information about consumer patterns. The introduction of DRM will hardly influence this situation but comparing it to existing customer files demonstrates the new possible threats for the consumer privacy. Whenever a costumer rents, for example, a DVD from rented from a video store or purchased from a retailer, the store saves the film to the costumer files. Consequently the video store or retailer receives knowledge of which client rented which film at the specific date. So far, the collection of personal data is nothing new to clients and as a matter of fact the gathering of personal data even makes it easier for the client to purchase or rent products. Nevertheless, the use of DRM opens the door to a new level of data gathering. DRM tools might even gather the data automatically. Hence using DRM tools does not necessarily mean that the gathered data will finally be monitored or used for further purposes.[62] Nevertheless only the possibility that the data might be used for monitoring or economic profiling purposes creates an immense threat to privacy.

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[59] Julie E. Cohen " DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 577.

[60] Julie E. Cohen "Overcoming Property: Does Copyright trump Privacy" (2002) University of Illinois Journal of Law, Technology and Policy" 375, 375.

[61] Julie E. Cohen " DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 577.

[62] Julie E. Cohen " DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 585.

It not only changes the amount of data that can be gathered but also moves the data away from the retailer to the copyright owner and the publisher of the work. DRM tools enable the copyright owner and publisher of the work not only to identify the individual using the product but also to gather information about when, where and how the consumer watched the film. And while the customer by signing the member contract for a video store is aware that its personal data might be saved, the authorized user of copyrighted CD might not even know about the possible gathering of its data.

The legislator have to be aware of the fact that DRM can and probably will be used to collect personal data from every user of the internet regardless whether he is a client of the firm searching for their files or not. Both the watermarking and fingerprinting technology might not only be used by the copyright owners to track down possible infringers, but can also be used to monitor the behaviour patterns of any authorized user. The kind of information received by this technology could either be sold on the internet information market to other enterprises or even be used for governmental purposes.[63] In New Zealand the latest proposed amendment regarding the Copyright Act proposes the introduction of provisions that limits the use of data received by the use of DRM. It recommends that only electronic rights management information (ERMI) that "identifies content protected by copyright, and terms and conditions of use, should be protected".[64] It states further that information that traces the use of the copyrighted material should not be protected because collecting this kind of information extends the "scope of copyright protection and raises privacy issues". The author or the publisher of the work, e.g. the music industry, might not only be interested in preventing copyright infringement but also using the received information of the customer for offering more works. If the music industry knows all the favourite songs of a customer it might want to use this information to send him more songs

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[63] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 442.

[64] See Number 33 of the Policy Recommendations to the Digital Technology and the Copyright Act 1994 of 18 June 2003 at <http://www.med.govt.nz/buslt/int_prop/digital/cabinet/cabinet-03.html#P58_17652> (last accessed 22 November 2003).

of that kind. Knowing the favourites of customers can also help the industry to increase their number of sales. BMG Music Service, for example, admits that BMG

> naturally...[pays]...attention to what you buy so we keep track of your purchases, traffic patterns and related site usages inside our website. This helps us to understand your musical tastes more fully, and to present you with better recommendations, more relevant offers, important news about artists and other announcements we think may interests you.[65]

This demonstrates the big commercial interests copyright owners might persuade the gather personal data. But the internet in conjunction to DRM tools not only enables the copyright owner or publisher to scan any client's computer for their works they can also be used to detect other products. The copyright owner of an audio recording, for example, can use the DRM technology to monitor any user's hard drive in order to search it for other mp3 files or unauthorized copies.[66] And as a matter of fact DRM Technologies are used more and more to "facilitate profiling users' preferences".[67] Hereby the legislator provides a tool that enables copyright owners to receive information not related to the protection of copyright due to digital technology. The protection of intellectual property does not justify the infringement of personal data.[68]

This might be morally justified in case that copyright owners or the publishing industry want to detect large-scale copyright infringement. But this ability can easily be misused to create profiles of each user likes and dislikes in order to develop new products. Using watermarks and fingerprints results in the situation

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[65] BMG Music <http://www.bmgmusic.com/acq/default/index.jhtml;jsessionid=5RCHASIYI2V20CWJISDSFEY?acqlinkback=y&_requestid=422601> (last accessed 24 November 2003).

[66] Julie E. Cohen " DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 584 and 585.

[67] Clare Sellars "Digital Rights Management Systems: Recent European Issues" [2003] Entertainment Law Review 5, 9.

[68] Julie E. Cohen "Overcoming Property: Does Copyright trump Privacy?" (2002) University of Illinois Journal of Law, Technology and Policy 375, 377.

that music cannot be heard anonymously on online devices.[69] The tracing of specific song files might be useful tool to detect large-scale copyright infringers. But even this task cannot justify violation of privacy issues of the majority of legitimate users. On the other hand you could argue that consumers in general might be not very concerned about privacy issues. Even outside the digital world consumers give their personal data willingly for commercial interests.[70] In order to receive a bonus card from a supermarket the customer has to reveal its personal data. Nevertheless this is hardly to compare to the situation in the internet as long as the customer is not aware of giving away its personal data and knows that it will be saved for commercial interests

Consequently using watermark and fingerprinting technologies raises serious concerns regarding the privacy of any legitimate user.[71] And because of the anti-circumvention provisions the legitimate users are confronted with the choice either to buy the product and hereby to risk the possible misuse of their data or not to buy it.

5. Digital Rights Management and the limitation of access

Any information about who uses the work, when and how often was neither protected nor authorized by Copyright Law. Using DRM tools allow the publisher and copyright owner to determine legitimate and illegitimate uses as well as access possibilities. The latter can easily be done, for example, by embedding a license requirement into the digital file. Before granting access to the file, the user is required to buy the license. The price includes the royalty for the author. Once

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[69] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 263.

[70] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 442.

[71] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 250.

received the licence the user has limited or unlimited access to the file depending on the copyright owner.[72]

Historically copyright owners had only little influence on how and where their costumer accessed their products. Copyright Law did not contain a right for the copyright owner to control the uses of its work.[73] Due to the digital technology copyright owners now obtain the possibility to influence or even prescribe how their customers access their works. While a book, for example, as a hardcopy can be read by its owner in every possible place and at every time, DRM systems allow to limit the authorized access to work to a certain device. The user might even like to write into its book or the mark the best parts of it. Again using DRM systems can deny the marking and making notes into the book. Consequently, the question of access restriction is likely to result in different possible uses depending on whether the book is printed on paper as a hardcopy or published in form of a digital copy. The publisher of an eBook, for example, can limit the access to the book to a single device or computer. And while the owner of a book in form of a hardcopy is able to read it in different rooms and even to loan it to friends, the owner of an eBook might be forced to read the book from one and the same computer. Furthermore, if the access to the book is restricted to the owner, nobody else, not even the family of the owner, would be able to read it. An e-book cannot easily be put in a bag and loaned to a close friend. The friend can only read it by using the same computer and furthermore, the copyright author might restrict the use of the book only to its client and not to close friends.

Another disadvantage that access control provides for the costumer is the copyright owner can protect the book in a way that it cannot even be transferred to another device of the same client. Once installed on the personal computer DRM systems can be programmed to deny the installation another devices like the laptop. Or customers might be able to listen its favourites songs on the computer at home but not be able to play it in the car. This determination to a specific

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[72] Brian Leubnitz "Digital Millennium? Technological Protections for Copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 418, 437.

[73] Graham Greenleaf "IP, Phone Home: The Uneasy Relationship between Copyright and Privacy, Illustrated in the Laws of Hong Kong and Australia" [2002] Hong Kong Law Journal 35, 37.

device might also result in the loss of the whole product. If the consumer might want to upgrade its computer, it might not be possible as the copyright owner does not want its work to be transferred from one device to another.

Proponents of the use of DRM systems might argue that these restrictions are justified because of the inherent risk of digital intellectual property to be unauthorized copied and distributed. And indeed comparing intellectual property to tangible property shows that the owner of private property can restrict the access to it. The owner of a book in hardcopy can deny others to read it, but the question is whether the copyright owner should be able to deny the legitimate owner of the copy to access it however and whenever he wants to. In the same that the owner of tangible property can use the property however he wants as long as he respects public rights, the owner of digital property should have any possible access to the product as long as the copyright is not going to be infringed.[74]

6. *Digital Rights Management and creativity*

Copyright Law's main aim is to secure creativity. By requiring the collection of royalties it provides the author of intellectual property with a financial incentive to regain its costs and to engage in further creations. In case that the recording or publishing industry holds the copyrights of the song or other intellectual property, it might be more in the interest of the industry to increase or maintain their revenues than in the interest of the authors. Many authors are paid by the industry, which guarantees the financial incentives for their creativity.[75] Nevertheless it is especially important for the majority of little known authors that depend on the royalties to secure their living standard.

Copyright further grants the author the exclusive right of reproduction and distribution. Violations of these rights are likely to result in a lack of revenue for the author and its publishers. The less the revenue becomes the less the financial

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[74] Julie E. Cohen "Fair Use Infrastructure for Rights Management Systems" (2001) 15 Harvard Journal of Law and Technology 41, 52 and 53.

[75] Aric Jacover "I want my MP3! Creating a Legal and Practical Scheme to combat Copyright Infringement on Peer-To-Peer Internet Applications" (2002) 90 Georgetown Law Journal 2207, 2212.

incentive for the author. Aforesaid DRM tools are used to minimize the ability of copyright infringement. The effectiveness of these tools depends on the special knowledge of the developing computer scientists. However, any form of protection technology is likely to be hacked. In order to protect the tools, the anti-circumvention provisions were passed. The threat of civil or even criminal liability deters hacker and other computer scientist from encoding the protection tool. At the first glance this seems to be a successful measure. But the anti-circumvention provisions not only deter user who hack the code to infringe copyright but also computer scientists who analyse the code to detect possible weaknesses and whose work is an essential part in the development of further generations of protection tools. It might even deter whole technology branches from developing further innovations, as they have to fear future liability for their product if it could be used for circumvention.[76]

It can also be argued that the criminal liability for anybody who circumvents the copyright provisions contravenes the desire of the authors to publish their works with a high level of protection. Strong codes can only be achieved when they are tested constantly. The deterrence achieved by establishing criminal liability results in a lack of tests. The less a code is tested the less strong it becomes. And the DMCA also creates criminal liability for the person who demonstrates the publisher that its lock is easy to break.[77] The DMCA limited the innovations in certain sectors as even software technicians fear criminal or civil liability and stop searching for the weaknesses of digital locking tools.[78]

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[76] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 979; Jeff York ""Acts" wound: Fair Use and Music Lovers vs. the Recording Industry – Association of America's Secret Weapon" (2003) 13 Washington University Journal of Law and Policy 399, 409.

[77] See. Brad Templeton "An eBook Publisher on why the U.S. Attorney should free Dmitry Sklyarov" at <http://www.templetons.com/brad/free.html> (last accessed 6 November 2003).

[78] Terri Branstetter Cohen "Anti-Circumvention: Has Technology's Child Turned Against its Mother?" (2003) Vanderbilt Journal of Transnational Law 961, 994:

7. *Digital Rights Management and consumer acceptance*

History shows that the implementation of DRM not necessarily has to prove as a promising tool. The software industry, for example, tried to protect their products by using DRM technologies. But they had to suffer from a lack of consumer acceptance and effectiveness of these measures.[79] The more recent approaches of the music industry trying to implement DRM might suffer from the same lack of acceptance. First the DRM technologies contravene the royalties already to be paid for certain products by the customer. Due to thee potential of their products to be used to infringe copyrights the manufacturers of copy machines, video recorders or CD-Burners are obliged to sell their products to a price including a royalty to the copyright holders[80]. This royalty is to be paid by the customers no matter whether they use the product for copying of creative works or not. But as DRM technologies can be used by the copyright holder to prevent any form of copying. In this case the customer has to pay the royalty because of the possibility to copy parts of a work that is actually protected by against unauthorized copying.[81] This royalty has its legal basis in the US law in the AHRA Section 1004 and 1006. In the United States two suits have already been filed against producers of CD. The plaintiffs had bought CDs that included protection tools. As this was not mentioned on the cover of the CDs the plaintiffs argue that they cannot use the product as they want.[82]

In case that the consumer tries to use the product in a way that extends its authorisation, DRM technology could even penalise the consumer and deny even if the authorized uses.[83] This technology could result in the situation that the programme itself executes possible responses of the copyright owner to a specific

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[79] R. Polk Wagner "Information wants to be free: Intellectual Property and the Mythologies of control" (2003) 103 Columbia Law Review 995, 1015.

[80] See for example, para 54 (1) of the German Copyright Act.

[81] Jeff York ""Acts" Wound: Fair Use and Music Lovers vs. the Recording Industry - Association of America's Secret Weapon" (2003) 13 Washington University Journal of Law and Policy 399, 412.

[82] See Jim Hu "Lawsuit targets copy protection" of 7 September 2001 at <http://news.com.com/2100-1023-272784.html> (last accessed 20 November 2003).

[83] Julie E. Cohen " DRM and Privacy" (2003) 18 Berkeley Technology Law Journal 575, 586.

breach of the contract by the consumer. In case that the consumer violates the copyright by using the product in an unauthorized way, the copyright owner could take certain legal measures as determined in the contract. DRM tools can be used to take these measures automatically.

Another DRM tool to combat piracy was invented by the music industry in cooperation with Microsoft. This tool requires a special CD with two different sides. One side can be played in normal audio devices but not in a CD-ROM drive.[84] The other side can be read by a CD-ROM drive but only be played on the Microsoft Windows Media Player. The Windows Media Player prevents certain uses of the CD, like copying or transferring the audio song into the mp3 format. This solution has the advantage that the first side is can be played like every other audio CD on different devices. The user has also access to the product on the computer. The product can be used within the restriction. Unfortunately the restrictions do not allow any copy for private purposes. Furthermore the songs cannot be transferred into mp3 or wav formats and hence not be listened on a portable mp3 player or "space shifted".[85] And of course these CD's require the download and use of Microsoft software as the Windows Media Player. Regarding to the fact that many of the DRM tools are designed to work with Microsoft products the use of DRM also might be misused to fight competition. Protected recordings might work on Microsoft Windows but not on applications of Apple or Linux.[86]

The same concerns about customer's acceptance can be raised regarding the Secure Digital Music Initiative (SDMI) taken by the Recording Industry Association of America (RIAA). The SDMI is based on the cooperation between

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[84] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 250.

[85] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 258.

[86] Clare Sellars "Digital Rights Management Systems: Recent European Issues" [2003] Entertainment Law Review 5, 9.

the publishing industry and the manufacturer of consumer electronics.[87] Instead of targeting the consumers directly the RIAA the SDMI requires the manufacturers to install a special system technology. This system technology guarantees that unauthorized copies of a protected work cannot be played on these devices. A similar initiative was earlier started by the motion picture industry permitting only encrypted DVDs to be played on trusted DVD players.[88]

The WIPO Treaties 1996 try to keep balance between the interests of the author and the manufacturers.[89] The effort of the authors to receive the strongest protection possible hereby contravenes the interests of the manufacturers selling the biggest possible amount of devices. The manufactures have only little interests in the infringement of copyrights. They will produce and sell their devices without any special protecting technology as long as their customers are interested in devices playing also unauthorized copies. And the manufacturers also have to bear in mind that their products not only are expected to play new recordings that include the copy protection but also older recordings. And even if the big publishing firms decide to produce their recordings with copy protection, it is very likely that especially smaller labels or unknown authors might not have the money to develop comparable protection systems and that their recordings hence could not be played on every device.[90]

Though these approaches seem to be promising tools to combat copyright infringement, the uncertain element will be the acceptance of these measures by the customers. Copyright owners will have to wait for their costumers to respond to works protected by DRM. If DRM are use to reduce to many consumer rights

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[87] Raymond Shih Ray Ku "The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology" (2002) 69 University of Chicago Law Review 263, 275.

[88] Raymond Shih Ray Ku "The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology" (2002) 69 University of Chicago Law Review 263, 276.

[89] Jane C. Ginsburg "Achieving Balance in international copyright law – The WIPO Treaties 1996: The WIPO Copyright Treaty and The WIPO Performances and Phonograms Treaty: Commentary and Analysis" (2003) 26 Columbia Journal of Law & The Arts 201, 210.

[90] Jeff York ""Acts" Wound: Fair Use and Music Lovers vs. the Recording Industry – Association of America's Secret Weapon" (2003) 13 Washington University Journal of Law and Policy 399, 412.

consumers might avoid buying digital files or CDs and buy older ones instead.[91] Customers want to purchase products they can use in the way them want to use it. Connecting intellectual property to certain devices means a lack of flexibility for the customers. In that case the benefits from the invention of digital technologies for the consumer could easily be outweighed by the disadvantages of using DRM Technologies which can reduces or even eliminate fair use or first sale.[92] Even more the lack of acceptance of the protected works might prove as in incentive for individual user to participate even more in peer-to-peer networks.

8. Digital Rights Management and future developments

Today's public awareness of the digital threat to intellectual property is mainly caused by the large-scale infringement of audio recordings and the unauthorized distribution of software programmes. But both the music and the software sector will not be the only sectors threatened by the digital technology. The eBook market can be harmed in the same way. Though clients still seem to prefer reading the hardcopy of a book instead of the digital copy, the development of this market can be affected by the digital threat. More concerning is the technological development for the movie industry. It was the invention of the compression format MP3 that made the use of file sharing services attractive for copyright infringement. Depending on the connection and the speed of the processor of the personal computer the download of an average song takes about 20 minutes.[93] Downloading a whole movie means obviously to transfer a far bigger amount of data from one hard drive to another. And the Content Scrambling System (CSS) used on DVDs prevents unauthorized copying of the DVD and contains a regional code that guarantees that the DVD is not played on devices registered for other regions than the DVD itself. But since the development of "DeCSS", a programme designed to hack the DVD protection code, for years ago, the movie

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[91] Aric Jacover "I want my MP3! Creating a legal and practical scheme to combat Copyright Infringement on Peer-To-Peer Internet Applications" 90 Georgetown Law Journal 2207, 2249.

[92] Jason Cohen "Endangered Research: The Proliferation of E-books and their potential threat to the Fair Use Clause" (2001) 9 Journal of Intellectual Property 163,190 and 191.

[93] Brian Leubnitz "Digital Millennium? Technological Protections for copyright on the internet" (2003) 11 Texas Intellectual Property Law Journal 417,

industry is likely to suffer the same problems like the music industry. In contrast to audio recordings movie files were encrypted and simply too large to be saved on other media than DVD or videotapes.[94] But compressing technology like DivX and decryption technology like DeCSS paves the way for digital copying of whole movies. Additionally, the increasing use of broadband connections allows the digital distribution of even large files like whole films in comparably little time. So far the Motion Picture Association of America only focuses on educational programmes to combat piracy[95].

Nevertheless, by using digital technology copyright owners can distribute their works within the global market at relatively low cost.[96] Orders already can be made online and in future the work itself will be sent directly to the customer without any cost-intensive retail system. Accordingly digital technology does not only threat copyright owners but also offers them new ways of distribution and creates new markets. It is likely that the amount of legal online downloads increases the sales of hardcopies.[97] So far, Apple already started an online distribution service called "iTunes" which offers the purchase of single songs for 0.99 US $[98] and audio books between 2.95 and 15.95 US $.[99] ITunes not only authorizes the download of digital products but also permits the copying of the digital file on an unlimited number of CDs for the personal use of the customer as well as the access the these files on various computers. It even provides a burning programme for its customers, which can burn the purchased songs or books directly on a blank CD. This is even a benefit for the publishing industry as their

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[94] Matthew C. Mousley "Peer-to-peer combat: The entertainment industry's arsenal in its war on digital piracy" (2003) 48 Villanova Law Review 667, 673.

[95] See Jack Valenti MPAA Press Release of 30 September 2003 "Film Studios announce end to award screeners: Measure taken to combat piracy" at <http://www.mpaa.org/jack/index.htm> (last accessed 27 November 2003).

[96] Jennifer Norman "Staying Alive: Can the Recording Industry survive Peer-To-Peer?" (2003) 26 Columbia Journal of Law & the Arts 371, 371.

[97] Kimberly Kerry "Music on the Internet: Is Technology moving faster than Copyright Law?" (2002) 42 Santa Clara Law Review 967, 985 and 986.

[98] Apple <http://www.apple.com/itunes/store/> (last accessed 20 November 2003).

[99] Apple <http://www.apple.com/itunes/store/books/> (last accessed 20 November 2003).

production and distribution costs can be reduced to a minimum. To resolve the digital dilemma the copyright owners must be aware of the fact, that even the best encryption or other protection technology can prove fruitless if a single hacker decides to put some effort in it. Protection tools can hardly prevent every possible infringement but they can make it more difficult to infringe the protected work. Enhancing the protection of copyright work and at the same time banning of programmes that remove the protection is a promising tool the combat copyright infringement. Nevertheless legislative attempts have to balance the interests of both and cannot only partially try to solve the problem. Legally protected DRM tools have to be determined and the law has to guarantee that the DRM are not to be misused for further commercial or privacy infringing interests. Creating own networks where any user can download legitimate copies are reasonable prices, can be the answer the digital dilemma for the copyright owners. If the copyright law is based on the thought that authors should receive a financial incentive for further works and to compensate them for their distribution costs,[100] new technologies enabling the reduction of distribution costs can justify the reduction of financial benefits for the copyright owner as long as the incentives for new creativity is guaranteed. And regarding combating piracy education might prove as the key. Copyright owners can strengthen their education campaigns against piracy to reach their goals of protecting their works.[101]

IV. CONCLUSION

Digital technology revolutionized the distribution and reproduction of intellectual property. Using digital technology offers benefits for both copyright owners and users. In the same way that digital technology facilitates the infringement of copyrights and the distribution of unauthorized copies, it facilitates the distribution of authorized copies and creates a new market for copyright owners. Digital Technology enables copyright owners to reduce their costs for producing the work, its distribution and publication to a minimum

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[100] Matthew C. Mousley "Peer-to-peer combat: The entertainment industry's arsenal in its war on digital piracy" (2003) 48 Villanova Law Review 667, 687.

[101] Jon M. Garon "Normative Copyright: A conceptual framework for Copyright Philosophy and Ethics" (2003) 88 Cornell Law Review 1278, 1360.

level.[102] It also allows little known authors to make their works public without the need of an own label. MP3.COM, for example, gave so far unknown artists the possibility to make their songs public and hereby influenced the music sector.[103] The internet is an excellent advertising media and many creators would not enjoy the same high level of popularity without the internet.[104]

Nevertheless, fearing revenues losses of copyright owners and the publishing industry mainly focus on its disadvantages. In order to enhance the position of the copyright owners the international intellectual law authorized and legally protects the use of a wide range of technological measures. Using DRM systems enables copyright owners to protect their works and open copyrighted works to the internet and digital technology. But DRM systems have also an immense potential to infringe the rights of the consumer as well as basic rights. First, the DRM systems offer copyright owners a great surveillance potential. They enable copyright owners or even the publishing industry to acquire a great amount of personal data. This data gives exact information about the personal interests of each customer or individual using the product. Protecting DRM tools regardless of their potential of infringing privacy issues bears the risk that DRM will be programmed to acquire data to enhance position of copyright owners on the market. The purpose of Copyright Law is to protect creativity and not to enhance the position of copyright owners on the market. Second, by embedding DRM systems directly into their product copyright owners are able to determine the level of protection of their works. This might result in a situation where DRM systems offer copyright owners more power to permit or deny possible uses of the work than Copyright Law itself. The protection against unauthorized copying can deny any form of copying even after the termination of the copyright. Third, the

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[102] Julie E. Cohen "Fair Use Infrastructure for Rights Management Systems" (2001) 15 Harvard Journal of Law and Technology 41, 47.

[103] Spiegel online "MP3.COM Ende einer kurzen Aera" (19 November 2003) at <http://www.spiegel.de/netzwelt/netzkultur/0,1518,274582,00.html> (last accessed 27 November 2003).

[104] Aric Jacover "I Want My MP3! Creating a Legal and Practical Scheme to combat Copyright Infringement on Peer-To-Peer Internet Applications" (2002) 90 Georgetown Law Journal 2201, 2208.

anti-circumvention provisions can create civil or criminal liability for the circumvention of DRM systems even if the circumvention was done to enable legitimate uses of the work. DRM systems enable the copyright owner to deny lawful uses as for example the copying of parts for the work for educational purposes and can even infringe the right of free speech. Laws confirming and authorising lawful uses of the works might prove fruitless for the costumer as DRM systems are used to deny them. Finally the ability to control the access to the work by using DRM systems can even result in the lost of the work by upgrading the hard drive or might deny the access to work on other devices of the legitimate owner of the copy. From the copyright owners point of view it might be promising to restrict the use of their products on computer devices, because no computers means no uploads and hence no large-scale online copyright infringement.[105]

The threat of possible copyright infringement due to the recent developments in digital technology cannot justify the violation of basic costumer rights. An effective Copyright Law has to keep balance between copyright owners and public interests.[106] DRM systems can protect the interests of the copyright owners. But overprotecting intellectual property can prove as harmful as "underprotecting" it.[107] And provisions that allow the protection of copyrighted works should respect the limitations of copyright granted to the customers by Copyright Law. The aim of using DRM tools should be to make it easier to

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[105] Amy K. Jensen "Copy Protection of CDs: The Recording Industry's Latest Attempt at preventing the Unauthorized Digital Distribution of Music" (2003) 21 John Marshall Journal of Computer and Information Law 241, 251.

[106] Masanobu Katoh "Symposium: Panel I. Anti-Circumvention Measures, License Restrictions, and the Scope of IT Protection: Protection from Copying or Protection from Competition?: Intellectual Property and the Internet: A Japanese Perspective" [2002] University of Illinois Journal of Law, Technology & Policy 333, 359 and 360.

[107] *White v Samsung Electronics of America, Inc.* [1993] 508 US 951, 1513 (US Supreme Court) Kozinski.

purchase an authorized copy than downloading an illegitimate one and not to restrict legitimate interests of the user.[108]

[108] See the Japan Business Council in Europe "Digital Rights Management Systems – View of the Japan Business Council in Europe" of 08.07.2002 published at <http://europa.eu.int/information_society/topics/multi/digital_rights/doc/submissions/jbce.doc> (last accessed 28 November 2003).