The protection of copyright works on the internet — an overview

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Abstract
Digitisation lead to wide-spread, cross-border and virtually uncontrollable copyright infringement because of the simplicity of digital reproduction, the ease and speed of digital transmission and the ease of digital manipulation.

Authors protect their digital works against copyright infringement through contractual conditions and technological protections.

Technological protection measures are vulnerable to hacking (circumvention). The international community accordingly concluded the WIPO Copyright Treaty (the 'WCT') in 1996. Article 11 requires of its member states that they should adopt legislation that would provide adequate legal protection against the circumvention of technological protection measures.


The provisions in the DMCA create a new form of liability, separate and distinct from copyright infringement. By prohibiting the devices necessary to circumvent protection measures for non-infringing purposes, it will be impossible to perform non-infringing acts. Although the EC Directive does not prohibit the devices necessary to circumvent for legitimate purposes, it does not really make provision for exceptions to the prohibition on circumvention since only one of the exceptions listed in the Directive is mandatory.

Copyright works on the internet enjoy a three layered protection: the work is protected by law of copyright, then by the technological protection measures applied by the author, and the protection measure itself is once again protected by law (by the prohibition on circumvention). The manner in which the prohibition on circumvention has been implemented in national legislation, threatens legitimate uses.

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Copyright law protects the intellectual efforts of the author of an original work. A work would qualify for copyright protection if it falls within one of the categories listed in the Copyright Act 98 of 1978 and meets both the inherent and formal requirements for protection. The inherent requirements demand that a work should be original and be in a material form. To fulfil the formal requirements a work should either have been made by a qualified person or first have been made or published in a member of the World Trade Organization, if the author is not a qualified person.

Copyright confers two categories of exclusive rights on the author, namely, economic and moral rights. The economic rights vest in the author and all subsequent copyright owners and the moral rights vest in the author. The rights to reproduce and distribute works are two examples of the various economic rights conferred on the copyright owner. This means that a copyright owner has the right inter alia to prevent the unsolicited copying and distribution of his or her work.

The moral rights by contrast, safeguard the intangible interests that associate the author with his or her work. These rights cannot be transferred and remain vested in the author even after the economic rights have been transferred to subsequent copyright owners. Section 20(1) of the Copyright Act creates two moral rights, namely, the right to be identified as the author of the work (the so-called paternity right), and the right to object to derogatory treatment of the work (the so-called integrity right).

The conversion from analogue to digital had a profound impact on copyright law. But before I examine this, it is perhaps necessary to explain briefly what digitisation entails. Digitisation is the conversion of works to a format readable by a machine. It is the ability to record works in a binary format which means that works are converted to a sequence of ones and noughts, and are stored and transmitted as such. A digitised work can be 'played back' to reproduce the original analog experience. Any existing

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1Section 2(1) of the Copyright Act 98 of 1978 (hereafter 'the Act').
2Section 2(1) of the Act.
3A work should either have been made by a 'qualified person' (s 3(1)) or first have been made or published in a member of the World Trade Organization, if the author is not a qualified person (ss 4(1) and 37 read with GN 1558 GG 17517 of 1 November 1996).
4Section 2(1) of the Act.
5Section 3(1) of the Act.
6Sections 4(1) & 37 of the Act read with GN 1558 GG 17517 of 1 November 1996.
7Sections 6 to 11B of the Act.
8Section 20 of the Act.
9Lionel Bently & Brad Sherman Intellectual property law (2ed 2004) at 234.
10Id at 242.
11A computer is not the only machine that can read digital formats. Television sets, telephones and computers are losing their distinctive characters, and can all be used to provide digital services. Thomas K Dreier Convergence through digital technology — the effect on copyright and information services 10th Annual Conference on Intellectual Property Law and Policy 5 April 2002 1–13 at 1.
tangible work can be recorded in digital format, and new works can be created in digital format. Digitisation thus creates a 'common form' in which all types of works can be made available to users.13

In the analogue world it was relatively simple to protect both economic and moral rights. The nature of analogue works and analogue technologies contained inherent obstacles to copyright infringement. With digitisation many of these obstacles against infringement were lost and copyright infringement in the digital world became a far greater threat to authors14 than it had ever been in the analogue world.

We can ascribe the increase in infringement in the digital world to three factors.

The first is the simplicity of digital reproduction.15 Analogue copies are usually imperfect, involve a time-consuming process, and require expensive equipment. Digital copies, however, are perfect,16 can be done virtually without cost and at very high speed17 by every person with home equipment such as a private computer.18

The second factor is the ease and speed of digital transmission. While analogue works were published in material format and then distributed by means of air, land or sea transport, digital works are delivered by means of digital transmission,19 like the internet.20 In the analogue world there were delays between the creation, publication and availability of works. Digital transmission is almost immediate21 and the delays between the creation of

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13Andrew Christie 'Reconceptualising copyright in the digital era' (1995) EIPR 522-530 at 523; 'Copyright clearance and digitisation in UK higher education: supporting study for the JISC/PA clearance mechanisms working party' at http://www.ukoln.ac.uk/services/elib/papers/pa/clearance on 3 October 2002 at 3-4; G Gervaise Davis III 'The digital dilemma: coping with copyright in a digital world' 1993 Copyright World 18-26 at 18; Dreier n 11 above at 1; and Eric Fleischmann 'The impact of digital technology on copyright law' Jan 1988 Journal of Patent and Trademark Office 5-26 at 6. Christie refers to digitisation as 'technological Latin' since it makes all works available in one common form.

14The general rule is that the author of a work is the first copyright owner (s 21(1)(a) of the Act). Copyright can then be transferred to subsequent copyright owners who will enjoy the exclusive economic rights conferred by copyright. For purposes of this discussion I shall use the term 'author' to refer to both the author and the copyright owner.


16Fleischmann n 13 above at 6-7 and 9-10; and Dean S Marks & Bruce H Turnbull 'Technical protection measures: the intersection of technology, law and commercial licences' (2000) 22/5 European Intellectual Property Review 198-213 at 198-199.

17Marks & Turnbull n 16 above at 198-199.


20Id at 607.

21Fleischmann n 13 above at 8.
works and its availability to users are thus greatly reduced. Digital transmission systems are also less expensive than comparable analogue systems. This can be ascribed to two reasons, namely, that digital works can be stored in less space than was possible with analogue works, and also that fibre optic cables carry digital transmissions more cheaply than do microwave transmissions that carry analogue transmissions. The internet offers the potential that every type of work can be made available or distributed by any person in possession of a private computer.

The third factor is, of course, the ease with which digital works can be manipulated — once again by private individuals. Works in digital form can be manipulated and modified in almost limitless ways, without any loss in the quality of the work. This created the possibility that the names of authors can be altered, removed or even added (thus infringing on the author’s paternity right), or that the work itself can be altered (and thereby infringing on the author’s integrity right).

Not only did the inherent obstacles against infringement disappear, thus making infringement much easier, but the enforcement of rights also became problematic. In the analogue world copyright was enforced territorially and not globally. Copyright was viewed as having territorial application, and the international conventions are built upon this concept. Notwithstanding the existence of international conventions there is considerable variation in different countries’ laws, enforcement policies, and cultural attitudes towards intellectual property. Digital transmission systems have global reach. It therefore seemed as if the territorial copyright enforcement procedures that were followed in the analogue world were inadequate to deal with infringements in cyberspace. Especially four problems surfaced in this regard: identifying infringers, determining the jurisdiction and applicable law, and enforcing judgments against infringers.

As digitisation opened the doors for wide-spread, cross-border and virtually
uncontrollable copyright infringement, the need arose for some kind of regulation or mechanism that would enable authors to protect and exploit their works in digital format. The authors themselves took the first steps. They employed two strategies to protect their digital works against copyright infringement, namely, contractual conditions and technological protections.

'Shrink-wrap' and 'click-wrap' agreements are examples of contractual protection. In the case of a 'shrink-wrap' contract a printed standard form agreement is affixed to the surface of a package of computer software and sealed in a plastic wrapper. By opening the package the purchaser accepts the offer made on the standard form agreement and a valid contract, separate from the contract of sale, arises.

In the case of a 'click-wrap' agreement, the person seeking access to the content must agree to accept (by 'click-on') the contractual offer displayed on the computer screen before he or she will gain access to the material. The offer made by the author will ordinarily be in standard form: take or leave. Failure to fulfil the conditions on the standard form agreement amounts to breach of contract. The problem with this type of protection lies in the fact that it is only effective between the parties to the contract. If a third party were to breach one of these conditions, such person could not be held liable in terms of the contract.

Many authors believed that the same technology that threatened copyright could also be used to protect copyright. Authors therefore applied different types of technological protections to their works in an attempt to safeguard it. I will refer only to one such protection, namely, technological protection

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31 'Digital technology ...' n 29 above.
33 Cornish n 32 at § 13-87. After acceptance of the offer, a contract arises and the user who copies or distributes the content contrary to these contractual conditions, will be liable for breach of contract. Davidson, Berg & Kapsner n 33 above at 7.
34 See, inter alia, David Price 'Fighting fire with fire: monitoring intellectual property in a digital age' 2001 Copyright World 14-15; Lucas n 30 above at 226; and Thomas C Vinje 'A brave new world of technical protection systems: will there still be room for copyright?' 1996 EIPR 431-440.
35 According to the classification followed by the WIPO Copyright Treaty of 1996.
A technological protection measure can either control access to a work (an access control), or it can control use of a work once it has been accessed (copy control). It can be integrated in software or built into the hardware. The best known examples of technological protection measures are passwords and encryption.

Technological protection measures, unfortunately, failed to fulfil the expectations of authors. Time proved them inadequate as protection against copyright infringement, because of their vulnerability to hacking.

The next logical step therefore, was to outlaw the hacking (or circumvention) of technological protection measures. This had to be done by means of legislation. The international community accordingly concluded the WIPO Copyright Treaty in 1996. Article 11 of the treaty contains the prohibition on circumvention. It reads as follows:

Contracting 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.

Article 11 is formulated in a broad and neutral way, oriented more to the desired result than on how to achieve it. The prohibition strikes at the act of circumvention. Article 11 does not expressly state whether this prohibition extends to the trafficking in circumvention devices.

Article 11 protects only those technological protection measures 'that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention...'. Only technological protection measures applied to works protected by copyright in terms of this provision.

It is generally accepted that article 11 requires protection for both access control technologies and copy control technologies.

Technological protection measures will be protected only as long as they effectively restrict access to and use of the work. Effectiveness does not imply that the measure should not be vulnerable to hacking. The fact that a technological protection measure can indeed be circumvented will not affect its effectiveness. If 'effectiveness' were to be interpreted to mean infallible, the whole prohibition would be nonsensical.
The requirement of 'effectiveness' introduces a knowledge requirement. A person would thus be liable only if he or she knowingly circumvented a protected technological protection measure.

The treaty thus prohibits the circumvention of a technological protection measure if the measure is applied to a copyrighted work, and if it prevents the infringement of copyright in the work. As soon as a measure meets these two requirements, it is protected.

The provisions of this treaty have to be implemented into national legislation by each member state. I will refer to only two pieces of implementing legislation: the Digital Millennium Copyright Act (the DMCA) which implemented article 11 in American copyright law and the EC Directive on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society, which implemented it into EC legislation.

President Clinton signed the DMCA on 28 October 1998. The DMCA is divided into five titles. Title 1 creates two new prohibitions in Title 17 of the US Code. The new Chapter 12 of Title 17 of the US Code deals with Copyright Protection and Management Systems. Section 1201 implements the obligation to provide adequate and effective protection against the circumvention of technological measures.

The Copyright Act now prohibits the act of circumventing a technological protection measure, as well as the trafficking in devices used to circumvent.

The prohibition on the act of circumvention is limited to the circumvention of access controls.

The act of circumventing a copy control is not prohibited. If a person circumvents a copy control, he or she would be liable for copyright infringement. It was therefore not necessary to add an additional violation for the circumvention of a copy control. The circumvention of an access control, however, would not amount to copyright infringement and is therefore expressly prohibited.

The act of circumventing an access control is prohibited even where no copyright infringement results. Therefore, if a person circumvents an access control, he or she would be liable for circumvention (or hacking), and if a

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45Section 1201(a)(1) of the Act.
46Section 1201(a)(2) and 1201(b) of the Act.
47Section 1201(a)(1)(A) of the Act.
48Mihály Ficsor The law of copyright and the internet: the 1996 WIPO Treaties, their interpretation and implementation (2002) at 551 Cl.11.15.
49Section 1201(a)(1)(A) of the Act. Band n 44 above at 92.
person circumvents a copy control, he or she would be liable for copyright infringement.

The Copyright Act provides that 'no person' shall circumvent an access control and is therefore aimed at individuals. Enforcing this prohibition will require lawsuits against each individual user and will therefore be largely impractical in controlling widespread access and use.

The Copyright Act then also prohibits the trafficking in circumvention devices. This prohibition extends to devices that circumvent access controls as well as devices that circumvent copy controls. There are three categories of prohibited devices. A device, service or component that falls into any of these three categories is prohibited and may not be manufactured, imported, sold or otherwise distributed. It is furthermore sufficient if only a component or part of a device falls into any of these categories.

The first prohibited device is one primarily designed or produced for the purpose of circumventing a technological measure. This category establishes a subjective criterion: did the manufacturer create it to circumvent protection measures on copyrighted works? If the manufacturer, for example, created it solely to circumvent technological measures on unprotected works, then the device is not prohibited.

The second category prohibits devices that have 'only limited commercially significant purpose or use other than to circumvent ...'. It imposes an objective criterion: notwithstanding the manufacturer's intention, how is the device in fact being used? If it is primarily used to circumvent protected measures, then it is prohibited. This category focuses on actual uses.

In the last category, devices 'marketed' as circumvention devices are prohibited. It targets the person promoting the circumventing use — who will not necessarily be the manufacturer. It appears as if advertising alone would be sufficient to establish liability.

It is irrelevant whether the circumvention devices are offered free over the internet, or whether they are offered for commercial sale. Both will be

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50 Section 1201(a)(1)(A) of the Act.
52 Section 1201(a)(2) of the Act.
53 Section 1201(b) of the Act.
55 Marks & Turnbull n 16 above at 201.
56 Section 1201(a)(2)(A) and §1201(b)(1)(A) of the Act.
57 Section 1201(a)(2)(B) and §1201(b)(1)(B) of the Act.
58 Lunney n 51 above at 833-834.
59 Section 1201(a)(2)(C) and § 1201(b)(1)(C) of the Act.
60 Section 1201(a)(2)(C) and §1201(b)(1)(C) of the Act. Ginsberg n 54 above at 144.
61 Lunney n 51 above at 837.
regarded as trafficking in circumvention devices which, if it falls within any one of these three categories, is prohibited.

The provisions in the Copyright Act have the following consequences:

First, they create a new form of liability, separate and distinct from copyright infringement. A hacker can be guilty of copyright infringement, or circumvention, or trafficking in circumvention or any combination of these. Actual copyright infringement is not a requirement for liability for circumvention.

Secondly, by prohibiting the devices necessary to circumvent protection measures for non-infringing purposes, it will be impossible to perform these non-infringing acts. Although the act of circumvention would under certain circumstances be allowed, the devices necessary to perform such circumvention are prohibited. Therefore, notwithstanding the long list of exceptions added to section 1201, the adoption of the broad device prohibition would in many instances render these exceptions without meaning.

There is a third possible consequence of the prohibition on circumvention devices. Will an internet service provider which hosts a site that makes circumvention devices available be liable for 'trafficking' in those devices, even if it had no knowledge of the presence of the devices on the site?


Article 6(1) prohibits the act of circumventing 'effective technological measures'.

Only measures that prevent copyright infringement are protected. It seems as if circumvention for purposes of performing authorised acts of fair use is

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62 Paramount Pictures Corporation and Twentieth Century Fox Film Corporation v 321 Studios, A/K/a 321 Studios LLC, A/K/A Terr Lee No 03-CV-8970 RO (SDNY 3 March 2004).

63 Section 1201(a)(1)(B)-(E) establishes a periodic rulemaking by the Librarian of Congress to determine categories of exempted classes of works; the other exemptions are contained in § 1201(d)-1201(j).

64 There is only one exception which applies to both the prohibition on the act of circumvention and the prohibition on circumvention devices, namely the exception contained in § 1201(e). This exception is for law enforcement, intelligence and other governmental activities.


66 Note 43 above.

67 Ibid.

68 In terms of Article 6(3) 'technological measures' means any measure designed to prevent or restrict 'acts ... which are not authorized by the rightholder of any copyright or a right related to copyright as provided for by law'.

The protection of copyright works on the internet

not prohibited.\textsuperscript{69}

The phrase ‘effective technological protection measure’ includes both access controls and copy controls. A ‘technological measure’ is a measure that prevents or restricts acts ‘not authorized by the right holder of any copyright or any right related to copyright as provided for by law’.\textsuperscript{70} An ‘effective technological measure will be ‘an access control or protection process, ... or a copy control mechanism, which achieves the protection objective.’\textsuperscript{71}

Therefore, unlike the US position where the act of circumvention is prohibited only in relation to access controls, the EC prohibits the act of circumventing both access controls and copy controls.

Article 6(2) prohibits the trafficking in circumvention devices for commercial purposes. The three categories of prohibited devices correspond to those in the American Copyright Act. However, unlike the prohibition in that Act, only devices manufactured for commercial purposes are prohibited. Devices manufactured exclusively to perform exempted acts of circumvention are therefore not prohibited.

Article 6(4) makes provision for exceptions to the prohibition on circumvention. The exceptions contained in articles 6(4)(1) and 6(4)(2) apply only to article 6(1) which prohibits the act of circumvention. This means that, although circumvention for the specified lawfully excepted uses must be protected by member states, circumventing devices or services are excluded from their scope. However, unlike the DMCA, this does not mean that exempted users are deprived of means by which to perform their exempted acts of circumvention with. The Directive does not prohibit the devices necessary to circumvent for legitimate purposes — it prohibits only the trafficking in circumvention devices used for commercial purposes. Devices manufactured exclusively to perform exempted acts of circumvention are not prohibited.

At first glance it seems as if circumvention for legitimate reasons would be allowed and possible under the EC Directive. This is, unfortunately, not necessarily true. Article 6(4) refers to the exceptions contained in article 5. Article 5 contains a series of mostly permissive measures. Only one of these exceptions is mandatory. This means that if member states were to decide not to implement these exceptions (since they are only permissive) users would not be able to exercise such an exception and circumvent legitimately. Where a member decides not to implement these exceptions, the prohibition in the

\textsuperscript{69}See \textit{contra} Vanessa van Coppenhagen ‘Copyright and the WIPO Copyright Treaty, with specific reference to the rights applicable in a digital environment and the protection of technological Measures’ (2002) 119/2 \textit{South African Law Journal} 429–452 at 443. According to Van Coppenhagen the definition in art 6(3) delimits technological measures to those designed to prevent acts which are not authorised by the right holder. However, even acts that are not expressly authorised by the copyright owner may be legally permitted, such as fair use and reverse engineering. Therefore art 6(1) of the Directive goes beyond the scope of the WCT and destabilises the application of copyright limitations and exceptions.

\textsuperscript{70}Article 6(3) of the Act.

\textsuperscript{71}Article 6(3) of the Act.
EC would have the same effect as in the US: circumvention for legitimate purposes would also be prohibited.

The prohibition on circumvention has the following result: works protected by copyright on the internet enjoy a three layered protection: the work is protected by law of copyright, then by technology (technological protection measures applied by the author), and the protection measure itself is once again protected by law (against circumvention).

The ways in which the USA and the EC have implemented the prohibition against circumvention, threaten legitimate uses: in America, because the devices necessary to circumvent legitimately are prohibited, and in the EC because the implementation of legitimate uses (with the exception of one) is not mandatory.

South Africa has not yet adopted the provisions of the WCT in national legislation. How should we do it? I can only give the answer the Cheshire cat gave Alice in Alice in Wonderland: 'it depends a great deal on where we want to get.' Do we want to stimulate creativity on the Net, and provide access to copyright works, or do we want to lock-up creative works and prevent users from legitimately using it?

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72Article 6(4) refers to the exceptions contained in art 5, namely a series of mostly permissive measures aimed at harmonising the limitations and exceptions to the reproduction right, and the rights of communication to the public and the making available to the public.