



Laws against the circumvention of copyright technological protection

Copyright
technological
protection

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Abstract *The problems that the great developments in digital information and the Internet are creating for copyright may be partly solved through new legislation as well as through the implementation of technological systems (generically known as ECMS) that help protect it. These two approaches – legal and technological – interact, as the new copyright laws protect these electronic measures through the prohibition of their circumvention. The contents of the three main legal norms that have regulated this area to date, the US Digital Millennium Copyright Act, the European Directive and the new Australian Copyright Act, are analysed in an attempt to determine what impact they might have on the traditional limitations and exceptions to copyright (fair use/dealing, private copying, library privileges) that benefit libraries, their users and the general public.*

1. Introduction

The development of digital information and of the Internet has greatly improved the possibilities of access to information by any person and from any point in the world. Nonetheless, these new options offered by the advance of technology also represent a problem for copyright of all types of intellectual works. When works were only available on a tangible medium, copyright holders had a great degree of control of their use and reproduction. Copyright laws gave them valid tools for exercising their rights, as the sources of infraction were easily identifiable. However, the conversion of publications into simple chains of bits allows their copying, modification and transmission without the awareness of the holder of those rights, and practically without cost or effort.

To do something in the face of these problems, two battlefronts have been planned: to promulgate new legislation and to employ technology for the protection of works. The first of these approaches, the legal one, focuses on making more severe laws (in favour of the holders of copyright), prohibiting activities that were once permitted and making the infractions of copyright more expensive for the offender. The key to the technological approach is perfectly defined by Clark (1996) as “the answer to the machine is in the machine”: a series of devices to allow identification of the material protected under copyright, to control the use made of them, avoiding economic loss for those who hold the rights, as well as the violation of the moral rights of their authors. These systems receive different denominations, of which the most habitual is electronic copyright management systems (ECMS), though also



used are the electronic rights management systems (ERMS), the digital rights management systems (DRMS) or even trusted systems, employed by Stefik (1997a, b). These two roads to the solution, the legal and technological routes, do not act independently. They interact mutually, as understood by Sirinelli (2001), who points out that the result is a structure with three levels:

- (1) legal protection (copyright laws);
- (2) technological protection; and
- (3) the legal protection that comes in aid of the technological protection (prohibition of acts of circumvention or neutralization).

Although the ECMS began to develop at the beginning of the 1990s (Garret and Lyons, 1993) and some of the problems they raised were rapidly identified (Oppenheim, 1996; Cornish, 1997), these problems have become more evident since their legal recognition and protection by the WIPO treaties of 1996, the WIPO Copyright Treaty (WIPO, 1996a) and the WIPO Performances and Phonograms Treaty (1996b), both having taken effect in the first semester of 2002, and the laws (in the USA, Australia and the European Union (EU), mainly) that have subsequently implemented them.

These technological systems now allow the use of bars or fences, that is, methods of protection of property usual in other sectors, but until now not technically possible for author rights (MacKaay, 1996; Bell, 1998; O'Rourke, 1998). This type of regulation by means of technology – “by the code”, to use the expression by Lessig (1999a) – is different from the traditional way of regulation by law. Instead of defining the behaviours that are not desirable, technology makes it possible to prevent certain behaviours and allow others (Reidenberg, 1998), giving rise to a perfect compliance with the law: now users do not have the possibility to choose whether they want to comply with the law or go against it, as the conditions of use implemented by the technological measures are imposed automatically. As a consequence, the level of enforcement and its success no longer depend on the degree to which the public understands and internalises the rules (Elkin-Koren, 2000).

This use of technology to control access and use of intellectual works presents important problems for copyright limitations and exceptions. It is well known that copyright does not have an absolute character, but is rather subject to very diverse limitations, justified in that the gestation and production of the works implies, inevitably, the participation of the society that has given formation and means to the author, as well as contributing to the very nature of the protected object – the intellectual work – to be incorporated into the patrimony of humanity. In practice, this translates as a limitation of the duration of these rights (70 years after the death of the author, as the general rule) and in certain occasions the work can be used freely and for free. The latter type of limitation is very diverse and varied, but we are concerned with two particular exceptions: private copying (in the countries with a Latin-based legal tradition) and its close (Anglo-Saxon) equivalent of fair use/dealing; and

the privileges of libraries and similar institutions. In reality, these limitations can be nullified due to the fact that the technological measures (protected as well by the new laws) give the owners of the rights a power unknown to date: the power of controlling both access to the work and its use, including acts such as the mere reading or quotation of the works, which had traditionally been left out of the contents of copyright. Some specialists warn that a fundamental change has come about in the equilibrium to which copyright should tend, and that legislators should intervene to re-balance the situation.

The objective of this study, therefore, is to analyse the effect of these technological devices and the legislation that protects them on the limitations to copyright that were established by law to facilitate access to information for citizens in general, and library users in particular. For this reason, there are some protected technological measures that remain beyond the focus of the present article, such as rights management information, as it does not endanger the enjoyment of the limitations to copyright. Nor do we address the – not less in importance – problems of the technological measures in relation to the privacy of persons (Cohen, 1996; Greenleaf, 1999; Bygrave and Koelman, 2000).

We shall begin by briefly reviewing these technological measures, their contents and their workings, as a crucial point of departure for analysing how they are regulated by the WIPO treaties, by US law (United States House of Representatives, 1998a) and Australian legislation (Attorney General's Department, 2000), and by the European Directive (European Union, 2001). These are the main – and just about the only – legal norms of a national or regional character that have been promulgated to date, and in the three cases they will be examined following the same scheme: first, we note how they protect the technological measures, then how they attempt to guarantee the limitations and exceptions to copyright, and finally, we offer a critical review of the results obtained.

2. Technological measures: concept and types

Neither the WIPO treaties nor the other laws analysed speak of the ECMS, but rather use the term “technological measure”. That is, the ECMS are only protected by these legal norms in that they respond to the specific definition of “technological measure” established in each one of them.

The technological measures that facilitate the protection of works with copyright are extremely diverse, and evolve with great speed, for which reason they have been the object of diverse classifications to facilitate their analysis. One of the first classifications is that developed by Schlachter (1997) in three major categories: measures that act to prevent the infraction of rights (pre-infringement), those that ensure payment before or at the time of the use of the work (metering), and finally, measures that are used to discover infractions and thereby improve their application (post-infringement). Instead of depending on the moment at which they act, most experts classify these measures bearing their finality in mind. For example, Leymonerie (1998) distinguishes three types: measures destined to identify and protect the work,

measures destined to the control of access to the work, and measures destined to control the use of the work. Similar classifications are established by, among others, Oman (1998), Vinje (1999), Koskinen-Olsson (2001) and Koelman and Helberger (2000).

In our opinion, the grouping carried out by the latter authors is a good starting point for analysing regulation through the different legal norms and their consequences for the users of intellectual works. Four types are distinguished: those that control access, those that control certain uses, those that protect the integrity of the work and those that ensure payment for the access to or use of the information. The first type, in turn, is subdivided into four others; thus, in the first place are the technologies that control access at the online outlet, habitually used in the information services based on subscription. They act like a door or a gatekeeper in the real world, in such a way that if the user has the right key (usually a password), the technology allows him to enter and access the contents. The second group comprises those that control access on the level of the user or receiver of the information. In this case, to access the information (for example, for pay TV), it is necessary to have a key or a device that permits the decoding or unscrambling. The next type includes the measures that control access to an already-acquired copy of the work, for instance a CD-ROM or a copy downloaded from the Internet. Also in this case, access is controlled in the sphere of the final user; but, unlike the other cases, these measures do not protect the service, only access *per se* to the contents of the specific copy of the work in the hands of the user (Stefik, 1997a, b; Gimbel, 1998). Finally, we have the measures that impede posterior access. In this case, initial access to the work is allowed with the understanding that it will thereafter be limited or impeded. For example, it is more and more usual to find works or computer programs that have an expiration date; that is, they can be used without any cost for a limited time, after which payment is required for continued use. In other cases it is not a matter of time, but of the number of occasions the work can be accessed. These applications are usually called “date bombs” (Schlachter, 1997).

The second of the major categories established by Koelman and Helberger (2000) is that of the measures centred on the control of certain uses of the work once it has been accessed. Most of these are dedicated to impeding copies of the work, though with different methods and results: they do not permit print-outs; they facilitate the copy of a portion but not of the totality of the work; the digital copy of the original cannot be used as a master, so that it is not possible to make more copies; software that detects that unauthorized copies have been made can counterattack by erasing the copied files, etc. The best known example of the anti-copy system is the serial copyright management system (SCMS), incorporated in most CDs. Along the same lines, a system for DVDs has been developed, called the copy generation management system (CGMS) (Marks and Turnbull, 2000).

The third category refers to the measures aimed to protect the integrity of the work by impeding its alteration or modification. In reality, these measures

are also dedicated to controlling certain uses, but it is best to deal with them separately, as they do not protect the traditional copyright in an economic sense, but rather the so-called moral rights, whose legal regulation is very different in the Anglo-Saxon countries and in those of the continental system (Fernández-Molina and Peis, 2001). By impeding the modification of a work, these technologies protect the moral rights of paternity and integrity through the diverse systems of encoding, digital watermarking (Mintzer *et al.*, 1997), digital signatures, etc.

Finally, we have the measures that do not impede or limit access or use of the works, but that are dedicated to measure the frequency with which they are accessed and used, or to monitor what is done with them. Their purpose, then, is to facilitate the economic exploitation of intellectual works. They are highly diverse: they keep track of the work by counting each of its uses, which makes it possible to charge payment for each one of them; they can detect illegal copies; and they can discover lack of compliance with the conditions of the licence of use (Elkin-Koren, 1997; Isaias, 1999; Miller, 2001).

3. WIPO treaties

The problem surrounding the technological measures to protect the copyright of electronic works came up in the WIPO conference of December 1996. As with many other matters discussed in that conference, debate grew very intense. One of the preliminary matters to decide on was the need, or not, for a specific legislation in the international realm, and if so, of what type: civil, penal, or mercantile (Lucas, 1997). It was decided that such legislation was indeed necessary, as a diversity of national rules would have very negative consequences for the interactive transmission of the works (Smith and Smith, 1997), and that it should be incorporated into both the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT). These were respectively approved in their articles 11 and 18.

But the fundamental question to decide on was how to articulate and combine the technological protection of the works with the system of exceptions and limitations regarding copyright existing in the different national legislations. The basic dilemma was to choose whether to make reference to the acts of circumvention of the technological measures, or else to center on the devices that allowed this circumvention.

In the basic proposal (WIPO, 1996c) of what was later to become the WCT, an article was included, number 13, focusing on the manufacture, distribution and importation of electronic devices, following the basic scheme planted in the US White Paper (Information Infrastructure Task Force, 1995). This article was the object of strong criticism (Vinje, 1997) both because of matters of form – it lacked clarity and precision, probably on account of the need to be “technology neutral” – and of substance. There was no clear differentiation between the protection of the works, the protection of access to such works, and the supply of *à la carte* services. Meanwhile, the concept of “device” was too vague, as it included any product whose “principal” purpose or effect was the

circumvention of protection, and did not focus exclusively on those whose “only” objective was circumvention. Besides, it made manufacturers and importers responsible when the “effects” of the devices were the circumvention of the technological measures (even if they were designed with other purposes in mind) if these parties knew or had reasons for knowing of such effects. This excessive burden on the manufacturers of electronic equipment provoked strong opposition on the part of the representatives of Japan and the rest of the countries of Eastern Asia (Ayyar, 1998).

All these problems caused the text to be modified and gave rise to the current article 11, entitled “Obligations concerning technological measures”, which establishes that:

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.

It is possible to distinguish three elements in this article or, what amounts to the same, three legal conditions that should be fulfilled so that the technological measures be the object of legal protection: that the measure be “effective”, that it be used by the authors for the exercise of their rights acknowledged by the WCT or the Berne Convention, and finally, that they restrict acts that are not authorized by the authors or allowed by law. These three conditions call for some clarification.

In the first place, it is not clear what this requirement means by “effective”, as the WCT does not explain it. Different specialists have tried to interpret it. Koelman and Helberger (2000) consider that only the measures that require intentional circumvention are going to enjoy protection, an interpretation similar to that of Lucas (1998), who believes that a measure that may be circumvented by accident is not effective and therefore should not be protected. Precisely in order to avoid the uncertainty of its meaning, the term “effective” has been defined in the different national legislations that implement this treaty.

In the second place, it is required that the copyright holder – though only authors are mentioned expressly, posterior right holders are implicitly included – voluntarily implements a technological measure in relation with the exercise of some of the rights recognized by the WCT or the Berne Convention (WIPO, 1971). This plants a number of doubts. The first is whether it protects the measures that control access to a work. In our opinion, such measures are not protected, as neither the Berne Convention nor the WCT recognise an exclusive right to control access to copyrighted works. For this same reason, neither should these measures safeguard works without copyright, for example because they are in the public domain or because they are simple collections of data without sufficient creativity in their selection or disposition.

Finally, the requirement that they be acts of the users “not authorized by the authors concerned or permitted by law” allows the respect of the technological

measures to be coordinated with the exceptions and limitations to copyright (fair use/dealing, for example), leaving it clear that this treaty does not attempt to create new exclusive rights in favour of the authors, but simply to establish an obligation of respect for the technological measures that the authors establish to protect their digital works. Therefore, the circumvention of the technological measures to carry out acts allowed on the basis of the limitations of copyright law is not prohibited by this article (Lucas, 1998; Koelman, 2000). This balance between the rights of the authors and those of the users has made several authors express satisfaction for its contents (Cohen, 1997) or be sorry that the article was not implemented in a more exact way in US national legislation (Samuelson, 1999).

But besides the conditions for legally protecting technological measures, there is another series of questions that remains confusing or unresolved in article 11 of the WCT: what acts are prohibited? Is a specific anti-circumvention regulation necessary? What type of legal remedies will be given to the copyright holders?

The first question is fundamental – and one of the most complex – in this type of norm. As we will see later on, it has been solved in a different way in each one of the laws developed. There are three ways to focus it (DeWerra, 2001):

- (1) on the act of circumvention itself; that is, he who circumvents the technological measure is held responsible;
- (2) on the trafficking/business/provision of the technological measures that permit circumvention, called “preparatory acts”, so that the party that sells or facilitates the means of circumvention is responsible;
- (3) on both possibilities.

The vagueness of the text has given rise to diverse interpretations on the part of experts; nonetheless, the majority believe that the prohibition is directed at the act of circumvention itself (Strowel and Dussolier, 1999). In this sense we must recall that former article 13 of the basic proposal (WIPO, 1996c) centred its prohibition on the technological devices, but the pressure of certain delegations and of the manufacturers of electronic devices led to its modification. This does not, however, prevent the states from establishing prohibitions centring on the circumventing devices in their national legislations (Vinje, 1999).

As for the need, or not, for a specific anti-circumvention regulation and of what type, it seems clear that the only thing demanded of the undersigning countries is that they provide “adequate legal protection”, for which reason it is irrelevant if they do it through specific legislation in their copyright laws, or through other measures such as, for instance, the norms of unfair competition – the solution adopted in Japan (Koizumi, 2001) – or the US doctrine of contributory infringement (Samuelson, 1999). The same can be said with

respect to the “effective legal remedies”, that may be implemented (civil and/or criminal law) freely by any government.

4. US Digital Millennium Copyright Act 1998

The USA was the first country to implement in its internal legislation the protection of technological measures required by the WIPO treaties by means of the Digital Millennium Copyright Act (DMCA), which adds a new Chapter 12 to Title 17 of the US Code. Even though it is a single section, 1201, titled “Circumvention of copyright protection systems”, it establishes a wide and excessively complex series of rules, which has led Nimmer (2000) to qualify it as “fiendishly complicated”.

4.1 Object of protection, definition of technological measures and object of sanction

Section 1201 is structured in accordance with an essential division, whereby it deals with technological measures that control access to works or that protect copyrights. This double structure means two different definitions of what constitutes circumvention of technological measures, what exactly an effective technological measure consists of, and what are considered to be “preparatory acts”. For this reason we are going to use the double standard (access control/copyright protection) as the point of departure for our analysis.

The control of unauthorised access to a work is prohibited by section 1201(a) through two means: the act of circumvention and the business of trafficking in circumvention devices. Concerning the act of circumvention, section 1201(a)(1)(A) sets forth that “no person shall circumvent a technological measure that effectively controls access to a work protected under this title”. Given that article 11 of the WCT did not clarify what an effective measure was, and its specification by this law was necessary, section 1201(a)(3)(b) explains that “a technological measure ‘effectively controls access to a work’ if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work”. It is also necessary to explain what circumventing a technological measure comes to mean: “to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate or impair a technological measure without the authority of the copyright owner (section 1201(a)(3)(A)).

Some conclusions can be drawn from the contents of these provisions. If only the technological measures controlling access to “a work protected under this title” are protected, then impeding access to material without copyright is not protected by this provision. Meanwhile, we must point out that the legislature (United States House of Representatives, 1998b; United States Senate, 1998) explained at that time that it referred only to “initial access”, meaning that the measures that prevent access to an already obtained copy are not protected.

The control of access to works is also protected by the prohibition of the business of trafficking in circumventing products and devices: “no person shall

manufacture, import, offer to the public, provide or otherwise traffic in any technology, product, service, device, component or part thereof” (section 1201(a)(2)) to circumvent technological protection measures. But this prohibition is subjected to nuances, as it does not affect any technology that might be used for the purposes of circumvention, but only that which is “primarily designed or produced for the purpose of circumventing” the access technological protection measure; or “has only limited commercially significant purpose or use other than to circumvent” a technological protection measure; or “is marketed by” the person who traffics with the circumventing technology or “by another acting in concert with that person, with that person’s knowledge for use in circumventing” a technological protection measure (section 1201(a)(2)(A)-(C)). Evidently, these limitations were introduced in order to prevent manufacturers and distributors of electronic products from being held legally responsible for the mere fact that their products could potentially be useful for circumventing technological measures (Smith, 1997).

Unlike the control of access, the DMCA does not prohibit the act itself of circumventing the technological protection measures that protect the rights of a copyright owner, but only the preparatory activities. This decision by the US legislature was taken in order not to penalize potential uses that were not infringements, such as, for instance those included under fair use. Therefore, only the business of manufacturing, importing, distributing, or providing technology for circumventing protection measures is prohibited. The definitions that the law gives for this activity and the type of technology affected (section 1201(b)(1)(A)-(C)), for the act of circumvention (1201(b)(2)(A)), and for effective technological measure (1201(b)(2)(B)) are practically identical to those referring to the control of access to the work.

4.2 Exceptions and means of guaranteeing them

In its original wording, the DMCA did not contain any exemption to the prohibitions established. During the legal procedure, however, some were gradually added as a result of the capacity of pressure of different groups. Among them is an exemption favouring non-profit libraries and educational institutions to determine if they wish to acquire a work, in addition to others for reverse engineering of computer programs, law enforcement, intelligence and other government activities, security testing, encryption research, protection of minors, security testing and circumvention to identify and disable the capability to collect personally identifying information (1202(d)-(j)) These exemptions, each one with its own criteria and based on specific policies, make up a closed list. It should be made clear that there is no direct relation between them and the traditional copyright exceptions and limitations (Besek, 2001).

There was an attempt to include a general exception of circumvention of technological measures based on fair use, but it was finally rejected (United States House of Representatives, 1998c). As a compromise solution, and bearing in mind that the protection of the right of access to works could mean a strong decrease in public access to information and create a pay-per-use

society, it was resolved to suspend for two years (until 28 October 2000) the commencement of enforcing the prohibition of circumventing the controls of access. Moreover, the Copyright Office was asked to conduct a rulemaking procedure in which it would correspond to the Register of Copyrights to recommend, and the Librarian of Congress to determine, if any specific classes of copyrighted works should be excluded from the prohibition of circumvention of access control protection measures, owing to the fact that those people who are users of such classes of works are, or are likely to be, in the ensuing three-year period (until 28 October 2003), adversely affected by virtue of the prohibition in their ability to make non-infringing uses of that particular class of works. This legal text also mentions some issues which should be taken into account in this study, such as the availability of copyrighted works for use for non-profit archival, preservation and educational purposes, and the impact that circumvention technologies might have on fair use and on the market value of such works. Once the rulemaking procedure was completed (United States Copyright Office, 2000), the Librarian of Congress (United States Library of Congress, 2000) ruled that only two classes of works would benefit from the exemption of prohibition over the following three-year period:

- (1) compilations consisting of lists of Web sites blocked by filtering software applications; and
- (2) literary works, including computer programs and databases, protected by access control mechanisms that fail to permit access because of malfunction, damage or obsolescence.

Other classes of works that had been proposed were not finally included, such as “thin copyright” works (consisting primarily, but not entirely, of matter unprotected by copyright), sole source works, “fair use” works, material that cannot be archived or preserved, or works embodied in copies which have been lawfully acquired by users who subsequently seek to make non-infringing uses thereof.

On this point, we should clarify that this rulemaking procedure is only the first of those foreseen, as section 1201(a)(1)(C) of the DMCA foresees that it will be repeated every three years. Therefore, before that period expires, the Register of Copyrights will initiate a new rulemaking to consider *de novo* what classes of copyrighted works, if any, should be exempt from section 1201(a)(1)(A) commencing 28 October 2003.

4.3 Critical analysis

The DMCA has been received by specialists with very harsh criticism, which may be grouped into two basic categories: those that believe it means an important restraint for the development of the technological industry (Samuelson, 1999, 2000, 2001; Digital Dilemma, 2000; Phoha, 2001) and those that consider it excessively protective of copyright, practically nullifying fair use and encumbering educational and cultural uses of the works. The scope of this study obliges us to focus on the latter group.

Most criticism of the DMCA anti-circumvention norms centres on the fact that they give rise to a new right, that of controlling access to copyrighted works. This has no precedents in either the US Copyright Act or any other national law or international treaty on copyright (Koelman, 2000). The new right, created indirectly and without previous discussion of its consequences and implications, comes to join those traditionally conceded to copyright holders (reproduction, distribution, public performance, public display) and breaks the traditional balance between the rights of users and those of the owners (Cohen, 1996, 1997; Lessig, 1999b). Of another opinion is Ginsburg (2000), clearly in favour of this new right of access. In her opinion, when the use made of a work changes from copying to direct experimentation with the contents, the capacity of the author to control access becomes crucial. Therefore, copyright is not only a right of copy; the right of access also constitutes an integral part of copyright. While aware of the need for this new right in the digital environment, she nonetheless considers its implementation in the DMCA to be deficient, and sees a need to more adequately establish its exceptions and limitations.

In order to try to solve the problems created by this new right of access, the DMCA started up the rulemaking procedure – mentioned in the previous section – to make some classes of works exempt from the prohibition of circumventing the technological measures that protect access to the works. However, neither the result of this process nor the procedure itself can be judged very favourably. Procedure-wise, it was pointed out that the Copyright Office made a very restrictive interpretation of the text of the DMCA in defining the authority to conduct the process. Although statutory language refers expressly to the probability that the controls of access harm legitimate uses, the Copyright Office demanded proof of actual harm. This restrictive interpretation made it unlikely that users of the works would testify in the hearings. Furthermore, given the short time elapsing between the enactment of the DMCA and the hearings, and the very few publishers and producers who actually implemented measures for the control of access, library professionals and other interested parties were not able to present much evidence of current harm (Gasaway, 2001). The approach to establishing the exemptions is also inappropriate. These should have been based not on the type or class of works, but rather on the uses of such works, which is the essence of fair use (DeWerra, 2001; Waelde, 2001). As Samuelson (2000) points out, an exemption of a wider and more general character would have afforded flexibility, adaptability and fairness, in such a way that (as in other areas of copyright) it is left up to the courts to decide, in view of the situation, which activities are legitimate and which are not. Along these lines, Cohen (1999) underlines that the DMCA will transform the fair use doctrine, from a flexible common law “safe harbour” to a civil law system of narrow, specific exceptions to copyright.

Insofar as the result of the rulemaking procedure is concerned, with only two classes of works included in the exemption, its narrowness is truly disappointing. Numerous negative commentaries condemn it for leading the

way to a “pay-per-view/pay-per-use” information world – a legitimate claim. A good example of this viewpoint can be found in the representatives of the library community. The ALA and other library associations (American Library Association, 2000) presented a series of allegations during the rulemaking procedure, in which they agreed on the need for some broader exemptions because otherwise the users of digital information would have fewer rights and opportunities than users of printed information. They believe that “access” cannot be separated from “use”; if access is denied, in reality, the use of that work is prevented. This means the practical annulment of fair use limits the applicability of the first sale doctrine (which permits libraries to loan copyrighted works) and complicates the traditional task of preserving the cultural patrimony. This concern led them to propose that the classes of works exempt from the anti-circumvention provisions would include those embodied in copies lawfully acquired by users who subsequently seek to make non-infringing uses thereof. As we saw in the above section, this proposal was not accepted.

Another important flaw in this system based on specific exemptions is that even when all the types of works that should not be protected from the act of circumvention are identified and included, this exemption may have no practical effects: if the user is not able to circumvent the system of protection on his own, he will also be unable to obtain help from a third party, as the prohibition of trafficking with or supplying technology to circumvent controls continues to be illegal (Benkler, 1999). DeWerra (2001) offers an illustrative example: the user (thanks to the exemption) has the right to open the door of the room where the work is located, but there is no locksmith who has the right to develop or facilitate the key with which the locksmith himself or the user may open the door. As a consequence, the user cannot actually benefit from the exemption.

In light of this process and of the results obtained, one is left with the impression that the winner is a school of thought in the USA that considers the justification of fair use to serve as a means of correcting market failure. From such a standpoint, the doctrine of fair use excuses payment when a use is socially valuable and the cost of the transaction is too high, as has historically happened with many educational uses, or uses for research or criticism. If the cost of transactions comes down, as it is doing in the digital setting, the justification for fair use disappears (Merges, 1997; Bell, 1998). Recent court cases, of which a good example is *Universal City Studios vs Reimerdes*, seem to make clear that the fair use doctrine has been left outside the anti-circumvention norms.

The negative consequences of this regulation for the library, educational and scientific communities have been recognized by the Librarian of Congress. As a result, he has requested a review of the temporal framework for rulemaking as well as adequate criteria to evaluate the damage that may be caused to research and creativity. Specifically, he has proposed that the next rulemaking be held in two years, instead of the three proposed by law.

5. EU directives

The EU has divided the protection of technological measures into three fundamental, complementary norms. They are, in chronological order: the directive on the legal protection of computer programs (European Union, 1991), conditional access directive (hereinafter CAD) (European Union, 1998), and the directive on the harmonisation of certain aspects of copyright and related rights in the information society (hereinafter CISD) (European Union, 2001). Once again, the outstanding difference between these directives and the Australian and US laws that we looked at previously is that the latter are national laws, whereas the directives are merely instruments to harmonize the laws of the member countries, for which reason their regulation is much less detailed.

5.1 *Directive on the legal protection of computer programs*

It is the first legal norm of the EU to protect technological measures. Specifically, its article 7.1(c) prohibits “any act of putting into circulation or the possession for commercial purposes of, any means the sole purpose of which is to facilitate the unauthorized removal or the circumvention of any technical device which may have been applied to protect a computer program”. This norm is not affected by the posterior CISD, as is clear in its recital 50, so that we have two systems of protection of the technological measures depending on whether we are in the presence of a computer program or some other type of work.

5.2 *CAD*

The objective of this directive is to protect access to and payment for online services whose viability depends on the guarantee of legal protection against illicit devices that permit access without payment for such services. The interest protected by this directive is the remuneration of the service provider, and not the content of the service in itself. Although initially it was thought up for the traditional television and radio broadcasting services, its scope of application was eventually widened to include “information society services”, defined as “any service provided at a distance, by electronic means and on the individual request of a service receiver”.

The conditional access – or, if we prefer, the protected technological measures – are defined by article 2(b) as “any technical measure and/or arrangement whereby access to the protected service in an intelligible form is made conditional on prior individual authorization”.

Unlike the DMCA or the CISD, this norm does not prohibit the act of circumvention itself, but only the business of trafficking in illicit devices, as its article 4 prohibits the following activities:

- the manufacture, import, distribution, sale, rental or possession for commercial purposes of an illicit device;

- the installation, maintenance or replacement for commercial purposes of an illicit device;
- the use of commercial communications to promote illicit devices.

These are defined in its article 2(e) as “any equipment or software designed or adapted to give access to a protected service in an intelligible form without the authorisation of the service provider”.

As for the relationship between the CAD and the CISD, the EU considers them to be complementary (recital 21 of the CAD): while the CAD tries to protect unauthorized access to a service, the CISD protects the use and economic exploitation of a work or service protected by copyright. Nonetheless, in practice there are overlaps between the two that can cause diverse problems. The CAD applies to the information society services and, therefore, to the online transmission of protected works, which means that the same technological measure that prevents unauthorised access to the service also serves the function of impeding access to the work. In consequence, a device which facilitates the unauthorised access to a work may be used also to permit an unauthorised use to the same work. For example, technological measures which prevent the unauthorised reproduction of the contents of an online database may be protected by the CSID. These same technological measures may be considered as devices of conditional access to the extent that they are designed to impede access to the database without payment, and therefore are covered by the CAD. Moreover, as Koelman and Helberger (2000) point out, certain technological measures may be designed for both aims: protection of access to the services and protection of the copyright.

This overlap can cause problems, as the regulation established by them is not identical. For example, we have already mentioned that while the CAD only prohibits the business of illicit devices for circumvention (without referring to the act of circumvention on the part of individuals), the CISD does consider as illicit the very act of circumventing the effective technological measures. These problems are especially serious if the overlap is related with the exercise of limitations to copyright (Heide, 2000), as the CAD does not bind the protection of access to the fact that the measure aims to avoid the violation of the copyright. In this way, even if (based on one of the “voluntary agreements” established in article 6.4 of the CISD, which we analyse below) there are technological measures which may be circumvented to carry out legitimate uses of works, the devices used for such circumvention may be illegal according to what is established by the CAD. We have to take into account that any technological measure used to protect information services which contains IPR contents will be covered by both directives. Therefore, all efforts made in the CISD for sheltering copyright limitations may not be very efficient. Dusollier (1999) holds this opinion, considering that these overlaps and the legal problems which they cause, strongly advise that the protection of technological measures against their circumvention (whether it be those which control access to services, protect content or control and manage the use of

protected works) be carried out outside the legislation of intellectual property. For example, by means of a computer crime regulation which prohibits any unauthorised access to non-free services independently of whether these services are copyright-based or not.

5.3 *Copyright in the information society directive*

After a long and complicated legislative procedure, the year 2001 finally saw the approval of a directive intended to implement the WIPO treaties, in addition to harmonizing the protection of the copyright in the digital environment throughout the member countries. It entered into force on 22 June 2001 and member states were given a period of 18 months from that date (until 22 December 2002) to implement the directive into national legislation. More specifically, this directive dedicates its complex and confusing article 6 to the protection of technological measures.

5.3.1 Object of protection, definition of technological measures and object of sanction. Just like the DMCA, this directive prohibits not only the personal act of circumventing the technological measures (article 6.1) but also the preparatory activities (article 6.2). But before analysing such prohibitions, it is wise to look at how the protected technological measures are defined.

Article 6.3 defines them 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 authorized by the right holder 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”. Surely the most noteworthy aspect of this definition is that it makes no reference to the technological measures that impede violation of copyright, but rather to those that prevent or restrict acts not authorized by the right holder. That is, it goes a step further than article 11 of the WCT, which referred to acts “not authorized by the authors concerned or permitted by law”. In other words, if a user wants to make a permitted use of some of the exceptions and limitations of copyright (regulated in article 5 of this directive) with respect to a work protected by a technological measure, he can only do it legally if it is authorized by the right holder. In short, then, all the technological measures that prevent or restrict uses or access not authorised by the right holders of copyright are protected, regardless of whether the user attempting access or use can take advantage of some of the exceptions established in article 5 of this directive. This definition of technological measures is the result of an unfortunate modification of that including in an earlier version of the directive (European Commission, 1999), whose article 6.3 refers exclusively to those measures “designed to prevent or inhibit the infringement of any copyright or any rights related to copyright”, which implies that the exceptions to copyright prevail over technological measures. Unfortunately, this article was modified, giving rise to regulation that is highly favourable for the copyright owners and very negative for the general public.

Also in this case a certain level of effectiveness is required to protect the technological measures: what happens when “the use of a protected work or other subject-matter is controlled by the right holders 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”? Therefore, a deficient or accidental technological protection is not be protected from circumvention. At the same time, this broad definition gives rise to a new right of access that does not only affect the initial utilization of the work (as it does in the DMCA), but also all subsequent use of it (Koelman, 2000). Also unlike the DMCA, there is no distinction between the measures that control the use of the works and those that control access to them.

With regard to the prohibitions established in the article, we should point out that the individual act of circumvention was not included in the first versions of the directive (only preparatory activities were prohibited), but was introduced in the final text. Article 6.1 establishes that “Member States shall provide adequate legal protection against the circumvention of any effective technological measures, which the person concerned carries out in the knowledge, or with reasonable grounds to know, that he or she is pursuing that objective”. A key element of this definition is that it is intention-dependent, so the act of circumvention is only prohibited if it is carried out in bad faith.

Meanwhile, the business of trafficking in circumventing technology is regulated by article 6.2, which establishes that “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”. This provision is very similar to that of the DMCA, and therefore does not require additional comment.

5.3.2 Exceptions and means of guaranteeing them. Article 6.4 is in charge of attaining a balance between the interests of right holders and those of the users of copyrighted works. It draws a division between works licensed by contract on the Internet and the remainder of works. In its analysis, we are going to follow the order of the article itself, which begins with the works not licensed on the Internet.

Paragraphs 1 and 2 of this article outline an odd system for establishing voluntary means to define the scope of copyright. Interested parties (right holders and users) are invited to adopt an agreement allowing the users to benefit from the exceptions to copyright guaranteed by the national legislations. If such agreements are not made, the member states are required to take proper measures to ensure that the right holders “make available [. . .] the beneficiary of an exception or limitation provided for in national law [. . .] the

means of benefiting from that exception or limitation, to the extent necessary to benefit from that exception or limitation and where that beneficiary has legal access to the protected work or subject-matter concerned”.

But not all the exceptions have the same level of protection with respect to the use of the technological measures. The system created by this article gives rise to three types of exceptions, in accordance with the importance that the legislator conceded them, and therefore, with the protection given to them. Thus, we have in a first group the exceptions generally understood as pursuing a public policy objective (Martín-Prat, 2001), referring to the reproduction right only: article 5.2(a) (reprography); 5.2(c) (reproductions made by publicly accessible libraries, educational establishments or museums and archives); 5.2.(d) (certain ephemeral recordings made by broadcasters); 5.2(e) (reproductions of broadcasts made by certain social institutions), or to the reproduction or communication to the public rights: article 5.3(a) (for the purpose of illustration for teaching or scientific research); 5.3(b) (for the benefit of people with a disability); and 5.3(e) (use for the purposes of public security or to ensure the proper performance or reporting of administrative, parliamentary or judicial proceedings).

We should underline the fact that, in accordance with article 5 of the directive, all these exceptions are optional for the member states, so that they may decide to maintain (or introduce) all or some of them in their national laws, and to what degree of broadness or restriction. Well, if the exceptions exist in national legislation, the obligation established in the first sub-paragraph of article 6.4 is clear: if there are no voluntary measures adopted by right holders, and the exercise of exceptions is made difficult due to the use of technological measures, the state should intervene.

The second type of exception refers exclusively to private copying (article 5.2(b)). Surely this is the most contentious and difficult to harmonize of all the copyright exceptions in the EU, as even though it is included in all the national laws, its regulation is very diverse in the different countries. It is an exception perceived by some as a right of users, whereas others see it as something that has been permitted up to now because it could not be prevented in practice. In this case the lawmaker has opted to leave in the hands of the member states the decision to adopt or not to adopt the measures listed above. They may intervene or choose not to, to ensure that private copying is not impeded by the technological measures. If they decide to intervene, the states can oblige the right holders to not prevent users from making a private copy of the works, whenever the former have not foreseen, voluntarily, this possibility, and payment for these copies is guaranteed them.

Finally, in the third group we would have the remainder of the exceptions, both those included in article 5 of the directive but not mentioned in the first paragraph of article 6.4, and those national exceptions that are analog (non-digital) and different than those foreseen in the aforementioned article 5. The exceptions belonging to this group are “unprotected”; that is, they are subject in all their extension to the regime established in articles 6.1 and 6.3, which

equates them with the rules established for online licensed works, which we will take a closer look at now.

Although the text of the directive does not clarify which type of measure the rightholders should take to permit the beneficiaries of an exception to continue to benefit from it, it creates the impression that the most adequate solution will be the adoption of agreements between rightholders and beneficiaries of exceptions. In this respect, problems may arise to identify who are those beneficiaries, whether it is because they belong to somewhat ambiguous categories (e.g. “non-profit social institutions”) or because they depend on the purpose of the act and not the identity of the actor (e.g. exceptions for non-commercial scientific research purposes). What does seem clear, as pointed out Martin-Prat (2001), is that a “one fits all” solution is not possible, but instead will require different solutions for the different categories of exceptions.

It is neither clear what these “appropriate measures” consist of which the states may/can take, as the text of the directive is not very explicit: “by modifying an implemented technological measure or by other means” (recital 51). So, its nature is not left clear: technological or legal. The third paragraph of article 6.4 (“The technological measures applied voluntarily by rightholders, including those applied in implementation of voluntary agreements, and technological measures applied in implementation of the measures taken by Member States, shall enjoy the legal protection provided for in paragraph 1”) seems to suggest they could be technological. However, this does not seem to make much sense, given that it is unlikely that the states will develop technological devices to make the circumvention of the technological protection measures possible (Garrote, 2001). It seems much more logical that the obligation of the states be legal, providing the ways of obliging the rightholders to allow the copyright limitations to be enjoyed, for example prohibiting those technological measures which are considered “abusive” for not respecting the copyright exceptions established in the first two paragraphs of article 6.4. Probably, the most positive effect of the availability of this means (“appropriate measures”) will be to encourage the rightholders to take the initiative in the development and proposal of solutions by themselves (Sirinelli, 2001).

All these measures established in the first two paragraphs of article 6.4 to facilitate the enjoyment of the exceptions to copyright are not valid for online licensed works, as laid out in perfectly clear terms in the fourth paragraph of this article. It establishes that “the provisions of the first and second subparagraphs shall not apply to works of other subject-matter made available to the public on agreed contractual terms in such a way that members of the public may access them from a place and at a time individually chosen by them”. In very general terms, this means that the effective application of the exceptions to copyright is practically nullified, as this type of use is precisely the most usual kind in digital settings.

Finally, we should briefly point out article 12 of the directive, which complements number 6. It regulates a system of control and rulemaking similar to that of the DMCA, establishing that, every three years, “the commission shall

submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this directive". This report will examine, among other things, whether article 6 "confers a sufficient level of protection and whether acts which are permitted by law are being adversely affected by the use of effective technological measures".

5.3.3 Critical analysis. We cannot offer a very positive assessment of the directive, both because of its tilt in favour of the interests of right holders and because of its confusing, complex and ambiguous wording, which leaves too many questions in the air and makes it difficult to achieve the necessary harmonisation of national legislations.

Insofar as the strong imbalance in favour of the right holders is concerned, we may bring forth several irrefutable pieces of evidence: not only are the preparatory acts prohibited, but also the individual act of circumvention; the excessively wide definition of technological measure (going far beyond that demanded by article 11 of the WCT) makes the protection of the technological measures prevail consistently over the exceptions to copyright; a new right of access is created, one that not only affects the initial use of the work, but also all subsequent use of it. And moreover, article 6.4, in theory in charge of balancing the interests of right holders and those of users, falls very short from reaching that objective, as we shall see below.

Paragraph 4 of article 6.4 (together with recital 53) makes it very clear that when the right holders decide to put their works on the Internet and contract directly with the user by means of online licences, their decision should prevail even over the exceptions to copyright, which leads to a double system of protection: on the one hand, that provided for in articles 6.1 and 6.3 prevents the user from circumventing the technological protection measures without the consent of the right holder; on the other hand, the licences facilitate the restriction or annulment of the exceptions. In this way, the list of exceptions established in article 5 of the directive only has practical effects for the offline environment, not for the world of Internet, where massive online contracting is likely to take place. These confusing provisions that oblige the member states to take "appropriate measures" so that users may benefit from exceptions have very limited practical effects on improved access to digital information on the part of citizens.

At the same time, there are obvious problems that may derive from the poor wording of this directive. It is not clear what type of agreement – individual or collective – should be reached to facilitate the exercise of exceptions, nor what exactly is meant by saying the USA should take the adequate measures, nor under what circumstances they should or are able to intervene, nor whether it is possible to prohibit the technological measures from seriously endangering access to the works by the public (Hugenholtz, 2000). This uncertainty, together with the system of closed-yet-optional list established for the exceptions to copyright, may cause each country to intervene in a very different way in time, scope and means, which would not have positive effects on the desired harmonisation in the heart of the EU.

6. Australian Copyright Amendment (Digital Agenda) Act 2000

By means of the Copyright Amendment (Digital Agenda) Act 2000 (Australia, 2000), amendments were introduced in the Australian Copyright Act 1968. The relevant provisions are included in a new Division 2A of Part V of this act, which came into effect on 4 March 2001 (Lindsay, 2001).

6.1 Object of protection, definition of technological measures and object of sanction

In subsection 10(1) of the Australian Copyright Act, a technological protection measure is defined as:

... a device or product, or a component incorporated into a process, that is designed, in the ordinary course of its operation, to prevent or inhibit the infringement of copyright in a work or other subject-matter by either or both of the following means: (a) by ensuring that access to the work or other subject-matter is available solely by use of an access code or process (including decryption, unscrambling or other transformation of the work or other subject-matter) with the authority of the owner or licensee of the copyright; (b) through a copy control mechanism.

It seems clear that this definition does not distinguish measures for controlling access from copy (“by either or both of the following means”), and yet it makes reference exclusively to “copy control mechanism”, which affects only the right of reproduction and neglects to mention the other author rights (DeWerra, 2001).

The definition of anti-circumvention technology is very similar to that of the norms already mentioned, in that it includes the devices and services that have “only a limited commercially significant purpose or use” other than circumventing a technological measure, or with the sole purpose or use of circumvention.

To the contrary of the US law or the European Directive, the Australian law does not prohibit the act of circumvention itself, but only the “preparatory acts”, distinguishing between devices and services. With respect to the former, actions such as making the device are prohibited; as are selling, letting for hire, offering or exposing for sale or hire, promoting, advertising or marketing the device; distributing the device for the purpose of trade, or for any other purpose that will prejudicially affect the copyright owner; exhibiting the device in public by way of trade; importing the device for certain commercial purposes; and making the device available online to an extent that will prejudicially affect the copyright owner. As for the circumvention services, their promoting, advertising or marketing is prohibited.

In addition, for a legal action based on these provisions, three elements must be satisfied: the copyrighted work must be protected by a technological measure; the act prohibited in relation with the circumvention device or service should be carried out without permission of the copyright owner or exclusive licensee; and finally, the defendant must have known, or ought reasonably to have known, that the device or service would be used to circumvent, or facilitate the circumvention of, the technological protection measure.

6.2 *Exceptions and means of guaranteeing them*

Just as in the two norms analyzed above, exceptions are a closed list, not general criteria evaluated case by case. They coincide with some of the typical exceptions of copyright, but not with all.

There are three general exceptions that apply to the prohibitions of circumvention devices and services, and two of them are of special relevance to us. The first is applicable when their supply constitutes use for a permitted purpose, and depends on three conditions that must be fulfilled. In the first place, a device or service is used for a “permitted purpose” if the use falls within one of a specified number of statutory exceptions to copyright infringement: reproduction of computer programs to make interoperable products, to correct errors, and for security testing; lawful copying by libraries, archives, educational and other institutions, including institutions assisting persons with an intellectual disability; and lawful use of copyright material for the services of the Commonwealth or a State. Nonetheless, it does not include the use of a device or a service that amounts to fair dealing. In the second place, the party who supplies must be a “qualified person”, that is, a person who is authorized to copy or deal with material for the purpose of one of the specified statutory exceptions. Finally, the person must give the supplier before, or at the time of, the supply a signed declaration stating certain matters, including: the name and address of the person to whom the device or service is supplied and the basis on which the person is a qualified person; the name and address of the supplier; a statement that the device or service is to be used only for a permitted purpose and a statement identifying the purpose; and a statement that the copyright material is not readily available in a form that is not protected by a technological protection measure. To avoid possible abuses, a provision was included to make it a criminal offence to give a false statement.

The second exception applies to the making or importing of a circumvention device. In this case, the requirements are that the device has been made or imported for one of two purposes: for use for a “permitted purpose” (defined in the same way as for the previous exception); and the material is not readily available in a form that is not protected by a technological protection measure. This second condition aims to ensure that technology for circumventing can only be provided if the user has no alternative manner of getting access to the work to exercise one of the exceptions included in the copyright law.

6.3 *Critical analysis*

In general terms, this law should be better appraised than the previous ones as, thanks to its original system of exception, it manages to achieve a better balance between the interests of the copyright holders and those of users. One good explanation behind this more favourable regulation for the rights of libraries and their users is offered by Fitzpatrick (2000), who asserts that Australia is basically not an exporter country of copyright products but rather an importer. That is, it consumes far more than it produces. Unfortunately, however, this law also gives rise to a cutback of the traditional limitations to

copyright, as the exceptions to the anti-circumvention norms do not include fair dealing, only the aforementioned specific exceptions.

From another standpoint, there are also contrary opinions, considering that this law does not offer adequate protection of copyright. The problem resides in the fact that everything depends on the user's declaration. Thus, a user may sign the declaration saying that he will use the technologies only for permitted uses, but then later use them for illicit purposes. If this happens, the suppliers of devices or services for circumvention will not be held responsible because of the declaration obtained from the user, and the user will also not be responsible, as the acts of circumvention are not illegal (Strowel and Dusollier, 1999). It may be argued that to give a false declaration is criminally sanctioned, but that is also no guarantee, as it just may be that the user makes the declaration with the intention of carrying out an authorised use, but once done therewith, he keeps the circumvention device to carry out subsequent non-authorised acts. In this case, we find that the act of supplying the means for circumventing was originally licit, so the supplier is not responsible; and as for the final user, he is likewise not responsible if his declaration was not intentionally false from the start (Sirinelli, 2001).

7. Conclusions

The analysis of these three legal norms that establish a legal protection for technological measures makes manifest the variety and diversity of possible solutions. In reality, this is a very complex subject to regulate, as it is very difficult to reconcile the effective protection of technological measures with limitations of copyright, above all taking into account the current immaturity of the technology that impedes adaptation to nuances implicit in the laws. If a measure prevents the access or copying of a work, it will do so in all cases, regardless of whether the use is an infraction or not. The same goes for allowing the circumvention of the technological measures for carrying out non-infracting uses, as most people lack the knowledge necessary to circumvent protection. Besides, they will depend on the supply by third parties for the devices or services for circumvention (which will probably be prohibited by law). But if these devices and services were widely and freely available, the technological protection measures would have no effectiveness, as such devices do not distinguish between infracting use and non-infracting use, and they could just as easily be used for one or the other.

Even in light of these difficulties, the results seen in the USA and in the EU (and to a much lesser extent in Australia) must be described as far from satisfactory. A new right to access, practically without limitations, is being created without evaluating its implications; it may lead to situations such as that of a legitimate user who first pays to access a work but later cannot make copies of it, or has to make additional payment each time he uses the work. The DMCA protects the measures of control of access even in situations where acts that do not infringe copyright are prevented. The European Directive makes it very clear that the exceptions and limitations to copyright are not relevant when

the work is protected technologically, and the user has been obliged by contract to not take advantage of such exceptions. In this way, these legal norms have led to an absolutely unlimited protection of the interests of the right holders, who benefit from several cumulative layers of protection: copyright, technological protection, legal protection of the technological measures, and contract law. Specifically, the combination of protected technological measures and contract law are producing a strong and dangerous privatization of copyright (Elkin-Koren, 1997, 2001; Benkler, 2001), with copyright holders wielding enormous power to set their own rules and build a “private legislation” that does not necessarily take into account the balance created in the copyright laws. We do not believe that the best solution for facing the problems of copyright in the digital environment is to replace the regulatory regime of copyright law with the conditions of access to information generated by information suppliers.

As for libraries, it is essential that their fundamental and socially beneficial role in enabling access to information not be undermined. Libraries are responsible users of copyrighted material, they make an effort to educate their users as to their appropriate and legal applications for education, research and private study, and they are prepared to act in responsible fashion and avoid abusive behaviours. The key to the matter is that technological controls can prevent the legitimate uses of copyrighted information, for which reason the libraries must have the capacity to circumvent such controls for uses permitted under copyright. It is, therefore, vital that the exceptions established in copyright law related to the management and maintenance of collections, and the acts performed in representation of the users included within fair use/dealing, continue to be valid even if it is necessary to circumvent the technological measures used by copyright owners.

The copyright holders (especially the music and media industries) have run an effective campaign to convince the world (and lawmakers in particular) that their situation was getting much worse under the digital environment. This, together with pressure applied in the right places, has led to legislation breaking the traditional balance of copyright, now in favour of the right holders (to a lesser degree in Australia). Now, as Koelman (2001) lucidly points out, they are in an advantageous position, as the rest of us (libraries, educational and research institutions, consumer associations and users, etc.) are the ones who must provide clear evidence of the damage being done in the exercise of the rights granted by law for access to information. The burden of proof now lies with the disadvantaged users. In this context, the ideas of Boyle (1997) about the need for an “environmental movement” to protect open information environs are interesting: a strong public domain and a balanced law of intellectual property are called for. It is not enough to protest and oppose the excessively protectionist legislative proposals; it is also necessary to propose solid alternatives that are viable and are based on objective data. European and US lawmakers are aware of the fact that legislation is immature and perhaps a bit precipitated, and have, therefore, foreseen systems for reviewing legislation over the next few years.

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