Technological accommodation of conflicts between freedom of expression and DRM: the first empirical assessment

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Abstract

Copyright incentives and rewards to producers of works have been able to exist alongside other values, such as freedom of expression. However, changes in the way information products are being disseminated raises questions as to whether those values remain compatible with the new modes of dissemination.

So far, studies devoted to digital rights management (DRM) and copyright exceptions have noted, theoretically, its legal implications.

This research filled an existing gap by unveiling, through empirical lines of enquiry, (1) whether certain acts which are permitted by law are being adversely affected by the use of DRM and (2) whether technology can accommodate conflicts between freedom of expression and DRM - linking, thus, policy conclusions to empirical findings.

The survey concluded that some beneficiaries of privileged exceptions are being adversely affected by the use of DRM and practical solutions are required.

Thus, it is proposed that, in the short term, with the help of the empirical findings and recommendations of this study, the EC Commission submits a proposal for two amendment of Article 6(4) of the Information Society Directive, as follows:

(1) A definition of the expression 'appropriate measures' should be inserted in Article 6(4) of the Information Society Directive, stating that for the purposes of that Directive such measures require the establishment of a procedure to enable expeditious access to works by beneficiaries of privileged exceptions, leading to the creation of standardized *access to works portals* across EC Member States.

The existence of *access to works portals* would be made possible by a *DRM deposit system*, according to which the means to enable beneficiaries of privileged exceptions to benefit from them would be deposited and made available through *access to works portals*, in specified circumstances.

(2) It should be added to Article 6(4) of the Information Society Directive that where access to works by beneficiaries of privileged exceptions is not facilitated, the protection of privileged exceptions (given their connection to core freedoms) prevails over the protection

of DRM, even where works are supplied online on agreed contractual terms.

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Introduction

The right to freedom of expression is a fundamental right that has been recognised at both international and regional levels. According to the Universal Declaration of Human Rights, everyone has the right to freedom of opinion and expression, which includes the right to *"seek, receive and impart information and ideas."*[1] This principle is reiterated by the International Covenant on Civil and Political Rights and, at the European level, by the European Convention on Human Rights and the Charter of Fundamental Rights of the European Union.[2]

In an active sense, freedom of expression denotes freedom to impart information and in a passive sense, a right to receive information. It includes the right to unconstrained dissemination of information and the right to gather and receive information.

In the realms of copyright law, authors are granted *quasi* monopolies in works as a reward for their creative endeavours and to provide incentives for the creation of future works. This enables copyright owners to exercise a degree of control in relation to access and use of works by others, which challenges the passive component of the right to freedom of expression.

There is a potential conflict between the right to freedom of expression and copyright, but the balance between these rights is normally achieved by means of exceptions to copyright, such as those that allow certain entities (such as libraries, the visually impaired, teachers, students and researchers) to carry out certain acts of copying (of protected works) without the authorisation of the relevant copyright owners.

These exceptions are attributable, principally, to the protection of fundamental rights, such as freedom of expression, and to the defence of corollaries of the latter, such as dissemination of information. Exceptions to copyright in favour of dissemination of information

[1] Article 19 of the Universal Declaration of Human Rights: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers."

[2] See Article 19 of the International Covenant on Civil and Political Rights, Article 10 of the European Convention on Human Rights and Article 11 of the Charter of Fundamental Rights of the European Union.

promote access to information, knowledge and culture, hence promoting freedom of expression values.

As a result, copyright incentives and rewards to producers of works have been able to exist alongside other values, such as freedom of expression. In the US, for example, the Supreme Court has taken the view that copyright works side by side with freedom of expression, complementing it rather that opposing it.[3] By providing a reward mechanism which enables the creation of works independently of a system of benefaction, copyright encourages uncensored and impartial formation and expression of opinions.

However, changes in the way information products are being disseminated raises questions as to whether those values remain compatible with the new modes of dissemination.

The ease and quality of copying that emerged in the digital context facilitated, in an unprecedented way, the illegal reproduction of works protected by copyright. This posed a threat to the entertainment industry leading it to protect content by means of technology.

Various technological solutions for the protection of copyright were developed throughout the years to prevent illegal copying of works protected by copyright, such as the Serial Copy Management System (SCMS) for CDs, the Content Scramble System (CSS) for DVDs, the Digital Transmission Content Protection (DTCP) for digital video transmitted between devices, the Secure Digital Music Initiative (SDMI) for music delivered on-line and Macrovision's copy protection technologies for videocassettes, digital pay-per-view programs and DVDs.[4]

DRM eventually received legal protection, without which it could be circumvented without any consequences. In Europe, this was achieved by means of the Information Society Directive.[5]

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[3] See *Harper & Row, Publishers, Inc. v. Nation Enterprises* 471 U.S. 539, 558 (1985) and *Eldred v. Ashcroft* 537 U.S. 186, 219 (2003).

[4] Throughout this report these technological solutions will be referred to as *digital rights management* (DRM).

[5] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, Official Journal L 167 , 22/06/2001 P. 0010 – 0019. See Annex A – Main provisions of the Information Society Directive and Annex B – Overview of the Information Society Directive.

The Information Society Directive made illegal the circumvention of DRM, whilst attempting, simultaneously, to ensure that the legal protection of DRM does not prevent certain entities (such as, libraries, the visually impaired, teachers, students and researchers) from carrying out certain acts of copying. The question addressed by this study is whether those entities are still able to copy works (and, therefore, take advantage of certain copyright exceptions that are connected to core freedoms) in spite of the legal protection of DRM.

Methodologically, this research filled an existing gap by assessing, through empirical lines of enquiry, (1) whether certain acts which are permitted by law are being adversely affected by the use of DRM and (2) whether technology can accommodate conflicts between freedom of expression and DRM.

The answers to the above questions were studied in the context of the UK legislation implementing the Information Society Directive – the EC legal regime addressing the protection of DRM.

This report includes an introduction, seven chapters, references and four appendices. Chapter I outlines the technological and legal backgrounds to the research problem. Chapter II carries out a literature review in the area. Chapter III describes the methodology employed in the study. Chapter IV asks whether certain acts which are permitted by law are being adversely affected by the use of DRM, setting out the study's results and findings, in this respect, pertaining to libraries, the visually impaired, private users, lecturers, students and researchers.

Chapter V asks whether technology can accommodate conflicts between freedom of expression and DRM, setting out the study's results and findings, in this connection, obtained from DRM developers. Chapter VI outlines the position of content owners in this regard. Finally, Chapter VII draws out conclusions, notes possible solutions and makes recommendations.

Chapter I - Background

This chapter covers the technological and legal backgrounds to this study, entailing a brief examination of the workings of DRM and of the UK solution in terms of implementation of the Information Society Directive.[6]

A. Technological background

At the heart of the research problem addressed by this study (has technology accommodated conflicts between freedom of expression and DRM?) lie technological products for the protection of copyright works, such as Microsoft's Windows Media DRM for music, films and books, Apple's FairPlay and RealNetworks' Helix DRM for music and Macrovision's RipGuard for films.

Throughout this report, reference to these technological products will be done under the all-embracing term of *digital rights management* (DRM), rather than *tecnological protection measures* - a subcategory of the former.

This terminological decision is imposed by the aims of the research, which include determining whether "the answer to the machine is in the machine".[7] This inquiry requires a working concept covering not only access control and copy control mechanisms (tecnological protection measures), but also other technological components where the "answer to the machine" may be found.

Hence, as understood in this report, a DRM contains technological protection measures (particularly focused on access control and copy control) and other components, such as identifiers (which identify content in a unique manner) and meta-data (including, for example, the identity of the copyright owner and the price for usage of the work).[8]

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[6] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, Official Journal L 167, 22/06/2001 P. 0010 – 0019. See Annex A – Main provisions of the Information Society Directive and Annex B – Overview of the Information Society Directive.

[7] In Clark, 2005.

[8] See Rosenblatt, Troppe and Mooney, 2002, 79-89; Rump, 2003, 3; Paskin, 2003, 26; Spenger, 2003, 62; Petitcolas, 2003, 81; Guth, 2003, 101; Cheng and Rambhia,

To identify content, identification technologies are used, assuring that there is no ambiguity as to the identity of that content. But content also needs to be described. To do so, metadata is used, that is, information that describes content.

Once content has been identified and described, the terms and conditions under which content can be accessed by users must be set out. These rules define use and access rights to content, setting out how content can be used and who may have access to it. That is where rights expression languages (RELs) come into play, translating these rules into machine readable instructions.

A rights expression language requires a precise vocabulary (semantics) and structure (syntax) in order to create unambiguous expressions. These terms form the basis of a rights data dictionary. *Print*, *play* or *view*, are examples of permissions, *time* and *location* are examples of restrictions and *payment* is an example of a prerequisite.

Encryption is used to authenticate users or devices and to protect content from unauthorised access or use. This entails the use of cryptographic algorithms (consisting of mathematic functions used for encryption and decryption) and keys. Authentication may require the participation of a trusted third party.

In addition to authentication, there is also a need to associate, persistently, information with content, for which fingerprinting and watermarking technologies are used predominantly. Often, fingerprinting and watermarking are used to prove that copyright infringement has occurred, but these technologies may also be used for other purposes.

Fingerprinting, works by extracting the characteristics of a file with the purpose of matching these characteristics to an unknown file when required. Traditionally, fingerprinting technologies were use to monitor radio stations so as to enable the distribution of royalties to copyright owners by collecting societies. Now, fingerprinting systems are used, increasingly, to monitor P2P networks.

Digital watermarks are used to associate metadata with content. Watermarks in images, music and films can be imperceptible (for

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2003, 162; Hauser and Wenz, 2003, 206; Haber, Horne, Pato and Sander 224; Cunard, Hill and Barlas, 2003.

instance, a music file can be watermarked with ultrasonic information). Watermarking may be used to convey information to devices (as is done, for example, with the Content Scrambling System technology which is applied to DVDs to prevent unauthorised reproduction and dissemination of films), to embed information imperceptibly so that illegal copies can be trailed, or for usage tracking (for instance, in the context of advertisement monitoring).

A DRM system also requires a mechanism to report events, such as the purchase of content, so as to enable event-based payments to occur (of interest to collecting societies). Payment systems which are based on event reporting systems will also be part of the DRM system.

B. Legal background

In Europe, the legal protection of technological protection measures was achieved by means of Article 6 of the Information Society Directive[9] - implementing Article 11 of the WIPO Copyright Treaty and Article 18 of the WIPO Performances and Phonograms Treaty.[10]

According to the first two paragraphs of Article 6 of the Information Society Directive, Member States must provide adequate protection against circumvention of technological measures for protection of copyright and against any activities (including the manufacture, the distribution of devices or components and the provision of services), which are marketed for the purposes of circumvention, or have only a limited commercially significant purpose or use other than to circumvent, or are primarily designed to facilitate the circumvention of protective technological measures.

It is likely that the understanding was that whilst it is difficult to sue individual users it is practical, relatively, to take legal action against those who distribute anti-circumvention software or hardware.[11]

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[9] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, Official Journal L 167, 22/06/2001 P. 0010 – 0019. See Annex A – Main provisions of the Information Society Directive, Appendix B – Overview of the Information Society Directive and Appendix C – Brief account of the legislative passage of the Information Society Directive.

[10] WIPO Copyright Treaty, Geneva, 1996 and WIPO Performances and Phonograms Treaties, Geneva, 1996.

[11] See, for example, *Sony Computer Entertainment Inc v Ball* [2004] EWHC 1738.

The Information Society Directive defines effective technological protection measures in Article 6(3), setting out the boundaries of protection offered by the Directive, in this context, as encompassing the act of circumvention and trafficking of circumventing devices and services, both in relation to copyright control measures and access control measures.

The interaction between the legal protection of technological measures and the need for users to be able to take advantage of certain exceptions to copyright is addressed in Article 6(4) of the Information Society Directive, which states that notwithstanding Article 6(1) Member States should promote voluntary measures taken by rightholders in order to enable the working of certain exceptions provided for in national law.

The specific exceptions listed in Article 6(4) of the Information Society Directive (hereinafter called *privileged exceptions*) are for:

a) reprographic copying,
b) copying by libraries, educational establishments or museums,
c) ephemeral recordings made by broadcasting organisations,
d) copying of broadcasts by non-commercial social institutions,
e) copying for illustration for teaching or scientific research,
f) copying for people with a disability and
g) copying for purposes of public security or for the proper performance or reporting of administrative, parliamentary or judicial proceedings.

It should be noted that beneficiaries of privileged exceptions are not given a right to circumvent. Furthermore, there is an absolute prohibition on trafficking in circumvention devices[12] - presumably to avoid a gap in protection and to assure that rightholders do not have to engage in too much subtlety to prevent using or distributing of anti-circumvention software or hardware.

[12] Article 6(4) of the Information Society Directive only applies to Article 6(1) and not to Article 6(2), which means that even if a rightholder does not enable the exercise of an exception, devices which enable the circumvention of technological measures or services which explain to users how to do so remain prohibited. This means that manufacturing or dealing in anti-circumvention devices or rendering services connected to the latter is unlawful even where the devices would enable users to benefit from exceptions authorised by Article 6 itself.

Instead, the first paragraph of Article 6(4) of the Information Society Directive sets out an unusual two-step approach to address the interface between exceptions and DRM:

a) Firstly, Member States should promote *voluntary measures* taken by rightholders to guarantee that beneficiaries of privileged exceptions are able to benefit from them;

b) Secondly, failing this, within a certain *time frame*, Member States have to take *appropriate measures*.

As to the *time frame*, the Directive does not provide clarification, just referring, in Recital 51, to a reasonable time frame.

The Information Society Directive does not expand on the concept of *voluntary measures* either, but according to the recent application report:

> "The voluntary measures considered by rightholders include the supply of a non-protected version of the work or the supply of a decryption key".[13]

In the absence of voluntary measures from rightholders, Member States must take *appropriate measures.* The Directive does not define appropriate measures, but Recital 51 refers to modifying an implemented technological measure or using other means.

The second paragraph of Article 6(4) deals with reproduction for private use. In the absence of voluntary measures taken by rightholders, Member States have a power (not duty) to take appropriate measures to ensure private copying.

The fourth paragraph of Article 6(4) puts forward an exception to the rule that addresses the intersection between the use of technological protection measures and the exercise of exceptions to copyright. That rule does not apply in relation to works supplied online on agreed contractual terms. In this scenario, rightholders may prevent users from benefiting from all exceptions to copyright.

As to sanctions and remedies to circumvention, Member States are left free to resort to civil remedies and/or criminal sanctions.

[13] Commission Staff Working Document, 2007.

Finally, Article 12 of the Information Society Directive sets out monitoring mechanisms. Every three years, the European Commission must submit a report on the application of the Information Society Directive, examining, inter alia, whether acts which are permitted by law are being adversely affected by the use of effective technological measures. Furthermore, where necessary, the Commission may submit proposals for amendments to the Directive, to be decided by the European Parliament, the Council and the Economic and Social Committee. The Information Society Directive also establishes a contact committee who is to organise consultations on all questions deriving from the application of this Directive.

In the UK, the Copyright and Related Rights Regulations 2003 (SI 2003/2498) implemented the Information Society Directive. It was laid before Parliament on the 3rd October 2003 and came into force on the 31st October 2003.

The UK Copyright, Designs and Patents Act, 1988 already contained a provision dealing with the circumvention of technical devices (Section 296) which only applied to computer programs and did not address the act of circumvention itself. This provision was maintained in connection with computer programs only. As regards works other than computer programs, a section was introduced to establish a new civil remedy against a person deliberately circumventing without authority effective technological measures, with an exception being set out in relation to cryptography research.[14]

Section 296ZF states that technological protection measures are effective if the use of the work is controlled by a copyright control or an access control measure, but a link is expressly made between anti-circumvention protection and the acts restricted by copyright.

Section 296ZB created a new offence in the context of trafficking in devices and services which circumvent effective technological measures and a new civil remedy was set out in Section 296ZD in connection with dealing in devices and services which circumvent effective technological measures.

The interaction between the legal protection of technological measures and the need for users to be able to take advantage of certain exceptions to copyright is addressed in section 296ZE. This section was introduced to cover cases where, because of the application of an

[14] Section 296ZA of the UK Copyright, Designs and Patents Act, 1988.

effective technological measure, users are not able to carry out certain permitted acts. The remedy is open to the beneficiaries of the exceptions listed under Part I of Schedule 5A[15] - provided the complainant has lawful access to the protected work in question and the work is not 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.

Under the scheme, where the application of an effective technological measure to a work (other than a computer program) prevents a beneficiary from carrying out a permitted act, that beneficiary may issue a notice of complaint to the Secretary of State, who has been given an administrative power (not duty) to act in this area, as and when required.

Pursuant to an investigation, the Secretary of State will establish whether any relevant voluntary measure or agreement subsists. If not, the Secretary may order the owner of the rights in the work to which the technological measure has been applied to ensure that the complainant can benefit from the permitted act - presumably on a case-by-case basis and not in relation to a class of users. Failure to comply with the Secretary's direction will amount to a breach of statutory duty.

Westkamp points out that:

> "the way in which the UK intends to strike a balance between permitted acts and technological protection measures is, however, doubtful and likely to deter beneficiaries." [16]

Conclusion

It was through this legislative process that the research problem came into existence, as the wording of Article 6 of the Information Society Directive left open the possibility that beneficiaries of certain exceptions to copyright may find that rightholders fail to provide them with appropriate means for benefiting from them.

This study put that possibility to the test, by ascertaining, empirically, (1) the impact of DRM on certain beneficiaries of privileged exceptions

[15] See Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988.
[16] Westkamp, 2007.

and (2) what technological solutions are being developed to enable the working of those exceptions.

Chapter II - Literature Review

The interplay between exceptions and DRM has proved to be one of the more complex areas in the implementation of the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty.[17] As a result, significant research has been produced, in the field, at an institutional level.

In 2003, the WIPO Secretariat published a survey on implementation provisions of the WIPO Treaties[18] and a study on copyright exceptions in the digital environment.[19] The latter study devoted pages 81-84 to the relationship between technological measures and exceptions. Ricketson concluded that:

> "The inter-relationship between Article 11 (and 18) and limitations and exceptions to protection is a difficult and controversial one from the point of view of copyright policy"
>
> and
>
> "the obligation in Article 11 of the WCT to provide for anti-circumvention protection must make allowance for the exercise of rights of quotation by third parties under Article 10(1) of Berne".

The author submitted that national legislators could:

> "bring rights of quotation within the scope of a general provision such as Article 6(4) of the Europe Community Directive (...) or provide that the exception does not or need not apply to digital protected versions so long as analogue versions of the work are available, but that such an exception must be provided in cases where a work is only available in digital protected formats."

WIPO also commissioned a survey of the state of DRM in Europe, the US, Japan and Australia, covering the technologies upon which DRM was based, the legal framework in which it operated and the business processes that were being deployed in different countries.[20] Pages

[17] WIPO Copyright Treaty, Geneva, 1996 and WIPO Performances and Phonograms Treaties, Geneva, 1996.
[18] WIPO Secretariat, 2003.
[19] Ricketson, 2003.
[20] Cunard, Hill and Barlas, 2003.

110-112 were focused on the effect of DRM on exceptions. The study concluded that:

> "the fit between the technological and commercial capabilities of DRMs, on the one hand, and the legal and policy outcomes reflected in exceptions and limitations, on the other, may be uneasy"
>
> and
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> "DRMs can be developed and used with usage rules that are roughly consistent with the exceptions, but inevitably they will not be able to account for every situation where an exception is (or ought to be) available but where the DRM technology is not itself capable of accommodating or verifying the legitimacy of the beneficiary's entitlement to the exception."

Adding, though, that:

> "Precedents may suggest that even an inexact accommodation by DRMs and distribution contracts of such legitimate uses may be acceptable"
>
> and
>
> "consumers, educators, librarians and other users of copyrighted content may tolerate some imprecision in the extent to which DRMs accommodate their requirements."

The study recommended that, on a periodic basis, WIPO undertakes to collect data or otherwise review the extent to which DRMs are being deployed and the effect of technological measures on legitimate access to protected works.

In 2004, WIPO commissioned a further study into the impact of DRM.[21] According to the author:

> "at the heart of this debate is a complex issue but one which can be simply stated: how are the consequences of using technical measures for the protection of copyright works to be managed in a manner which is consistent with the established principles and practices of copyright law."

[21] Garnett, 2006.

The study did not deal with the issue in a general sense, but instead focused on two groups of beneficiaries (the educational community involved in distance learning and the visually impaired), describing the law and practice in five countries (Australia, the Republic of Korea, Spain, UK and US).

Garnett concluded that:

> "The technology considered responsible for the perceived lock-up is essentially neutral: indeed, appropriately deployed and administered, it will likely prove a key contributor to the necessary accommodation."

Adding, though that:

> "DRM technology is unable to replicate the full scope of copyright practice."

For this author:

> "the most promising avenue appears to involve two basic components: the development and use of voluntary licensing arrangements relevant to the new environment and the establishment of trusted intermediaries charged with the trusted implementation of contractually-based licensing arrangements."

He pointed out that:

> "a number of organizations representing the interests of visually impaired people are already developing their role as trusted intermediaries in the acquisition of content, its conversion into accessible formats and its secure delivery to qualified recipients."

At the EC level, the DG Information Society sponsored a series of DRM workshops between 2002 and 2005.[22] In 2004, the Commission set up a High Level Group (HLG) of stakeholders to consolidate the views of the various stakeholders on DRM related issues and to identify possible ways forward. Its final report, issued in July 2004, made recommendations on DRM and interoperability, private copying levies

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22 http://ec.europa.eu/information_society/eeurope/2005/all_about/digital_rights_man/events/index_en.htm.

and DRM, and migration (from illegal processes) to legitimate services.[23] According to the summary of the consultation on the High Level Group final report on DRM by the Commission:

> "DRM is seen by some contributors as putting copyright exceptions at risk. Some suggest that by contractually restricting usage of copyright protected material and technically enforcing these restrictions, DRM will allow the substitution of copyright law by contractual terms, and subsequently alter the fragile balance between rightholders and public interests. Several contributors express their concerns regarding the potential adverse effects of DRM on consumer and public interests. By allowing access restrictions to content, DRM could hamper public access to information or to works in the public domain.
>
> Some contributors are in favour of the application of some of the copyright exceptions, such as the private copying exception in a DRM protected environment. Others refer to the need for an application of the traditional rights and usages. These contributors believe that appropriate steps should be taken to accommodate copyright exceptions and prevent the abusive use of technology".[24]

In February 2007, a study on the implementation and effect in Member States' laws of the Information Society Directive[25] was published. The study, commissioned by the European Commission, examined the application of the Directive "in the light of the development of the digital market". Part I assessed the impact of the Directive on the development of online business models, while Part II surveyed the actual implementation of the Directive by Member States, covering disparities and problems.[26]

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[23] http://ec.europa.eu/information_society/eeurope/2005/all_about/digital_rights_man/doc/040709_hlg_drm_final_report.doc.

[24] http://ec.europa.eu/information_society/eeurope/2005/all_about/digital_rights_man/doc/drm_workshop_2005/drm_report_on_the_hlg_consultation.doc.

[25] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, Official Journal L 167 , 22/06/2001 P. 0010 – 0019. See Annex A – Main provisions of the Information Society Directive and Annex B – Overview of the Information Society Directive.

[26] Guibault et al, 2007 and Westkamp, 2007.

Part I of the study concluded, as regards the interface between DRM and exceptions, that:

> "the "facilitation" obligation of article 6(4) is a unique, albeit laudable attempt to reconcile the interests of right owners with those of certain potentially disenfranchised user groups",
>
> but
>
> "the particularly opaque rules of article 6(4), which offer the Member States virtually no legislative guidance, have inspired the Member States to establish at the national level an array of different solutions, procedures and even agencies".

The authors concluded that:

> "the Directive's convoluted rules on technological protection measures have little more to offer to the Member States and its market players than confusion, legal uncertainty and disharmonisation."

The study recommended the amendment of Article 6(4) of the Information Society Directive, submitting that:

> "a rational approach would be to give protected status to those limitations that, as our study advises, deserve mandatory status. In other words, limitations that reflect the fundamental rights and freedoms enshrined in the European Convention on Human Rights, those that have a noticeable impact on the Internal Market or concern the rights of European consumers deserve accommodation, while other "minor reservations" do not."

In November 2007, the EC Commission presented a report on the application of the Information Society Directive.[27] The report did not attempt to ascertain whether acts which are permitted by law are being adversely affected by the use of effective technological measures, even though that obligation stems from Article 12 of the same Directive – partially because of the lack of empirical data on the subject.[28]

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[27] Commission Staff Working Document, 2007.

[28] According to Tobias McKenney (Copyright and the knowledge-based economy, DG Internal Market and Services D1, European Commission), interviewed on 14th April 2008, upon consultation with Tilman Lueder (Head of Unit – Copyright, European Commission). See Appendix F – Questionnaires.

Laudably, the Commission did reiterate the connection between technological measures and copyright subsistence:

> "Article 6(3) requires that technological protection measures are applied to restrict acts which are not authorised by the rightholders of the protected subject matter. This is in line with Article 11 of the WIPO Copyright Treaty which requires that technological protection measures be used by rightholders "in connection with their rights" under the WIPO Copyright Treaty or the Berne Convention. The wording "acts not authorised by the rightholder" in Article 6(3) aims to link technological protection measures to the exercise of the exclusive rights mentioned in this paragraph. Therefore, the Directive aims to establish a connection between the technological measure and the exercise of copyright. This implies that Article 6(3) only protects technological measures that restrict acts which come within the scope of the exclusive rights (…) Moreover, it is clear that the mention of "access control" is no more than an example to define an effective technological protection measure. It cannot be relied upon to widen the scope of the legal definition of technological protection measures under Article 6(3) beyond what is in the rightholders' normative power to prohibit (…) In addition, where technological protection measures are used to control after-markets in spare parts of hardware goods, such as printers or remote controls for garage doors, as in some US cases, protection does not apply under the Directive. Similarly, technological protection measures used for the sole purpose of segmenting geographical markets, for instance for "regional coding", are only protected insofar as they prevent infringement of the reproduction right, of the making available right or of the distribution right."

As to the relationship between technological measures and exceptions, the report merely recognised that:

> "the provision of Article 6(4) leaves a large margin of discretion to Member States in selecting appropriate measures to ensure the benefit of certain exceptions to users. Member States have favoured a wide range of different solutions (…) These decisions can be appealed before the courts."

In the UK, in June 2006, the All Party Internet Group (APIG) published a report on DRM.[29] The report made nine recommendations, including a recommendation:

> "that the Government consider granting a much wider-ranging exemption to the anti-circumvention measures in the 1988 Copyright, Designs and Patents Act for genuine academic research."

In December 2006, Andrew Gowers reported his findings on the UK's intellectual property regime.[30] The Gowers Review concluded, inter alia, that DRM can prevent activities permitted as exceptions and that such exceptions ought to be respected by technology. As regards cases where, because of the application of an effective technological measure, a user is unable to carry out certain permitted acts, the review recommended:

> "that the procedures in place for circumventing DRM to allow copying for uses deemed legitimate under copyright exceptions ought to be made easier, for example through a model email form available on the Patent Office website."

A consultation followed the Gowers Review, to consider how the Gowers recommendations on exceptions to copyright (concerning educational use, libraries and archives, format shifting and parody) might be implemented in the UK. The aims were to: [31]

> "provide more balance and flexibility in the intellectual property system by enabling consumers to use copyright material in ways that do not damage the interests of rightholders"
>
> and
>
> "provide clarity concerning the extent of the exceptions in the face of changing technologies."

A second consultation was announced, in December 2008, on the future direction of copyright[32] and in, January 2009, the Departments for Business, Enterprise & Regulatory Reform works (BERR) and

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[29] http://www.apcomms.org.uk/apig/current-activities/apig-inquiry-into-digital-rights-management/DRMreport.pdf.
[30] Gowers, 2006.
[31] UKIPO Consultation, January 2008.
[32] UKIPO Consultation, December 2008.

Culture, Media and Sport published Lord Carter's Digital Britain Interim Report, according to which: [33]

> "by the time the final Digital Britain Report is published the Government will have explored with interested parties the potential for a Rights Agency to bring industry together to agree how to (…) enable technical copyright-support solutions that work for both consumers and content creators. The Government also welcomes other suggestions on how these objectives should be achieved."

Conclusions

Even though most of the described studies and reports have examined DRM and/or exceptions to copyright, there are differences between these surveys, reports and studies and this research, relating to aims, scope and, above all, methodology.

This study is not a survey on implementation provisions of the WIPO treaties or on the implementation in Member States' laws of the Information Society Directive, nor does it examine generally copyright exceptions in the digital environment, or attempt to address all the legal issues that surround DRM, such as standardisation, interoperability, private copying levies and privacy.

Instead, the scope of the present research is very narrow, exclusively addressing two very specific questions: (1) whether certain acts which are permitted by law are being adversely affected by the use of DRM and (2) whether technology can accommodate conflicts between freedom of expression and DRM.

The research's scope is further narrowed by only studying the answers to the above questions in the context of the UK legislation implementing the Information Society Directive.

Most importantly, there is a methodological difference between this research and previous studies in the area. Thus far, studies devoted to DRM and/or copyright exceptions have noted, theoretically, its legal implications. This research filled an existing gap by unveiling, though empirical lines of enquiry, the degree to which there is a problem (in

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[33] http://www.culture.gov.uk/images/publications/digital_britain_interimreportjan09.doc.

the UK) and the degree to which technology can address it – linking policy recommendations to empirical findings.

The uniqueness of this research stems from the empirical methodology employed.

Chapter III - Methodology

As part of the research planning and question development, it was determined that the research paradigm was empirical (using evidence and information as the way of developing and testing ideas), scientific (accepting the authority of empirical data and that ideas have to be tested against data) and qualitative (with emphasis being placed on words and actions). The pragmatic approach was selected and the focus was on assuring that research methods fitted research aims.[34]

In the pre-empirical stage, a careful analysis of the problem led to the creation of the following research questions (to set out what the research was designed to answer and to provide the backbone of the empirical procedures):

a) Is DRM preventing librarians, the visually impaired, private users, lecturers, students and researchers from carrying out certain acts that are permitted by law?
b) If so, are they able to resort to non-digital versions of the materials in question? If so, how difficult is it to find non-digital versions of those materials? How much is access to information dependant on accessing DRM protected works?
c) What are the major aims of DRM developers when developing DRM? Do they try to facilitate acts of copying that would currently be permitted by law, especially privileged exceptions? If not, can their DRM systems be changed to support those permitted acts? Would they be willing to change their DRM systems? How costly would that be?
d) Have content owners taken voluntary measures to enable the working of privileged exceptions? If not, are they willing to do so?

The research questions were developed according to the empirical criterion, aiming to show what data would be necessary to answer them, and suggesting *how* and *from where* and *whom* the data would be obtained.

Once the original problem had been restated as a series of empirical questions, data collection questions were produced for (1) certain

[34] With the aid of Punch, 1998; Denzin and Lincoln, 2000; Silverman, 2005; Oppenheim, 1992; Foddy, 1993; Gresswell, 1994; Singer and Presser, 1989; Moser and Kalton, 1989; Vaus, 1991; Grooves et al, 2004.

users who, amongst the ones listed under Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988,[35] were perceived to have been affected by the UK's recent DRM legislation (libraries, the visually impaired and partially sighted, private users, lecturers and students/researchers), (2) DRM developers and (3) content owners.

Data collection questions were also produced for the EC Commission and the UK Intellectual Property Office, given their role in drafting the legislation in question, respectively, in the European Union and in the UK.

In summary, to gain insight into the various perspectives at play, nine questionnaires were created for different players: (1) libraries, (2) the visually impaired and partially sighted, (3) private users, (4) lecturers, (5) students/ researchers, (6) DRM developers, (7) content owners, (8) the European Commission and (9) the UK Intellectual Property Office.[36]

The design of the questionnaires took into consideration pros and cons of "questions with open answer" and "questions with forced choice". In the end, the selected approach was tightly structured and standardized, including predominantly questions with forced choice (followed, though, by respondents' comments) and some open questions. The aim was to combine the need for rigour with the need to understand how respondents themselves describe the issue, in their own language; to convey respondents' explanations for *when*, *why* or *how* the issue emerged and to identify their practical concerns and constraints.

Examples of questions with forced choice: [37]

1. How often have technological measures prevented librarians from copying in the context of their duties at the British Library:

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

[35] See Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988 and Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988.
[36] See Appendix F – Questionnaires.

If never or don't know, go to question 8.

3. If the answer in 1 or 2 was affirmative, would it be possible to resort to non-digital versions of the materials at stake at the British Library?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

4. If the answer in 3 was affirmative, please rate how difficult it would be to find those non-digital materials.

Very easy		Moderately easy		Very difficult
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

8. If the answer in 1 was never or don't know, do you anticipate that you will have problems in future regarding copying?

Yes	No	Don't know
?	?	?

[37] See Appendix F – Questionnaires.

Comments:

Examples of questions with open choice:

9. What expectations do you have in this field?

10. Would you like to add anything?

The creation of the questionnaires was followed by an empirical procedure, with data being collected predominantly by means of interviews (on the basis of the data collection questions designed in the previous stage) but also utilising survey research. Hence, the study combined intensive and extensive qualitative methods: interviews to representatives of libraries, the visually impaired and partially sighted, private users, lecturers, DRM developers, content owners, the European Commission and the UK Intellectual Property Office (providing the actual discourse of the respondents) and survey methodology in connection with students/researchers (a shorter questionnaire to more people).

Following this rational, on the user front, since the project was designed as a UK case study (to generalise and also to understand the case in its entirety and context) a succession of interviews took place with representatives of the British Library, the Royal National Institute of Blind People, the National Consumer Council and film lecturers. The methodology employed in connection with students/researchers was that of survey research.

Interviews with DRM developers were conducted in the US, as the technologies under examination are produced in that country (as are most of these technologies).

There followed interviews with representatives of companies who deliver products (books, music and films) protected by DRM and interviews with the EC Commission and the UK Intellectual Property Office.

The selection of interviewees used deliberate sampling (purposive selection), in line with the qualitative nature of the methodology. The goal was that the sampling would be relevant to the research questions, enhance generalisation of findings (through representativeness) and be feasible (in terms of time, money and access to people). Interviewees were selected by means of consultation with senior members of staff, leading to the selection of those who had knowledge of the user situation and/or technical knowledge.

Once the interviews had been completed, the data analysis was initiated. This was the last empirical procedure. Results came directly from the analysis of the data, findings emerged as answers to the research questions, conclusions were based on the answers to the research questions and recommendations ensued.

Chapter IV – Are certain acts permitted by law being adversely affected by the use of DRM?

To answer this question, a succession of interviews took place with users and representatives of users who were perceived to have been affected by the UK's recent DRM legislation: (1) libraries, (2) the visually impaired and partially sighted, (3) private users and (4) lecturers. The methodology employed in connection with students/researchers was that of survey research. Sections A-E and section F, summarise, respectively, the results and findings thus obtained.

A. British Library

According to Sections 38-42 and 296Z and Part I of Schedule 5A of the Copyright, Designs and Patents Act, 1988, libraries may reproduce works for certain purposes, in spite of the legal protection of DRM. They may (1) make and supply single copies of articles in periodicals or of parts of published works (other than articles in a periodical) for purposes of non-commercial research or private study, (2) make and supply copies of works to other prescribed libraries and (3) make replacement copies of items in their permanent collection.[38]

To assess whether libraries are able to carry out these permitted acts, despite the existence and legal protection of DRM, upon consultation with Lynne Brindley (Chief Executive, British Library) interviews were conducted with representatives of the British Library on 26th June 2007 (Benjamin White, Publishing Licensing and Copyright Compliance Manager, British Library) and 1st October 2007 (Sean Martin, Head of Architecture and Development, British Library). Further data were collected on 11th July 2007 (Benjamin White, Publishing Licensing and Copyright Compliance Manager, British Library) and 12th February 2008 (Peter Bright, Digital Preservation Architect, British Library).[39]

Thus, the British Library (BL) was used to illustrate the position of libraries in this context. The BL is the UK's national library and was established by Parliament with the British Library Act, 1972. It houses a collection that includes one hundred and fifty million items (such as manuscripts, maps, newspapers, magazines, prints, drawings, music

[38] See Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988 and Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988.
[39] See Appendix F – Questionnaires.

scores, patents and sound recordings) and is used by on-site and remote readers, operating:

> "the world's largest document delivery service providing millions of items a year to customers all over the world".[40]

The Copyright Act 1911 required a copy of every UK print publication to be automatically deposited by publishers in the BL. Each of the other deposit libraries (the National Libraries of Scotland and Wales, the Bodleian Library in Oxford, Cambridge University Library and Trinity College, Dublin) *could* request a deposit to be made.

The Legal Deposit Libraries Act 2003 introduced the concept of digital archiving, placing on the BL the obligation to provide access in perpetuity to digital objects and on publishers to provide the materials.[41] Further to that Act and to the Copyright and Related Rights Act, 2000 the BL is to receive a copy of every publication produced in the UK and Ireland within one month of publication.

> "Publications deposited with the British Library are made available to users in its various Reading Rooms, are preserved for the benefit of future generations and become part of the national heritage."[42]

Results

a) According to Benjamin White (Publishing Licensing and Copyright Compliance Manager, British Library), internally, the biggest challenge the BL is facing in terms of copying does not stem from technology but from licensing:

> "Most of the licences imposed on the BL are more restrictive than copyright law, including restrictions around copying, such as, only copy one per cent, copy once, only copy in the same medium or no wholesale copying, which prevent archiving and interlibrary loans."

[40] http://www.bl.uk/aboutus/quickinfo/facts/index.html.
[41] The Legal Deposit Libraries Act 2003 progressed through Parliament as a Private Members Bill, received Royal Assent on 31 October 2003 and commenced on 1 February 2004. The Act allows for regulations to be made to widen the existing system of legal deposit to cover non-print publications.
[42] http://www.bl.uk/aboutus/stratpolprog/legaldep/.

This problem does not stem from DRM but from the fact that licences may override copyright law, remaining outside the scope of this study.[43]

b) The same BL representative went on to say that, from the viewpoint of remote users (those who are supplied materials outside the premises of the BL), problems derive from DRM usage. He explained that:

> "when materials are supplied externally, the BL is obliged, contractually, to use a DRM that limits the period of view, restricts the number of copies that can be made and is time limited. Common frustrations emerge around the limit on print-outs as ink runs out, printers jam etc. Remote users are only allowed to print once, so if something goes wrong they are not able to print."

Where a remote user is not able to print because of a technological anomaly, this is not caused by DRM but by a software or hardware malfunction. This problem too remains outside the scope of this study.

Where a DRM limits the period of view, restricts the number of copies that can be taken and is time limited, the issue is whether this contradicts the Copyright, Designs and Patents Act, 1988.[44] As it stands, the law allows librarians of prescribed libraries to make and supply single copies of materials for certain users, without determining whether copies are to be supplied in digital format or in analogue format, and without setting out how permanent copies must be. Section 17 of the Copyright, Designs and Patents Act, 1988, merely states that copying "includes storing the work in any medium by electronic means."

Where a remote user is supplied with a limited period of viewing or with a copy which is time limited, it could be argued that they were supplied with a temporary digital copy and that this accords with the letter of the law. And where the number of copies that a remote user can make from a digital copy supplied by the BL is limited, it could be argued that the user obtained, at least, a single digital copy and that this also accords with the letter of the law. [45]

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[43] See Guibault, 2002.

[44] See Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988 and Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988.

[45] This issue will be revisited later.

c) White also mentioned the existence of problems in connection with "certain business databases", which do not allow downloading or copying.

Where a user obtains access to a copy of a work lodged in "certain business databases" via the BL, the user is prevented from obtaining a permanent copy but supplied with access to a temporary digital copy - it could be argued that this too accords with the letter of the law as above.[46]

d) As to whether a remote user (upon finding that they cannot copy a DRM protected work hosted by the BL) may resort to a paper version of the work, at the BL, this is not always possible, according to White, because an increasing amount of material is born digital, that is, without a physical counterpart. He explained that:

> "the majority of online databases (other than science) derive from the publishers' own websites, leaving the BL without a paper surrogate, and the BL estimates that by 2020 eighty per cent of academic materials will be available electronically and forty per cent will only be available in this format. Matters are made worse, because some UK publishers do not comply with legal deposit rules and embargos may last for about two to five years. This will lead not to the extinction of physical materials but to a significant increase of the proportion of materials that will be available in digital format only."

Even where there is a paper surrogate, added the BL representative, but speed is a consideration (for example, due to an academic deadline) having the resource in paper may not meet a remote user's needs.

e) Finally, White stated that the BL's aspiration is that works supplied to the library are DRM free. Cautiously, he added that:

> "wrap around free e-legal deposit may be undermined by licences, and, consequently, the BL also requires legislation to be brought forward so that contract terms that override copyright provisions are made void."

[46] This issue will be revisited later.

f) Another BL representative, Sean Martin (Head of Architecture and Development, British Library), mentioned that remote users may encounter viewing difficulties when a DRM requires a specific version of a plug-in to a browser. He explained that:

> "it is a standard IT framework for organizations to lock-down PCs so that users cannot install extra plug-ins, meaning that viewing will be prevented if a DRM requires a certain plug-in to a browser and the system administrator has not allowed that plug-in to be used. For example, a DRM only works with reader version 6 and a remote user only has reader version 5 installed in their browser and so cannot view the materials."

This is, however, an IT framework problem, remaining outside the scope of this study.

g) For Martin, the BL's greatest concern is digital preservation. The BL's mission is preservation towards perpetual access, which is not compatible with the relatively short life of DRM systems. He supplied an example:

> "For the last three years the BL used a certain DRM for content delivery, but the company behind that DRM is withdrawing the product from the marketplace. The problem is that once a DRM becomes technologically obsolescent, works protected by that system become inaccessible long before the expiry of copyright. If DRM is not removed at source the BL may not be able to have access within a few years."

h) According to Martin, the BL's aspiration is that when digital works are supplied to the library, they are DRM free and that when there is a request for an item (either from a reading room or from a remote user), the BL has the option to protect it with DRM at the point of delivery.

i) According to Peter Bright (Digital Preservation Architect, British Library), at present, the major interaction the BL has with DRM concerns ancillary software used to access works in digital format. He explained that unlike physical books or newspapers, works in digital format do not stand-alone, requiring considerable support infrastructure (in the form of hardware and software) to be usable and there are concerns as to the longevity and support of the platform technology.

Bright supplied an example:

> "For example, we have in the photography collection some Adobe Photoshop images that were part of a bequest from a notable photographer. The only software that can reasonably be trusted to open and view these files is Adobe Photoshop itself. Photoshop runs on Windows and MacOS X; in the Library, Windows is preferred, as it's the standard platform. The current versions of Windows (XP, Vista) and Photoshop (CS3) all have a DRM system called Product Activation. In addition to the standard license key, these programs examine your system hardware to construct a kind of hardware fingerprint; they send the fingerprint and the license key to remote Microsoft/Adobe-operated Internet servers. If the servers are unavailable, or if the servers say that the license key has been used with a different set of hardware, then the software will refuse to run. Activation is not restricted to these programs; Microsoft Office has a similar scheme, and other software vendors are investigating it for themselves. At the moment this is not a major issue - the software can be purchased (to obtain new license keys) and the activation servers are still live and reachable. Longer term, however, this is a major concern. This software is essential to access collection items (including legal deposit objects) but our ability to use it is conditional on Microsoft continuing to support their activation servers. Windows XP is due to stop being sold some time this year, and although MS has committed to keeping the activation servers running for another three or four years, it is not clear what they will do beyond that. As such, a time will likely come that MS neither offers Windows XP license keys, nor offers any provision for activating Windows XP even when a license key is available. To continue to provide access to the digital objects that require Windows XP will demand that we take some action to circumvent the DRM checking. There are a couple of options available to us: modifying Windows (so that it no longer needs a key or activation), which seems difficult, or generating a fake license key. The activation check in Windows can be bypassed by providing a certain kind of license key, and software exists to generate license keys without purchasing them from MS. This is obviously legally problematic (at best), but as things stand, it remains the only reasonable way to support Windows XP indefinitely."

j) According to Bright, preservation problems also emerge in relation to DRM protection of works in digital format. He supplied an example:

> "The DVD specification includes two DRM measures (encryption, using the CSS algorithm, and region coding) and there are a number of third-party extensions such as Macromedia's RipGuard that some DVDs also contain. These features are designed to obstruct duplication either by preventing a system from copying the data from the disc in the first place, or by making a burned (DVD-R/DVD+R) copy of a disc subtly different from the original. Duplication and media migration are an essential and unavoidable preservation requirement. For these duplicates and migrations to be useful, the DRM protection must necessarily be defeated. The reality is that this is generally easy to do - for all the time and money spent on trying to protect optical discs, software workarounds are cheap, abundant and fairly reliable."

k) Bright gave a further example of difficulties encountered by the BL in connection with legal deposit:

> "Legal deposit contains magazines with cover DVDs for games consoles such as the Xbox and the PlayStation 2. The cover DVDs contain game demos and similar software. Supporting these hardware platforms is hugely problematic in itself due to their proprietary nature, but their DRM is another big problem. An Xbox will not run software from DVD-R, in an effort to prevent people from duplicating game DVDs. The widespread solution is to perform modifications of the Xbox."

l) Bright concluded that to reduce the complexity of the required migration or emulation strategies and to ensure long-term preservation and access, the BL should receive DRM free versions of the items deposited. He added that failing this, the BL needs to be able to circumvent DRM applied to works and DRM protecting ancillary software/hardware required to access works in a digital format.

B. Royal National Institute of Blind People

According to Sections 31A-31C and 296Z and Part I of Schedule 5A of the Copyright, Designs and Patents Act, 1988, a visually impaired

person or an approved body[47] may make accessible copies of works, in spite of the legal protection of DRM systems.[48]

The Copyright (Visually Impaired Persons) Act 2002, came into force on 31 October, 2003, amending the Copyright Designs and Patents Act 1988 to allow for the creation of accessible copies of works.

According to the Act, a *visually impaired person* is a person:

> "(a) who is blind; (b) who has an impairment of visual function which cannot be improved, by the use of corrective lenses, to a level that would normally be acceptable for reading without a special level or kind of light; (c) who is unable, through physical disability, to hold or manipulate a book; or (d) who is unable, through physical disability, to focus or move his eyes to the extent that would normally be acceptable for reading."[49]

An *accessible copy* is defined as:

> "a version which provides for a visually impaired person improved access to the work."[50]

The Copyright (Visually Impaired Persons) Act 2002 authorises (1) a visually impaired person to make an accessible copy of a work, (2) certain approved bodies to make multiple accessible copies of a work for visually impaired persons and (3) certain approved bodies to hold intermediate copies of works, being copies necessarily created during the making of accessible copies.[51]

There is a concern that even though the Copyright (Visually Impaired Persons) Act 2002 allows the visually impaired to create accessible copies of works, eBook technology providers, such as Microsoft, have provided the option to turn-off accessibility settings, so that the visually impaired may be prevented access by DRM.

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[47] According to Section 31B(12) of the UK Copyright, Designs and Patents Act, 1988, an *approved body* is "an educational establishment or a body that is not conducted for profit".

[48] See Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988 and Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988.

[49] Copyright (Visually Impaired Persons) Act 2002, Section 6.

[50] Copyright (Visually Impaired Persons) Act 2002, Section 6.

[51] Copyright (Visually Impaired Persons) Act 2002, Sections 1-3.

Kerscherv and Fruchterman summarise the problem thus:[52]

> "The personal computer is the information access tool of choice for many persons who are blind. The computer is made accessible through a screen reader program. Screen readers use a text-to-speech synthesizer (TTS) to speak aloud the information that a sighted person would visually read on the computer screen. These screen readers intercept the text being written to the display and keep track of it, so that it can be vocalized in response to the user's control. For example, pressing certain keys will cause the screen reader to read the current word, line or paragraph. Screen readers also permit the use of dynamic Braille displays instead of, or in addition to, the TTS.
>
> The screen readers are external applications to the PC-based eBook reading software. The DRM wrappers are designed to work with reading applications that present the text visually without allowing the text to be copied, to prevent the illegal distribution of the book. Unfortunately, these anti-copying provisions also prevent the screen reader from providing access with TTS or braille. The secure reading application views these external applications as security threats and blocks their access. As a result, persons who try to use their screen reader with eBook reading systems find that their screen reader is not allowed to do its job and leaves the person who is blind with no access to the ePublication, unless the reading application builds access directly into the user interface.
>
> Microsoft and Adobe, which have implemented the use of TTS in their eBook reading systems, have heard from publishers that the audio rights to their eBooks may have been sold. Therefore a feature has been added that allows the use of TTS to be turned off. This means that at the time of creation, a decision can be made by the publisher to disable the use of TTS for this particular eBook.
>
> (...)
>
> In the case of Microsoft Reader, if the highest level of security is selected, TTS access will be disabled. Unfortunately for people with disabilities, the latest and most popular eBooks are almost

[52] Kerscherv and Fruchterman, 2002.

always released at this highest level of security. So, while some eBooks formatted for Microsoft Reader now talk, the ones in greatest demand generally do not.

Adobe takes a different approach that does not associate TTS with security. Adobe's eBook authoring tool provides the option to turn off TTS access. Publishers using this option sometimes turn off this access because they are not certain they have the rights to turn it on."

According to Garnett, White and Mann:[53]

"There are essentially two ways in which this problem can be addressed. The first is to set up a system where the DRM mechanism is able to recognise a trusted accessibility tool and then unblock access to content for that tool. The second way is by devising instructions, expressed through the rights expression language, which are available to authorised users of trusted access tools.

Adobe has already initiated a program incorporating the first approach. The DRM system used in the Adobe reader is now able to recognise and establish a trusted relationship with at least two accessibility tools (Window-Eyes and Jaws screen readers). Allowing access to DRM protected content is now reportedly the default position of the reader.

The effect of this trusted relationship between the Reader and the accessibility tools is that access (including text to speech) can be facilitated without in any way derogating from the security level applied to the content generally (e.g. no printing, no altering, no saving to alternate formats).

To achieve this relationship, third party applications are submitted to Adobe for testing the security and compatibility issues.

(...)

Thus the feasibility of access to Adobe DRM through assistive technology has been established, but effective realisation remains protracted and by no means universally rolled out."

[53] Garnett, Mann and White, 2005.

To ascertain whether a visually impaired person or an approved body are able to create accessible copies of works, despite the existence and legal protection of DRM, upon contact with Pritti Mehta (Senior Research Officer, Corporate Research, Royal National Institute of Blind People) interviews were conducted with representatives of the Royal National Institute of Blind People on 21st May 2007 (Richard Orme, Head of Accessibility, Royal National Institute of Blind People), 30th May 2007 (David Mann, Campaigns Officer, Public Policy Department, Royal National Institute of Blind People) and 26th June 2007 (Lynn Holdsworth, Web Designer, Royal National Institute of Blind People). Further data were collected on 14th June 2007 (Richard Orme, Head of Accessibility, Royal National Institute of Blind People) and 3rd August 2007 (David Mann, Campaigns Officer, Public Policy Department, Royal National Institute of Blind People and Lynn Holdsworth, Web Designer, Royal National Institute of Blind People).[54]

Thus, the Royal National Institute of Blind People (RNIB) was used to illustrate the position of the visually impaired in this context. According to Richard Orme:

> "The RNIB is one of the UK's oldest and largest organisations serving the need of blind and partially sighted people. Its patron is the Queen and in its Royal Charter the RNIB is identified as the leading organisation representing the needs of the visually impaired. There is not another organisation in the UK that has such a broad and all encompassing remit as the RNIB, even though there are about four hundred organisations in the UK serving the needs of blind and partially sighted people (from small organisations that serve local needs, to specialist groups for particular conditions or interests) and three major organisations representing and campaigning for the visually impaired (the RNIB, Guidedogs and Action for Blind People)."

Orme added that:

> "the RNIB has a number of offices across England and four UK countries (Belfast, Edinburgh, Glasgow and Cardiff). The headquarters are in London, housing a research library and a resource centre. Peterborough is one of the RNIB's major sites, with almost three hundred employees. It encompasses a production/distribution centre, a warehouse and a print floor. A

[54] See Appendix F – Questionnaires.

> wide range of products and applications are shipped from Peterborough, from liquid level indicators for people who newly lost their sight, to computers, mobile phones and Braille and audio productions."

As to representativeness, Orme explained that:

> "the RNIB's representativeness stems from its structure rather than membership, which was a later development. Members of the RNIB may vote people on to an assembly and assembly members may vote people on to a board. The RNIB board is made up of a majority of blind and partially sighted people and is scrutinized and monitored by a committee structure which includes, mainly, blind and partially sighted people. There is a democratic structure in place."

Results

a) According to Richard Orme (Head of Accessibility, Royal National Institute of Blind People), even though the visually impaired have the right to create accessible copies of works (for example, by using a screen reader, or modified on-screen print, or format-shifting to an MP3 player, or by producing large print via Microsoft Word) these features may be blocked (for example, a visually impaired person may buy an e-book and realise, afterwards, that access by a screen reader has been prevented). Thus:

> "the RNIB is very watchful of the issues around DRM because it can see evidence of DRM preventing access to content in a world where digital technology actually makes information more accessible rather than less".

b) As to the possibility of having publishers flag-up inaccessible content, the RNIB representative noted that the RNIB does not believe that a labelling scheme describing levels of accessibility should be supported, as it could appear to endorse inaccessibility:

> "Any labelling scheme should be used to indicate clearly how the bona fide beneficiary of an exception can gain ready access to the material in question, whether that is from the publisher or through technological means."

c) Asked how often the RNIB has been contacted by visually impaired people who have been unable to create accessible copies of works because of DRM, Orme's answer was:

> "Occasionally, the RNIB has been contacted by blind or partially sighted people who have purchased e-books only to find that they are unable to access the content because DRM has been applied in such a way as to prevent their screen reader technology from accessing that content. The fact that the RNIB has only encountered a few cases in which DRM prevented access does not make the issue less significant. One of the reasons could be that the visually impaired may know, by now, that buying e-books may lead to very frustrating results."

In the majority of reported cases, stated Orme, the visually impaired did not get satisfactory resolution:

> "They contacted the book suppliers and were told to contact the publishers; some complainants got a refund, but none got a clean copy."

d) The RNIB representative volunteered a few case studies to this research project, one of whom, he claimed, was about to put the Secretary of State's complaint mechanism to the test.[55] The potential complainant (whose identity will be kept anonymous by this study) had bought two e-books on British birds and had not been able to access one of them. In the end, that case study did not materialise, nor did any explanation as to its absence. [56]

e) One case study was made available to this research by the RNIB: Lynn Holdsworth, a visually impaired web developer at the RNIB, who had testified before the All Party Internet Group (APIG) in 2006.[57]

In November 2004, Lynn Holdsworth purchased and downloaded a digital version of the Bible, from Amazon. She found that the DRM that

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[55] Contained in Section 296ZE of the UK Copyright, Designs and Patents Act, 1988. See Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988.

[56] Upon contact with Lisa Vango (Senior Policy Advisor, UK Intellectual Property Office), interviewed on 9th July 2008, upon consultation with Ian Fletcher (Chief Executive, UK Intellectual Property Office), it was uncovered that, as of 6th February 2009, the complaints' mechanism had not been tested, which indicates that the RNIB did not "test the waters", either because a decision was taken to do so, or because the retailer or publisher were able to solve the problem.

[57] http://www.apig.org.uk.

had been applied to the work did not allow her screen reader to have access to the e-book and contacted Amazon, asking to be provided with an accessible alternative (with security settings changed to allow screen reader access). A few hours later, she got the following message:

> "Dear Customer
>
> Thank you for contacting Amazon.co.uk. I have checked your order and found that the e-book has been successfully downloaded. Please accept our apologies, but we are unable to refund your cost of downloading the e-Book "The Message - The Bible In Contemporary Language [E-BOOK: ADOBE READER]" or send you a copy of the e-Book after you had successfully downloaded the e-Book.
>
> In accordance with the United Kingdom's Distance Selling Regulation and as stated in our Returns Policy, we cannot give refunds on e-Books once downloading has commenced and is completed.
>
> For further information, please consult the e-Book FAQs listed here: http://www.amazon.co.uk/exec/obidos/tg/feature/-/219681/
>
> Once again, we apologise for any inconvenience that this may have caused you.
>
> Thank you for shopping at Amazon.co.uk.
>
> Warmest regards
>
> Customer Service
>
> Amazon.co.uk"

On Amazon's advice Lynn Holdsworth contacted the publisher, but the publisher referred her back to Amazon. Neither Amazon nor the publisher, were able to assist her and she ended up obtaining an illegal copy of the work (which her screen reader application could access).

She feels that:

> "the inaccessibility of the book should have been flagged-up or [she] should have had redress, because [her] world is digital. For a lot of materials digital is it."

According to Lynn Holdsworth, she has encountered these inaccessibility barriers "very often" and they have stopped her, at times, from performing her duties (for example, in relation to training materials).

She added that, generally, the visually impaired tend to surpass these problems by obtaining unsecured copies from third parties or by circumvention. Exceptionally, authors themselves (upon being contacted by the visually impaired) supply word versions of non-accessible PDFs to the visually impaired.

f) As to the possibility of resorting to non-digital versions of the materials at stake (when access difficulties are triggered by DRM), Orme asserted that non-digital versions are "very difficult" to find. He explained that:

> "most accessible material is still created by specialist agencies operating on charitable funds or social subventions, meaning that only a small proportion of the material published currently becomes available in accessible formats. The RNIB estimates that in the UK only around five per cent of published titles ever become available in accessible formats. It is rare for accessible versions to come out until months or years after the original and ninety five per cent of books are never made available in large print, audio or Braille.

On the same issue, Lynn Holdsworth pointed out that it is not always possible to resort to non-digital versions because of their size. She supplied an example: the standard version of *Harry Potter and the Half Blood Prince* contains about 600 pages, the large print version is only slightly bigger (at 998 pages), but the Braille version actually entails ten large volumes of text.

g) As to expectations, according to Orme, the RNIB sees the industry moving towards an individualised on-demand service:

> "where the visually impaired can order an electronic copy, an audio version, a certain print size, or even a Braille version of a book. In parallel, where DRM creates restrictions in terms of accessibility, tools will become available whereby DRM can be

> circumvented and a grey market of clean copies will float around amongst a small number of individuals."

More broadly, he concluded, the RNIB anticipates that publishers will start working with trusted intermediaries, such as the RNIB:

> "In the main publishers are warm to the issues of the visually impaired; they are part of the solution and ready to work".

h) David Mann (Campaigns Officer, Public Policy Department, Royal National Institute of Blind People) illustrated this trend by reference to a feasibility project, called *Books Expansion for the Visually Impaired (BEVI) Feasibility Project,* which led the RNIB to work closely with publishers, publishing trade associations, booksellers, distributors, conversion suppliers and other organisations, throughout 2006.

He explained that the project had two basic goals, (1) to determine the feasibility of using digital files supplied by publishers to save costs and improve efficiency in creating accessible books and (2) to determine the feasibility of selling accessible books through the book trade.

In the proposed model, he said, publishers would make electronic files available to the RNIB as a not-for-profit, trusted intermediary, enabling the RNIB to double its output on the basis of current levels of funding and leading to more availability and ease of purchase.

According to Mann, the Government did not contribute financially to the project, but facilitated the discussions between rightholders and representatives of the visually impaired community. The money came from the RNIB and the publishers.

The project reported in May 2007.[58]

i) Mann noted that there are two ways in which the RNIB wishes to build on the success of the feasibility study: a Trade Book Pilot and a Text Book Central Service Pilot.

The Trade Book Pilot project will focus on a set of high profile trade titles from major trade publishers. It will convert publisher PDFs to XML and then make multiple output formats from the one source XML file (such as Braille, synthetic speech and large print). These titles will

[58] Russell, 2007.

be made available for purchase via bookshops, testing a new business model.

The Text Book Central Service Pilot is likely to focus on compulsory secondary education. The idea is for schools to channel requests for textbooks in accessible formats via a central service, which will source these from publishers in PDF format and make them available to the schools in appropriate formats. The project will test the service and investigate funding options.

j) As to solutions, according to the RNIB:

> "the ideal solutions should be built into the technology itself, but for as long as this is not the case, adequate agreements must be established to find ways around the problem. Voluntary agreements may offer the most flexible solutions, but the law must provide a fallback where voluntary agreements fail (…) Priority should be given to developing technical solutions such as: provision of an encryption key, entrusting a third party with an encryption key, developing watermarking and fingerprinting techniques, creating a dedicated channel, such as a website accessible only to authorised people, where access could be tailored to individual users' needs." [59]

C. National Consumer Council

According to Sections 70 and 296Z and Part I of Schedule 5A of the Copyright, Designs, and Patents Act, 1988, private individuals may make a recording of a broadcast or cable programme, for the purpose of viewing it or listening to it, in a private and domestic context, at a more convenient time, in spite of the legal protection of DRM.

To ascertain whether private users are able to carry out this permitted act despite the existence and legal protection of DRM, and, more generally, whether DRM has been preventing consumers from benefiting from exceptions to copyright, an interview was conducted with a representative of the National Consumer Council (Jill Johnstone, Director of Policy, National Consumer Council) on 23rd May 2007.[60]

[59] Mann, 2007.
[60] See Appendix F – Questionnaires.

The National Consumer Council (NCC) was contacted to shed light on the position of private users in the DRM context, given its role in representing the consumer interest. According to Jill Johnstone:

> "the NCC is a non-departmental public body (meaning that it receives some funding from the Government, namely from the Department for Business, Enterprise and Regulatory Reform, but is completely independent of Government) set up by Government in 1975 to represent the consumer interest. The NCC's mission is to make sure the consumer gets a better deal by making their voice heard and this is achieved, through research, analysis and campaigning – which might be lobbying Parliament, European institutions or even pressurizing businesses or service providers to do things."

Results

a) According to Jill Johnstone (Director of Policy, National Consumer Council), the way DRM is being used is causing serious problems for consumers, including unreasonable limitations on the use of digital products and infringement of consumer rights.

The NCC representative submitted that consumers are finding that their previous ability to use works has been constrained through DRM and that they have become subjects of legal actions for doing what previously was deemed acceptable.

Furthermore, the use of DRM shifts the burden of proof to consumers:

> "Rather than companies having to demonstrate illegal activity (which will usually require some legal deliberation), technical restrictions prevent all activities that companies wish to prevent, even when these are activities that previously courts have accepted as legitimate under 'fair dealing' exceptions to copyright law."

Matters are made worse, she said, because even though according to EU and UK consumer protection law there should be clear statements about the operation and effects of using a product, these are seldom available on DRM protected products and consumers may be forced to accept unfavourable contract/licensing terms:

> "Given that consumers are the weaker party in these relations, and frequently are not clearly appraised of the limitations on use

> that the licence (and its associated software) place on them, DRM software clearly disadvantages consumers."

The NCC representative argued that:

> "where the implementation of the Information Society Directive would benefit commercial operators there has been extensive and detailed transposition, however where the implementation might have benefited UK consumers, there was a clear minimalist strategy to transposition. This imbalanced approach has resulted in law that is out of step with social norms and technical developments. It places unreasonable and unrealistic constraints on consumers' use of products they have purchased and simple does not reflect how people live their lives. Such legislation cannot command public respect and so brings the law, and the legislative process, into disrepute."

b) As to solutions, according to Johnstone, DRM systems should not get blanket protection, rather there should be standards that they should comply with (such as those stemming from consumer protection law) in order to get protection, and any non-compliant DRM should be withdrawn from the market or circumvented. She explained that if there were clear standards and transparency, the NCC could, for example, make a shopping survey and, if appropriate, make a complaint to the Office of Fair Trading.

It is the NCC's view, added the same representative, that consumer rights should be incorporated into copyright legislation: in the first instance by amending UK legislation to use the full scope of exceptions allowed under the Information Society Directive, (including the right to private copying), and in the medium term by influencing the EU copyright review towards clear consumer rights:

> "a human right of access should be linked to the notion of a public domain; by introducing an explicit term to identify the public side of the balance at the centre of the protection of IPRs (and specifically copyright), the EU would be able to ensure that public interests would be accorded more weight in negotiations around the protection of private rights."

Lastly, she said, the NCC advocates applying the same protection for digital and non-digital products. The suggestion is to tackle contract law, through consumer law, making sure that protections that apply to physical products apply to digital products.

There are two major aims ahead, concluded the NCC representative:

> "to improve consumer rights, which are relatively pre-digital, and to deal with the unreasonableness of copyright law".

D. Lecturers

According to Sections 32 and 296Z and Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988, persons giving instruction are allowed to carry out certain acts of copying in spite of the legal protection of DRM. Persons giving instruction are allowed to copy literary, dramatic, musical or artistic works, as long as copying is not carried out by means of a reprographic process and persons giving instruction in the making of films or film sound-tracks are also allowed to copy sound recordings, films or broadcasts by making a film or film sound-track. In both cases, copying must be done in the course of instruction or preparation for instruction and for a non-commercial purpose and sufficient acknowledgement is required, unless this would be impossible for reasons of practicality or otherwise.

To assess whether persons giving instruction are able to carry out these permitted acts despite the existence and legal protection of DRM, data were collected from film lecturers. Film lecturers regularly use short clips from films in a number of subjects, such as film analysis and film history, both in lecturing and seminar teaching.

Moreover, the 2006 announcement by the US Librarian of Congress suggested that problems had been encountered in this particular field. On the recommendation of the Register of Copyrights, the six classes of works that would be subject to a circumvention exemption included:

> "audiovisual works included in the educational library of a college or university's film or media studies department, when circumvention is accomplished for the purpose of making compilations of portions of those works for educational use in the classroom by media studies or film professors."[61]

[61] Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works, 2006, http://www.copyright.gov/1201/.

Thus, in April 2007, sixty, randomly selected, film lecturers from Aberdeen, Anglia Ruskin, Birbeck, Bournemouth, Central Lancashire, Derby, East London, Edge Hill, Exeter, Glasgow, Goldsmiths, Glamorgan, Gloucestershire, Greenwich, Huddersfield, KCL, Kingston, Leeds, Leeds Metropolitan, Middlesex, Leicester, Lincoln, London South Bank, Manchester Metropolitan, Middlesex, Napier, Northumbria, Oxford Brooks, Queen Mary, Royal Holloway, St Andrews, SOAS, Sussex, Wales and Warwick were contacted and requested an interview.

The response rate was very poor, mostly entailing no reply, or replies such as "I cannot think of any examples, so would not make a very productive interviewee", or "might it be better to ask a lecturer who doesn't have hacking software expertise?" Only three interviews followed.[62]

In May 2007, sixty, randomly selected, film lecturers from the same institutions, were contacted and requested, not a face-to-face interview, but a written reply to a questionnaire. The response rate improved, with twenty-six responses ensuing.[63]

In view of the still low response rate, in spite of perceived problems in terms of the interface between DRM and certain educational exceptions, the decision was taken to make direct contact with the academic film community in order to obtain more data. In July 2007, this researcher attended a film conference, *The Realist Impulse contemporary film making in Britain*, St Anne's College, Oxford. Interestingly, one of the speakers emphatically recommending viewing two films, adding:

> "buy/rent *Yasmin* but if you can't find *Don't Shoot the Messanger* let me know and I will happily send you a copy".

Results

a) The twenty-six replies to the questionnaire, unveiled three positions: (1) "Don't care", the position of six computer proficient lecturers, (2) "don't know", the position of four lecturers who get help from AV personal or technical assistants for film studies and (3) "have problems", the position of sixteen lecturers who neither get help neither know how to circumvent DRM.

[62] See Appendix F – Questionnaires.
[63] See Appendix F – Questionnaires.

The “don’t care” lecturers try to avoid material which is “crippled” by DRM, but have enough software expertise to capture clips that are needed for teaching, whether they are DRM protected or not. It was noted, though, by some, that circumventing DRM on DVDs can lead to the loss of certain manipulation faculties, such as loss of frames.

The “don’t know” lecturers are assisted by AV personal or technical assistants for film studies in the creation of teaching materials. In the process, software is used which enables the creation of high quality Quicktime MPEG video files of DVDs, permitting selection of chapters, trimming of files in quick time and leading to convenient and easy to use menus.[64]

The lecturers who neither get technical support for extracting clips nor know how to circumvent DRM, when unable to extract a clip from a commercial DVD lodged in their library collection are forced to tailor the content of their lectures to the VHS materials at their disposal. They contend that this happens frequently, given that most commercial DVDs are DRM protected.

b) As to whether they are able to resort to non-digital versions of the materials at stake when faced with DRM difficulties, their responses were not very positive. For example:

> “only because I will limit myself to use clips and VHS tapes from my personal collection (composed mostly by recordings from terrestrial TV) rather than from the vast DVD collection lodged at our University library. This is incongruous in the context of the major investment made by the University to provide adequate DVD provision for Film Studies teaching”;
>
> or
>
> “I resort to a combination of personal resources and ERA DVD recordings from terrestrial television, obtained in the past six years. However, this greatly limits my teaching practice”.

c) As to expectations, some lecturers referred to the US as an example to follow. For example:

[64] The technical details were provided by two AV assistants, whose identities will, at their request, remain anonymous, on 3rd December 2007.

> "In US educational institutions, teachers of film and television classes have been granted an exemption in "defeating" copy protections on DVDs for the purpose of using clips in the classroom use, in 2006. This exemption lasts only for a three-year period. Something similar would be desirable in the British context."

E. Students and researchers

According to Sections 32 and 296Z and Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988, persons receiving instruction are allowed to carry out certain acts of copying in spite of the legal protection of DRM. Persons receiving instruction are allowed to copy literary, dramatic, musical or artistic works, as long as copying is not carried out by means of a reprographic process and persons receiving instruction in the making of films or film sound-tracks, are also allowed to copy sound recordings, films or broadcasts by making a film or film sound-track. In both cases, copying must be done in the course of instruction or preparation for instruction and for a non-commercial purpose. Sufficient acknowledgement is required, unless this would be impossible for reasons of practicality or otherwise.

To assess whether persons receiving instruction are able to carry out these permitted acts despite the existence and legal protection of DRM, in June 2007, sixty film lecturers, randomly selected, were asked whether a questionnaire could be presented to their students in loco.[65]

The following are examples of the types of answers obtained: "my recommendation is that you send this to …"; "I have forwarded your email to…"; "I am not teaching this term"; "I am on research leave this year"; "I am not in a position to help you at the moment"; "I am not currently involved in the type of teaching that would facilitate your research"; "I do not permit research in relation to my academic work and teaching"; "I do not think this would work with my students"; "unfortunately I will not be able to help you with your questionnaire".

In October 2007, the questionnaire got circulated, by email, to film studies students at Birbeck (Department of History of Art, Film and Visual Media), King's College London (Department of Film Studies),

[65] See Appendix F – Questionnaires.

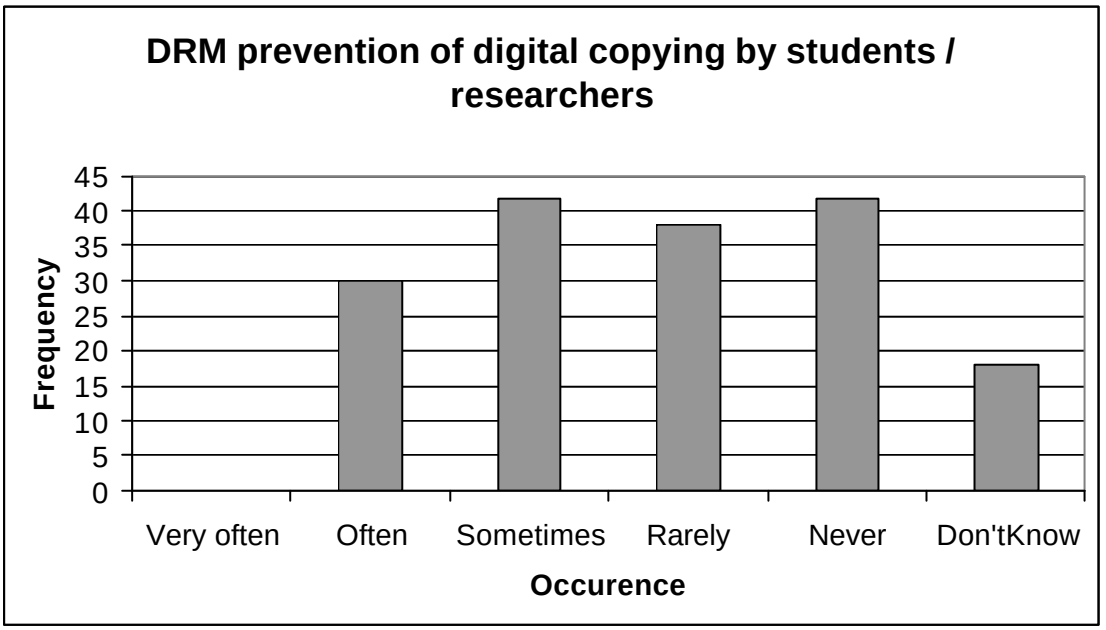
Royal Holloway (Media Arts), SOAS (centre for Media and Film Studies) and also to the University of London Screen Studies Group.[66]

In November 2007, a further step was achieved, as the questionnaire was presented, in person, to film students at Goldsmiths (Department of Media and Communications) and QMUL (School of Languages, Linguistics and Film). In the process this researcher attended various film lectures, and saw extracts of films such as *The Odd Man Out*, *The Fallen Idle* and *The Third Man*.

Overall, one hundred and seventy four replies from students and researchers were obtained.

Results

a) One hundred and ten respondents had encountered problems in this area.



The following are examples of students/researchers comments:

[66] The University of London Screen Studies Group came into existence in 2001, due to the spread of film and television studies across the University of London. It comprises all the London colleges teaching film and television and several hundred MA and research students. It is composed of film and media scholars from various institutions within the University of London (http://screenstudies.sas.ac.uk/).

"Most media students are aware of bypass measures because they are essential in this field of study";

"I download software to break encryption";

"Programs like DVD shrink or Macbe The Ripper are used to rip clips from DVDs, which gets around the copyright protection";

"I can't rip clips legally, even if I use a DVD from the library";

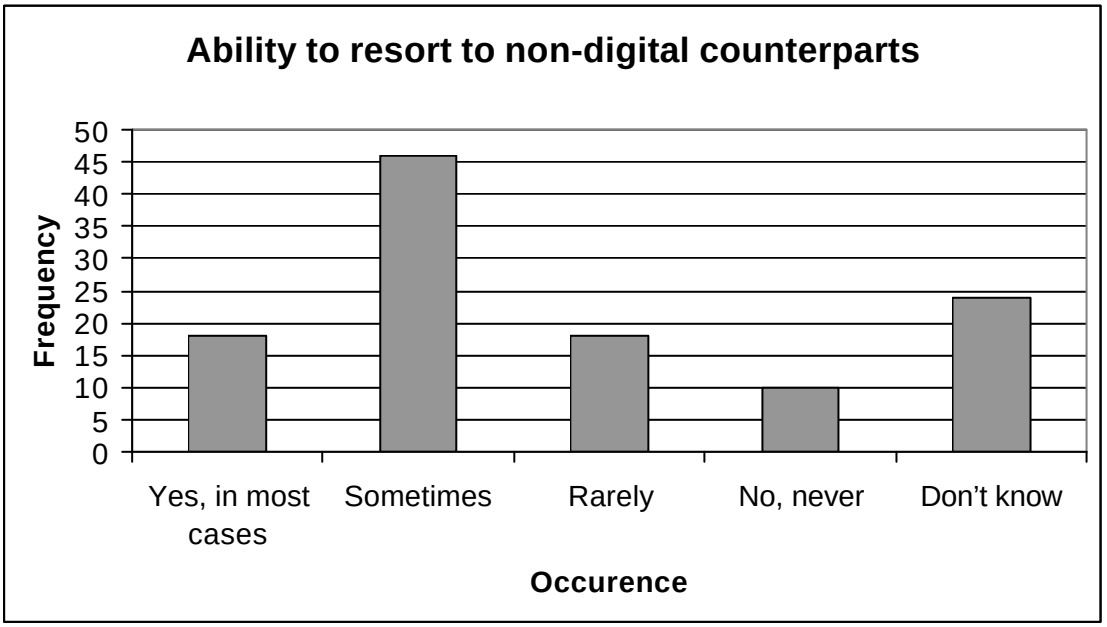
"I wouldn't think twice about ripping something illegally in order to have it for study";

"Restrictions on DVDs encourage me to download illegal versions";

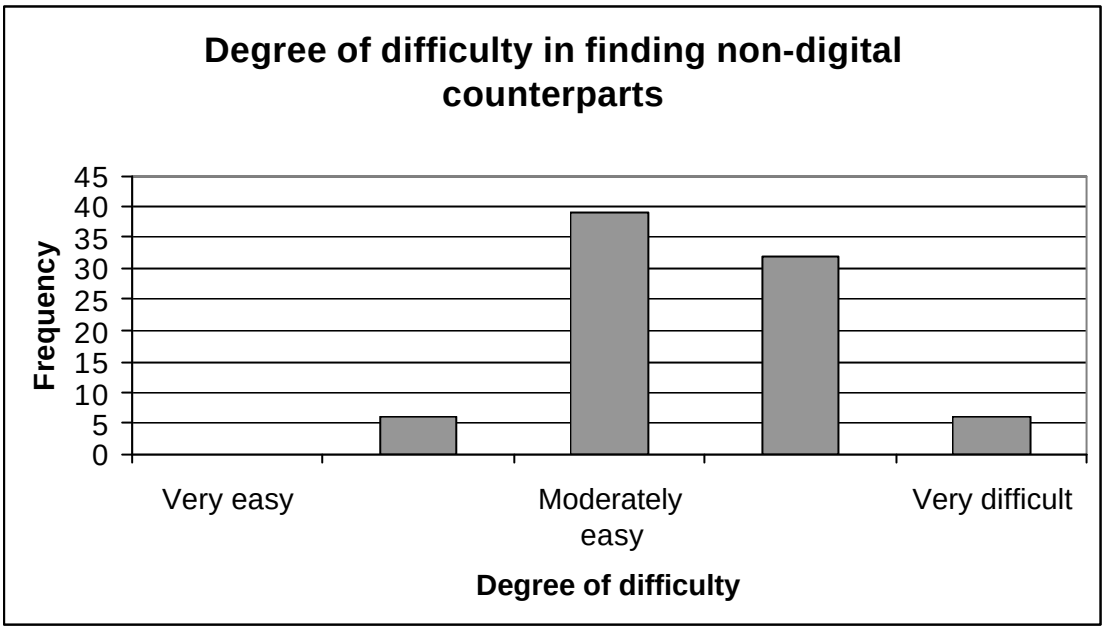
"It will always be possible for people to copy DVDs in spite of the laws";

"It is quite easy to get around the copyright".

b) Most students/researchers had been able to find non-digital versions of the materials at stake "sometimes".



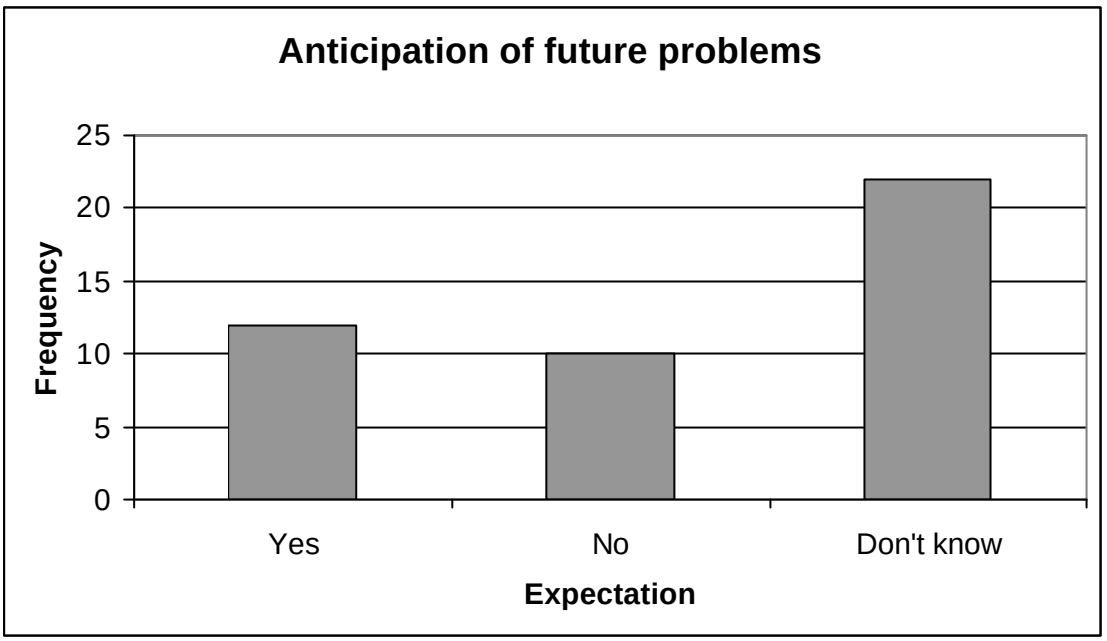
c) As to the degree of difficulty in finding non-digital versions to the materials in question, there was a split between those who found it "moderately easy" and those who found it "difficult".



The following are examples of students/researchers comments:

> "Non-digital versions are easily found in relation to text only";
>
> "It is not so much a question of difficulty as of convenience and affordability (consider travel expenses, registration fees – especially at places such as British Film Institute, time consuming search for a hard copy, etc.)";
>
> "Obtaining non-digital versions often slows the process and time is wasted, while the industry makes no further money".

d) Most of the students/researchers who had not encountered problems before did not know whether they anticipated any future problems.



As to expectations, the respondents wrote, for example:

> "I expect to be allowed to use DVDs where appropriate and I will continue to do so, even if illegally";
>
> "No matter how many measures are put in place to prevent copying of media, it will always happen";
>
> "There is always a way";
>
> "It should be easier to get clips out of a film and to put them in a presentation";
>
> "I expect a reduction of encryption in relation to academic materials".

F. Findings

a) Data collection with the BL revealed two main issues: (1) from the perspective of the BL's mission, a preservation issue and (2) regarding BL's remote users, an issue regarding the degree of enjoyment of an exception.

The BL's biggest concern is digital preservation. There are preservation concerns in relation to access to works and duplications of works – both activities being essential for preservation purposes.

The first preservation concern is that where DRM (applied to works in digital format or to ancillary software used to access those works) becomes obsolete and the relevant manufacturers are not willing to provided updates or have gone out of business, the BL could find itself with digital content that it can no longer have access to and unable, by law, to circumvent. The obsolescence of a DRM could render an item hosted by the BL inaccessible.

The second preservation concern is that where a DRM prevents copying (and the BL is unable, by law, to circumvent) reproduction of a work for preservation purposes will be impossible.

There is also an issue in relation to remote users. Where DRM systems limit the period of view, restrict the number of copies that can be made and are time limited, a user is able, arguably, to have access to the work and receive the information in question. Where a user is forced to resort to a paper copy of a work in digital format (as a result of DRM protection of the digital version of the work), the user is able to have access to the work (and to the information in it). The question is whether it is sufficient to enable a user to benefit from an exception in a sub-optimal way, or whether the ecosystem around the exception should be more favourable to it, enabling optimum use.

To solve these problems, the BL would like to receive DRM free versions of the items deposited, or, failing this, to be able to circumvent both DRM applied to works and DRM protecting ancillary software/hardware required to access works in a digital format.

b) Data collection with the RNIB uncovered two main points (1) a reported access problem for which scarce evidence was provided by the RNIB and (2) the existence of voluntary measures to facilitate access to works by the visually impaired.

The RNIB claimed to be very watchful of the issues around DRM because it could see "evidence" of DRM preventing access to content. The RNIB indicated that several case studies would be made available to this research, but eventually only one case study emerged, reporting an example of inaccessibility going back to 2004.

The RNIB also claimed that, generally, the publishing industry was warm to the issues of the visually impaired. This claim was illustrated by reference to a feasibility project, called *Books Expansion for the Visually Impaired (BEVI) Feasibility Project*.[67]

Conversely, in the US, in December 2006, the US Copyright Office discovered that the visually impaired were likely to be adversely affected by DRM in connection to "literary works distributed in ebook format when all existing ebook editions of the work (including digital text editions made available by authorised entities) contain access controls that prevent the enabling either of the book's read-aloud function or of screen readers that render the text into a specialized format."[68]

Whereas, generally, the US Copyright Office's 2006 findings, under the established rule-making procedure[69] are not dissimilar to the findings of this study, they do differ in connection to the visually impaired. In the UK, voluntary measures have emerged in relation to ebooks for the blind. It is possible that such voluntary measures may have been stimulated by the action in the US.

c) The NCC's main concern, in relation to DRM, is that its usage does not compromise transparency, clarity and convenience for the consumer. For the NCC, the way DRM systems are being used is causing serious problems for consumers, including unreasonable limitations on the use of digital products and infringement of consumer rights. The NCC was not able to provide any particular examples of DRM preventing the consumer from benefiting from an exception to copyright.

d) Data collection within the film lecturers and students/researchers community unfolded two problems: (1) DRM protection of cinematographic works is leading to difficulties in extracting portions of those works for educational use and (2) those difficulties are triggering isolated acts of self-help for academic and educational purposes.

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[67] The project reported in May 2007. See Russell, 2007.

[68] Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works, 2006, http://www.copyright.gov/1201/.

[69] According to a rulemaking proceeding conducted by the US Copyright Office to determine whether certain classes of works should be exempted from the prohibition against circumvention of DRM. See Section 1201(a)(1)(C)-(D) of the United States Copyright Act.

In some cases, where DRM does not enable copying of extracts of films in a digital format, resorting to non-digital versions of the required materials is a possibility. Some respondents pointed out, though, that this option can be expensive and inconvenient, as well as time wasting. The question is again whether it is sufficient to enable a user to benefit from an exception in a partially optimum way, or whether the ecosystem around the exception should enable optimum use.

To solve these problems, some film lecturers and students/researchers contended that legislation should be passed in the UK so as to clarify and streamline the general use of film extracts (from commercial, as well as non-commercial DVD sources) in the context of the classroom. It was submitted that this would enable universities to provide adequate technical support to lecturers, for example, by producing DVD materials, including film extracts, on request by lecturers and tutors, for specific teaching (face-to-face and virtual) environments.

e) It can be concluded that some beneficiaries of privileged exemptions (namely, the BL and the film lecturers and students/researchers community) are being adversely affected by the use of DRM.

In some instances, beneficiaries report limited or no enjoyment of a privileged exception. Where a user is not able to benefit from a privileged exception or is only able to benefit from it in a limited manner, it could be argued that this undermines the public interest considerations underlying the exception – a rational that invokes the spirit of the law, rather than just its letter.

Overall, there is a gap between user expectations and what is being delivered by DRM. Whether this gap may be addressed by technology will be seen in the next chapter.

Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?

To answer this question, the major players in the DRM development field were contacted, covering the protection of music, films and books. Sections A-E and section F, summarise, respectively, results and findings thus obtained.

A. Mark Stefik, DPRL and XrML

The first empirical procedure, within the DRM development field, took place with Mark Stefik, a research fellow at the Xerox Palo Alto Research Center. He was interviewed on 7th March 2007.[70]

Stefik was the researcher behind the creation of DRM. In the nineties, he published a paper entitled "Letting Loose the Light: Igniting Commerce in Electronic Publishing",[71] where he argued that the first key to commerce in digital works is to use *trusted systems:*

> "Trusted systems speak a communications protocol with other trusted systems and will not transmit information to any system not recognised as another trusted system. This strategy ensures that copies of digital works are either inside trusted systems or they are encrypted. When they are inside trusted systems, usage is controlled. When they are outside trusted systems, usage is practically impossible without breaking the code. The important issue, however, is not just protection and containment. The greater good is not served by simply limiting the flow of information. It is served by supporting and encouraging a lively trade in information. *Rather than just confining genies to specific bottle, we want to encourage them to travel between bottles under rules of commerce*." [72]

Mark Stefik referred to trusted systems as *repositories* that would read the rules that apply to a given work and follow them. This would happen on the basis of *usage rights*:

[70] See Appendix F – Questionnaires.
[71] Stefik, 1996.
[72] Stefik, 1996, 227.

> "Digital works would come with tags on them. The tags – put there by the creators, publishers, and distributors - would describe the usage rights for the digital work: what can be done with it and what it costs (…) They are written in a machine-readable language and give the repository the rules for using the work; they are an electronic contract enforced by the repository (…) they are not removable." [73]

Stefik went on to create a programming language for expressing rights to content and transactions in those rights, called *Digital Property Rights Language* (DPRL):

> "a digital property rights language needs to define several kinds of rights, namely those concerned with how the work can be transported, how it can be rendered, and whether it can be used in derivative works. Other special rights relate to making and restoring backup copies to protect against hardware failure." [74]

Copy, transfer and loan are examples of *transfer rights*, playing and printing are examples of *render rights*, and extract, embed and edit are examples of *derivative rights*.

To this he added the concepts of *licences and tickets*:

> "Licences would be digital certificates that enable someone to exercise certain usage rights (…) When a consumer asks to use a licensed work, an authorisation server or digital authority – a program on a repository - would check his or her digital licence (…) Licences and tickets could be established for diverse categories of purposes, including social purposes. For example, a charity or governmental organisation could issue certificates to low-income people or inner-city youth. Socially conscious publishers could offer discounts or limited free use of certain digital works to people holding such certificates (…) The same digital-licence could provide special rights to certified librarians, researchers, and teachers." [75]

DPRL appears in a patent filed by Xerox in November of 1994 (granted in February 1998) entitled:

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[73] Stefik, 1996, 229.
[74] Stefik, 1996, 230.
[75] Stefik, 1996, 235-238.

> "System for Controlling the Distribution and Use of Digital Work Having Attached Usage Rights Where the Usage Rights are Defined by a Usage Rights Grammar" (US Patent 5,715,403, issued to Xerox Corporation).

Xerox created a division called Xerox Rights Management, dedicated to the development of DPRL technology. In November 1998, Xerox issued the first XML version of DPRL. In early 2000, Xerox spun off Xerox Rights Management into a separate company called ContentGuard.[76] ContentGuard renamed DPRL to the Extensible Rights Management Language (XrML), to reflect its XML foundation.

XrML is a rich language for building rights specifications, providing:

> "a universal method for securely specifying and managing rights and conditions (...) Rights and conditions can be securely assigned at varying levels of granularity to individuals as well as groups of individuals and the parties can be authenticated. In addition, the grants/licences can be interpreted and enforced by the consumption application (...) XrML is the only rights language being used in commercially deployed solutions, including the DRM solutions from Microsoft." [77]

A specification written in XrML includes several components, including the specification of the rights group (examples: standard, subscriber, student, etc), rights list (examples: copy, transport, loan, play, print, export, view, edit, extract and embed), time (when can rights be exercised), consideration (transaction), territory (where can the rights be exercised) and access controls (authentication).

According to Bechtold:

> "with rights expression languages such as XrML, the permission to copy, delete, modify, embed, execute, export, extract, annotate, aggregate, install, backup, loan, sell, give, lease, play, print, display, read, restore, transfer, uninstall, verify, save, obtain, issue, possess, and revoke content may be expressed in a machine–readable form. The grant of these rights may be conditioned upon a wide array of circumstances: access to and use of digital content may be restricted to certain time periods, locations, devices (for example, computers, storage media,

[76] http://www.contentguard.com/home.asp.
[77] http://www.xrml.org/about.asp.

> printers, and computer displays), and to certain users. Furthermore, the number of times content may be accessed or used can be restricted. At which quality, in which format and for what purpose the content may be accessed may also be defined. Finally, the access and use may be conditioned upon the payment of a flat or a pay–per–use fee.[78]"

Results

a) According to Mark Stefik, DRM can accommodate permitted acts, including privileged exceptions, as long as there is a trusted connection, encryption of the protocol itself, authentication techniques (to verify who is on the other end), a language that catalogues things that one may want to do (copy, print, etc), using the computer as an enforcement agent and licences (which he sees as digital certificates that enable someone to exercise certain usage rights).

b) The system does not have to be black and white, he explained:

> "a controlled system can be as socially generous as you want it to be."

If a language is detailed enough, noted Stefik, it can capture all possible uses of content and make provisions for permitted acts. With XrML, he added, it is already possible to specify different sets of rights and rights attributes for various classes of users:

> "XrML can support permanent copying, as well as copying by special users where they have appropriate licences."

He sees licences as analogous to drivers' licences, enabling special users to carry out permitted acts in a secure structure, but being revoked if misused.

c) Stefik concluded that what is required:

> "is a DRM system that is open-ended to be supportive, to provide for the evolving needs of society. This is not a feasibility issue anymore; it is very easy to do technologically."

[78] Bechtold, 2003, 603-604.

B. Microsoft

Microsoft, with headquarters in Redmond, Washington, was founded in April 1975. It leads the operating system market with the Windows operating system and the business application market with Microsoft Office. As to DRM, Microsoft has two basic DRM technologies: a delivery platform for music and films, which is part of Windows Media Player and (2) a delivery platform for eBooks, which entails Microsoft Reader on the client's side and Digital Asset Server (DAS) on the server side. Microsoft's DRM technology uses a subset of XrML to define rights.[79]

A representative of Microsoft (Tom Rubin, Chief Counsel for Intellectual Property Strategy, Microsoft), indicated, in March 2008, that Microsoft would participate in this study. On 25th May 2007, though, another representative (Jule Sigall, Senior Attorney, Microsoft) declined, stating:

> "We've reviewed the questionnaire and think that we are not the right kind of respondent for your research. Nearly all of the questions go into how DRM affects consumer's use of works and relations to copyright law. Microsoft is predominantly a maker of DRM technologies and simply provides tools to content owners and service providers to decide what usage rules they would like to establish. Thus, for example, it is not for us to decide whether a particular DRM allows fair dealing or not -that is left for the content owners and retailers who interface with the consumer. Even though we won't be able to answer this survey, we would be pleased to touch base in the future on other DRM or copyright-related projects of yours."

Prior to this, interviews had been conducted with Microsoft researchers on 15th February (Fabien Petitcolas, Researcher, Microsoft Research and Michael Roe, Researcher, Microsoft Research) and 2nd March 2007 (Darko Kirovski, Senior Researcher, Microsoft Research).[80] The Microsoft researchers spoke in their personal capacity and not on behalf of Microsoft.

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[79] http://www.microsoft.com/en/us/default.aspx.
[80] See Appendix F – Questionnaires.

Results

a) Overall, the researchers were not very optimistic as to the possibility of DRM accommodating permitted acts, including privileged exceptions, foreseeing various problems.

b) They all referred to difficulties in creating a DRM that is custom built for particular legal situations. One would have to cater for thousands of mini-cases and anticipating, in advance, the situations in which a work must be given away for free is a complex task.

Darko Kirovski explained that it is difficult to deal with particular instances in an automated way, as this requires partitioning and authentication of users. The problem, according to the researcher, is distinguishing between users and authenticating the identity and circumstances of users:

> "How do you know that the user is a student or a researcher? You can use IDs, but there will be fraud. There is no fool-proof way to connect the physical world with the computer world. A governmental supported setting in which people would be logged as special users would be required, but even so normal users could still impersonate special users."

c) The researchers noted that even if DRM developers were to create a DRM capable of accommodating permitted acts, two problems would remain: (1) the system could be easily circumvented and (2) the DRM could be deployed in different ways by copyright owners.

In Kirovski's words:

> "You can cater for DRM exceptions, but there are thousands of ways in which the system could be fooled. It would be trivial to circumvent such a system, ridiculing the core purpose of the system."
>
> and
>
> "DRM is not a selfish creation of a company: it results from negotiation between content owners and DRM developers and, ultimately, how it is used is down to copyright owners."

f) As to expectations, different opinions were presented. Michael Roe thought that a possible way forward was to resort to trusted

intermediaries, such as the British Library. According to Kirovski, though, the market is craving for a new technology that will satisfy all the parties involved and this technology should be created by the EU itself. He argued that the EU should foster the creation of a licence-free DRM with an exemplary implementation; a rigorous implementation model to be used by content owners:

> "When things are not clear, when there is not certainty, when there is no connection between law and technological reality, you need law by example."

C. Apple

Apple Inc., formerly Apple Computer, Inc., was established in Cupertino, California in 1976. The company, famous for designing and manufacturing the Macintosh personal computers, expanded into the consumer electronics market (examples: the iPod and the iPhone) and related software products (example: the iTunes application) and into the online market through the iTunes Store.[81]

Given Apple's control of the online market for DRM protected music, an interview seemed justified. A succession of emails was sent to Apple, throughout January and beginning of February of 2007, requesting an interview with the company. There was no reply, but on 6th February 2007, Steve Jobs (Chief Executive Officer, Apple Inc.) released an open letter entitled "Thoughts on Music".

Jobs' open letter did not address this study's concern that DRM systems may undermine exceptions to copyright, stemming instead from another social preoccupation: the fact that different DRM systems were rarely able to interoperate with each other, meaning, for example, that files in the Microsoft's Windows Media DRM format were incompatible with players that supported Apple's FairPlay and vice-versa. Unless online retailers used the same DRM, files could be played only with the same player.

Apple's attempt to satisfy DRM interoperability concerns was to advocate the elimination of DRM (rather than, for example, opening up FairPlay to other vendors):

> "With the stunning global success of Apple's iPod music player and iTunes online music store, some have called for Apple to

[81] http://www.apple.com./

“open” the digital rights management (DRM) system that Apple uses to protect its music against theft, so that music purchased from iTunes can be played on digital devices purchased from other companies, and protected music purchased from other online music stores can play on iPods. Let’s examine the current situation and how we got here, then look at three possible alternatives for the future.

(...)

The rub comes from the music Apple sells on its online iTunes Store. Since Apple does not own or control any music itself, it must licence the rights to distribute music from others, primarily the “big four” music companies: Universal, Sony BMG, Warner and EMI. These four companies control the distribution of over 70% of the world’s music. When Apple approached these companies to licence their music to distribute legally over the Internet, they were extremely cautious and required Apple to protect their music from being illegally copied. The solution was to create a DRM system, which envelopes each song purchased from the iTunes store in special and secret software so that it cannot be played on unauthorized devices.

Apple was able to negotiate landmark usage rights at the time, which include allowing users to play their DRM protected music on up to 5 computers and on an unlimited number of iPods. Obtaining such rights from the music companies was unprecedented at the time, and even today is unmatched by most other digital music services. However, a key provision of our agreements with the music companies is that if our DRM system is compromised and their music becomes playable on unauthorized devices, we have only a small number of weeks to fix the problem or they can withdraw their entire music catalogue from our iTunes store.

(...)

Apple’s DRM system is called FairPlay. While we have had a few breaches in FairPlay, we have been able to successfully repair them through updating the iTunes store software, the iTunes jukebox software and software in the iPods themselves. So far we have met our commitments to the music companies to protect their music, and we have given users the most liberal

usage rights available in the industry for legally downloaded music.

With this background, let's now explore three different alternatives for the future.

The first alternative is to continue on the current course, with each manufacturer competing freely with their own "top to bottom" proprietary systems for selling, playing and protecting music.

(...)

The second alternative is for Apple to licence its FairPlay DRM technology to current and future competitors with the goal of achieving interoperability between different company's players and music stores. On the surface, this seems like a good idea since it might offer customers increased choice now and in the future. And Apple might benefit by charging a small licensing fee for its FairPlay DRM. However, when we look a bit deeper, problems begin to emerge.

(...)

Apple has concluded that if it licences FairPlay to others, it can no longer guarantee to protect the music it licences from the big four music companies. Perhaps this same conclusion contributed to Microsoft's recent decision to switch their emphasis from an "open" model of licensing their DRM to others to a "closed" model of offering a proprietary music store, proprietary jukebox software and proprietary players.

The third alternative is to abolish DRM systems entirely. Imagine a world where every online store sells DRM-free music encoded in open licensable formats. In such a world, any player can play music purchased from any store, and any store can sell music which is playable on all players. This is clearly the best alternative for consumers, and Apple would embrace it in a heartbeat. If the big four music companies would licence Apple their music without the requirement that it be protected with a DRM, we would switch to selling only DRM-free music on our iTunes store. Every iPod ever made will play this DRM-free music.

Why would the big four music companies agree to let Apple and others distribute their music without using DRM systems to protect it? The simplest answer is because DRM systems haven't worked, and may never work, to halt music piracy. Though the big four music companies require that all their music sold online be protected with DRM systems, these same music companies continue to sell billions of CDs a year which contain completely unprotected music. That's right! No DRM system was ever developed for the CD, so all the music distributed on CDs can be easily uploaded to the Internet, then (illegally) downloaded and played on any computer or player.

In 2006, under 2 billion DRM-protected songs were sold worldwide by online stores, while over 20 billion songs were sold completely DRM-free and unprotected on CDs by the music companies themselves. The music companies sell the vast majority of their music DRM-free, and show no signs of changing this behaviour, since the overwhelming majority of their revenues depend on selling CDs which must play in CD players that support no DRM system.

So if the music companies are selling over 90 percent of their music DRM-free, what benefits do they get from selling the remaining small percentage of their music encumbered with a DRM system? There appear to be none. If anything, the technical expertise and overhead required to create, operate and update a DRM system has limited the number of participants selling DRM protected music. If such requirements were removed, the music industry might experience an influx of new companies willing to invest in innovative new stores and players. This can only be seen as a positive by the music companies.

Much of the concern over DRM systems has arisen in European countries. Perhaps those unhappy with the current situation should redirect their energies towards persuading the music companies to sell their music DRM-free. For Europeans, two and a half of the big four music companies are located right in their backyard. The largest, Universal, is 100% owned by Vivendi, a French company. EMI is a British company, and Sony BMG is 50% owned by Bertelsmann, a German company. Convincing them to licence their music to Apple and others DRM-free will

> create a truly interoperable music marketplace. Apple will embrace this wholeheartedly."[82]

On 5th Januray 2009, Apple announced that it had abandoned DRM for all music on iTunes.[83]

D. RealNetworks

Progressive Networks was founded by a former Microsoft executive, Rob Glaser, in 1995, becaming RealNetworks in September 1997.[84]

> "Today, RealNetworks, Inc. is a leading creator of digital media services and software, such as Rhapsody, RealArcade and RealPlayer. Consumers use our services and software to find, play, purchase and manage free and premium digital content, including music, games and video. Broadcasters, network operators, media companies and enterprises use our products and services to create and deliver digital media to PCs, mobile phones and other consumer electronics devices."[85]

The company's DRM is called Helix and is used (as is Windows Media DRM) for its subscription music services. Real's technology, like Microsoft's, is licensed to third parties.[86].

Upon consultation with Rob Glaser (Chief Executive Officer, RealNetworks) and Matt Graves (Director, Music PR, RealNetworks), on 2nd March 2007, an interview was conducted with representatives of RealNetworks (Todd Alberstone, Associate General Counsel, Chief Private Officer, RealNetworks, and Adam Cappio, Manager, Media Security, RealNetworks).[87]

Results

a) According to Todd Alberstone (Associate General Counsel, Chief Private Officer, RealNetworks), the primary goal of Real's DRM is to meet the requirements of content owners. Real believes, he said, in a

[82] http://www.apple.com/hotnews/thoughtsonmusic/.
[83] http://copyrightandtechnology.com/.
[84] http://www.realnetworks.com./.
[85] http://investor.realnetworks.com/.
[86] Since our interview RealNetworks has stopped licensing Helix DRM to third parties. This information was provided by Adam Cappio (Manager, Media Security, RealNetworks) on 18th July 2008.
[87] See Appendix F – Questionnaires.

truly flexible DRM solution (embodying different variables that can be changed and different ways in which content can be distributed, transported, copied, etc, according to the wishes of content owners). The aim, he contended, is to make available, to content owners, a variety of flexible business rules.

b) As to whether, when developing DRM, the company tries to facilitate permitted uses, three answers emerged: initially, "no, never" (Adam Cappio, Manager, Media Security, RealNetworks) and "yes, always" (Todd Alberstone,) and, finally, "most of the times" (Todd Alberstone).

Alberstone explained that Real's goal in terms of DRM design is to allow broad uses and variables are put in place that can approximate permitted uses, but these variables can be turned on or off selectively by content owners (example: the DRM both allows and disallows permanent copying):

> "DRM is a car and the content owners are the drivers and if Real were to provide no way to adjust a product to meet the demands of content owners, it would lose a lot of customers."

c) Cappio added that it is very difficult, from a technical perspective, to capture the legal concepts involved. Alberstone agreed, asserting that DRM development cannot accurately encompass all permitted uses:

> "DRM may allow users to copy once, or within a personal domain, or on the basis of a geographical dimension, etc but it is not possible to accurately master all the possible cases. Accommodating [permitted uses] implies the ability to stretch a boundary here or there, and that cannot be done with DRM."

d) A further problem, Cappio argued, is that DRM cannot identify special users:

> "At the DRM level you cannot distinguish between special consumers and ordinary consumers, these are not DRM concepts."

Alberstone added that even though the distinction between users can take place at the licensing and distribution levels, it is outside the scope of DRM. Furthermore, he contended, even if those concepts were within the scope of DRM, the ability for someone to represent themselves as using a work in a permitted context would be

problematic and, technically, anything that provides a loophole is an infinite loophole.

e) As to how costly it would be to change HelixDRM in order to accommodate privileged exceptions, the answer provided by Alberstone was:

> "prohibitive cost, based on customer demand. The cost would be the cost of developing, testing and supporting the DRM. It would be prohibitive because it would imply doing something that Real's customers have not asked for and would not pay for."

f) Regarding hopes and expectations, the same representative referred to an open letter released by Rob Glaser (Chief Executive Officer, RealNetworks), in January 2007 (before Steve Jobs' open letter), in which the CEO stated that from a usability perspective, DRM protected products were inferior to physical media (example: a CD may be read and moved around from one player or platform to another easily in contrast with the many restrictions around modern digital products). DRM, according to Glaser, should be used to enable new and creative business models on the web that are superior from a usability viewpoint to physical media.

E. Macrovision

Macrovision, with headquarters in Santa Clara, California, was established in 1983. The company develops technological solutions (such as RipGuard designed to prevent digital DVD copying) that are deployed by companies in the entertainment, consumer electronics, cable and satellite and online distribution markets.[88]

Upon consultation with Linda Quach (PR Manager, Macrovision), on 15th March 2007, an interview took place with a representative of Macrovision (Jim Ryan, Senior Vice President and General Manager, EMEA, Macrovision).[89]

Results

a) J. Ryan started out by saying that Macrovision does not provide content, but has a DRM ecosystem that benefits content owners. In

[88] http://www.macrovision.com/.
[89] See Appendix F – Questionnaires.

line with this, he explained, Macrovision's main aim when developing or acquiring DRM is to ensure that content owners have a variety of different options to inject in to their content, thus enabling content owners to offer different options to consumers on the basis of various business models.

b) According to the Macrovision representative, whether the company's DRM solutions facilitate permitted acts, depends on how content owners deploy the technology. He provided an example: RipGuard has the capability to allow the consumer to make zero copies or one or two copies.

c) As to how costly it would be to change the company's DRM solutions in order to accommodate privileged exceptions, Ryan contended that the cost would be moderate, adding that:

> "the main reason to carry out that change would be a large enough customer demand. That would be the first lens that we would see things through. Compliance with legislation would be number two. Goodwill would be number three."

d) As to expectations, the Macrovision representative said that the company believes that DRM is vital to digital distribution and that:

> "DRM does not have to be an all or nothing proposition."

He explained that there are a lot of different business models that can be enabled by DRM, such as a domain management concept (which gives the consumer the ability to set up a domain of devices in which they are able to move content around as they see fit).

e) Finally, Ryan referred to an open letter which Fred Amoroso (President and Chief Executive Officer, Macrovision) had written back to Steve Jobs, on 15th February 2007, summarising Macrovision's position on DRM:

> "I believe that most piracy occurs because the technology available today has not yet been widely deployed to make DRM-protected legitimate content as easily accessible and convenient as unprotected illegitimate content is to consumers. The solution is to accelerate the deployment of convenient DRM-protected distribution channels—not to abandon them
>
> (...)

> For example, DRM is uniquely suitable for metering usage rights, so that consumers who don't want to own content, such as a movie, can "rent" it. Similarly, consumers who want to consume content on only a single device can pay less than those who want to use it across all of their entertainment areas – vacation homes, cars, different devices and remotely. Abandoning DRM now will unnecessarily doom all consumers to a "one size fits all" situation that will increase costs for many of them
>
> (...)
>
> A commitment to transparent, interoperable and reasonable DRM will effectively bridge the gap between consumers and content owners, eliminate confusion and make it possible for new releases and premium content to enter the digital environment and kick off a new era of entertainment. At Macrovision we are willing to lead this industry effort. We offer to assist Apple in the issues and problems with DRM that you state in your letter. Should you desire, we would also assume responsibility for FairPlay as a part of our evolving DRM offering and enable it to interoperate across other DRM systems, thus increasing consumer choice and driving commonality across devices." [90]

F. Intertrust

Intertrust Technologies, with headquarters in Sunnyvale, California, was founded in 1990 to develop DRM technologies. It was acquired by Sony and Philips in November 2002.[91]

Intertrust does not have a DRM system, but develops toolkits and helps develop specifications for DRM systems, such as Marlin:

> "Marlin is a joint development initiative formed by leading CE companies: MEI (Panasonic), Philips, Samsung, and Sony, and DRM leader Intertrust. Marlin defines specifications for a common DRM architecture for a family of CE-based client devices and services that specifically meet the requirements of this

[90] Macrovision's Response to Steve Jobs' Open Letter - Our Position on Digital Rights Management, http://www.macrovision.com/company/1430_5331.htm.
[91] http://www.intertrust.com/main/ip/settlement.html.

> industry. Implementing Marlin will ensure commonality in how devices enforce rights and apply digital rules to content."[92]

Intertrust supports different DRM systems and promotes interoperability among them through its Coral initiative and its participation in the Marlin Developer Community (along with several other companies):

> "The Coral Consortium is a cross-industry initiative that brings together content owners, distributors, device makers, and software providers to collaborate on interoperability solutions between existing and emerging DRM products. Coral also addresses difficulties consumers face when moving digital content between their devices, by enabling play anytime, anywhere. Play anytime, anywhere envisions a consumer experience where content can be enjoyed regardless of which format, device, or distribution service the content was originally acquired in."[93]

On 2nd April 2007, a data collection exercise took place with a representative of Intertrust (David Maher, Executive Vice President and Chief Technology Officer, Intertrust Technologies).[94]

Results

a) According to David Maher (Executive Vice President and Chief Technology Officer, Intertrust Technologies), Intertrust's aim in developing specifications and toolkits for DRM systems is to ensure that they allow people to enjoy and share their content with friends and family when and where they want, using any convenient device, while ensuring that they cannot easily become an illicit distributor of that content.

This is why, said the Intertrust representative, Intertrust supports interoperability amongst DRM systems, as well as domain models (where people can easily share their content among family members on multiple devices), also supporting a diversity of licensing models (such as subscription, rental, sampling, single play, domain, multiple formats, etc).

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[92] http://www.intertrust.com/main/research/initiatives.html#marlin.
[93] http://www.intertrust.com/main/research/initiatives.html.
[94] See Appendix F – Questionnaires.

He added that there are many options for licensing (spanning from right to view content for free after viewing advertising, to worldwide rights to distribute a work for sale) and that Intertrust believes that content licensing must accommodate many different kinds of consumer uses (and has developed techniques to accommodate such use).

b) As to whether Intertrust tries to facilitate permitted acts, Maher explained that the reference designs and toolkits the company has developed, include capabilities that strongly support permitted acts; Marlin rules can be written that always allow or allow conditionally.

Marlin uses graph theory instead of rights expression languages to determine what rights a particular combination of user and device has to a given body of content.

Most importantly, according to the CTO, Intertrust can partition between users:

> "The DRM systems that we design have extremely flexible usage rules and they allow for designation of user roles, group memberships, and the like"
>
> and
>
> "Intertrust makes toolkits and helps design specifications for systems that have very flexible rules and means of distinguishing content users among members of different groups."

d) As to how costly it would be to change the Intertrust technology in order to accommodate privileged exceptions, Maher's answer was that the DRM systems that can be provided using Intertrust toolkits and reference designs are very flexible and extensible, with costs for adding capabilities and features varying widely from nothing to the cost of developing and distributing a system update.

e) Regarding expectations, the Intertrust representative said that the company hopes that eventually DRM systems will converge on the ideal the company is seeking, adding that:

> "DRM systems that cannot provide a full range of user experiences will be bypassed. One of our aims is to reduce the motivation to bypass DRM systems."

G. Sun

Sun Microsystems, with headquarters in Santa Clara, California, was founded in 1982. Sun's products include hardware and software (examples: servers, workstations, storage systems and various software products, including the Solaris Operating System, the Java platform and identity management applications). Sun is an advocate of open systems and a strong contributor of open source software.[95]

As to DRM, in 2005, Jonathan Schwartz (President and Chief Operating Officer, Sun Microsystems) unveiled the Open Media Commons initiative, an open-source community project developing a royalty-free DRM standard:

> "Incredible economic value is waiting to be tapped, but we must not allow progress to be stifled by clumsy, self-defeating Internet tollgates in the form of a monolithic, closed digital rights management system (…) The issue at hand is fair compensation without loss of fair use. The Open Media Commons is committed to creating an open network growth engine, all the while continuing to protect intellectual property in a manner that respects customer privacy, honours honest uses of media, and encourages participation and innovation (…) We fundamentally believe that a federated DRM solution must be built by the community, for the community.
>
> Laying the foundation for the Open Media Commons initiative, Sun will immediately share the entirety of its internal Sun Labs program Project DReaM (DRM/everywhere available) with the community."[96]

On 10th March 2007, an interview took place with a representative of Sun (Susan Landau, Distinguished Engineer, Sun Microsystems).[97]

Results

a) According to Susan Landau (Distinguished Engineer, Sun Microsystems), the company's principle is that innovation flourishes

[95] http://www.sun.com/.
[96] http://www.sun.com/smi/Press/sunflash/2005-08/sunflash.20050822.2.xml.
[97] See Appendix F – Questionnaires.

through openness, present in its architecture, open-standards and open-source:

> "Sun believes that DRM systems should be interoperable, open-source, network-centric (from the company that believes that the network is the computer) and identity-based: a DRM where the user matters".

b) In line with this, said Suns' representative, the company introduced Project DReaM, a project to create an open-source standard for interoperable and royalty-free DRM. She summarised the project's main features as follows:

DReaM's approach is network identity-based (approaching DRM from a network identity management perspective, rather than a device-centric one), open (providing all information required to build interoperable implementations) and designed to be royalty free (employing Common Development and Distribution Licence (CDDL) terms and other models for assuring royalty free usage such as the Patent Commons approach);

The standard calls for a DRM that relies on user authentication alone and does not bind content to hardware devices. To do so DReaM employs a DRM architecture called OPERA, which enables user-based licences (as opposed to device-based licences);

Sun has taken apart the various parts of rights expressive languages and done what it calls "disintermediating":

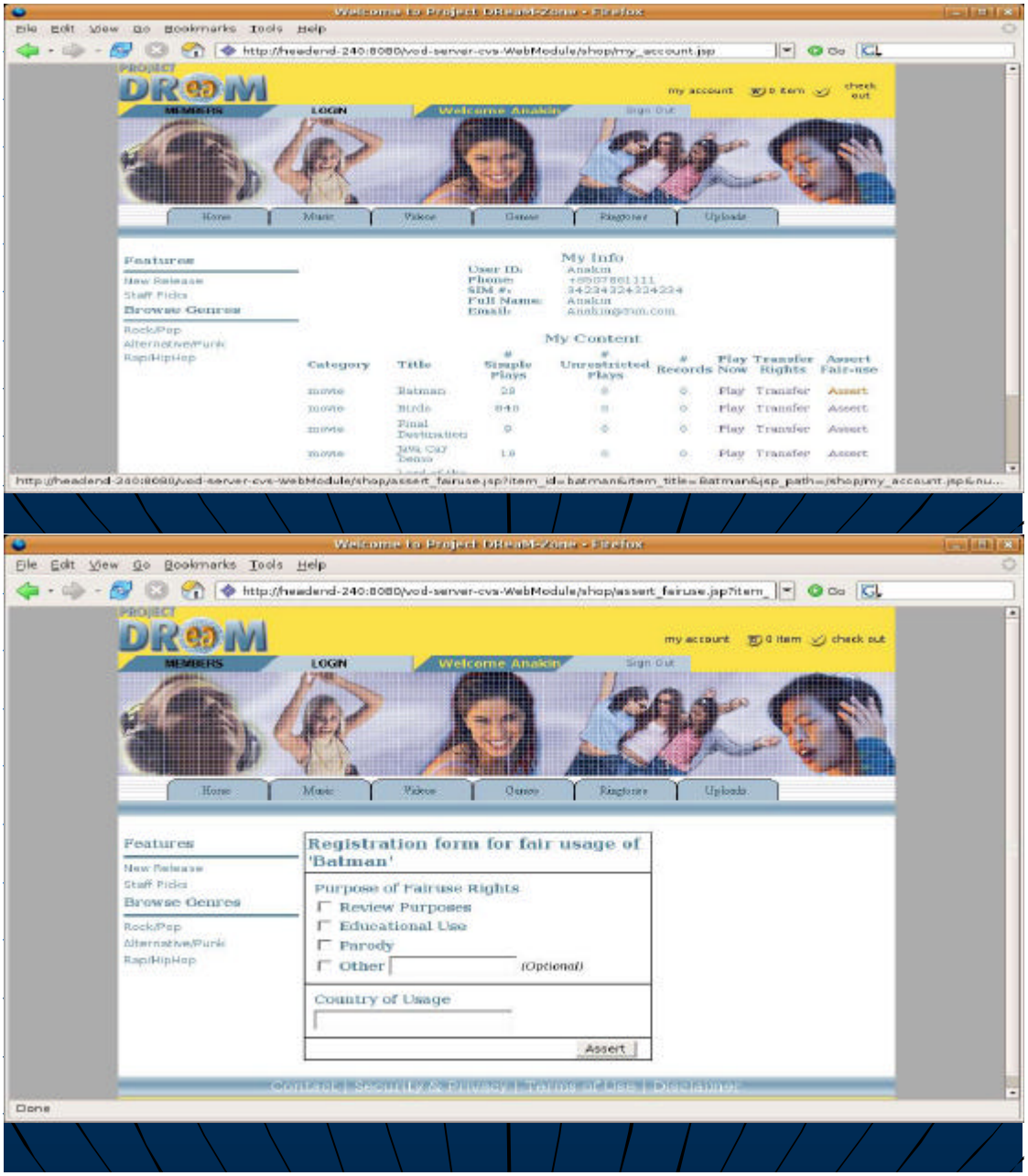
> "separating out the authentication from the licensing, from the contracts and so on, because one of the complications of DRM systems currently is that all the functionality is mashed together, and that is complex from a technological, policy and interoperability stand points."

DReaM uses the MMI Protocol (coming from "Mother May I", the American childhood game), a simple request mechanism for making requests:

> "So, rights are stored on the network and accessible to any network client. They are identity based (so rather than this iPod, or that PC, it is me, with my identity card of whatever flavour my ID card is) and it does not matter which device I am using, whether I am in the car, the house or the office and I want to

listen to a piece of music or view whatever I want to view (in other words, we are also supporting mobility)."

c) According to Landau, Sun believes that DReaM supports permitted acts and it has proof of concept:



So, where a user is allowed, by law, to carry out a permitted act, DReaM allows them to request to carry out that permitted act in relation to a certain work. Provided a user registers with the system

(supplying, in the process, full name, user ID, phone number and email address) and declares the legitimate purpose of the use (review, educational, parody, other), and their country of usage (not address), the content will be unwrapped. The implication is that both partitioning and identification of users are enabled by DReaM.

d) There are problems though. Legally, explained, Landau, Sun is finding it hard to come to terms with diverging national notions regarding permitted acts, especially as regards the concepts of personal use and personal space.

An additional problem, noted by the Sun representative, stems from the fact that content unwrapped by DReaM may be disseminated, subsequently, in an unlimited fashion.

Sun's solution, according to Landau, is to combine permitted acts with watermarking and tracking, but since Sun is committed to a royalty free and open-source model it cannot implement watermarking and tracking:

> "as the technology is tied up in patents".[98]

Nevertheless, said the Sun representative, any DReaM licensee willing to pay the licensing fees for watermarking and tracking enabling technologies can do so.

e) Landau pointed out that Sun cannot force developers and users to support permitted acts. Developers and users are free to implement the system partially, but Sun does make public whether or not permitted acts are supported.

f) Is it worth it, in spite of all the problems? According to the Sun representative, DReaM is something that the market needs and it is the company's hope and intent that people will license it.

H. Findings

a) Not surprisingly, the primary goal of DRM developers is to meet the requirements of content owners, that is, to respond to their demands. Hence, DRM developers are very keen to ensure that content owners

[98] http://www.openmediacommons.org/collateral/DReaM-CAS_IPR_White_Paper_v1.0.pdf.

have a variety of different options to inject their content in to, on the basis of different business models.

In this vein, they contend that they put variables in place that allow permitted acts, adding, though, that enabling is not the same as insisting. What this means, they say, is that their DRM systems both allow permitted acts and disallow permitted acts. These capabilities, they note, can be turned on or off selectively by content owners.

c) One issue, though, given that the privileged exceptions listed in Article 6(4) of the Information Society Directive only benefit certain users (and not all users), is whether DRM is capable of partitioning users – something that not all the respondents' technological solutions can do.

This study uncovered that two of the DRM technologies under examination include flexible usage rules allowing for designation of users, user roles or group memberships:

Suns' DReaM addresses, from a technological viewpoint, both user partitioning and authentication, highlighting the fact that certain permitted acts may be enabled by technology;

In terms of architecture, Intertrust's Marlin has a lot in common with Sun's OPERA (including interoperability, user partitioning and authentication) and is also being developed under community source licensing. Since Marlin is a joint development initiative formed by MEI (Panasonic), Philips, Samsung, and Sony, the major media companies are likely to back the Intertrust technology.

d) Where extra features would have to be added to guarantee enablement of permitted acts, especially privileged exceptions, there is willingness to change.

e) Costs for adding capabilities and features vary widely from nothing to the cost of developing and distributing a system update. Where there is no customer demand, the cost is said to be prohibitive, based on non-zero cost and zero value derived for DRM developers' customers on the basis of their present needs. But they believe that full accommodation of permitted acts would be very advantageous in terms of goodwill aura, PR, status and public image.

f) According to DRM developers, when a DRM is created, it is easy to add a few lines of code saying, for example, that if a user is a

researcher or a student they are allowed to copy certain content for free. But they also noted that where partitioning between users is possible, it is still difficult (1) to authenticate users and their circumstances in a fool-proof manner and (2) to ensure that users do not become illicit distributors of content.

g) To remedy this, several suggestions were put forward by respondents:

1) online tracking of user and usage and revoking user faculties, where there is misuse
2) resorting to insurance, that is, deliberately constructing something that manages the risk,
3) setting out a system of super-distribution that would engage the end user as both a consumer and a re-seller, enabling the user to set out a price for a piece of content and to keep a percentage of it, while giving a fixed amount to relevant copyright owners (rewarding the end user was said to lead to copyright compliance) and
4) it was also argued that the EU itself should foster the creation of a licence-free DRM with an exemplary implementation; a rigorous implementation model to be used by content providers.

h) From a policy viewpoint, there is a difficult triangle covering technology providers, content owners and end users. Generally, free and clear is unacceptable to content owners and DRM inflexibility is not acceptable for end users. But technological solutions are emerging to bridge the gap between free and clear content and DRM-protected content, such as Suns' DReaM and Intertrust's Marlin.

Chapter VI – The position of content owners

The final stage of the empirical procedures entailed interviews with representatives of companies who deliver products (books, music and films) protected by DRM. Sections A-C and section D, summarise, respectively, results and findings thus obtained.

A. Publishers Association

The Publishers Association (PA):

> "is the leading trade organisation serving book, journal and electronic publishers in the UK. Our core service is representation and lobbying, around copyright, rights and other matters relevant to our members who represent roughly eighty per cent of the industry by turnover. Our membership is open to publishing companies that operate in the UK. "[99]

To illustrate the position of publishers as regards DRM accommodation of permitted acts, especially privileged exceptions, on 22nd February 2008, an interview took place with a representative of the PA (Hugh Jones, Copyright Counsel, Publishers Association).[100] Upon consultation with Hugh Jones, on 4th March 2008, further data were collected from Jim Russell (Partner, RPM Associates).

Results

a) Hugh Jones (Copyright Counsel, Publishers Association) started out by saying that the PA sees DRM, from a management of content perspective, as an enabling mechanism:

> "DRM was welcomed and the PA has high hopes for it, but there is still a learning curve for us in the publishing industry."

b) Regarding accessibility, he pointed out that there appears to be a widespread recognition of the needs of those with reading impairments, as many publishing organisations have been active in the area since before the 2007 UN Convention on the Rights of Persons

[99] http://www.publishers.org.uk/en/home/?CFID=2214&CFTOKEN=C9034FB6-1394-4FE1-8A9A1B10DD26C5BE.
[100] See Appendix F – Questionnaires.

with Disabilities, the 2005 Disability Discrimination Act and the 2002 Visually Impaired Person's Copyright Act.

In the UK, said the PA respondent, the Publishers Licensing Society and the RNIB funded a feasibility project which showed that if publishers provide trusted intermediaries with electronic files the number of accessible books (in audio, Braille, electronic and large print formats) can be increased. The project, he explained, is to be followed-up by two pilot projects: a Trade Book Pilot and a Text Book Central Service Pilot.

According to Jones, the aim of the pilots is to give the materials to the visually impaired as close as possible to publication date, thus removing their present disadvantage:

> "if you are visually impaired and you get in touch with the RNIB and request an accessible version especially adapted for your needs it might take months, almost a year, for this special copy to be provided, which is a denial of a human right to access material."

c) Jim Russell (Partner, RPM Associates), who was going to run the pilot projects, explained that the Trade Book Pilot, would take:

> "source electronic files from publishers, converting them first into XML and then into accessible formats. They will then be sold via the book trade as well as RNIB's shop. Special arrangements are being made to secure preferential terms with players in the book supply chain so that any net revenue can be used to cross-subsidise products and perhaps even fund further growth in production. The project will involve some significant marketing to try to stimulate the market, with the overall objective of trying to assess the market potential. To start with, this will largely be an RNIB operation, linking with all required organisations in the supply chain, but in due course it is hoped that commercial organisations will be attracted to become more engaged. This is involving top trade books from the top trade publishers. It is a UK only initiative."

In principle, he added, the project will lead to two products:

> "a hard copy Braille product, and what is currently being labelled a *Book for All*, which is a large print paperback with a CD with Daisy synthetic voice audio (not full text) and Braille electronic

files. There will be no download. All files will be given to the RNIB for production."

As to the Text Book Pilot, Russell said that a Steering Group (chaired by the Department for Children, Schools and Families) was about to invite tenders to perform some initial scoping work:

> "it will probably involve choosing one or more subjects/age groups for under sixteen education and producing some titles in accessible forms in advance, and then reacting to requests for the remainder. Products may be provided in electronic form or hard copy depending on what the school can handle and use."

Some files, he explained, may just be passed on to the school via a central sourcing service, whereas other files may require transformation into interim formats (such as XML) or final accessible formats (such as Braille, Daisy etc).

As to whether the electronic files will be DRM protected in any way, Russell's answer was:

> "I doubt it. The RNIB is not yet geared up to do this, but is looking into it."

Regarding whether visually impaired users will be authenticated (as being visually impaired), in the online context, before being given accessible electronic copies, he thought that this was likely to be the case:

> "Previous discussions have focused on a responsible individual in a school or other local body registering before they are able to have files and accepting licence terms for use of the file."

d) Hugh Jones noted there were two issues to consider in this connection: a costs and overheads issue and a potential revenue issue. As to cost, he said:

> "There is particularly the conversion cost from one format to another: on the publishers' side the cost in producing alternative files and on the RNIB side the cost in converting the files into accessible formats. The question is whether each side should absorb the costs as overheads, or whether the RNIB should ask the Government for a grant on the basis that this is a disability

issue. There are some unanswered questions about who will bear which cost."

As to the revenue issue, Jones explained that:

> "The RNIB expects its members to purchase the materials, rather than obtain them gratuitously, and so it is possible, once we have developed and fine-tuned this system, to develop a revenue stream here."

d) Finally, the PA respondent concluded that:

> "The feeling about a lot of these technological access problems is that the most suitable and effective solution is likely to be in the machine itself. The machine will find its own solution to problems like this."

B. International Federation of the Phonographic Industry

The International Federation of the Phonographic Industry (IFPI):

> "represents the recording industry worldwide, with a membership comprising some one thousand and four hundred record companies in seventy three countries and affiliated industry associations in forty eight countries. IFPI's mission is to promote the value of recorded music, safeguard the rights of record producers and expand the commercial uses of recorded music in all markets where its members operate (...) Any company, firm or person producing sound recordings or music videos which are made available to the public in reasonable quantities is eligible for membership of IFPI." [101]

To illustrate the position of the recording industry as regards DRM accommodation of permitted acts, especially privileged exceptions, on 11th September 2008, an interview took place with representatives of the IFPI (Shira Perlmutter, Executive Vice-President Global Legal Policy, International Federation of the Phonographic Industry, and Richard Gooch, Director of Technology, International Federation of the Phonographic Industry).[102]

[101] http://www.ifpi.org/.
[102] See Appendix F – Questionnaires.

Results

a) According to Shira Perlmutter (Executive Vice-President Global Legal Policy, International Federation of the Phonographic Industry), DRM is about offering different options to different users, which is achieved by restricting access, assuring security of content and protecting content against unauthorised copying.

The IFIP representative clarified that:

> "no one in the record industry wants to restrict access to works, we want to maximise access to works. The way you offer different options to different users is by saying that consumers can have access on certain terms for certain uses that they select, so restricting access is not about locking-up, it is about using different types of access as a tool for offering different options."

DRM, she explained, is an enabling tool which lets the industry develop different online markets.

For example, said Richard Gooch (Director of Technology, International Federation of the Phonographic Industry), in the iTunes model, access to music is track-based (the time dimension does not change) and in the Napster subscription model, a flat monthly rate gives the user access to four million tracks.

b) As to the IFPI's position regarding permitted acts, especially privileged exceptions, Perlmutter's answer was:

> "We generally support any exceptions that are written appropriately, satisfy the three-step test and are updated to deal with the challenges of the new technology".

c) Regarding who determines whether DRM will enable permitted uses, the same representative said:

> "Who actually sets the rules will be some combination of the content provider and the copyright owner, because they will have a deal between them. The copyright owners will say what they want, they will negotiate it with the content providers and the content providers may have additional things that they want to do."

Gooch added:

> "Copyright owners have put quite a lot of pressure on DRM providers to have the rules as flexible as possible and have actually fought against being railroaded into business models which are defined by the technical constraints of the DRM. Generally they have been very successful. There are one or two places where DRM systems have not allowed all the flexibility that content owners want, in things such as the open mobile, or the CD burner or superdistribution, but generally copyright owners have pushed to have DRM that can support flexible business models."

d) As to whether the DRM systems used by the recording industry,[103] allow permanent copying, Gooche's answer was:

> "Yes, in general, unless there is a business model reason not to, such as in the case of access by streaming where permanent copying would break the stream-based service model".

For example, he said, with iTunes the ability to make copies cannot be turned off whereas with Windows Media DRM there are rules that can be set which allow "copying freely", "copying to certain classes of device", "copying to certain devices that meet certain pre-defined security criteria" or "no copying".

e) As to whether the DRM systems used by the recording industry can allow permanent copying by special entities (such as libraries and educational establishments), the same IFPI representative contended:

> "It is very trivial to allow permanent copying or not, because you just have to set the business rules to allow copying or not. If the DRM needs to have a sixth sense to know whether it is a library user, or not, that could be pretty tough."

According to Perlmutter:

> "you are not going to get a one size fits all DRM that will deal both with the consumer and the special interests exceptions and, in any case, you do not want to give up a system that works for

[103] According to Richard Gooch, the DRM systems used mostly by the recording industry were, at the time, by sales volume, Apple's Fairplay followed by Windows Media DRM.

> ninety nine per cent of cases because there is a particular issue with a particular kind of user when you can let the system work and then deal with that user in a way that makes sense for everyone. The fair view would say that this is the kind of thing that you achieve through negotiation. It would be more beneficial to sit down with libraries; it would be much more practical, less risky and less difficult."

Gooch added:

> "There is no reason to burden everybody's iPod with a system that is designed for librarians, because a librarian might need access one day. It is much more efficient to have a simple DRM and to have the librarian phone up Universal or Apple iTunes to get access through a different scheme. It is perfectly reasonable to have a DRM that is designed for consumer use, which does not support the use of specialist interest groups such as libraries, so long as there is an alternative system in place which libraries can use – which could be a separate DRM, or a clean copy, or lodging a master tape in the library archive. It is not up to us to fight the libraries' corner for them. If they want to work with manufacturers to build a specific DRM, that is fine. If they find the cost prohibitive and they want to talk to the record companies about doing something that does not involve DRM at all, I am sure that the record companies would talk to them."

f) As to expectations, according to Gooch, DRM is here to stay and will continue to be applied to products such as films, games and software. The only question, he said, is the extent to which it will be used in the music context:

> "This has to be played out in the market dynamic, as companies are undertaking experiments to find out what works in different areas."

Perlmutter expects that the trend will be towards a lighter touch approach to DRM:

> "with more flexibility and variety, not just in how DRM is used but when, whether and how".

C. Motion Pictures Association

The Motion Picture Association of America (MPAA) and its international counterpart, the Motion Picture Association (MPA):

> "serve as the voice and advocate of the American motion picture, home video and television industries, domestically through the MPAA and internationally through the MPA. Today, these associations represent not only the world of theatrical film, but serve as leader and advocate for major producers and distributors of entertainment programming for television, cable, home video and future delivery systems not yet imagined (…) The U.S. film industry provides the majority of home entertainment products seen in millions of homes throughout the world. This complex audiovisual industry is represented globally by the Motion Picture Association." [104]

Members of the MPAA include Paramount Pictures, Sony Pictures Entertainment, Twentieth Century Fox, Universal City Studios, Walt Disney Studios Motion Pictures and Warner Brothers.[105]

To illustrate the position of the film industry, as regards DRM accommodation of permitted acts, especially privileged exceptions, on 22nd February 2008, an interview took place with a representative of the MPA (Ted Shapiro, Deputy Managing Director, Vice President & General Counsel – Europe, Motion Picture Association).[106]

Results

a) According to Ted Shapiro (Deputy Managing Director, Vice President & General Counsel – Europe, Motion Picture Association), the MPA promotes use of DRM and supports DRM, but mostly supports the right of a content owner to use DRM. For the MPA, he said, DRM should aim to protect content, restrict access (pay TV providers, for example, use a conditional access model), make a differentiated offering, manage rights, establish security and confidentiality and accommodate exceptions.

[104] http://www.mpaa.org/AboutUs.asp.
[105] http://www.mpaa.org/AboutUsMembers.asp.
[106] See Appendix F – Questionnaires.

b) Whether DRM allows permitted acts, especially privileged exceptions, explained the MPA representative, depends on the particular technology and business model: the DVD, for example, was conceived as a read-only format (although the MPA is promoting within the industry the introduction of managed copying of DVDs), the video-on-demand model tends not to allow copying, but electronic sell through implies permanent copying and the goal of the DVB secure home networking work is to enable the making of copies within a consumer's network (as well as moving these copies around) whilst preventing the consumer from distributing that content illegally.

c) As to who determines whether DRM enables permitted acts, he submitted that ultimately it will be copyright owners:

> "The MPA members present a list of requirements to content providers, who pass it on to DRM manufacturers. DRM manufacturers have a role in that they point out the available functionalities. In the film industry, use of DRM tends to be negotiated in industry-to-industry agreements (for example, the functionality and level of protection of DVDs resulted from a compromise between various competing interests). Ultimately, copyright owners will decide, but that will be subject to negotiations (at the licensing level), to technological possibilities, and to the intervention of a court or a public authority that might for one reason or another intervene under Article 6(4)".

d) Whether DRM systems which do not support permitted acts may be changed to support them, this depends, explained Shapiro, on the business model:

> "If you have early window premium content that you want to promote, you may not go as far as enabling all the uses, particularly in an on-demand service and if you do not have to. That said, going forward, it may well be that enabling enhanced functionalities into your DRM will become a competitive proposition, such that you should do that because your service will be viewed as a better service and you may attract a broader audience."

e) Thus far, said the MPA representative, the MPA has not had brought to its attention a wide range of problems in terms of access to works protected by DRM, and, in particular, the MPA has not been approached by any UK university film department.

Shapiro claimed that there should not be a "real" problem, in this context, given that:

> "locking up content presupposes that every single instantiation of a particular piece of content is DRM protected. That is not the case in the film industry, with content being released in different formats, times and levels of protection. There is strong protection early in the life of a film, but as the work goes further along in life it tends to be subject to less technical protection and, ultimately, content is broadcast in the clear and then there are no problems in excerpting, etc If there is something that someone wants to do with a particular DVD they might not be able to, but they will not be foreclosed from being able to do that to the work that might be on that DVD. We can say, look it is going to be on TV, and indeed you could camcord your DVD and take clips of the camcord, the quality would not be as good, but it could be done. Or you can go down to the local film archive and take excerpts. There are ways to do it."

At the moment, he added, the MPA is giving film prints (analogue copies) to archives (since films archives want film stock, rather than digital versions, to preserve the original film experience), but as the technology gets more sophisticated and the industry moves to digital cinema, the MPA may use secure channels with film archives.

f) As to expectations, according to Shapiro, the MPA hopes that technology will grow in sophistication and will be able to accommodate more exceptions, although:

> "there is not a positive obligation in the law to full stop accommodate. We do not have an obligation or at least Member States do not have an obligation to ensure that we do. So far we have not experienced many problems and at the same time the technology is getting more sophisticated. We are hopeful that technology will solve these issues without the need for governmental intervention. We do think that, going forward, technology will provide possibilities to accommodate exceptions where necessary."

D. Findings

a) Content owners' representatives see DRM as an *enabling mechanism*, an *enabling tool*.

b) Voluntary measures have emerged in the publishing field. In the UK, the Publishing Licensing Society and the RNIB funded a feasibility project which demonstrated that if publishers provide trusted intermediaries with electronic files the number of accessible books (in audio, Braille, electronic, and large print formats) can be increased, and the project is to be followed-up by two pilot projects: a Trade Book Pilot and a Text Book Central Service Pilot. There are questions as to who will support the costs involved in creating accessible copies.

c) In the music and film arenas, there is a strong awareness that there is not an obligation to accommodate permitted acts, including privileged exceptions, through DRM. Whether DRM systems used in the music and film marketplace allow permanent copying by special entities (such as libraries and educational establishments), depends, ultimately, on content owners. They decide how DRM should behave, through lengthy processes of negotiation which are fed into the licences that mandate how DRM parameters are set.

d) Even though data collection within the film lecturers and students/researchers community uncovered that DRM protection of cinematographic works is leading to difficulties in extracting portions of those works for educational use, the MPA has not been approached by any UK university film department.

Chapter VII – Conclusions, solutions and recommendations

A. Conclusions

When the legal protection of DRM was being examined, in the mid 1990s, two divergent pictures emerged as to its possible effects. Some saw DRM as an enabler for authors, owners and consumers. DRM would allow the making available of works in a myriad of different conditions (in part or in whole, for browsing, viewing, permanent or temporary download and so on), thus reflecting the diversity of consumer demand. It was the end to one size fits all. Consumers could get exactly what they wanted, when they wanted it. This was an idyllic vision of DRM.[107] But there subsisted, in parallel, a more sinister vision. The latter anticipated that, with DRM, access to information products that used to be freely available would thereafter be dependant on obtaining authorisation from copyright owners and paying a fee. Rather than increasing public access, DRM would lead to *locking-up* of information and (in turn) the freezing of creativity and innovation.[108]

Confronted with these two radical visions, the European Union sought to encourage the use of DRM (through the provision of protection against circumvention of technological protection measures or the manipulation of rights management information) while offering a means to avoid the nightmare scenario of 'digital lock-up.' The latter 'safety valve' was embodied in Article 6(4) of the Information Society Directive. This solution was largely based on the hope that copyright owners would voluntarily develop solutions that could make material available to users in situations where traditional copyright exemptions applied. However, the Directive provided that if copyright owners failed to do so, Member States could step in and take corrective action to ensure public access was ensured.

This project looked at the impact of DRM on the ability of users to take advantage of certain exceptions to copyright. Based on a series of interviews with key organisations and individuals, involved in the use of copyright material and the development and deployment of DRM,

[107] See, for example, Zimmerman, 1994; Cohen, 1996; Litman, 1996; Vinje, 1996; Cohen, 1997; Litman, 1997; Mason, 1997; Bell, 1998; Hart, 1998; Cohen 1999; Dusollier, 1999; Samuelson, 1999.
[108] See, for example, Olswang, 1995; Clark, 1996; Band, 1999.

this study examined how these issues are working out in practice. While the nightmarish vision of digital lock up has not materialised, this survey concluded, nevertheless, that significant problems do exist, and others can readily be foreseen:

1) Although DRM has not impacted on many acts permitted by law, certain permitted acts are being adversely affected by the use of DRM;

2) This is in spite of the existence of technological solutions (enabling partitioning and authentication of users) to accommodate those permitted acts (privileged exceptions);

3) Beneficiaries of privileged exceptions who have been prevented from carrying out those permitted acts (because of the employment of DRM) have not used the complaints mechanism set out in UK law;

4) Article 6(4) of the Information Society Directive put an onus on content owners to accommodate privileged exceptions voluntarily. Voluntary measures have emerged in the publishing field, but not all content owners are ready to act unless they are told to do so by regulatory authorities.

These four conclusions will be explained in more detail and this will be followed by proposed solutions and recommendations.

Conclusion (1): Although DRM has not impacted on many acts permitted by law, certain permitted acts are being adversely affected by the use of DRM

a) Some beneficiaries reported limited or no enjoyment of a privileged exception but were not able to provide evidence in support of those claims. Data collection with the Royal National Institute of Blind People (RNIB) uncovered (1) a reported access problem for which scarce evidence was provided by the RNIB and (2) the existence of voluntary measures in the publishing field to facilitate access to works by the visually impaired. The National Consumer Council was not able to provide any examples of DRM preventing the consumer from benefiting from an exception to copyright.[109]

[109] See results and findings in connection with the Royal National Institute of Blind People (Chapter IV – Are certain acts permitted by law being adversely affected by the use of DRM?, Sections B and F) and the National Consumer Council (Chapter IV –

b) Other beneficiaries of privileged exceptions (for example, the British Library and the film lecturers and students/researchers community) are being adversely affected by the use of DRM.

c) The British Library revealed two main problems: (1) from the perspective of the British Library's mission, a preservation problem; (2) regarding British Library's remote users, an issue regarding the degree of enjoyment of an exception.[110]

The British Library's biggest concern is digital preservation. There are preservation concerns in relation to access to works and duplication of works – both activities being essential for preservation purposes.

The first preservation concern pertains to the fact that where DRM (applied to works in digital format or to ancillary software used to access those works) becomes obsolete and the relevant manufacturers are not willing to provide updates or have gone out of business, the British Library could find itself with digital content that it can no longer have access to and unable, by law, to circumvent. The obsolescence of a DRM could render an item hosted by the British Library inaccessible.

The second preservation concern is that, presently, where a DRM prevents copying (and the British Library is unable, by law, to circumvent) reproduction of a work for preservation purposes is impossible.

There is also an issue in relation to British Library remote users. Where DRM systems limit the period of view, restrict the number of copies that can be made and are time limited, or where a user is forced to resort to a paper copy of a work in digital format (as a result of DRM protection of the digital version of the work), a legal question arises: *must Member States take action under Article 6(4) where beneficiaries of an exception are offered a means of benefiting from that exception which is conditioned or qualified in some way (and is thus sub-optimal), or only where beneficiaries are unable to benefit from the exception at all?*

Are certain acts permitted by law being adversely affected by the use of DRM?, Sections C and F).

[110] See results and findings in connection with the British Library in Chapter IV – Are certain acts permitted by law being adversely affected by the use of DRM?, Sections A and F.

According to the Information Society Directive (in spite of the legal protection of DRM) Member States must take measures to ensure that content owners make available to the beneficiary of a privileged exception the means of benefiting from that exception to "the extent necessary to benefit from that exception".

But at what point is state intervention deemed required? Is it when a beneficiary of a privileged exception is faced with impossible use or access, or also when the beneficiary is able to enjoy the exception in a limited manner (for example, because a cost is involved or travelling is required)?

It may be that the answer will depend on the rationale underlying the exception, so that where an exception is attributable, principally, to the protection of fundamental rights, such as freedom of expression, and to the defence of corollaries of the latter, such as dissemination of information, a sub-optimal use will not suffice. This would be the case, for example, with exceptions that allow entities, such as libraries, the visually impaired and teachers, to carry out certain acts of copying without the authorisation of the relevant copyright owners.

In other cases, where the purpose of an exception is not as close to core freedoms or the use is basically entertaining rather than informative, a sub-optimal use may suffice. This would be the case, for example, where the copying is for purposes of public security or for the performance or reporting of administrative proceedings, or where certain broadcasts are copied by non-commercial social institutions.

d) Data collection within the film lecturers and students/researchers community revealed two problems: (1) DRM protection of cinematographic works is leading to difficulties in extracting portions of those works for educational use and (2) those difficulties are triggering isolated acts of self-help for academic and educational purposes.[111]

In some cases, where DRM does not enable copying of extracts of films in a digital format, resorting to non-digital versions of the required materials is a possibility. Some respondents pointed out, though, that this option can be expensive and inconvenient, as well as time wasting.

[111] See results and findings in connection with Lecturers, Students and Researchers in Chapter IV – Are certain acts permitted by law being adversely affected by the use of DRM?, Sections D, E and F.

Where a beneficiary of a privileged exception for educational purposes is not able to benefit from it or is only able to do so in a limited manner, it could be argued that this undermines the public interest considerations underlying the exception – an argument that invokes the spirit of the law, rather than just its letter. In this case, sub-optimal use may not suffice.

Conclusion (2): This is in spite of the existence of technological solutions (enabling partitioning and authentication of users) to accommodate those permitted acts (privileged exceptions)

a) The technological possibilities unveiled by contacts with the DRM developing community indicate that existing problems do not stem from the technology itself, but from the way the technology is employed.[112]

b) The primary goal of DRM developers is to meet the requirements of content owners, that is, to respond to their demands. Hence, DRM developers are very keen to ensure that content owners have a variety of different options to inject their content in to, on the basis of different business models. In this vein, they contend that they put variables in place that allow permitted acts, adding, though, that enabling is not the same as insisting. What this means, they say, is that their DRM systems both allow permitted acts and disallow permitted acts. But these capabilities, they note, can be turned on or off selectively by content owners.

c) One issue, though, given that the privileged exceptions listed in Article 6(4) of the Information Society Directive only benefit certain users (and not all users), is whether DRM is capable of partitioning users – something that not all the respondents' technological solutions can do.

d) This study uncovered that two of the DRM technologies under examination include flexible usage rules allowing for designation of users, user roles or group memberships:

[112] See results and findings in connection with DRM developers in Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?, Sections A-H.

Suns' DReaM addresses, from a technological viewpoint, both user partitioning and authentication, highlighting the fact that certain permitted acts may be enabled by technology; [113]

In terms of architecture, Intertrust's Marlin has a lot in common with Sun's OPERA (including interoperability, user partitioning and authentication) and is also being developed under community source licensing. [114]

Conclusion (3): Beneficiaries of privileged exceptions who have been prevented from carrying out those permitted acts (because of the employment of DRM) have not used the complaints mechanism set out in UK law.

a) Article 6(4) of the Information Society Directive put the onus on content owners to accommodate exceptions, voluntarily, but the European Council did not completely rely on the goodwill of rightholders, building in Article 6(4) the obligation for Member States to intervene in an unspecified manner to ensure accommodation (and then with respect to private copying the option to intervene). In other words, the EC legislator backed-up the onus built in Article 6(4) with a duty to act by Member States in order to guarantee accommodation.

b) In the UK, even though some beneficiaries have not been able to carry out certain permitted acts because of DRM employment, the complaints' mechanism has not been tested.[115] Thus, in the UK no appropriate state measures have been taken even though there are some problems.

c) Amongst respondents of this study, it was found that user representatives were aware of the complaints mechanism but had not tested it, whilst individual respondents were not familiar with it. Certain beneficiaries found it too onerous to utilise the complaints mechanism and other beneficiaries were not aware of its existence.

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[113] See results and findings in connection with Sun in Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?, Sections G and H.

[114] See results and findings in connection with Intertrust in Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?, Sections F and H.

[115] As of 6th February 2009, according to Lisa Vango (Senior Policy Advisor, UK Intellectual Property Office).

As a result, the UK complaints' mechanism remains untested in spite of the existence of some problems, with some users finding it too impractical and others being unaware of its existence

Conclusion (4): Article 6(4) of the Information Society Directive put an onus on content owners to accommodate privileged exceptions voluntarily. On a positive note, voluntary measures have emerged in the publishing field. However, not all content owners are ready to act unless they are told to do so by regulatory authorities.

a) In the UK, the Publishing Licensing Society and the RNIB funded a feasibility project which demonstrated that if publishers provide trusted intermediaries with electronic files the number of accessible books (in audio, Braille, electronic, and large print formats) can be increased, and the project is to be followed-up by two pilot projects: a Trade Book Pilot and a Text Book Central Service Pilot. There are questions as to who will support the costs involved in creating accessible copies.[116]

b) In the music and film arenas, there is a strong awareness that there is not an obligation to accommodate permitted acts (including privileged exceptions) through DRM.

c) Whether DRM systems used in the music and film marketplace allow permanent copying by special entities (such as libraries and educational establishments), depends, ultimately, on content owners. They decide how DRM should behave, through lengthy processes of negotiation which are fed into the licences that mandate how DRM parameters are set.[117]

d) This has not led to problems in terms of enjoyment of privileged exceptions in connection to music - unsurprisingly, given the phasing out of DRM in music. But, as reported above, the film lecturers and students/researchers community is being adversely affected by the use of DRM.

[116] See results and findings in connection with the Publishers Association in Chapter VI – The position of content owners, Sections A and D.

[117] See results and findings in connection with the International Federation of the Phonographic Industry and the Motion Pictures Association in Chapter VI – The position of content owners, Sections B-D.

In summary:

Article 6(4) of the Information Society Directive put an onus on content owners to accommodate privileged exceptions and voluntary measures have emerged, undeniably, in the publishing field. Whether this stemmed from the introduction of DRM legislation, or/and lobbying, or/and a spontaneous recognition of the needs of those with reading impairments, the fact is that Art. 6(4) seems to have worked, at least to some extent, as regards the UK publishing sector.

But it was also concluded by this study, that certain acts which are permitted by law are being adversely affected by the use of DRM. Hence, there are problems which have not been addressed by voluntary measures. In the cases of the British Library and the film lecturers and students/researchers community, no forces, internal or external to the entities in question, have led to the emergence of voluntary measures.

Partially, this is due to the fact that the Information Society Directive made the measures required to solve potential problems voluntary rather than compulsory. Yet, given the scenario in the publishing context, awareness of the limited responsibility imposed on content owners by Art. 6(4) of the Information Society Directive cannot fully account for the absence of voluntary measures in other areas.

Interviews with music and film representatives revealed that one of the reasons content owners have not introduced voluntary measures is that the law does not require such action. However, they indicated that they are willing to help beneficiaries on a case-by-case basis, upon being approached by them. Whether this approach would lead to practical enough solutions is doubtful, but it does reveal a certain amount of goodwill.

Ultimately, the evidence shows that some beneficiaries of privileged exceptions are being adversely affected by the use of DRM and practical solutions are required.

B. Solutions

1) It is clear that:

a) Beneficiaries of privileged exceptions (such as, libraries, lecturers, students and researchers) require access to works protected by DRM,

so as to be able to carry out certain permitted acts (and, therefore, take advantage of certain copyright exceptions that are connected to core freedoms) in spite of the legal protection of DRM systems. This implies setting out an expeditious procedure to facilitate access to works by beneficiaries of privileged exceptions and to enable optimum use of those exceptions. It implies the need for *access to works portals*, rather than *access to complaints portals*;

b) Where access to works by beneficiaries of privileged exceptions (such as libraries, lecturers, students and researchers) is not facilitated, the protection of privileged exceptions (given their connection to core freedoms) needs to prevail over the legal protection of DRM.

2) The implementation of these solutions may follow different avenues.

a) Problems empirically identified by this studied may be addressed under the Information Society Directive's monitoring mechanism:

> "1. Not later than 22 December 2004 and every three years thereafter, the Commission shall submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this Directive (…) In the case of Article 6, it shall examine in particular whether that Article 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. Where necessary, in particular to ensure the functioning of the internal market pursuant to Article 14 of the Treaty, it shall submit proposals for amendments to this Directive.
>
> (…)
>
> 3. A contact committee is hereby established. It shall be composed of representatives of the competent authorities of the Member States. It shall be chaired by a representative of the Commission and shall meet either on the initiative of the chairman or at the request of the delegation of a Member State.
>
> 4. The tasks of the committee shall be as follows:
>
> (…) to organise consultations on all questions deriving from the application of this Directive."

b) Thus, amending the Information Society Directive is a possibility put forward by the above provision, but it is not an easy task. Amending a directive can take many years and follow different routes, depending on what is determined by the directive itself. In practice, intense lobbying precedes the drafting of amendments.

Directives that are adopted by means of the Council and Parliament codecision procedure (the main legislative procedure by which law can be adopted in the EC) require the Parliament and the Council to agree on a legislative text before it is adopted. In this case, once the Commission's proposed amendments have been approved by the college of commissioners, it can take between one to two years for those changes to be authorised by the Parliament and the Council. It is a long procedure, both as regards the preparatory stage and the adoption stage. The former is particularly slow, with the Commission having to consult with all stakeholders and, once the proposal is ready, with all other Directorates-General.

The Information Society Directive does not empower the Commission to produce unilateral amendments to its text, but it does refer to the possibility of the Commission proposing amendments, which indicates (given the fact that the Treaty empowers the Commission to do that anyway) that the Commission *should* submit proposals for amendments where necessary. Where it does so, they will be adopted by the Parliament and the Council according to the co-decision procedure of Article 251 EC (the *ordinary legislative procedure* according to the Treaty of Lisbon).

c) Yet another possibility is for legislative change to take place at the national level. Member States have, in principle, great freedom in terms of implementation of a directive. A directive contains the aims to be achieved leaving it up to Member States to determine how to attain such aims. Significantly, Member States may amend national implementing legislation that turns out to be inadequate.

In the UK, current revisions to copyright law could be used as an opportunity to address this issue, going beyond Gowers.[118] The Gowers Review recommended improving the notice of complaint procedures, for example through a model email form available on the Patent Office website. The UKIPO is ready to do that following a

[118] Gowers, 2006.

process of informal consultation.[119] The Gowers solution, however, does not tackle the issue of how entities, such as the British Library, are to address their concerns on a case by case basis, given the volume and frequency involved.

d) A further avenue is that of jurisprudence. The general lack of case law in relation to Article 6(4) has led to unanswered questions as to its scope. It is possible that over time rules will develop and clear interpretations of Article 6(4) will start to emerge and to be known.

e) In practice, in the context of the Information Society Directive, the Commission's wait-and-see approach has stemmed, partially, from a lack of empirical data on the matter - one of the reasons why in January 2008, pursuant to Article 12 of the Information Society Directive, the Commission produced an application report on the Directive rather than an evaluation report.[120] Ultimately, in political terms, events within the EC can be surprising and unpredictable. It all depends on the political will.

C. Recommendations

In light of the above, it is recommended that, in the short term, with the help of the empirical findings and recommendations of this study, the EC Commission submits a proposal for two amendment of Article 6(4) of the Information Society Directive, as follows:

First proposed amendment to Article 6(4) of the Information Society Directive:

> ***A definition of the expression 'appropriate measures' should be inserted in Article 6(4) of the Information Society Directive, stating that for the purposes of that Directive such measures require the establishment of a procedure to enable expeditious access to works by beneficiaries of privileged exceptions, leading to the***

[119] According to Lisa Vango (Senior Policy Advisor, UK Intellectual Property Office), interviewed on 9th July 2008, upon consultation with Ian Fletcher (Chief Executive, UK Intellectual Property Office). See Appendix F – Questionnaires.

[120] According to Tobias McKenney (Copyright and the knowledge-based economy, DG Internal Market and Services D1, European Commission), interviewed on 14th April 2008, upon consultation with Tilman Lueder (Head of Unit – Copyright, European Commission). See Appendix F – Questionnaires.

creation of standardized access to works portals across EC Member States.

Beneficiaries of privileged exceptions (such as libraries, lecturers, students and researchers) require access to works protected by DRM, so as to be able to carry out certain permitted acts (and, therefore, take advantage of certain copyright exceptions that are connected to core freedoms).

This implies setting out a procedure (step-by-step and with a clear time-frame) to facilitate access to works by beneficiaries of privileged exceptions, thus, enabling optimum use of those exceptions. It implies the need for *access to works portals* (rather than access to complaints portals).

The existence of *access to works portals* would be made possible by a *DRM deposit system*, according to which the means to enable beneficiaries of privileged exceptions to benefit from them (such as, a non-protected version of the work or a decryption key)[121] would be deposited and made available through *access to works portals*, in specified circumstances.[122]

As to *scope*, this study considered the possibility of extending the deposit obligation to all persons claiming legal protection under Article 6 of the Information Society Directive (that is, to all persons claiming

[121] According to the EC application report: "The voluntary measures considered by rightholders include the supply of a non-protected version of the work or the supply of a decryption key" (Commission Staff Working Document, 2007).

[122] Conceptually, the Portuguese law follows this reasoning, although lacking reference to a clear time-frame. Article 221 of the Portuguese Author's Right and Connected Rights Code, guided by the principle that the legal protection of DRM should not be an obstacle to the *normal* exercise of privileged exceptions, determines that (1) owners of technological measures have a duty to deposit with *Inspecção-Geral das Actividades Culturais* (an entity working under the aegis of the Portuguese Ministry of Culture) means to enable beneficiaries of privileged exceptions to benefit from them, and (2) that where a DRM *prevents* or *limits* the enjoyment of a privileged exception by a beneficiary, they may request from *Inspecção-Geral das Actividades Culturais* the means deposited with that entity to enable exercise of the privileged exception in question. Otherwise, a beneficiary of a privileged exception may require that adequate measures be taken by the *Comissão de Mediação e Arbitragem* whose decisions can be taken to the Court of Appeals. The *Comissão de Mediação e Arbitragem*, created by law n. 83/01, 3 August to settle disputes between collective management entities and their associates, had its responsibilities extended by law n. 50/2004, 14 August (implementing the Information Society Directive in Portugal) which established that the *Comissão* would also be responsible for arbitrating any disputes emerging in the field of copyright exceptions.

DRM legal protection). Such a solution would lead to the creation of fully-fledged national *access to works portals* and encourage the creation of national archives of digital works. Consequently, access to information under privileged exemptions would be facilitated significantly (for example, in the context of distance learning).

However, this broad solution would impose costs on industry which are difficult to justify, presently, in view of the evidence gathered by this study. This research showed that DRM has impacted on some (but not many) acts permitted by law. While such proposal seems attractive, further consideration goes well beyond the scope of this research.

Hence, it is proposed that, initially, the deposit obligation emerging from the proposed system would only cover the works and beneficiaries in connection to which problems have been identified by this study. Subsequently, evidence should be gathered, regularly, by means of hearings and this obligation should be extended appropriately.

Here an analogy could be drawn with US DRM law. In the US, the law protected DRM, but in order to ensure that the public keeps the ability to engage in non-infringing uses of works, Congress set out safe harbour provisions regarding those measures, including a triennial review conducted by the Register's Office.[123] The US Copyright Office conducts a rulemaking proceeding to determine whether certain classes of works should be exempted from the prohibition against circumvention of DRM - because persons who are users of those classes of works are, or are likely to be, adversely affected by virtue of the prohibition in their ability to make non-infringing uses of that particular class of works. Exemptions are not perpetual and will expire if they are not re-established. Further to the last rulemaking proceeding, the US Librarian of Congress approved six exemptions (the most ever granted and, for the first time, groups of users were exempted), including:

> "audiovisual works included in the educational library of a college or university's film or media studies department, when circumvention is accomplished for the purpose of making

[123] See Section 1201(a)(1)(C)-(D) of the United States Copyright Act. There are also seven exemptions for the benefit of non-profit libraries, archives, and educational institutions, law enforcement, intelligence, and other Government activities, reverse engineering of computer programs, encryption research, protection of minors, protection of personally identifying information and security testing (United States Copyright Act, Section 1201(d)-(j)).

> compilations of portions of those works for educational use in the classroom by media studies or film professors; computer programs and video games distributed in formats that have become obsolete and that require the original media or hardware as a condition of access, when circumvention is accomplished for the purpose of preservation or archival reproduction of published digital works by a library or archive (…) computer programs protected by dongles that prevent access due to malfunction or damage and which are obsolete (…) literary works distributed in ebook format when all existing ebook editions of the work (including digital text editions made available by authorised entities) contain access controls that prevent the enabling either of the book's read-aloud function or of screen readers that render the text into a specialized format."[124]

Thus, it is proposed that EU copyright offices (or other appropriate entities)[125] conduct regular hearings and create deposit obligations (in connection to particular classes of works and users) when beneficiaries of privileged exceptions are found to be adversely affected by DRM in their ability to carry out non-infringing uses – that is, when a beneficiary of a privileged exception is faced with impossible use or access, or is only able to enjoy the exception in a limited manner (depending on the purpose of the use, so that, for example, where the aim is preservation a sub-optimal use will not suffice).

It is suggested that these hearings take place every three years and the information thus discovered be fed into the EC Commission's report on the application of the Information Society Directive - in accordance to the pace and guidelines set out in Article 12 of the Directive.[126]

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[124] Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works, 2006, http://www.copyright.gov/1201/.

[125] Such as, in the UK, the digital rights agency proposed in Lord Carter's Digital Britain report (2009).

[126] According to Article 12 of the Information Society Directive: "1. Not later than 22 December 2004 and every three years thereafter, the Commission shall submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this Directive, in which, inter alia, on the basis of specific information supplied by the Member States, it shall examine in particular the application of Articles 5, 6 and 8 in the light of the development of the digital market. In the case of Article 6, it shall examine in particular whether that Article 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. Where necessary, in particular to ensure the functioning of the internal market pursuant to

In practice, the creation of access to works portals requires (a) selecting a deposit entity within a given country, (b) setting up a procedure to enable expeditious access to works by beneficiaries of privileged exceptions and (c) establishing incentives to guarantee the effectiveness of the system.

(a) The selection of a deposit agency within a given country could echo national legislative choices in terms of legal deposit, so that a main deposit library could become the entity with whom those means are deposited (and the entity providing access to those means). In the UK, it is suggested that the British Library could take on this task. The British Library is the UK's national library, with legislation requiring a copy of every UK publication to be automatically deposited by publishers in the British Library. The know-how and infrastructure required to carry out deposit functions are already in place, so that the new tasks (involved in the creation of a UK *access to works portal)* would be a mere extension of the British Library's present mission.

(b) As to the procedure to enable expeditious access to works by beneficiaries of privileged exceptions, it could involve three simple steps: (i) request (ii) partitioning and authentication and (iii) immediate access.

> (i) A beneficiary of a privileged exception upon finding that a DRM *prevents* or *limits* the enjoyment of that exception would request, through the appropriate national *access to works portal,* online access to the means required to enable exercise of the privileged exception in question. For example, a UK film lecturer in the course of preparing a film analysis lecture finds that it is not possible to extract a clip from a certain DVD required for their lecture. The lecturer goes online to the *access to works portal* (provided by the British Library) and requests access to the means to enable exercise of the privileged exception in question.
>
> (ii) In line with the existing self-certification practice in the context of access to libraries, a beneficiary would have to provide identification elements (such as full name and email address) and declare the lawful purpose of the use (educational,

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Article 14 of the Treaty, it shall submit proposals for amendments to this Directive." [emphasis added]

for example) and country of usage.[127] In the above example, the film lecturer would provide full name, email address and country of usage (UK), and declare the intention to use the materials in the course of film lecturing. User authentication and partitioning would be made possible by use of existing technology – as discovered by this study.[128]

(iii) Lastly, the beneficiary in question would have immediate access to the means to enable him to benefit from that exception. The film lecturer, in the example above, upon being authenticated would have instant access, for example, to a non-protected version of the work or to a decryption key, making it feasible to use the required materials for a same day lecture.

In order to minimise abuse, it is proposed that all copies issued under this procedure be *individually watermarked*, and that it be made an offence to distribute those copies knowingly to persons to whom the certification does not apply. This should ensure that copies of works obtained legitimately through national *access to works portals* are not then circulated online illegally – if they are, they will be deemed infringing copies.

The suggestion is that a method combining the use of digital identification with watermark techniques could be used to assure traceability and to deter copyright infringement. This method would guarantee that if a beneficiary disseminates unauthorised copies of a work these copies can be traced back to the beneficiary.

An emerging problem would be that of *privacy*. In order to identify individual digital copies, without jeopardising privacy of users, individually watermarked copies should be numbered, without identifying the beneficiary. Only deposit agencies would have access to the database holding the link between numbers and individual

[127] For example, according to s. 37(2) of the UK Copyright, Designs and Patents Act, 1988: "The regulations may provide that, where a librarian or archivist is required to be satisfied as to any matter before making or supplying a copy of a work— (a) he may rely on a signed declaration as to that matter by the person requesting the copy, unless he is aware that it is false in a material particular, and (b) in such cases as may be prescribed, he shall not make or supply a copy in the absence of a signed declaration in such form as may be prescribed."

[128] See results and findings in connection with Sun (Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?, Sections G and H) and Intertrust (Chapter V - Can technology accommodate conflicts between freedom of expression and DRM?, Sections F and H).

beneficiaries, which information they would only disclose to law enforcement authorities in specified circumstances.

(c) Effectiveness of the proposed solution would be guaranteed by incentives.

Two possibilities present themselves as obvious incentives:

> (i) First, protection under Article 6 generally (that is, DRM legal protection) could be denied to the owner of a work that has been identified by the rule-making procedure where means of accessing the work have not been deposited with the relevant deposit agency;
>
> (ii) Second, an exemption from the prohibition against circumvention of DRM could be offered in cases where a beneficiary cannot take advantage of an exception, but no means have been deposited with the relevant authority.

These possibilities raise two important legal questions. First, the question arises whether the effect is to impose a formality in a way which is objectionable under Art 5 of the Berne Convention or the WIPO Copyright Treat. Secondly, the question arises whether the grant of such an exemption is generally legitimate under the WIPO Copyright Treaty. It is suggested that the use of either technique is permissible under international copyright law.

Formalities, including registration, cannot be imposed in connection to copyright subsistence (that is, copyright protection cannot be dependant on compliance with formalities) given the prohibition in Article 5(2) of the Berne Convention.[129] This Berne provision bars national laws from setting out the fulfilment of administrative obligations (such as the deposit of a copy of a work or its registration) as a condition of copyright protection:

[129] According to Article 5(2) of the Berne Convention: "the enjoyment and the exercise of these rights shall not be subject to any formality; such enjoyment and such exercise shall be independent of the existence of protection in the country of origin of the work. Consequently, apart from the provisions of this Convention, the extent of protection, as well as the means of redress afforded to the author to protect his rights, shall be governed exclusively by the laws of the country where protection is claimed."

> "Making the protection of a right (claimed by virtue of the Berne Convention) dependant on the observation of a formality would be a breach of the Convention."[130]

This principle extends to non-Berne states adhering to the WIPO Copyright Treaty – since Article 1(4) requires compliance with Articles 1 to 21 of the Berne Convention, which entails Article 5(2).

Hence, the fulfilment of formalities as a condition of protection of a right invoked by the WIPO Copyright Treaty (such as the right to communicate the work to the public) would breach the treaty.

But, according to Ricketson and Ginsburg:

> "the Berne Convention does not declare that that members may not *institute* a system of formalities; it prohibits making enjoyment and exercise of copyright in non-domestic works subject to them. Thus, article 5(2) does not prohibit member states from maintaining public registries or other notices-giving devices; it merely bars making compliance mandatory for non-domestic works (…) The question then becomes: how may a member state achieve the benefits of formalities without punishing authors who fail them? One approach would be to substitute carrots for sticks. Authors who do comply with registration or other requirements might enjoy evidentiary advantages or qualify for additional remedies. So long as the basic copyright remedies of injunctive relief and actual damages remain available without regard to formalities, one may argue that remedial enhancements remain with in the "means of redress afforded to the author to protect his rights", which article 5(2) leaves to the country of protection's design." [131]

Thus, it is proposed that, in the context of *access to works portals*, compliance with formalities would not be required to establish copyright subsistence, but would provide certain advantages, such as *enhanced remedies.*

Here, a limited analogy could be drawn with the US system. The US imposition of the obligation to register works as a prerequisite to filing an infringement suit:

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[130] Masouyé, 1978, page 33.
[131] Ricketson and Ginsburg, 2006, para. 6.107-6.108.

> "was deemed inconsistent with the article 5(2) prohibition on subjecting the exercise of rights to compliance with formalities."[132]
>
> and
>
> "The 1988 Berne Convention Implementation Act accordingly lifted the requirement for non-US Berne works, but retained it for US works." [133]

However, registration still plays a significant role in US copyright law. While registration is not a requirement for copyright protection, other incentives are provided to encourage copyright owners to register, such as the following:

> "Registration establishes a public record of the copyright claim;
> Before an infringement suit may be filed in court, registration is necessary for works of U. S. origin;
> If made before or within five years of publication, registration will establish prima facie evidence in court of the validity of the copyright and of the facts stated in the certificate;
> If registration is made within three months after publication of the work or prior to an infringement of the work, statutory damages and attorney's fees will be available to the copyright owner in court actions. Otherwise, only an award of actual damages and profits is available to the copyright owner;
> Registration allows the owner of the copyright to record the registration with the U. S. Customs Service for protection against the importation of infringing copies."[134]

It is suggested that even if the legal protection of DRM were made dependant on the observation of a formality that would not breach the Berne Convention or the WIPO Copyright Treaty.

While Article 5(2) of Berne prohibits formalities from being imposed on the "enjoyment and the exercise of these rights", the legal protection of DRM is not a *right* under the WIPO Copyright Treaty.

Article 11 of the WIPO Copyright Treaty, entitled "Obligations concerning Technological Measures" states:

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[132] Ricketson and Ginsburg, 2006, para. 6.104.
[133] Ricketson and Ginsburg, 2006, footnote 318.
[134] http://www.copyright.go\v/circs/circ1.pdf. See Sections 408-412 of the US Copyright Act.

> "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."

From a legal language viewpoint, the protection of DRM offered by the WIPO Copyright Treaty does not emerge as a *right of authors*,[135] but as an *obligation of Contracting Parties concerning technological measures*. From a legal architecture perspective, Article 11 does not follow other rights foreseen by the treaty, but exceptions to those rights. Hierarchically, the protection of DRM systems is secondary to the protection of the rights of authors.

Moreover, from a conceptual perspective, commentators have treated the protection of DRM as *para-copyright* rather than true copyright, confirming the other indications that such legal protection is not subject to the no-formality rule.[136]

Indeed, in the UK, the legislator inserted legal protection of DRM in Part VII of the UK Copyright Act, "Miscellaneous and General – Circumvention of protection measures" (not within Chapter II, "Rights of the Copyright Owner") and, in Portugal, that protection was placed in a new chapter, entitled "Protection of technological measures and rights management information" (rather than within Chapter I, which is devoted to the rights of authors).

The view that the prohibition in Article 11 of the WIPO Copyright Treaty is not an *author's right* (subject to Article 5(2) of Berne) can be seen from the fact that in the UK, for example, protection is given not just to the copyright owner but also to others involved in the development and use of technological measures. For example, where there has been an unlawful act of circumvention, a civil action may be brought by "any person issuing copies or communicating the work to which effective technological measures have been applied".[137]

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[135] Typically, the WIPO Copyright Treaty imposes obligations of this sort through the language "authors of… shall enjoy the exclusive right of authorising the … of their works." See, for example, Articles 6 (right of distribution), 7 (rental) and 8 (communication to the public).

[136] See, for example, DeBeer (2005).

[137] UK Copyright, Designs and Patents Act, 1988, s. 296ZA.

Furthermore, where a person is unlawfully dealing in circumvention devices, an action can even be commenced by "the owner or exclusive licensee of any intellectual property right in the effective technological measures applied to the work".[138]

It could be argued that it is significant that Article 11 of the WIPO Copyright Treaty explicitly refers to the use of technological measures "in connection with the exercise of their rights" (ie, that it uses the language of *exercise*, just like Article 5(2) of Berne). *The question is what is meant by "exercise" and "in connection" (and what are the repercussions thereof).*

As to the meaning (and purpose) of the word *exercise* within the Berne provision that prohibits formalities, Ricketson and Ginsburg explain that:

> "An author may be *vested* with copyright, but unable to *enforce* her rights unless she complies with a variety of prerequisites to suit. Hence the addition by the Berlin Act of the word 'exercise'. An example of this was to be found in the requirement in the French decree of 1793 that copies of a work were to be deposited in the *Bibliothèque Nationale* as a precondition for the bringing of an infringement proceeding. It was held, however, by a French court in 1914 this did not apply to authors claiming protection under the Convention (although it did apply to French authors), as it was inconsistent with the Convention (…)"[139]

This leads to the conclusion that the introduction of the word *exercise* within Article 5(2) of the Berne Convention (the provision that prohibits formalities) was meant to enable *enforcement* of rights of authors independently of compliance with formalities. Hence, the term has a legal (not technological) aura, reflecting the need for prompt judicial protection of rights of authors. This rationale is corroborated by the illustrative example furnished by Ricketson and Ginsburg.

Given that the term *exercise* bears no technological connotation (that is, the word *exercise* does not refer to DRM employment, but to legal redress), the only other way to link DRM protection to the Berne ban on formalities (absorbed by the WIPO Copyright Treaty) is by relying on the phrase "in connection" which is used in Article 11 of the WIPO Copyright Treaty.

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[138] UK Copyright, Designs and Patents Act, 1988, s. 296ZD.
[139] Ricketson and Ginsburg, 2006, para. 6.104.

But semantics does not allow for an extensive interpretation of Article 5(2) of the Berne Convention. According to the Oxford English Dictionary, the phrase "in connection" means "concerning" or "with reference to".[140] This makes sense, since DRM protection is employed *in connection* to rights of authors. The phrase "in connection" (which is used in Article 11 of the WIPO Copyright Treaty) is merely locating the legal protection of technological measures in the realms of copyright - that is, establishing a copyright link that leaves unprotected, by the Treaty, DRM employment (in garage remotes, for example) which is disconnected from the protection of the rights of authors.[141]

Extending the formalities prohibition to DRM would require too broad an interpretation of Articles 5(2) of Berne and 11 of the WIPO Copyright Treaty. Such extensive interpretation would not be consistent with the purpose of the Berne provision (the need for prompt judicial, not technological, protection of rights of authors) nor with the legal language and architecture of the WIPO Copyright Treaty.

Legally, the Berne formalities prohibition covers the *exercise of rights* and not para-copyright activities which may take place in parallel (and *concern*) the exercise of those rights.

Finally, under the WIPO Copyright Treaty, the legal protection of DRM is not absolute. This is clear as regards the intersection between permitted acts and DRM.

Article 11 of the WIPO Copyright Treaty, requires the introduction of an anti-circumvention provision in respect of acts which are not authorised by rightholders or permitted by law. This provision has been examined by various authors who have concluded that:

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[140] According to the Oxford English Dictionary, http://www.askoxford.com.

[141] This view is corroborated by the EC application report: "Article 6(3) requires that technological protection measures are applied to restrict acts which are not authorised by the rightholders of the protected subject matter. This is in line with Article 11 of the WIPO Copyright Treaty which requires that technological protection measures be used by rightholders "in connection with their rights" under the WIPO Copyright Treaty or the Berne Convention. The wording "acts not authorised by the rightholder" in Article 6(3) aims to link technological protection measures to the exercise of the exclusive rights mentioned in this paragraph. Therefore, the Directive aims to establish a connection between the technological measure and the exercise of copyright. This implies that Article 6(3) only protects technological measures that restrict acts which come within the scope of the exclusive rights " (Commission Staff Working Document, 2007).

> "no obligation exists in Article 11 of the Treaty to provide 'adequate legal protection and effective legal remedies' against acts of circumvention which concern acts permitted by law."[142]

> "(…) where a user circumvents a technological measure in order to make a copy for private purposes or educational purposes permitted under the relevant national law without the rightholders authorisation, the WCT and the WPPT do not require Contracting Parties to provide for legal remedies against the circumvention; they clearly establish a link between copyright or neighbouring rights protection and the protection against circumvention."[143]

> "Not all acts of circumvention are violations of article 11; member states incur no obligation to prohibit circumventions that allow the user to exploit a work in the public domain, or to engage in an act authorised by the rightholder, or, more importantly, that allow the user to engage in a non-infringing act, such as accessing a work in the public domain, or copying for the purposes endorsed by articles 10 and 10bis (…) The challenge for national laws, then, is to determine how to regulate the creation and dissemination of circumvention devices without effectively cutting off the fair uses that at least some devices, in the right hands, would permit (…) ultimately it will be seen that there is little in the WCT text or Berne itself that will provide guidance to national legislators and policymakers." [144]

Thus, under the WIPO Copyright Treaty, anti-circumvention measures preventing acts permitted by law do not require legal protection. Given that the one who can do the greater can do the lesser, if a Contracting Party does not deem it necessary to deny *all* protection to anti-circumvention measures preventing acts permitted by law, it may, nonetheless, make that protection dependant on the observation of a formality.

Consequently, an exemption from the prohibition against circumvention of DRM could be offered in cases where a beneficiary cannot take advantage of an exception, but no means have been deposited with the relevant deposit agency.

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[142] Ficsor, 2002, 548.
[143] Lewinski, 2008, 464.
[144] Ricketson and Ginsburg, 2006, 977-978.

Although narrower than the first incentive that was suggested (above), this incentive tool has a practical and useful dimension to it when extended to both beneficiary and deposit agency.

It would enable a deposit agency to make a digital copy of a work to ensure availability through the respective national access to work portal – in the absence of deposit. And it would be a very valuable mechanism for beneficiaries of privileged exceptions, such as, film lecturers and students/researchers community who (as revealed by this study) are having difficulties in extracting portions of DRM protected films for educational use and are, consequentially, being led to execute isolated acts of self-help for academic and educational purposes.

Hence, it is suggested that this exemption could be offered to both the beneficiary and the deposit agency in question. The implication would be that in the absence of deposit, circumvention by the beneficiary or the deposit agency, in question, would be allowed.

The principle underlying this proposal is that where the means to enable beneficiaries of privileged exceptions to benefit from them are not deposited, the protection of privileged exceptions will prevail over the protection of DRM. For this principle to apply to works supplied online through *access to works portals*, a second amendment to Article 6(4) of the Information Society Directive is required, as follows.

Second proposed amendment to Article 6(4) of the Information Society Directive:

> ***It should be added to Article 6(4) of the Information Society Directive that where access works by beneficiaries of privileged exceptions is not facilitated, the protection of privileged exceptions prevails over the protection of DRM, even where works are supplied online on agreed contractual terms.***

Where access to works by beneficiaries of privileged exceptions (such as libraries, lecturers, students and researchers) is not facilitated, the protection of privileged exceptions (given their connection to core freedoms) should prevail over the legal protection of DRM.

Interestingly, in Europe, the EC Commission intended to link the protection of DRM to copyright infringement. According to Article 6 in

the Explanatory Memorandum of the Commission's Proposed Information Society Directive:

> "The provision prohibits activities aimed at an infringement of a copyright, a related right or a sui generis right in databases granted by Community and national law; this would imply that not any circumvention of technical means of protection should be covered, but only those which constitute an infringement of a right, i.e., which are not authorised by law or by the author." [145]

The Commission's idea was that DRM would not be protected in the presence of exceptions to copyright. The underlying principle was, clearly, the primacy of *all* exceptions (listed in the proposal) over DRM.

The Council rejected this idea, replacing it with the opposite principle. However, given the connection of privileged exceptions to core freedoms, the Council created a special rule for those exceptions, setting out two mechanisms that betray the underlying prevalence of the protection of *privileged exceptions* (not all exceptions) over the protection of DRM:

1) At the national level, according to Article 6(4) of the Information Society Directive, Member States must promote voluntary measures taken by rightholders to guarantee that beneficiaries of privileged exceptions are able to benefit from them; failing this, within a certain time frame, Member States have to take appropriate measures;

2) At the EC level, according to Article 12 of the Information Society Directive, every three years, the European Commission must submit a report on the application of the Information Society Directive, examining whether acts which are permitted by law are being adversely affected by the use of effective technological measures - leading, where necessary, to the submission of proposals for amendments to the Directive.

The underlying rationale is, unequivocally, the primacy of *privileged exceptions* (not all exceptions) over DRM.

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[145] Proposal for a European Parliament and Council Directive on the harmonization of certain aspects of copyright and related rights in the Information Society (COM/97/628 final). See Appendix C – Brief account of the legislative passage of the Information Society Directive.

This principle is confirmed, by an argument *a contrario* stemming from the fourth paragraph of Article 6(4), according to which where works are supplied online copyright owners may prevent users from benefiting from all exceptions to copyright, including privileged exceptions.

The Commission has clarified, already, the link between copyright subsistence and protection of DRM.[146] It could also be clarified that where access to works by beneficiaries of privileged exceptions is not facilitated, the protection of privileged exceptions prevails over the protection of DRM. This would be in line with the spirit of the EC Commission's proposal for the Information Society Directive and the above mechanisms devised by the Council.

But this clarification would not suffice in relation to works supplied online: where works are supplied on the Internet, copyright owners may prevent users from benefiting from all exceptions to copyright (including privileged exceptions).

To solve this problem, Article 6(4) of the Information Society Directive should be amended to set out that where the means to enable beneficiaries of privileged exceptions to benefit from them are not deposited (such as, a non-protected version of the work or a decryption key), the protection of privileged exceptions prevails over the protection of DRM, whether or not works are supplied online.

As seen above, this proposal would be consistent with the WIPO Copyright Treaty.

[146] Commission Staff Working Document, 2007.

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Appendix A – Relevant provisions of the Information Society Directive

Recital (51)

"The legal protection of technological measures applies without prejudice to public policy, as reflected in Article 5, or public security. Member States should promote voluntary measures taken by rightholders, including the conclusion and implementation of agreements between rightholders and other parties concerned, to accommodate achieving the objectives of certain exceptions or limitations provided for in national law in accordance with this Directive. In the absence of such voluntary measures or agreements within a reasonable period of time, Member States should take appropriate measures to ensure that rightholders provide beneficiaries of such exceptions or limitations with appropriate means of benefiting from them, by modifying an implemented technological measure or by other means. However, in order to prevent abuse of such measures taken by rightholders, including within the framework of agreements, or taken by a Member State, any technological measures applied in implementation of such measures should enjoy legal protection."

Article 5
Exceptions and limitations

"1. Temporary acts of reproduction referred to in Article 2, which are transient or incidental [and] an integral and essential part of a technological process and whose sole purpose is to enable:
(a) a transmission in a network between third parties by an intermediary, or
(b) a lawful use
of a work or other subject-matter to be made, and which have no independent economic significance, shall be exempted from the reproduction right provided for in Article 2.

2. Member States may provide for exceptions or limitations to the reproduction right provided for in Article 2 in the following cases:
(a) in respect of reproductions on paper or any similar medium, effected by the use of any kind of photographic technique or by some other process having similar effects, with the exception of sheet music, provided that the rightholders receive fair compensation;
(b) in respect of reproductions on any medium made by a natural person for private use and for ends that are neither directly nor

indirectly commercial, on condition that the rightholders receive fair compensation which takes account of the application or non-application of technological measures referred to in Article 6 to the work or subject-matter concerned;
(c) in respect of specific acts of reproduction made by publicly accessible libraries, educational establishments or museums, or by archives, which are not for direct or indirect economic or commercial advantage;
(d) in respect of ephemeral recordings of works made by broadcasting organisations by means of their own facilities and for their own broadcasts; the preservation of these recordings in official archives may, on the grounds of their exceptional documentary character, be permitted;
(e) in respect of reproductions of broadcasts made by social institutions pursuing non-commercial purposes, such as hospitals or prisons, on condition that the rightholders receive fair compensation.

3. Member States may provide for exceptions or limitations to the rights provided for in Articles 2 and 3 in the following cases:
(a) use for the sole purpose of illustration for teaching or scientific research, as long as the source, including the author's name, is indicated, unless this turns out to be impossible and to the extent justified by the non-commercial purpose to be achieved;
(b) uses, for the benefit of people with a disability, which are directly related to the disability and of a non-commercial nature, to the extent required by the specific disability;
(c) reproduction by the press, communication to the public or making available of published articles on current economic, political or religious topics or of broadcast works or other subject-matter of the same character, in cases where such use is not expressly reserved, and as long as the source, including the author's name, is indicated, or use of works or other subject-matter in connection with the reporting of current events, to the extent justified by the informatory purpose and as long as the source, including the author's name, is indicated, unless this turns out to be impossible;
(d) quotations for purposes such as criticism or review, provided that they relate to a work or other subject-matter which has already been lawfully made available to the public, that, unless this turns out to be impossible, the source, including the author's name, is indicated, and that their use is in accordance with fair practice, and to the extent required by the specific purpose;
(e) use for the purposes of public security or to ensure the proper performance or reporting of administrative, parliamentary or judicial proceedings;

(f) use of political speeches as well as extracts of public lectures or similar works or subject-matter to the extent justified by the informatory purpose and provided that the source, including the author's name, is indicated, except where this turns out to be impossible;
(g) use during religious celebrations or official celebrations organised by a public authority;
(h) use of works, such as works of architecture or sculpture, made to be located permanently in public places;
(i) incidental inclusion of a work or other subject-matter in other material;
(j) use for the purpose of advertising the public exhibition or sale of artistic works, to the extent necessary to promote the event, excluding any other commercial use;
(k) use for the purpose of caricature, parody or pastiche;
(l) use in connection with the demonstration or repair of equipment;
(m) use of an artistic work in the form of a building or a drawing or plan of a building for the purposes of reconstructing the building;
(n) use by communication or making available, for the purpose of research or private study, to individual members of the public by dedicated terminals on the premises of establishments referred to in paragraph 2(c) of works and other subject-matter not subject to purchase or licensing terms which are contained in their collections;
(o) use in certain other cases of minor importance where exceptions or limitations already exist under national law, provided that they only concern analogue uses and do not affect the free circulation of goods and services within the Community, without prejudice to the other exceptions and limitations contained in this Article.

4. Where the Member States may provide for an exception or limitation to the right of reproduction pursuant to paragraphs 2 and 3, they may provide similarly for an exception or limitation to the right of distribution as referred to in Article 4 to the extent justified by the purpose of the authorised act of reproduction.

5. The exceptions and limitations provided for in paragraphs 1, 2, 3 and 4 shall only be applied in certain special cases which do not conflict with a normal exploitation of the work or other subject-matter and do not unreasonably prejudice the legitimate interests of the rightholder."

Article 6
Obligations as to technological measures

“1. 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.

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

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

4. Notwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation provided for in national law in accordance with Article 5(2)(a), (2)(c), (2)(d), (2)(e), (3)(a), (3)(b) or (3)(e) 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.
A Member State may also take such measures in respect of a beneficiary of an exception or limitation provided for in accordance with Article 5(2)(b), unless reproduction for private use has already been made possible by rightholders to the extent necessary to benefit

from the exception or limitation concerned and in accordance with the provisions of Article 5(2)(b) and (5), without preventing rightholders from adopting adequate measures regarding the number of reproductions in accordance with these provisions.
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.
The provisions of the first and second subparagraphs shall not apply to works or 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.
When this Article is applied in the context of Directives 92/100/EEC and 96/9/EC, this paragraph shall apply mutatis mutandis."

Article 7
Obligations concerning rights-management information

"1. Member States shall provide for adequate legal protection against any person knowingly performing without authority any of the following acts:
(a) the removal or alteration of any electronic rights-management information;
(b) the distribution, importation for distribution, broadcasting, communication or making available to the public of works or other subject-matter protected under this Directive or under Chapter III of Directive 96/9/EC from which electronic rights-management information has been removed or altered without authority,
if such person knows, or has reasonable grounds to know, that by so doing he is inducing, enabling, facilitating or concealing an infringement of any copyright or any rights related to copyright as provided by law, or of the sui generis right provided for in Chapter III of Directive 96/9/EC.

2. For the purposes of this Directive, the expression "rights-management information" means any information provided by rightholders which identifies the work or other subject-matter referred to in this Directive or covered by the sui generis right provided for in Chapter III of Directive 96/9/EC, the author or any other rightholder, or information about the terms and conditions of use of the work or other subject-matter, and any numbers or codes that represent such information.

The first subparagraph shall apply when any of these items of information is associated with a copy of, or appears in connection with the communication to the public of, a work or other subject matter referred to in this Directive or covered by the sui generis right provided for in Chapter III of Directive 96/9/EC."

Article 8
Sanctions and remedies

"1. Member States shall provide appropriate sanctions and remedies in respect of infringements of the rights and obligations set out in this Directive and shall take all the measures necessary to ensure that those sanctions and remedies are applied. The sanctions thus provided for shall be effective, proportionate and dissuasive.

2. Each Member State shall take the measures necessary to ensure that rightholders whose interests are affected by an infringing activity carried out on its territory can bring an action for damages and/or apply for an injunction and, where appropriate, for the seizure of infringing material as well as of devices, products or components referred to in Article 6(2).

3. Member States shall ensure that rightholders are in a position to apply for an injunction against intermediaries whose services are used by a third party to infringe a copyright or related right."

Article 12
Final provisions

"1. Not later than 22 December 2004 and every three years thereafter, the Commission shall submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this Directive, in which, inter alia, on the basis of specific information supplied by the Member States, it shall examine in particular the application of Articles 5, 6 and 8 in the light of the development of the digital market. In the case of Article 6, it shall examine in particular whether that Article 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. Where necessary, in particular to ensure the functioning of the internal market pursuant to Article 14 of the Treaty, it shall submit proposals for amendments to this Directive.

2. Protection of rights related to copyright under this Directive shall leave intact and shall in no way affect the protection of copyright.

3. A contact committee is hereby established. It shall be composed of representatives of the competent authorities of the Member States. It shall be chaired by a representative of the Commission and shall meet either on the initiative of the chairman or at the request of the delegation of a Member State.

4. The tasks of the committee shall be as follows:
(a) to examine the impact of this Directive on the functioning of the internal market, and to highlight any difficulties;
(b) to organise consultations on all questions deriving from the application of this Directive;
(c) to facilitate the exchange of information on relevant developments in legislation and case-law, as well as relevant economic, social, cultural and technological developments;
(d) to act as a forum for the assessment of the digital market in works and other items, including private copying and the use of technological measures."

Appendix B – Overview of the Information Society Directive

Granted rights: Reproduction, communication to the public and distribution (Articles 2-4)

"Member States shall provide for the exclusive right to authorise or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part (…)."

"Member States shall provide authors with the exclusive right to authorise or prohibit any communication to the public of their works, by wire or wireless means, including the making available to the public of their works in such a way that members of the public may access them from a place and at a time individually chosen by them."

"Member States shall provide for authors, in respect of the original of their works or of copies thereof, the exclusive right to authorise or prohibit any form of distribution to the public by sale or otherwise."

Exceptions and limitations to rights (Article 5)

"1. Temporary acts of reproduction referred to in Article 2, which are transient or incidental [and] an integral and essential part of a technological process and whose sole purpose is to enable:
(a) a transmission in a network between third parties by an intermediary, or
(b) a lawful use
of a work or other subject-matter to be made, and which have no independent economic significance, shall be exempted from the reproduction right provided for in Article 2.

2. Member States may provide for exceptions or limitations to the reproduction right provided for in Article 2 in the following cases:
(a) in respect of reproductions on paper or any similar medium, effected by the use of any kind of photographic technique or by some other process having similar effects, with the exception of sheet music, provided that the rightholders receive fair compensation;
(b) in respect of reproductions on any medium made by a natural person for private use and for ends that are neither directly nor indirectly commercial, on condition that the rightholders receive fair compensation which takes account of the application or non-application of technological measures referred to in Article 6 to the

work or subject-matter concerned;
(c) in respect of specific acts of reproduction made by publicly accessible libraries, educational establishments or museums, or by archives, which are not for direct or indirect economic or commercial advantage;
(d) in respect of ephemeral recordings of works made by broadcasting organisations by means of their own facilities and for their own broadcasts; the preservation of these recordings in official archives may, on the grounds of their exceptional documentary character, be permitted;
(e) in respect of reproductions of broadcasts made by social institutions pursuing non-commercial purposes, such as hospitals or prisons, on condition that the rightholders receive fair compensation.

3. Member States may provide for exceptions or limitations to the rights provided for in Articles 2 and 3 in the following cases:
(a) use for the sole purpose of illustration for teaching or scientific research, as long as the source, including the author's name, is indicated, unless this turns out to be impossible and to the extent justified by the non-commercial purpose to be achieved;
(b) uses, for the benefit of people with a disability, which are directly related to the disability and of a non-commercial nature, to the extent required by the specific disability;
(c) reproduction by the press, communication to the public or making available of published articles on current economic, political or religious topics or of broadcast works or other subject-matter of the same character, in cases where such use is not expressly reserved, and as long as the source, including the author's name, is indicated, or use of works or other subject-matter in connection with the reporting of current events, to the extent justified by the informatory purpose and as long as the source, including the author's name, is indicated, unless this turns out to be impossible;
(d) quotations for purposes such as criticism or review, provided that they relate to a work or other subject-matter which has already been lawfully made available to the public, that, unless this turns out to be impossible, the source, including the author's name, is indicated, and that their use is in accordance with fair practice, and to the extent required by the specific purpose;
(e) use for the purposes of public security or to ensure the proper performance or reporting of administrative, parliamentary or judicial proceedings;
(f) use of political speeches as well as extracts of public lectures or similar works or subject-matter to the extent justified by the informatory purpose and provided that the source, including the

author's name, is indicated, except where this turns out to be impossible;
(g) use during religious celebrations or official celebrations organised by a public authority;
(h) use of works, such as works of architecture or sculpture, made to be located permanently in public places;
(i) incidental inclusion of a work or other subject-matter in other material;
(j) use for the purpose of advertising the public exhibition or sale of artistic works, to the extent necessary to promote the event, excluding any other commercial use;
(k) use for the purpose of caricature, parody or pastiche;
(l) use in connection with the demonstration or repair of equipment;
(m) use of an artistic work in the form of a building or a drawing or plan of a building for the purposes of reconstructing the building;
(n) use by communication or making available, for the purpose of research or private study, to individual members of the public by dedicated terminals on the premises of establishments referred to in paragraph 2(c) of works and other subject-matter not subject to purchase or licensing terms which are contained in their collections;
(o) use in certain other cases of minor importance where exceptions or limitations already exist under national law, provided that they only concern analogue uses and do not affect the free circulation of goods and services within the Community, without prejudice to the other exceptions and limitations contained in this Article.

4. Where the Member States may provide for an exception or limitation to the right of reproduction pursuant to paragraphs 2 and 3, they may provide similarly for an exception or limitation to the right of distribution as referred to in Article 4 to the extent justified by the purpose of the authorised act of reproduction.

5. The exceptions and limitations provided for in paragraphs 1, 2, 3 and 4 shall only be applied in certain special cases which do not conflict with a normal exploitation of the work or other subject-matter and do not unreasonably prejudice the legitimate interests of the rightholder."

Exception to exceptions - Protection of technological measures Article 6

"1. 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.

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

Exceptions to exception to exceptions – Article 6(4)

"Notwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation provided for in national law in accordance with Article 5(2)(a), (2)(c), (2)(d), (2)(e), (3)(a), (3)(b) or (3)(e) 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.

A Member State may also take such measures in respect of a beneficiary of an exception or limitation provided for in accordance with Article 5(2)(b), unless reproduction for private use has already been made possible by rightholders to the extent necessary to benefit from the exception or limitation concerned and in accordance with the provisions of Article 5(2)(b) and (5), without preventing rightholders from adopting adequate measures regarding the number of reproductions in accordance with these provisions."

Exception to exceptions to exception to exceptions – Article 6(4) in fine

"The provisions of the first and second subparagraphs shall not apply to works or 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."

Appendix C – Brief account of the legislative passage of the Information Society Directive

On 21 January 1998 the European Commission transmitted to the Parliament and the Council a proposal for a Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society.[147]

At this stage the Commission intended to cover preparatory acts of infringement (not the act of circumvention) and clearly linked the protection of technological protection measures to copyright infringement.[148]

The European Parliament (EP), consulted under the co-decision procedure, examined the proposal in detail in its committees. On 20 January 1999 the Committee on Legal Affairs and Citizens' Rights debated the report drawn up by Mr R. Barzanti on its behalf and the Parliament gave its opinion in the plenary session of 10 February 1999 in favour of the proposal as amended.[149]

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[147] Proposal for a European Parliament and Council Directive on the harmonization of certain aspects of copyright and related rights in the Information Society (COM/97/628 final).

[148] Article 6(2) of the Commission's Proposal – "The expression 'technological measures`, as used in this Article, means any device, product or component incorporated into a process, device or product designed to prevent or inhibit the infringement of any copyright or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of Directive 96/9/EC (...)" and
Article 6 in the Explanatory Memorandum of the Commission's Proposal –
"3. The provision prohibits activities aimed at an infringement of a copyright, a related right or a suis generic right in databases granted by Community and national law; this would imply that not any circumvention of technical means of protection should be covered, but only those which constitute an infringement of a right, i.e., which are not authorised by law or by the author.
4. It should be stressed that such legal protection is complementary with the initiative already proposed by the Commission in the field of the protection of conditional access services. This latter proposal addresses in fact harmonised protection against unauthorised reception of a conditional access service, which may or may not contain or be based upon intellectual property, whilst this proposal deals with the unauthorised exploitation of a protected work or other subject matter, such as unauthorised copying, making available or broadcasting."

[149] Legislative resolution embodying Parliament's opinion on the proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society (COM(97)0628 C4-0079/98 97/0359(COD))(Codecision procedure: first reading).

Parliament's amendments introduced new recitals, reiterating the fundamental principles of the harmonisation of copyright,[150] stressing the importance of a rigorous and efficient copyright system[151] and referring to the fight against counterfeiting and piracy of cultural works.[152] But Parliament also said that:

> "these rights [were] not absolute and their protection must not be allowed to jeopardise the fundamental principles of an open and modern society, in which freedom of expression and the public interest must be fully achieved within the framework of the provisions enshrined in international conventions on intellectual property and may prevail over the restrictions arising from the enjoyment of these rights."[153]

Parliament modified the Commission's proposal to include the prohibition of the act of circumvention,[154] the replacement of the reference to copyright infringement with a reference to protection of

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[150] Amendment 1:
Recital (2a), new, following EP vote – "Whereas the proposed harmonisation will help to implement the four freedoms of the internal market and relates to compliance with the fundamental principles of law and especially of property - including intellectual property - of freedom of expression and the public interest."
[151] Amendment 6:
Recital 9a, new, text following EP vote – "Whereas a rigorous, effective system for the protection of copyright and related rights is one of the main ways of ensuring that European cultural production receives the necessary resources and of safeguarding the independence and dignity of artistic creators and performers."
[152] Amendment 12:
Recital 14a, new, text following EP vote – "Whereas the objective of proper support for the dissemination of culture must not be achieved by sacrificing strict protection of rights or by tolerating illegal forms of distribution or counterfeiting of works."
[153] Amendment 3, Recital 6a, new, text following EP vote.
[154] Amendment 49:
Article 6(1), original text – "1. Member States shall provide adequate legal protection against any activities, including the manufacture or distribution of devices or the performance of services, which have only limited commercially significant purpose or use other than circumvention, and which the person concerned carries out in the knowledge, or with reasonable grounds to know, that they will enable or facilitate without authority the circumvention of any effective technological measures designed to protect any copyrights or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of European Parliament and Council Directive 96/9/EC."
Text following EP vote – "1. Member States shall provide adequate legal protection against the circumvention without authority of any effective technological measures designed to protect any copyrights or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of European Parliament and Council Directive 96/9/EC."

copyright,[155] and the setting out the supremacy of the protection of technical protection measures over exceptions.[156]

The Commission submitted an amended proposal on 25 May 1999, having accepted forty-four of Parliament's fifty-six amendments.[157] Parliament proposed and the Commission accepted to forbid explicitly circumvention of technical protection measures and to list the activities carried out with the aim of circumventing the technical protection measures. Going beyond what had been proposed by Parliament, the Commission made it a condition that the person committing such an act is doing so knowingly, and used the definition of technological measures to reinstate the concept of "infringement of copyright",[158]

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[155] Amendment 50:
Article 6(2), original text – "The expression 'technological measures', as used in this Article, means any device, product or component incorporated into a process, device or product designed to prevent or inhibit the infringement of any copyright or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of Directive 96/9/EC (...)
Text following EP vote – "2. Member States shall provide adequate legal protection against any activities, including the manufacture or distribution of devices, products or components or the provision of services (…)"
Amendment 54:
Article 6(2a), new, following EP vote – "The expression 'effective technological measures', as used in this Article, means any technology, device or component that, in the ordinary course of its operation, is designed to protect any copyright or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of Directive 96/9/EC (...)"

[156] Amendment 47:
Article 5(4), original text - "The exceptions and limitations provided for in paragraphs 1, 2 and 3 shall only be applied to certain specific cases and shall not be interpreted in such a way as to allow their application to be used in a manner which unreasonably prejudices the rightholders' legitimate interests or conflicts with the normal exploitation of their works or other subject matter."
Text following EP vote - "The exceptions and limitations provided for in paragraphs 1, 2 and 3 shall only be applied to certain specific cases and shall not be interpreted in such a way as to allow their application to be used in a manner which unreasonably prejudices the rightholders' legitimate interests or conflicts with the normal exploitation of their works or other subject matter. These exceptions and limitations must not prevent the use of technical means to protect works with the aim of safeguarding the interests of the rightholders, nor prejudice the protection of these means as referred to in Article 6."

[157] Amended proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society - COM/99/250 final.

[158] Article 6 – "1. Member States shall provide adequate legal protection against the circumvention without authority of any effective technological measures designed to protect any copyright or any rights related to copyright as provided by law or the sui generis right provided for in Chapter III of European Parliament and Council Directive

providing that only technological measures preventing or inhibiting the infringement of copyright were protected under Article 6, which the Council later explained:

> "meant that technological measures designed to prevent or inhibit acts allowed by law (e.g. by virtue of an exception) were not protectable under Article 6. In other words, under the Commission's amended proposal, the exceptions provided for in Article 5 prevailed over the legal protection of technological measures provided for in Article 6."[159]

The Commission did not accept:

> "the specific mention in Article 5(4) that the exceptions and limitations to the exclusive rights do not prevent the use of technical protection measures. The link between the technical measures and private copying is set out in Articles 5(2)(b) and 5(2)(ba) and need not be reiterated in Article 5(4). In the case of the other limitations and exceptions, this question is dealt with in Article 6, as amended, relating to technological measures (amendment 47)."

96/9/EC, which the person concerned carries out in the knowledge, or with reasonable grounds to know that he or she pursues that objective.

2. Member States shall provide adequate legal protection against any activities, including the manufacture or distribution of devices, products or components or the provision of services, carried out without authority, 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 designed to protect any copyright or any right related to copyright as provided by law or the sui generis right provided for in Chapter III of European Parliament and Council Directive 96/9/EC.

3. The expression "technological measures", as used in this Article, means any technology, device or component that, in the normal course of its operation, is designed to prevent or inhibit the infringement of any copyright or any right related to copyright as provided by law or the sui generis right provided for in Chapter III of European Parliament and Council Directive 96/9/EC.

Technological measures shall be deemed "effective" where the access to or use of a protected work or other subject matter is controlled through application of an access code or any other type of protection process which achieves the protection objective in an operational and reliable manner with the authority of the rightholders. Such measures may include decryption, descrambling or other transformation of the work or other subject matter.

[159] Common Position (EC) No 48/2000 adopted by the Council on 28 September 2000, statement of the council's reasons, 43.

The Council adopted its Common Position on 28 September 2000.[160] It was at this point of the legislative process that the most significant changes emerged, with negotiations taking place behind closed doors. The work of the Council was prepared by the COREPER (a group of Permanent Representatives of the EU Member States) at which meetings the Commission is usually represented by its Secretary General.

The Council aligned the wording of Article 5(5) with that of Article 10 of the WCT and Article 16 of the WPPT and addressed the relationship between exceptions and technological measures in Article 6.[161]

The Council adopted in Article 6(3) a definition of protected technological measures which was broader than the one provided in the Parliament's amendment or in the Commission's amended proposal. The Council's definition covered all technological measures designed to prevent or restrict acts not authorised by the rightholder, regardless of whether the person performing the circumvention is a beneficiary of one of the exceptions provided for in Article 5. To counterbalance this measure, the Council added a new paragraph 4 to Article 6, accompanied by new explanatory recitals 51 and 52.

Firstly, the Council determined that in the absence of *voluntary measures* taken by rightholders, Member States have a duty to take *appropriate measures* to ensure that rightholders make available to beneficiaries of certain exceptions the means of benefiting from them. It was suggested, initially, that all Article 5 exceptions would be covered, but that suggestion was later replaced with the idea to only include certain exceptions (the ones deemed to be privileged exceptions because, for example, of their connection to certain human rights).

Secondly, the Council gave Member States the power to take appropriate measures to ensure that rightholders make available to users the means of benefiting from the exception of private copying, in the absence of voluntary measures taken by rightholders. Private copying was not deemed to be linked to a human right and so it was shifted to Article 6(4)(2).

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[160] Common Position (EC) No 48/2000 adopted by the Council on 28 September 2000.

[161] Common Position (EC) No 48/2000 adopted by the Council on 28 September 2000, statement of the council's reasons, 44.

Lastly, the Council established that agreed contractual terms for on-demand supply of works or other subject matter would prevail over the provisions of subparagraphs 1 and 2 of Article 6(4). This was meant to boost Internet sales of copyright products.

In its Communication of 11 September 2000, the Commission gave its opinion on the common position of the Council, fully agreeing with the Common Position of the Council. On 14 February 2001, the European Parliament adopted, in a second reading, minor amendments to the common position of the Council, which the Commission agreed with.[162]

[162] Commission opinion pursuant to Article 251 (2) (c) of the EC Treaty, on the European Parliament's amendments to the Council's common position regarding the proposal for a Directive of the European Parliament and of the Council on the harmonisation of certain aspects of copyright and related rights in the information society amending the proposal of the Commission pursuant to Article 250 (2) of the EC Treaty (COM/2001/0170 final - COD 97/0359).

Appendix D – Relevant provisions of the UK Copyright, Designs and Patents Act, 1988

Section 296

"(1) This section applies where –
(a) a technical device has been applied to a computer program; and
(b) a person (A) knowing or having reason to believe that it will be used to make infringing copies -
(i) manufactures for sale or hire, imports, distributes, sells or lets for hire, offers or exposes for sale or hire, advertises for sale or hire or has in his possession for commercial purposes any means the sole intended purpose of which is to facilitate the unauthorised removal or circumvention of the technical device; or
(ii) publishes information intended to enable or assist persons to remove or circumvent the technical device.

(...)

(6) In this section references to a technical device in relation to a computer program are to any device intended to prevent or restrict acts that are not authorised by the copyright owner of that computer program and are restricted by copyright."

Section 296ZA

"(1) This section applies where –
(a) effective technological measures have been applied to a copyright work other than a computer program; and
(b) a person (B) does anything which circumvents those measures knowing, or with reasonable grounds to know, that he is pursuing that objective.

(2) This section does not apply where a person, for the purposes of research into cryptography, does anything which circumvents effective technological measures unless in so doing, or in issuing information derived from that research, he affects prejudicially the rights of the copyright owner."

Section 296ZF

"(1) In sections 296ZA to 296ZE, "technological measures" are any technology, device or component which is designed, in the normal

course of its operation, to protect a copyright work other than a computer program.

(2) Such measures are “effective” if the use of the work is controlled by the copyright owner through –
(a) an access control or protection process such as encryption, scrambling or other transformation of the work, or
(b) a copy control mechanism, which achieves the intended protection.

(3) In this section, the reference to –
(a) protection of a work is to the prevention or restriction of acts that are not authorised by the copyright owner of that work and are restricted by copyright; and
(b) use of a work does not extend to any use of the work that is outside the scope of the acts restricted by copyright.”

Section 296ZB

“(1) A person commits an offence if he –
(a) manufactures for sale or hire, or
(b) imports otherwise than for his private and domestic use, or
(c) in the course of a business –
(i) sells or lets for hire, or
(ii) offers or exposes for sale or hire, or
(iii) advertises for sale or hire, or
(iv) possesses, or
(v) distributes, or
(d) distributes otherwise than in the course of a business to such an extent as to affect prejudicially the copyright owner, any device, product or component which is primarily designed, produced, or adapted for the purpose of enabling or facilitating the circumvention of effective technological measures.

(2) A person commits an offence if he provides, promotes, advertises or markets–
(a) in the course of a business, or
(b) otherwise than in the course of a business to such an extent as to affect prejudicially the copyright owner, a service the purpose of which is to enable or facilitate the circumvention of effective technological measures.

(...)

(4) A person guilty of an offence under subsection (1) or (2) is liable –

(a) on summary conviction, to imprisonment for a term not exceeding three months, or to a fine not exceeding the statutory maximum, or both;
(b) on conviction on indictment to a fine or imprisonment for a term not exceeding two years, or both.

(5) It is a defence to any prosecution for an offence under this section for the
defendant to prove that he did not know, and had no reasonable ground for
believing, that –
(a) the device, product or component; or
(b) the service,
enabled or facilitated the circumvention of effective technological measures."

Section 296ZD

"(1) This section applies where –
(a) effective technological measures have been applied to a copyright work other than a computer program; and
(b) a person (C) manufactures, imports, distributes, sells or lets for hire, offers or exposes for sale or hire, advertises for sale or hire, or has in his possession for commercial purposes any device, product or component, or provides services which –
(i) are promoted, advertised or marketed for the purpose of the circumvention of, or
(ii) have only a limited commercially significant purpose or use other than to circumvent, or
(iii) are primarily designed, produced, adapted or performed for the purpose of enabling or facilitating the circumvention of, those measures."

Section 296ZE

"(...)

(2) Where the application of any effective technological measure to a copyright work other than a computer program prevents a person from carrying out a permitted act in relation to that work then that person or a person being a representative of a class of persons prevented from carrying out a permitted act may issue a notice of complaint to the Secretary of State.

(3) Following receipt of a notice of complaint, the Secretary of State may give to the owner of that copyright work or an exclusive licencee such directions as appear to the Secretary of State to be requisite or expedient for the purpose of –
(a) establishing whether any voluntary measure or agreement relevant to
the copyright work the subject of the complaint subsists; or
(b) (where it is established there is no subsisting voluntary measure or agreement) ensuring that the owner or exclusive licencee of that copyright work makes available to the complainant the means of carrying out the permitted act the subject of the complaint to the extent necessary to so benefit from that permitted act.

(...)

(6) The obligation to comply with a direction given under subsection (3)(b) is a duty owed to the complainant or, where the complaint is made by a representative of a class of persons, to that representative and to each person in the class represented; and a breach of the duty is actionable accordingly (subject to the defences and other incidents applying to actions for breach of statutory duty).
(...)

(9) This section does not apply to copyright works 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.

(10) This section applies only where a complainant has lawful access to the
protected copyright work, or where the complainant is a representative of a
class of persons, where the class of persons have lawful access to the work (...)."

Appendix E – Privileged exceptions according to Part I of Schedule 5A of the UK Copyright, Designs and Patents Act, 1988

Section	Permitted act	Subject-matter	Who can carry out the act?	Purpose	Restrictions & Requirements
29	Fair dealing.	Literary, dramatic, musical or artistic works. Also: t.a.p.e.	Researchers.	Research for non-commercial purposes.	Copying must be done by the researcher where it would lead to multiple copies of the same material. Decompilation of a computer program and incidental copying of it in the course of doing so can only be done as per s50B. Sufficient acknowledgment is required, unless impossible.
29	Fair dealing.	Literary, dramatic, musical or artistic works. Also: tipographical arrangement of published editions (t.a.p.e.)	Students.	Private study.	Copying must be done by the student where it would lead to multiple copies of the same material. Decompilation of a computer program and incidental copying of it in the course of doing so can only be

					done as per s50B.
31A	To make a single accessible copy.	Literary, dramatic, musical or artistic works, t.a.p.e.	Visually impaired persons.	Personal use.	Lawful possession or use of the copy required. Not applicable, where the master copy is of a musical work, or part of a musical work, and the making of an accessible copy would involve recording a performance of the work or part of it, or if the master copy is of a database, or part of a database, and the making of an accessible copy would infringe copyright in the database. Not applicable if, or to the extent that, copies of the work are commercially available, by or with the authority of the copyright owner, in a form that is accessible to that person. The accessible copy must be accompanied

					by a statement that it is made under this provision and a sufficient acknowledge ment.
31B	Make or supply multiple accessible copies.	Commercially published literary, dramatic, musical or artistic works or published editions.	Approved bodies (for the benefit of visually impaired persons), such as educational establishments.	Personal use.	Lawful possession or use of the copy required. Not applicable if the master copy is of a musical work, or part of a musical work, and the making of an accessible copy would involve recording a performance of the work or part of it, or if the master copy is of a database, or part of a database, and the making of an accessible copy would infringe copyright in the database. Not applicable in relation to the making of an accessible copy if, or to the extent that, copies of the copyright work are commercially available, by or with the

					authority of the copyright owner, in a form that is accessible to the same or substantially the same degree. Not applicable in relation to the supply of an accessible copy to a particular visually impaired person if, or to the extent that, copies of the copyright work are commercially available, by or with the authority of the copyright owner, in a form that is accessible to that person. The accessible copy must be accompanied by a statement that it is made under this provision and a sufficient acknowledge ment. If the master copy is in copy-protected electronic form, the accessible

					copy must, so far as it is reasonably practicable to do so, incorporate the same, or equally effective, copy protection (unless the copyright owner agrees otherwise).
31C	To hold an intermediate copy of the master copy which is necessarily created during the production of the accessible copies.		Approved bodies under s 31B.	For the purposes of the production of further accessible copies.	So long as the approved body continues to be entitled to make accessible copies of that master copy.
32	Copying. Anything, for the purposes of an examination.	Literary, dramatic, musical or artistic works. Sound recordings, films or broadcasts.	Persons giving or receiving instruction.	Instruction. In the case of sound recordings, films or broadcasts, instruction, or preparation for instruction, in the making of films or film sound-tracks.	Copying must be done in the course of instruction or of preparation for instruction, for a non-commercial purpose and not by means of a reprographic process. Sound recordings, films or broadcast can be copied by making a film or film sound-track. Anything can be done for the purposes of an

					examination by way of setting the questions, communicating the questions to the candidates or answering the questions (but not the making of a reprographic copy of a musical work for use by an examination candidate in performing the work). Sufficient acknowledgement is required, unless this would be impossible for reasons of practicality or otherwise.
35	Recording or copying. Communication to the public by a person situated within the premises of an educational establishment.	Broadcast.	By or on behalf educational establishments.	Educational purposes.	Sufficient acknowledgement of the broadcast required. The educational purposes must be non-commercial. The communication must not be received by any person situated outside the premises of

					the educational establishment. Not applicable if or to the extent that there is a licensing scheme certified (under s 143).
36	Reprographic copies.	Passages from published literary, dramatic or musical works. Also: t.a.p.e.	By or on behalf of educational establishments.	Instruction.	Sufficient acknowledgement is required, unless this would be impossible for reasons of practicality or otherwise and the instruction must be for a non-commercial purpose (requirements not applicable to t.a.p.e.). Not more than one per cent. of any work may be copied in any quarter. Not applicable if, or to the extent that, licences are available authorising the copying in question and the person making the copies knew or ought to have been aware of that

					fact.
38	Make and supply single copies.	Articles in periodicals.	Librarians of prescribed libraries.	Research for a non-commercial purpose or private study.	Copies cannot be used for any other purposes. No person can be furnished with more than one copy of the same article or with copies of more than one article contained in the same issue of a periodical. Persons to whom copies are supplied are required to pay for them a sum not less than the cost (including a contribution to the general expenses of the library) attributable to their production.
39	Make and supply a single copy.	Parts of published literary, dramatic or musical works (other than articles in a periodical).	Librarians of prescribed libraries.	Research for a non-commercial purpose or private study.	Copies cannot be used for any other purpose. No person can be furnished with more than one copy of the same material or with a copy of more than a reasonable proportion of any work.

					Persons to whom copies are supplied are required to pay for them a sum not less than the cost (including a contribution to the general expenses of the library) attributable to their production.
41	Make and supply of copies to other prescribed libraries.	Articles in periodicals or the whole or part of a published edition of literary, dramatic or musical works.	Librarians of prescribed libraries.		Not applicable if at the time the copy is made the librarian making it knows, or could by reasonable inquiry ascertain, the name and address of a person entitled to authorise the making of the copy.
42	Make replacement copies.	Any item in the permanent collection of the library or archive. No infringement of literary, dramatic or musical work, any illustrations accompanying such a work or, a published edition.	Librarians and archivists of prescribed libraries or archives.	In order to preserve or replace that item by placing the copy in its permanent collection in addition to or in place of it, or in order to replace in the permanent collection of another prescribed library or archive an	The making of copies should be restricted to cases where it is not reasonably practicable to purchase a copy of the item in question.

				item which has been lost, destroyed or damaged.	
43	Make and supply copies.	Whole or part of unpublished literary, dramatic or musical works from documents in the library or archive.	Librarians and archivists of prescribed libraries or archives.	Research for a non-commercial purpose or private study.	Copies must not be used for other purposes. No person can be furnished with more than one copy of the same material. Persons to whom copies are supplied are required to pay for them a sum not less than the cost (including a contribution to the general expenses of the library or archive) attributable to their production. Not applicable if the work had been published before the document was deposited in the library or archive. Not applicable if the copyright owner has prohibited copying of the work, and at the

					time the copy is made the librarian or archivist making it is, or ought to be, aware of that fact.
44	Copy of a work and deposit in an appropriate library or archive.	Article of cultural or historical importance or interest.		So that it can be lawfully exported from the UK.	
45	Anything done for the purposes of parliamentary or judicial proceedings. Reporting such proceedings.			Purposes of parliamentary or judicial proceedings.	Does not authorise the copying of a work which is itself a published report of the proceedings.
46	Anything done for the purposes of the proceedings of a Royal Commission or statutory inquiry. Reporting any such proceedings held in public. Issue to the public of copies of the report of a Royal Commission or statutory inquiry containing the work or material from it.	Material open to public inspection or on official register.			Does not authorise the copying of a work which is itself a published report of the proceedings.
47	Copying.	Material which is open to public inspection or is on a statutory register.	By or with the authority of the appropriate person.		Copyright in the material as a literary work is not infringed by the copying of

					so much of the material as contains factual information of any description, for a purpose which does not involve the issuing of copies to the public.
47	Copying or issuing copies to the public.	Material which is open to public inspection.	By or with the authority of the appropriate person.		For the purpose of enabling the material to be inspected at a more convenient time or place or otherwise to facilitate the exercise of any right for the purpose of which the requirement is imposed.
47	Copying or issuing copies to the public.	Material which is open to public inspection or which is on a statutory register.	By or with the authority of the appropriate person	For the purpose of disseminating that information.	The material contains information about matters of general scientific, technical, commercial or economic interest.
48	Copying and issuing copies to the public.	Literary, dramatic, musical or artistic works.	The Crown.	For the purpose for which the work was communicated to the Crown, or any related purpose which could reasonably	The work has in the course of public business been communicated to the Crown for any purpose, by or with the licence of the

				have been anticipated by the copyright owner,	copyright owner and a document or other material thing recording or embodying the work is owned by or in the custody or control of the Crown. The Crown may not copy a work, or issue copies of a work to the public, if the work has previously been published otherwise.
49	Copying and supplying of a copy to any person.	Material which is comprised in public records.	By or with the authority of an officer.		The records are open to public inspection.
50	Doing of a particular act specifically authorised by an Act of Parliament.				Does not exclude any defence of statutory authority otherwise available under or by virtue of any enactment.
61	To make sound recordings.	Performances of folksongs.		For the purpose of including it in an archive maintained by a designated body.	The words must be unpublished and of unknown authorship at the time the recording is made. The making of the recording must not

					infringe any other copyright. Its making may not be prohibited by any performer.
61	To make and supply copies.	Sound recordings of performances of folksongs.	The archivist or a person acting on his behalf.	Research for a non-commercial purpose, or private study.	The copies must not be used for any other purposes. No person may be furnished with more than one copy of the same recording.
68	To make a sound recording or film of the work or adaptation.	In the case of a literary, dramatic or musical work, or an adaptation of such a work.		Incidental recording for purposes of broadcast.	By virtue of a licence or assignment of copyright a person is authorised to broadcast a literary, dramatic or musical work, or an adaptation of such a work.
68	To take a photograph or make a film of the work.	In the case of an artistic work.		Incidental recording for purposes of broadcast.	By virtue of a licence or assignment of copyright a person is authorised to broadcast an artistic work.
68	To make a copy.	In the case of a sound recording or film.		Incidental recording for purposes of broadcast.	By virtue of a licence or assignment of copyright a person is

					authorised to broadcast a sound recording or film.
69	The making or use of recordings.	Programmes broadcast by the British Broadcasting Corporation.	The British Broadcasting Corporation.	For the purpose of supervision and control.	
70	The making of recordings.	Broadcasts.	Private individuals.	For the purpose of enabling it to be viewed or listened to at a more convenient time. For private and domestic use.	The recording must be made in domestic premises and solely.
71	Making of a photograph or copy of the same.	Whole or any part of an image forming part of a broadcast.		For private and domestic use.	The act must be carried out in domestic premises.
74	Copy, issue or lend copies to the public.	Broadcasts.	Designated body.	For the purpose of providing people who are deaf or hard of hearing, or physically or mentally handicapped in other ways, with copies which are sub-titled or otherwise modified for their special needs.	Not applicable if, or to the extent that, there is a licensing scheme certified under s 143 providing for the grant of licences.
75	Recording or copy of such a recording.	Broadcasts of a designated class.		For the purpose of being placed in an archive maintained by a designated body.	

Appendix F – Questionnaires

Data Collection Questions – British Library

The following questions refer to the act of copying digital materials.

1. How often have technological measures prevented librarians from copying in the context of their duties at the British Library:

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

If *never* or *don't know*, go to question 8.

2. How often do technological measures prevent remote users of the British Library from copying in the context of their research?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

3. If the answer in 1 or 2 was affirmative, would it be possible to resort to non-digital versions of the materials at stake at the British Library?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

4. If the answer in 3 was affirmative, please rate how difficult it would be to find those non-digital materials.

Very easy		Moderately easy		Very difficult
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

5. How often have technological measures prevented copying for researchers or students?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

6. How often have technological measures prevented copying for other libraries?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

7. How often have technological measures prevented copying for archival purposes?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

8. If the answer in 1 was never or don't know, do you anticipate that you will have problems in future regarding copying?

Yes ?	No ?	Don't know ?

Comments:

9. What expectations do you have in this field?

10. Would you like to add anything?

Data Collection Questions – RNIB

The following questions refer to accessible copies, that is, copies which are made accessible to the visually impaired.

1. How often have technological measures prevented the visually impaired from making accessible copies of digital materials:

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

If *never* or *don't know*, go to question 4.

2. If the answer in 1 was affirmative, were the visually impaired able to resort to non-digital versions of the materials at stake to satisfy their specific needs?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

3. If the answer in 2 was affirmative, please rate how difficult it was to find those non-digital materials.

Very easy		Moderately easy		Very difficult
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

4. If the answer in 1 was *never* or *don't know*, do you anticipate that the visually impaired will have problems in future regarding making accessible copies of digital materials?

Yes ?	No ?	Don't know ?

Comments:

5. What expectations do you have in this field?

6. Would you like to add anything?

Data Collection Questions – NCC

The following questions refer to the act of copying digital materials.

1. How often have technological measures prevented the consumer from copying, for private, domestic, non-commercial purposes?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

If *never* or *don't know*, go to question 4.

2. If the answer in 1 was affirmative, were consumers able to resort to non-digital versions of the materials at stake to satisfy their specific needs?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

3. If the answer in 2 was affirmative, please rate how difficult it was to find those non-digital materials.

Very easy		Moderately easy		Very difficult
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

4. If the answer in 1 was *never* or *don't know*, do you anticipate that consumers will have problems in future regarding copying, for private, domestic, non-commercial purposes?

Yes ?	No ?	Don't know ?

Comments:

5. What expectations do you have in this field?

6. Would you like to add anything?

Data Collection Questions – Lecturers

The following questions refer to the act of copying digital materials.

1. How often have technological measures prevented you from copying, in the context of teaching?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

If never or don't know, go to question 4.

2. If the answer in 1 was affirmative, were you able to resort to non-digital versions of the materials at stake?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

3. If the answer in 2 was affirmative, please rate how difficult it was to find those non-digital materials.

Very easy 1 ?	2 ?	Moderately easy 3 ?	4 ?	Very difficult 5 ?

Comments:

4. If the answer in 1 was never or don't know, do you anticipate that you will have problems in future regarding copying in the context of teaching?

Yes ?	No ?	Don't know ?

Comments:

5. What expectations do you have in this field?

6. Would you like to add anything?

Data Collection Questions - Students / Researchers

The following questions refer to the act of copying digital materials.

1. How often have technological measures prevented you from copying digital materials in the context of your research or private study?

Very often ?	Often ?	Sometimes ?	Rarely ?	Never ?	Don't know ?

Comments:

If never or don't know, go to question 4.

2. If the answer in 1 was affirmative, were you able to resort to non-digital versions of the materials at stake (to carry out your research or private study)?

? Yes, in most cases
? Sometimes
? Rarely
? No, never
? Don't know.

Comments:

3. If the answer in 2 was affirmative, please rate how difficult it was to find those non-digital materials.

Very easy		Moderately easy		Very difficult
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

4. If the answer in 1 was never or don't know, do you anticipate that you will have problems in future (regarding copying in the context of research or private study)?

Yes ?	No ?	Don't know ?

Comments:

5. What expectations do you have in this field?

6. Would you like to add anything?

Data Collection Questions – DRM Developers

1. Is your DRM in-house or licensed?

2. What are your major aims when developing/acquiring DRM?

- ? Protect content
- ? Restrict access
- ? Offer different options ? with different DRM) to different users
- ? Security of content and its communication/dissemination
- ? Confidentiality (content) and privacy (users)
- ? Other (please specify)

Comments:

3. *This question refers to exceptions to copyright, which allow limited use of copyright works without the permission of the copyright owner, for example, for non-commercial research and private study, for teaching in educational establishments or to help the visually impaired.*

When developing/acquiring DRM do you try to facilitate uses that would currently be allowed as exceptions to copyright?

Yes, always				No, never
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

The following questions refer to the act of permanent copying.

4. Does your DRM allow permanent copying?

? Yes, always	? In certain cases	? No, never

Comments:

If no, go to question 6.

5. Does your DRM allow permanent copying:

by a researcher	? Yes, always	? In certain cases	? No, never
by a student	? Yes, always	? In certain cases	? No, never
by a teacher/lecturer	? Yes, always	? In certain cases	? No, never
by a librarian	? Yes, always	? In certain cases	? No, never
by an archivist	? Yes, always	? In certain cases	? No, never

Comments:

6. *This question refers to the making of accessible copies, that is, copies which are suitable to the needs of the visually impaired.*

Does your DRM allow the making of accessible copies?

? Yes, always	? In certain cases	? No, never	? NA

Comments:

7. *This question refers to acts carried out by teachers/lecturers.*

Does your DRM allow a lecturer/teacher to do anything (copying, storing, disseminating, modifying, etc) for examination purposes?

? Yes, always	? In certain cases	? No, never

Comments:

The following questions refer to DRM used in relation to TV and radio transmissions.

8. Does your DRM apply to TV and radio transmissions?

? Yes	? No

If no, go to question 12.

9. Does your DRM allow the recording of a TV or radio transmission?

? Yes, always	? In certain cases	? No, never

Comments:

If yes or no, go to question 11.

10. Does your DRM allow the recording of a TV or radio transmission:

by an educational establishment	? Yes, always	? In certain cases	? No, never, never
by an archivist	? Yes, always	? In certain cases	? No, never, never

by a private user	? Yes, always	? In certain cases	? No, never, never

Comments:

11. *This question refers to modifying a TV or radio transmission for the specific need of the disabled, that is for the purpose of providing people who are deaf or hard of hearing, or physically or mentally handicapped in other ways, with copies which are sub-titled or otherwise modified for their special needs*

Does your DRM allow the modification of a TV or radio transmission?

? Yes, always	? In certain cases	? No, never

12. If no, could your DRM be changed to support the above permitted acts [referred to in questions 4-11]?

In the context of copying:

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

In the context of making accessible copies:

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

In the context of doing anything (copying, storing, disseminating, modifying, etc):

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

In the context of recording a TV or radio transmission:

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

In the context of modifying a TV or radio transmission for the specific needs of the disabled:

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

13. *This question refers to cost, seen as the value of inputs that have been used up to produce something, and hence are not available for use anymore.*

Rate how costly you anticipate changing your DRM would be.

Low cost		Moderate cost		Prohibitive cost
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

14. Would you be willing to change it?

15. Why? What could you gain? What could you lose?

16. *This question refers to licensing DRM, that is, to obtaining contractual permission to use a third party's technology.*

If you could licence DRM that would support the above permitted acts how likely would it be that you would acquire it?

Very likely				Not likely
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

17. Why?

18. What expectations do you have in this field?

19. Would you like to add anything?

Data Collection Questions – Publishers Association

1. Do you recommend the protection of published content by means of DRM?

2. If so, what are your major aims?

- ? Protect content
- ? Restrict access
- ? Offer different options (with different DRM) to different users
- ? Security of content and its communication/dissemination
- ? Confidentiality (content) and privacy (users)
- ? Other (please specify)

Comments:

3. *This question refers to exceptions that allow limited use of copyright works without the permission of the copyright owner (for example, for non-commercial research and private study, for teaching in educational establishments or to help the visually impaired) and which subsist in spite of the legal protection of DRM.*

Do you recommend that such uses be allowed?

Yes, always				No, never
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

4. Who determines whether DRM will enable the uses referred in question 3?

? DRM Manufacturers	? Copyright Owners	? Content Providers (please specify)	? Others (please specify)

Comments:

5. What DRM systems do PA members use?

6. Do those DRM systems allow permanent copying?

? Yes, always	? In certain cases	? No, never

Comments:

7. Why?

8. If in certain cases, specify.

9. If no (in 6), could those DRM systems be changed to support permanent copying?

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

10. *This question refers to cost, seen as the value of inputs that have been used up to produce something, and hence are not available for use anymore*.

Rate how costly you anticipate changing DRM would be.

Low cost		Moderate Cost		Prohibitive cost
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

11. Would you be in favour of changing it?

12. Why?

13. *This question refers to licensing DRM, that is, to obtaining contractual permission to use a third party's technology.*

Would you be likely to recommend licensing DRM that would support the above permitted acts, if it were available?

Very likely				Not likely
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

14. Why?

15. What expectations do you have in this field?

16. Would you like to add anything?

Data Collection Questions – IFPI

1. Do you recommend the protection of digital music by means of DRM?

2. If so, what are your major aims?

- ? Protect content
- ? Restrict access
- ? Offer different options (with different DRM) to different users
- ? Security of content and its communication/dissemination
- ? Confidentiality (content) and privacy (users)
- ? Other (please specify)

3. *This question refers to exceptions that allow limited use of copyright works without the permission of the copyright owner (for example, for non-commercial research and private study, for teaching in educational establishments or to help the visually impaired) and which subsist in spite of the legal protection of DRM.*

Do you recommend that such uses be allowed?

Yes, always				No, never
1 ?	2 ?	3 ?	4 ?	5 ?

4. Who determines whether DRM will enable the uses referred in question 3?

? DRM Manufacturers	? Copyright Owners	? Content Providers (please specify)	? Others (please specify)

Comments:

5. What DRM systems do IFPI members use?

6. Do those DRM systems allow permanent copying?

? Yes, always	? In certain cases	? No, never

Comments:

7. Why?

8. If in certain cases, specify.

9. If no (in 6), could those DRM systems be changed to support permanent copying?

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

10. *This question refers to cost, seen as the value of inputs that have been used up to produce something, and hence are not available for use anymore.*

Rate how costly you anticipate changing DRM would be.

Low cost		Moderate Cost		Prohibitive cost
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

11. Would you be in favour of changing it?

12. Why?

13. *This question refers to licensing DRM, that is, to obtaining contractual permission to use a third party's technology*.

Would you be likely to recommend licensing DRM that would support the above permitted acts, if it were available?

Very likely				Not likely
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

14. Why?

15. What expectations do you have in this field?

16. Would you like to add anything?

Data Collection Questions – MPA

1. Do you recommend the protection of audio-visual content by means of DRM?

2. If so, what are your major aims?

- ? Protect content
- ? Restrict access
- ? Offer different options (with different DRM) to different users
- ? Security of content and its communication/dissemination
- ? Confidentiality (content) and privacy (users)
- ? Other (please specify)

Comments:

3. *This question refers to exceptions that allow limited use of copyright works without the permission of the copyright owner (for example, for non-commercial research and private study, for teaching in educational establishments or to help the visually impaired) and which subsist in spite of the legal protection of DRM.*

Do you recommend that such uses be allowed?

Yes, always				No, never
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

4. Who determines whether DRM will enable the uses referred in question 3?

? DRM Manufacturers	? Copyright Owners	? Content Providers (please specify)	? Others (please specify)

Comments:

5. What DRM systems do MPA members use?

6. Do those DRM systems allow permanent copying?

? Yes, always	? In certain cases	? No, never

Comments:

7. Why?

8. If in certain cases, specify.

9. If no (in 6), could those DRM systems be changed to support permanent copying?

Yes, very easily				No, not possible
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

10. *This question refers to cost, seen as the value of inputs that have been used up to produce something, and hence are not available for use anymore.*

Rate how costly you anticipate changing DRM would be.

Low cost		Moderate Cost		Prohibitive cost
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

11. Would you be in favour of changing it?

12. Why?

13. *This question refers to licensing DRM, that is, to obtaining contractual permission to use a third party's technology.*

Would you be likely to recommend licensing DRM that would support the above permitted acts, if it were available?

Very likely				Not likely
1 ?	2 ?	3 ?	4 ?	5 ?

Comments:

14. Why?

15. What expectations do you have in this field?

16. Would you like to add anything?

Data Collection Questions – EC

Regarding Article 6(4) of the Information Society Directive:

1. Why and how did the Article 6(4) solution emerge?

2. Why were the specific exceptions listed?

3. Why did the EC select voluntary rather than compulsory measures?

4. How did the EC know that voluntary measures would suffice?

5. Have voluntary measures been applied before in the copyright field or in other fields?

6. If so, could you give examples?

7. If so, have these measures been successful?

8. Why was self-help excluded?

9. Have any Member States taken appropriate measures to ensure that rightholders make available to the beneficiaries listed in Article 6(4) the means of benefiting from the exceptions listed in that Article?

10. Why and how did the online solution emerge?

11. Should the exceptions foreseen in Article 6(4) be expanded?

12. Should the voluntary measures become compulsory measures?

13. Should the Article 6(4) mechanism be changed in any way?

14. Has DRM law been effective in terms of suppression of circumvention devices?

15. What expectations do you have in this field?

16. Would you like to add anything?

Data Collection Questions – UKIPO

Regarding the extrapolation of Article 6(4) of the Information Society Directive in to the UK:

1. What is the background to the UK solution?

2. Why were the specific exceptions listed?

3. Have voluntary measures been applied before in the copyright field or in other fields?

4. If so, could you give examples?

5. If so, have these measures been successful?

6. Has the UK complaints mechanism been tested?

7. If so, how does it work in practice?

8. If not, how should it work in practice?

9. Would the ruling by the Secretary of State apply to a particular case, or to a class of works/users/uses?

10. Should the exceptions foreseen in Article 6(4) be expanded?

11. Should the voluntary measures become compulsory measures?

12. Should the Article 6(4) mechanism, as implemented in the UK, be changed in any way?

13. If the Article 6(4) mechanism, as implemented in the UK, were to be changed, how far could the UK go in the absence of a change at the EC level?

14. Has DRM law been effective in terms of suppression of circumvention devices?

10. What expectations do you have in this field?

15. Would you like to add anything?