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Transposing the Copyright Directive: Legal Protection of Technological Measures in EU-Member States

A Genie Stuck in the Bottle?

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Introduction

Is the Genie[1] stuck in the bottle? - A fair question one might be tempted to ask, considering that there are still eight countries within the European Union (EU) that have not yet transposed the European Copyright Directive (EUCD)[2] over one and a half years after the implementation process should have been completed. However, the question whether the Genie is stuck in the bottle might also be asked while looking at the transposition of some of the Directive's most complex and controversial provisions into national law. Against this backdrop, the purpose of this study is twofold. First, it aims to provide an overview of the current state of implementation within the EU. Second, it seeks to provide a high-level overview of the ways in which EU member states have transposed the EUCD's thorny provisions on the protection of technological measures[3] – such as encryption, digital watermarking, copy-control technologies, etc. – into national law in general, and to take a closer look at the relevant definitions, exemptions, sanctions and remedies in particular.

In this context, an initial analysis reveals that uncertainty over the *scope* of provisions aimed at protecting technological measures as well as the *definition* of crucial terms (such as 'effective measures') persists – even at a rather basic level. The question, for instance, as to what extent access control mechanisms fall under the definition of technological protection measures and, as a consequence, are protected by the anti-circumvention provisions has been contested.

Further, the study explores different ways in which national implementations have addressed the problem of privately applied technological protection measures vis-à-vis the traditional *exceptions* to copyright within the framework as laid down in the EUCD. As demonstrated in this paper, incumbent member states have not made broad use of the possibility to take measures ensuring that private copying exceptions will survive technological protection measures, and have gone different paths as far as the implementation of the public policy exception as set forth by the EUCD are concerned.

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[1] Whether 'Genie' refers to the ancient story of the fisherman, finding a bottle containing an evil ghost, or referring to the story of the friendly ghost granting three wishes to its master is left to the reader to decide.

[2] Directive 2001/29/EC of the European Parliament and the Council of 22 May 2001, on the harmonization of certain aspects of copyright and related rights in the information society, Official Journal of the European Communities, Nr. L 167 of June 22, 2001, 10-19, online *available at* <http://europa.eu.int/eur-lex/pri/en/oj/dat/2001/l_167/l_16720010622en00100019.pdf>.

[3] For general background readings, *see, e.g.,* JEFFREY P. CUNARD, KEITH HILL and CHRIS BARLAS, Current Developments in the Field of Digital Rights Management, Standing Committee on Copyright and Related Rights, Tenth Session, Geneva 2003, online *available at* <http://www.wipo.int/documents/en/meetings/2003/sccr/doc/sccr_10_2_rev.doc>; JACQUES DE WERRA, The Legal System of Technological Protection Measures under the WIPO Treaties, the Digital Millennium Copyright Act, the European Union Directives and other National Laws (Japan, Australia), Contribution to the ALAI 2001 Congress on Adjuncts and Alternatives to Copyright, online *available at* <http://www.alai-usa.org/2001_conference/Reports/dewerra.doc>; KAMIEL J. KOELMAN, Protection of Technological Measures, Institute for Information Law, Amsterdam 1998, online *available at* <http://www.ivir.nl/publications/koelman/technical.pdf>, and the contributions to the ALAI 2001 Congress on Adjuncts and Alternatives to Copyright, online *available at* <http://www.alai-usa.org/2001_conference/program_en.htm>.

A brief analysis of some approaches to *sanctions and remedies* taken by EU member states suggests that member states have interpreted the relevant provisions of the EUCD – calling for "appropriate sanctions and remedies" – in different ways. While all countries impose civil sanctions in the case of a violation of anti-circumvention provisions, differences remain with regard to criminal sanctions. The regimes range from significant criminal sentences for both acts of circumvention and trafficking in circumvention devices and services to copyright laws that stipulate modest fines, but no imprisonment in the case of a violation of the anti-circumvention provisions.

Three important caveats are necessary: First, the study is limited in scope and deals only with selected questions surrounding the implementation of the anti-circumvention provisions. Second, the article does not provide a comprehensive overview of all implementations, but seeks to present a representative selection of interesting models and approaches taken by EU member states. Third, the study primarily analyzes and compares national implementations in the field of technological protection measures; a critical assessment of these approaches must be saved for later.

Part I: How the Genie Got in the Bottle[4]

A. The WIPO-Treaties

With the adoption of two treaties of the World Intellectual Property Organization (WIPO)[5] — the WIPO Copyright Treaty (WCT)[6] and the WIPO Performances and Phonograms Treaty (WPPT)[7] — on December 20, 1996, member states of WIPO agreed that these treaties shall enter into force after at least 30 member states have ratified the treaties.[8] Accordingly, on March 6, 2002 the WCT and on May 20, 2002 the WPPT entered into force. With those two treaties, technological protection measures (TPM) used by copyright and related rights holders, were for the first time integrated into international treaties.[9] As a result a balance between the protection of the rights holders' interests and the limits and exceptions of copyright in the digital environment should be achieved. This protection, set forth in article 11 WCT[10] and article 18 WPPT[11] respectively, is to be transposed into the national laws of the WIPO member countries and is to be seen as a minimum standard. The two provisions are of a general wording which allows member countries suitable liberties in transposing it into their national laws as long as the legal protection is 'adequate' and the legal remedies are 'effective'.[12] Since article 11 WCT and article 18 WPPT neither define the term 'effective' nor 'technological measures', member countries have to provide for their own definitions and thus set the scope of protection and bring meaning to the broad provisions of the WIPO treaties.[13] It is this leeway that causes much despair wherever the implementation process is on its way and interest groups are trying to have the

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[4] For an interactive overview, see chart at <http://cyber.law.harvard.edu/media/eucd>.

[5] World Intellectual Property Organization, <http://www.wipo.int>.

[6] WIPO Copyright Treaty (WCT), 36 I.L.M. 65 (1997), online *available at* <http://www.wipo.int/treaties/ip/wct/index.html>.

[7] WIPO Performances and Phonograms Treaty (WPPT), 36 I.L.M.76 (1997), online *available at* <http://www.wipo.int/treaties/ip/wppt.html>.

[8] *See* art. 20 WCT and art. 29 WPPT. For a detailed analysis of the WIPO-treaties *see, e.g.*, JÖRG REINBOTHE and SILKE VON LEWINSKI, The WIPO treaties 1996: The WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty: Commentary and Legal Analysis, London, Dayton 2002; PHILIPP WITTGENSTEIN, Die digitale Agenda der neuen WIPO-Verträge: Umsetzung in den USA und der EU unter besonderer Berücksichtigung der Musikindustrie, Staempfli: Berne 2000.

[9] For a brief overview of the struggles and tussles over the inclusion of TPM in the 1996 Treaties, *see, e.g.*, THOMAS C. VINJE, The New WIPO Copyright Treaty: A Happy Result in Geneva, 19 EIPR 5, 230, 234 (1997) *et seq.*; BRIAN W. ESLER, Protecting the Protection: A Trans-Atlantic Analysis of the Emerging Right to Technological Self-Help, 43 IDEA 553, 566 *et seq* (2003).

[10] Article 11 WCT states that "Contracting Parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law."

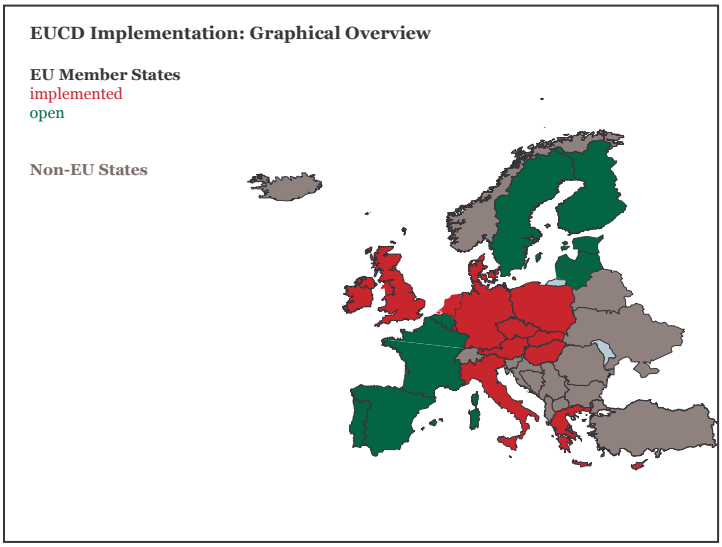
[11] Article 18 WPPT states that "Contracting Parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by performers or producers of phonograms in connection with the exercise of their rights under this Treaty and that restrict acts, in respect of their performances or phonograms which are not authorized by the performers or the producers of phonograms concerned or permitted by law."

[12] *See* Communication of the WIPO Standing Committee on Copyright and Related Rights, Current Developments in the Field of Digital Rights Management, SCCR/10/1, August 1, 2003, 38.

[13] WITTGENSTEIN, *supra* note 8, 109.

balance shift their way. Thus, different implementation regimes are evolving across the globe, mostly influenced by the approaches of the U.S. with the Digital Millennium Copyright Act (DMCA)[14] and the European Union with its Copyright Directive.

B. European Union: Current State of the EUCD-Implementation[15]



The Directive 2001/29/EC, better known as the European Copyright Directive (EUCD),[16] entered into force on June 22, 2001. Its purpose is to harmonize the divergent European copyright regimes that were increasingly seen as an obstacle to the EU single market and not yet ready for the information age, and to transpose the two WIPO-Treaties. [17] Member states were granted a swift 18 months to implement the provisions of the directive into their national laws. [18] A significant number of member states were not able to comply with this time-frame. Consequently, the European Commission decided to pursue infringement procedures and sent complaints in the form of "reasoned opinions" to 11 member countries for failing to transpose the directive on July 14, 2003.[19] On December 17, 2003, the Commission filed a case with the ECJ against 9 member states.[20] Should a country not comply with the ECJ ruling,[21] the Commission may ask the court to have daily fines imposed on the concerned member state until it complies with the *acquis communautaire*.[22] From this point of view, with numerous countries still struggling to transpose the EUCD, the

[14] To bring U.S. law into compliance with the obligations of the United States under the WCT and the WPPT - especially those provisions concerning TPM and rights management information (RMI) - the U.S. Congress passed and President Clinton signed into law the DMCA in October, 1998. The DMCA provides a definition concerning technological protection measures in section 1201 and thus sets forth the scope of protection. TPM are divided into 'access control' and 'copy control' technology. 'Effectiveness' is defined in separate provisions. (*See* § 1201 (a) (3) (B) US Copyright Act and § 1201 (b) (2) (B) US Copyright Act). For a concise overview, *see, e.g.,* JUNE M. BESEK, Anti-Circumvention Laws and Copyright: A Report from the Kernochan Center for Law, Media and the Arts, 27 Colum. J.L. & Arts 385 (2004); DE WERRA, *supra* note 3, 14 *et seq*.

[15] A linklist to international and national legislation on technological protection measures with focus on the relevant laws of EU member states has been made available at <http://cyber.law.harvard.edu/media/eucd> by the Berkman Center's Digital Media Project team.

[16] *See supra* note 2.

[17] *See, e.g.,* MICHAEL HART, The Copyright in the Information Society Directive: An Overview, 24 EIPR 2, 58, 58 (2002).

[18] *See* art. 13(2) EUCD.

[19] *See* Press Release IP/03/1005 of July 14, 2003, online *available at* <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/03/1005&format=HTML&aged=1&language=EN&guiLanguage=en>.

[20] *See* Press Release IP/03/1752 of December 17, 2003, online *available at* <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/03/1752&format=HTML&aged=1&language=EN&guiLanguage=en>.

[21] The ECJ recently declared that Belgium and Sweden have failed to transpose the EUCD. *See* <http://curia.eu.int/jurisp/cgi-bin/gettext.pl?lang=fr&num=79958881C19040143&doc=T&ouvert=T&seance=ARRET> and <http://curia.eu.int/jurisp/cgi-bin/gettext.pl?lang=fr&num=79958881C19040091&doc=T&ouvert=T&seance=ARRET>.

[22] *See* Press Release IP/04/891 of July 14, 2004, online *available at* <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/04/891&format=HTML&aged=1&language=EN&guiLanguage=en>.

Genie *is* stuck in the bottle. As of September 22, 2004 there were still 8 member-countries - Belgium, Cyprus, Estonia, Finland, France[23], Portugal, Spain and Sweden - with a pending implementation status. Seven countries were waiting for a ruling of the ECJ concerning their infringement.

Country	Impl.	Date	ECJ
Austria	Yes	July 1, 2003	-
Belgium	No	-	Yes
Cyprus	Un-known	-	No
Czech Republic	(Yes)*	December 1, 2000	-
Denmark	Yes	December 22, 2002	-
Estonia	No	-	No
Finland	No	-	Yes
France	No	-	Yes
Germany	Yes	September 13, 2003	-
Greece	Yes	October 10, 2002	-
Hungary	Yes	May 1, 2004	-
Ireland	Yes	January 19, 2004	-
Italy	Yes	April 9, 2003	-

Country	Impl.	Date	ECJ
Latvia	(Yes)*	May 11, 2000	-
Lithuania	(Yes)*	August 4, 2000	-
Luxemburg	Yes	April 29, 2004	-
Malta	Yes	January 1, 2004	-
Netherlands	Yes	September 1, 2004	-
Poland	Yes	May 1, 2004	-
Portugal	No	-	Yes
Slovak Republic	Yes	January 1, 2004	
Slovenia	Yes	May 1, 2004	-
Spain	No	-	Yes
Sweden	No	-	Yes
United Kingdom	Yes	October 31, 2003	Yes (Gibraltar)

* The EUCD has not yet been formally implemented. Nevertheless, present legislation transposes the directive's provisions at least in part.

[23] For an overview of the French draft, *see* PHILIPPE GILLIERON, La gestion numérique des droits (DRM) dans les législations nationales, sic! 2004, 292.

Part II: Overview of Article 6 and Article 8 EUCD

The question why Genie got in the bottle is linked with the very structure of the EUCD itself, giving leeway to the implementing states due to its open wording. The EUCD consists of a preamble, which outlines the principles for an adequate implementation of the Directive, and of fifteen articles. This section provides a rough overview of the directive's most controversial articles, i.e. article 6, dealing with the protection of technological measures and its exceptions, and article 8(1) and 8(2), which embody sanctions and remedies for the directive as a whole and with respect to article 6 EUCD.

A. The Act of Circumvention, the Devices and the Definition of TPM in the EUCD

The EUCD obliges the EU Member States in article 6(1)[24] and article 6(2)[25] to provide for protection against the act of circumvention of effective technological protection measures as well as against the trafficking of circumvention devices and services. In both paragraphs it does not matter whether the act *actually* infringed a copyright or not – merely the act of circumvention alone is relevant.[26]

The definition of TPM can be found in article 6(3) EUCD. There is no explicit distinction between 'access control'[27] and 'copy control'[28] in the definition itself when it declares TPM as "any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts ..., which are not authorized by the rightholder of any copyright or any right related to copyright." However, the directive

[24] Article 6(1) EUCD states that "Member States shall provide adequate legal protection against the circumvention of any effective technological measures, which the person concerned carries out in the knowledge, or with reasonable grounds to know, that he or she is pursuing that objective."

[25] Article 6(2) EUCD states that "Member States shall provide adequate legal protection against the manufacture, import, distribution, sale, rental, advertisement for sale or rental, or possession for commercial purposes of devices, products or components or the provision of services which:

(a) are promoted, advertised or marketed for the purpose of circumvention of, or

(b) have only a limited commercially significant purpose or use other than to circumvent, or

(c) are primarily designed, produced, adapted or performed for the purpose of enabling or facilitating the circumvention of, any effective technological measures."

[26] *See, e.g.,* MARKUS FALLENBÖCK, On the Technical Protection of Copyright: The Digital Millennium Copyright Act, the European Community Copyright Directive and Their Anticircumvention Provisions, IJCLP, Issue 7, 2002, 42, online *available at* <http://www.ijclp.org/7_2003/pdf/fallenboeck-artikel-ijclp-15-01-03.pdf>.

[27] 'Access controls' are technological measures aimed at preventing access and use of a work. *See, e.g.*, KOELMAN, *supra* note 3, 2 *et seq*.

[28] 'Copy controls' are technological measures that prevent certain uses being made of a work after it has been accessed. *See, e.g.,* KOELMAN, *supra* note 3, 3 *et seq*.

touches upon these concepts in article 6(3) EUCD ("through application of an access control or protection process, such as encryption, scrambling …"), which leads to the presumption that the EUCD does analytically distinguish between access and copy-controls but – unlike the DMCA – grants equal treatment to both types of technology.[29] The ambiguity of these provisions as to the protection of particular types of technological measures leads to a variety of regimes at member state level in the process of transposing the directive, as we will discuss in Part 3.

The effectiveness of TPM, as required in article 6(1), is defined in article 6(3). Effectiveness is assumed "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." In Part 3, we will address the question how the member states have interpreted these rather vague terms and definitions as well.

B. The Relation between Protection of Technological Measures and Exceptions to Copyright

Article 6(4) EUCD addresses the situation where beneficiaries of certain copyright exceptions provided for in article 5 EUCD[30] are hindered from making use of those exceptions due to the technological lock-down of the work.[31] It is under article 6(4) where the balance between the interests of rightholders and holders of related rights using technological protection measures on the one hand and the public on the other can (or at least could) be struck.[32]

The exceptions set out in article 6(4) can be divided into two categories: the 'public policy exceptions' and the 'private copying exception'.[33] According to subparagraph 1 of article 6(4), the 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 certain exceptions set forth in article 5] 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 ... concerned." The public policy exceptions listed in article 6(4) – i.e. exceptions in relation to photocopying, copy and archive purposes of educational facilities, broadcaster's own ephemeral recordings, non-commercial broadcasts, teaching and research, use by disabled individuals, and public safety[34] – are mandatory. However, recital 51 EUCD makes

[29] *See, e.g.*, NORA BRAUN, The Interface between the Protection of Technological Measures and the Exercise of Exceptions to Copyright and Related Rights: Comparing the Situation in the United States and the European Community, 25 EIPR 11, 496, 498 (2003); DE WERRA, *supra* note 3, 28.

[30] Article 5 EUCD provides a list of 21 exceptions, whereof only the exception concerning ephemeral copying is mandatory, s*ee* art. 5(1) EUCD. For further discussion of art. 5 EUCD, *see, e.g.*, HART, *supra* note 17, 59 *et seq*.

[31] BRAUN, *supra* note 29, 499.

[32] *See* recitals 51-53 EUCD. For a detailed analysis, see SÉVERINE DUSOLLIER, Exceptions and Technological Measures in the European Copyright Directive of 2001, IIC, 62 (2003).

[33] *See, e.g.,* BRAUN, *supra* note 29, 500.

[34] BRAUN, *supra* note 29, 500. For a general discussion, *see, e.g.*, LUCIE GUIBAULT and BERNT P. HUGENTHOLTZ, The nature and scope of limitations and exceptions to copyright and neighbouring rights with regard to general interest missions for the transmission of knowledge: prospects for their adaption to the digital environment, June 2003, online *available at* <http://portal.unesco.org/culture/en/ev.php-URL_ID=17316&URL_DO=DO_ TOPIC&URL_SECTION=201.html>.

clear that member states should take appropriate measures only in absence of "voluntary measures taken by rightholders, including the conclusion and implementation of agreements between rightholders and other parties".[35] As far as the 'private copying exception' is concerned, member states may – but are not obliged to – take measures "unless reproduction for private use has already been made possible by rightholders to the extent necessary to benefit from the exception or limitation concerned ... without preventing rightholders from adopting adequate measures regarding the number of reproductions in accordance with these provisions."[36]

It is important to note that, according to article 6(4) subpara. 4, both categories of exceptions do not apply to "on-demand"-services, i.e. 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."[37]

C. Sanctions and Remedies

Sanctions and remedies for the whole directive are set out in article 8 EUCD. In reference to the anti-circumvention provisions, article 8(1) obliges member states to "provide appropriate sanctions and remedies" and to "take all the measures necessary to ensure that those sanctions and remedies are applied." Furthermore, the sanctions have to be "effective, proportionate and dissuasive." Article 8(2) sets out the obligation for member states to create mechanisms to enable rightholders to seek damages, injunctions and the seizure of infringing material and components referred to in article 6(2).

[35] Recital 50 EUCD.

[36] Article 6(4) subpara. 2.

[37] *See, e.g.*, ALVISE MARIA CASELLATI, The Evolution of Article 6.4 of the European Information Society Directive, 24 Colum.-VLA J.L. & Arts 369, 386 *et seq.* (2001); DE WERRA, *supra* note 3, 30 *et seq.*

Part III: Country-Specific Analysis

A. Problems related to the Definition of TPM

In this section, we analyze definitions of the terms 'technological protection measures' and 'effective measures' as set forth in the implementing legislations of several EU member states. The definition of these terms is not only of theoretical interest, but has practical consequences as the following example might illustrate. Consider the case of teenager Kris, living somewhere in Europe, who buys "Charlie's Angles" on DVD in a movie store while traveling to a foreign continent. Back home, Kris wants to watch the latest movie in her collection on her recently purchased laptop. However, her laptop refuses to play the DVD and displays the following message instead:

THIS DVD PLAYER MAY HAVE BEEN ALTERED AND IS UNABLE TO PLAY THIS DISC. THERE IS NOTHING WRONG WITH THIS DISC. DVD PLAYERS AND DISCS ARE DESIGNED TO WORK IN CERTAIN REGIONS. THIS DISC IS NOT COMPATIBLE WITH THIS PLAYER. PLEASE CONTACT YOUR LOCAL RETAILER OR PLAYER MANUFACTURER FOR ADDITIONAL INFORMATION. WE APOLOGIZE FOR ANY INCONVENIENCE.[38]

The teen calls her tech-savvy friend Jon to get advice. He suggests software available on the internet to work around the "Regional Coding Enhancement" that prevents the DVD from playing on the laptop's DVD-player. Kris follows the advice and is soon able to hear the words: "Good morning, Angels...", "Good morning, Charlie!" From a legal viewpoint, the question immediately arises whether the teen has violated the law by circumventing a technological protection measure. The answer to this question depends on many factors, including jurisdictional issues. Once the applicable law has been determined, however, the crucial question becomes whether the act of "working around" the regional coding on a DVD is a prohibited circumvention of technological protection measures according to the relevant copyright law. The answer to this question, in turn, depends on the qualification of a regional coding on the one hand and, more interestingly, on the definition and scope of the term 'technological protection measures' on the other. As the following analysis suggests, divergent definitions across EU member states may, in fact, lead to different results. The analysis focuses on Germany, Denmark, the U.K., Hungary, and the Netherlands.

[38] See <http://www.dvdcompare.net/features/rce.php>.

1. Germany

Paragraph 95a(2) of the German Copyright Act[39] defines 'technological measures' as "technologies, devices and components, which in the normal course of their operation, are designed to prevent or restrict acts, in respect of protected works or other subject-matter protected by this law, which are not authorized by the rightholder."[40] It shall be noted that only those technological measures are covered which protect works that are subject to copyright protection. Consequently, technological measures applied to non-copyrightable works or works in the public domain receive no protection under this section of the Act.[41] By and large, the definition in para. 95a(2) mirrors the description of the term as set forth in article 6(3) EUCD and does not distinguish between copy and access control technologies as section 1201 of the U.S. Copyright Act does.[42] Moreover, paragraph 95a(2), second sentence uses almost the same wording as the EUCD when defining technological measures as 'effective', if "the use of a protected work ... is controlled by the rightholder through application of an access control, a protection process such as encryption, scrambling or other transformation, or a copy control mechanism, which achieves the protection objective." By explicitly referring to 'access control' technology, the German legislator has made clear, in contrast to the position of some Nordic countries, that 'access controls' are qualified as technologies aimed at preventing the infringement of copyrights or related rights. However, since the German implementation almost literally copies definitions of critical terms as set forth in the EUCD, it fails to further clarify, among other issues, what has to be considered an 'effective' technological protection measure. It has been suggested that only those measures which hinder average users from circumvention are effective measures, while other commentators argue that any technology is covered as long as any activity towards circumvention must be undertaken in order to bypass the control system.[43]

2. Denmark

The Danish Copyright Act[44] does not define the term 'technological measures' as such. Rather, section 75c(1) simply states that "[i]t is not permitted to circumvent effective technological measures without the consent of the rightholder." Section 75c(4) defines the term '*effective* technological measures' as "any ... measures that, in the normal course of their operation, are designed to protect works and performances and productions, etc. protected under this Act." At least two characteristics of this definition are noteworthy. First and in contrast to the EUCD as well as, for instance, the German law, the Danish Copyright Act in its definition does neither expressively refer to 'copy control' nor 'access control' technologies. Similarly, the Danish Act does not mention technologies such as encryption or scrambling, or the like. Second, section 75c(4) refers to technological measures that are "designed to *protect* works" ("beskytte vaerker"). The definition as set forth in

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[39] German Copyright Act of September 9, 1965, amended on September 10, 2003. Official legislation, online *available at* <http://bundesrecht.juris.de/bundesrecht/urhg>; English Translation by MENNO BRIËT and ALEXANDER PEUKERT, online *available at* <http://eurorights.cdfreaks.com/index/14/51>.

[40] *Supra* note 39.

[41] *See, e.g.,* WENCKE BÄSLER, Technological Protection Measures in the United States, the European Union and Germany: How Much Fair Use Do We Need in the "Digital World"?, 8 Va. J.L. & Tech. 13, 20 (2003).

[42] *See supra* note 14.

[43] *See* ALEXANDER PEUKERT, Country Report Germany, online *available at* <http://www.euro-copyrights.org/index/14/49>.

[44] Consolidated Act No. 164 of March 12, 2003. English Translation of the Danish Ministry of Culture, online *available at* <http://www.kum.dk/sw4550.asp>.

the English (but not Danish) version of the EUCD and many national implementations, by contrast, contains the phrase "where the *use* of a protected work ... is controlled by". It is not yet possible to rely on case law to analyze how the interpretation of section 75c(4) will be distinct in practice from its counterparts in other member states. However, one might argue that the particular wording of the Danish legislation, which emphasizes the "protection" of works and does not refer to specific types of control, is not accidental, but may reflect the earlier position of Nordic countries that article 6(3) EUCD excludes 'access control' technology because such technology does not necessarily prevent an act that would constitute an infringement.[45] This interpretation, moreover, finds support in the explanatory text of the new Danish Copyright law, which suggests that only technological measures aimed to prevent *copying* are protected.[46] Accordingly, the Copyright Act does not protect systems that are designed to control the user's own use of the work.[47] This excludes, in the view of the Danish Ministry of Culture, the DVD regional coding system from the Act's protection.[48] According to the Ministry of Culture, it is not illegal for a user to circumvent a system if the (sole) purpose is to make use (but not a copy) of a work she has lawfully acquired, e.g. to make it possible to view a DVD on a Linux platform.[49] In conclusion, it can be said that the Danish legislator has taken a minimalist approach as far as the definition of effective technological measures is concerned. Therefore, it remains with the Danish courts and, finally, the European Court of Justice to determine whether a particular technological measure qualifies for protection.[50]

3. United Kingdom

Section 296ZF(1) of the Copyright, Designs, and Patents Act 1988 as amended by The Copyright and Related Rights Regulation 2003[51] defines the term 'technological measures' as used in section 296ZA to 296ZE, as "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." Section 296ZF(3)(a) clarifies that the term 'protection of a work' has a broad meaning and includes "prevention or restriction of acts that are not authorized by the copyright owner of that work and are restricted by copyright." Section 296ZF(2), in similar terms as the EUCD, considers a technological measure to be effective if the use of the work is controlled by the copyright owner through either an access control or protection process such as encryption, scrambling or other transformation of the work, or a copy control mechanism, which achieves the intended protection. Thus, the definition includes any type of technological measures aimed at protecting copyrighted works. Prior to the implementation of the EUCD, by contrast, the Act covered only copy control technologies used to protect works in electronic form (former section 296 of the UK Copyright Act). It is noteworthy that this limited protection still applies to computer programs, since the relevant provisions of the EUCD and the UK

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[45] BRAUN, *supra* note 29, 498.

[46] *See* PER HELGE SORENSEN, Implementing the EU Copyright Directive, Foundation for Information Policy Research Report, 34 *et seq.*, online *available at* <http://www.fipr.org/copyright/guide/eucd-guide.pdf>.

[47] A similar position is expressed in the Finnish bill aimed at implementing the EUCD, *see* VIVECA STILL, Country Report Finland, online *available at* <http://www.euro-copyrights.org/index/3/4>.

[48] *See* „Digital kopiering - hvad er lovligt?", online *available at* <http://www.kum.dk/sw5386.asp>.

[49] *Supra* note 48.

[50] *See also* TERESE FOGED, Country Report Denmark, online *available at* <http://www.euro-copyrights.org/index/4/11>.

[51] Online *available at* <http://www.legislation.hmso.gov.uk/si/si2003/20032498.htm>.

implementation do not cover computer programs.[52] However, it is notable that section 296ZF(3)(b) explains that the reference to the 'use of a work' in section 296ZF(2) does not extend to any use of the work that is outside the scope of the acts restricted by copyright. This definition indicates that the provision does not cover situations where access or *copy* control technologies are used to prevent or restrain uses that are not relevant under U.K. copyright law, although the use in question may not be authorized by the rightholder.

4. Hungary

The Hungarian Copyright Act[53] defines technological measures in article 95(2) as "all devices, products, components, procedures and methods which are designed to prevent or hinder the infringement of the copyright." By using the phrase "designed to prevent or hinder *the infringement of the copyright*" rather than "designed to prevent or restrict acts, ..., which are not authorized by the rightholder", the Hungarian anti-circumvention provision – at least in its English version – takes a different approach to the definition of technological protection measures than the one used in the EUCD and by most member states. Consequently, only technological measures which prevent acts that are copyright infringements are protected, but not technologies aimed at blocking other acts which the rightholder did not authorize. Thus, the scope of protection seems narrower than in other EU member states such as, for instance, the Netherlands[54] or Germany. Further, the definition of the term "effective technological measures" is novel, too. According to article 95(2), a "technological measure shall be considered effective if as a result of its execution the work becomes accessible to the user through performing such actions – with the authorization of the author – as require the application of the procedure or the supply of the code necessary therefore." Interestingly,[55] the definition seems to suggest that effective measures are only technologies which control access to the work ("if as a result ... the work becomes accessible"), while it does not make any reference to copy control mechanisms. However, the definition of technological protection measures as such as well as the wording of article 92(1), which prohibits the "unlawful circumvention of effective technological measures designed to provide protection for the copyright", suggest that both access and copy control technologies fall under the definition. It remains to be seen how this interpretative problem will be resolved by national courts.

5. The Netherlands

The recently – September 1, 2004 – updated Dutch Copyright Act of 1912[56] defines technological protection measures in article 29a(1) as "technolog[ies], devices or components which in the normal course of their operation serve to prevent or restrict acts in respect to works, which are not authorized by the author or his successor in title."[57] Accordingly, any technological measure aimed at preventing or restricting any act which

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[52] *See* AASHIT SHAH, UK's Implementation of the Anti-Circumvention Provisions of the EU Copyright Directive: An Analysis, 2004 Duke L. & Tech. Rev. 3, N 30 (2004).

[53] Act No. LXXVI of 1999 on Copyright. The official legislation is online *available at* <http://www.hpo.hu/jogforras/9976.html>; the English translation is online *available at* <http://portal.unesco.org/culture/en/file_download.php/533e6fd7e3cc405e28c6df4499ea8628law_on_Copyright.pdf>. For an overview, see GABOR FALUDI and PÉTER GYERTYANFY, The Transposition of the INFOSOC Directive into the Hungarian Copyright Law, MR-Int 2004 (1), 23.

[54] See the following paragraph.

[55] Interesting, because art. 95(2) puts emphasis on "infringement of the copyright", a term traditionally linked to acts of copying.

[56] English translation by MENNO BRIËT, online *available at* <http://www.euro-copyrights.org/index/1/34>.

[57] *Supra* note 56.

has not been authorized by the rightholder seems to fall within the broad scope of the provision. However, it has elsewhere been noted that the interpretation of the scope of article 29a(1) is not entirely clear, since statements of the Minister of Justice caused some confusion whether mere access controls are covered or not.[58] The second sentence of article 29a(1), however, explicitly refers to access controls when defining technological measures as effective "if the use of a protected work of the author or his successor in title is controlled by means of an access control or by application of a protection process, such as encryption, scrambling or other transformation of the work or other subject-matter or a copy control mechanism, which achieves the intended protection."[59] In any event, protection – in contrast, for instance, to the Hungarian implementation – extends to situations where technology is used to prevent or restrain uses that would be exempted under Dutch copyright law (e.g. private copying). However, only technological measures protecting copyrighted works are backed-up by law.[60] Consequently, any control technology aimed at protecting works in the public domain might lawfully be circumvented. As far as the effectiveness of the measures is concerned, the Dutch Copyright Act uses the same language as the EUCD. As a consequence, it remains an open question to be answered by the courts as to what exactly qualifies as an 'effective' measure.

6. Conclusion

An initial analysis of EU member states' transpositions of article 6(3) EUCD reveals that uncertainty over the scope of provisions aimed to protect technological measures as well as the definition of crucial terms like 'effective measures' persists – even at a rather basic level.[61] Thus, for instance, the question as to what extent access control mechanisms fall under the definition of technological protection measures and, as a consequence, are protected by the anti-circumvention provisions has been contested. Currently, one might distinguish between two ends of a spectrum: On the one end, the minimalist approach taken by Denmark, which protects technological measures designed to prevent copying, but excludes mere access controls from the scope of protection. On the other end, a comprehensive approach as applied in the copyright acts of the U.K., Germany and other member states, which expressly stipulate that access control technology falls within the scope of protection. These differences might well have effects in practice as the example in the introduction paragraph illustrates. Although one cannot yet rely on case law, it seems likely that Kris could legally circumvent the regional coding of her newly purchased DVD if, for instance, Danish law were applicable. If she lived in London and, based on general principles of private international law, assuming that U.K. law were applicable, by contrast, she would arguably violate the anti-circumvention provision set forth in the Copyright and Related Rights Regulation 2003. Our teenage movie-fan would then be in desperate need for some help from Charlie and his Angels if she is not to end up in the devil's kitchen.

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[58] *See* KAMIEL KOELMAN and MENNO BRIËT, Country Report Netherlands, online *available at* <http://www.euro-copyrights.org/index/1/10> (with references).

[59] *Supra* note 57.

[60] *See also* KOELMAN and BRIËT, *supra* note 58.

[61] The U.S. experience suggests that the questions outlined in this paragraph are only starting points in the tussles over defining technological protection measures. For instance, is software used to create a virtual private network a technological protection measure? What about garage door openers? Or authentication sequences required to get access to toner loading programs and engine programs in the case of printers? For an overview, *see, e.g.,* Berkman Center for Internet & Society/GartnerG2, Copyright and Digital Media in a Post-Napster World, Updated Version, October 2004, (forthcoming), online *available at* <http://cyber.law.harvard.edu/home/research_publication_series>.

Our initial analysis has also revealed differences between member states' implementations with regard to the prohibited acts of circumvention. Most notably, the Hungarian implementation seems to suggest that only those acts are outlawed which circumvent technology aimed to prevent or restrict acts that are copyright infringements, but not technologies aimed at blocking other acts which the rightholder did not authorize. The Dutch Copyright Act, in contrast, protects technological measures designed to prevent or restrict any acts which have not been authorized by the rightholder.

It is up to the national courts and, ultimately, the European Court of Justice to interpret the national provisions, review their compliance with EU law, and, as a consequence, to determine the exact level of harmonization against the backdrop of the rather vague anti-circumvention provisions stipulated in the EUCD.

B. Relation and Interaction between TPM and Exceptions to Copyright[62]

As outlined in Part 2, the EUCD provides a list of exceptions and limitations that shall also apply to copyrighted works that are "locked down" by technological measures. It is important to note that article 6(4) EUCD, in contrast to its U.S. counterpart,[63] "does not introduce exceptions to the liability of the circumvention of technological measures in a traditional sense, but rather introduces a unique legislative mechanism which foresees an ultimate responsibility on the rightholders to accommodate certain exceptions".[64] In any event, article 6(4) left us with several unanswered questions. As to the mandatory public policy exceptions listed in article 6(4), paragraph 1, the interpretation of the term 'voluntary measures' has come up for discussion. Similarly, it remains unclear what 'appropriate measures' are once voluntary measures have failed. In regard to the (voluntary) private copying exception set forth in article 6(4) paragraph 2, it remains unclear what factors (such as the three-step test, for instance) have to be considered.[65] Another set of questions relates to article 6(4), paragraph 4, which states that article 6(4), paragraph 1 and paragraph 2 "shall not apply to 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." It remains unclear what such interactive on-demand services[66] include.[67] Given the uncertainty at the level of the EUCD,[68] it is particularly interesting to analyze the implementing legislation of the EU member states. Before we start with

[62] This section focuses on the transposition of art. 6(4) EUCD into member states' laws. Note that other exceptions to technological protection measures might apply. Recital 48 EUCD, for instance, requires that legal protection against technological measures should not hinder *cryptographic research*. The EUCD, however, does *not* contain substantive provisions dealing with research into cryptography. Notably, the exceptions in the EUCD also do not include *reverse engineering*, although such an exception exists in the Directive 91/250/ECC of 14 May 1991 on the legal protection of computer programs ("Software Directive"), which provides a limited safe harbor for those trying to achieve software interoperability.

[63] It has been argued that the major difference between the DMCA and the EUCD lies in art. 6(4) EUCD. *See* BÄSLER, *supra* note 41, 13. For an overview from a comparative law perspective, see SUSAN J. MARSNIK, A Delicate Balance Upset: A Preliminary Survey of Exceptions and Limitation in U.S. and European Union Digital Copyright Laws, 4 Int'l Bus. L. Rev. 110 (2004).

[64] BRAUN, *supra* note 29, 499.

[65] *See, e.g.,* BRAUN, *supra* note 29, 500.

[66] Recital 53 states: "The protection of technological measures should ensure a secure environment for the provision of *interactive on-demand services*, in such a way that members of the public may access works or other subject-matter from a place and at a time individually chosen by them. Where such services are governed by contractual arrangements, the first and second subparagraphs of Article 6(4) should not apply. Non-interactive forms of online use should remain subject to those provisions." (emphasis added.)

[67] *See, e.g.,* HART, *supra* note 17, 63. *See also* CASELLATI, *supra* note 37, 386 *et seq*.

[68] *See also* ESLER, *supra* note 9, 600 *et seq*.

the analysis, however, let us again ask why these questions matter from a practical perspective. Consider three examples:

- Barbara Musici has legally downloaded many albums and songs from a new online music store. To make sure that a hard drive crash does not wipe out her entire music collection, Barbara decides to make a backup copy of her music library. However, a Digital Rights Management (DRM) scheme protects the songs from being copied. Against this backdrop, she contacts the online music store to ask for the key to unwrap the songs. Not surprisingly, the online store refuses to hand it out. What are Barbara's rights and remedies?

- Mr. Monk seeks to make a copy of a DVD – a movie in which he takes a special interest in preserving – since DVDs are vulnerable to scratches and other damage. Can he use widely available standard-software allowing him to circumvent the DRM scheme without running the risk to be held liable?

- DoGoodTech.org, a non-profit organization, has developed a web-based system able to supply books in digital formats – including talking books and a format for Braille devices and printers – designed for visually impaired and otherwise print disabled individuals. As far as traditional books in paper are concerned, an exception in copyright law allows the organization to scan these books, transform them into the appropriate format, and distribute it over a subscription service to visually handicapped users. The organization also seeks to supply books and other materials that have initially been published as e-books. Most of the available e-books, however, are protected by strong DRM locks. Can the organization lawfully "translate" e-books and offer them to its subscribers if the National E-book Publishing Association (NEPA) refuses to enter an agreement? What are the relevant procedures that might be initiated by the non-profit organization?

With these practical examples in mind, we will discuss in the following paragraphs different approaches that have been taken by EU member states – Ireland, the U.K., Denmark, Greece, Austria, and the Netherlands – to address the problem that technological measures may prevent users from benefiting from copyright exceptions.

1. Ireland

Section 374(2) of the Irish Copyright and Related Rights Act as amended by Statutory Instrument (S.I.) No. 16 of 2004,[69] section 5 deals with the non-interference of technological protection measures with permitted acts, implements article 6(4) EUCD, and reads in part as follows: "Where the beneficiary is legally entitled to access the protected work or subject-matter concerned, the rightsholder shall make available to the beneficiary the means of benefiting from the permitted act, save where such work ... has been made available to the public on agreed contractual terms in such a way that members of the public may access the work ... from a place and a time individually chosen by them." Section 374(1) as amended lists the permitted acts by way of

[69] S.I. No. 16 of 2004, European Communities (Copyright and Related Rights) Regulation 2004, online *available at* <http://www.entemp.ie/publications/sis/2004/si16.pdf>.

reference to the exceptions as set forth in other chapters and part of the Copyright Act. In relation to works protected by copyright, the exceptions listed in Chapter 6 of Part II are applicable.[70] The long lists set forth in sec. 49 to 106 includes, *inter alia*, fair dealing exemptions (research, private study, criticism, review), acts done for purposes of instruction or examination, recording by educational establishments, copying by librarians or archivists, parliamentary and judicial proceedings, recording for the purpose of time-shifting, etc. Other catalogs with exceptions apply to technologically locked performances and databases.[71] Section 374(3) as amended[72] deals with the situation where rightholders do not make available the necessary means that enable beneficiaries to benefit from the exceptions. It states: "In the event of a dispute arising, the beneficiary may apply to the High Court for an order requiring a person to do or to refrain from doing anything the doing or refraining from doing of which is necessary to ensure compliance by that person with the provisions of this section." In other words, the Irish intervention mechanism – distinct from other member states – sets forth a direct recourse to the courts to address the exception problem vis-à-vis technological protection measures if voluntary measures fail.[73]

2. United Kingdom

Section 296ZE(2) of the Act as amended by the Copyrights and Related Rights Regulation 2003[74] states that in cases "[w]here the application of any effective technological measure to a copyrighted work other than a computer program prevents a person from carrying out a permitted act in relation to that work then that person ... may issue a notice of complaint to the Secretary of State." Section 296ZE(1) paragraph 1 defines a "permitted act" as an act "which may be done in relation to copyright works, notwithstanding the subsistence of copyright, by virtue of a provision of this Act listed in Part 1 of Schedule 5A." Part 1 of Schedule 5A, finally, enumerates a list of copyright exceptions applicable to works protected by technological protection measures, including public policy exceptions such as uses for research and private study, copying by librarians, etc. As to private copying, Part 1 of Schedule 5A refers to the "time-shifting" exception in revised section 70, apparently the only private copying exception permitted by the Act. Section 19 of the Regulation clarifies that time-shifting is legal in domestic premises only, and that subsequent transactions in such copies render the copying an infringement. Under the scheme set forth in section 296ZE, in essence, a complainant may issue a complaint to the Secretary of State, acting through the U.K. Patent Office, who will open an investigation in order to explore "whether any voluntary measure or agreement relevant to the copyright work the subject of the complaint subsists".[75] If this investigation leads to the conclusion that there is no subsisting voluntary measure or agreement, the Secretary of State may[76] give a direction requiring the copyright holder or the

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[70] *Supra* note 69, sec. 5(1)(a).

[71] *Supra* note 69, sec. 5(1)(b) and (c).

[72] *Supra* note 69, sec. 5(3).

[73] A similar approach has been taken by Germany and Luxembourg: For Germany, *see* para. 95b(1) Copyright Act (*supra* note 40) and para. 2a and 3a of the Injunctions Act (English translation by MENNO BRIËT and ALEXANDER PEUKERT, online *available at* <http://www.euro-copyrights.org/index/14/51>); see in this context CUNARD et al., *supra* note 3, 77 *et seq.* Section 71quinquies(2) of the Luxembourgian Copyright Act entitles the beneficiaries of an exception (or their representatives) to take injunction proceedings. English translation by CORENTIN POULLET, online *available at* <http://www.euro-copyrights.org/index/10/22>.

[74] *Supra* note 51.

[75] Section 296ZE(3)(a).

[76] The Consulting Paper clarifies that the Secretary of State, despite the use of the word "may", has a duty to act, and that if he did not act when action should be taken the matter could be subject to judicial review. *See* UK Patent Office, Consultation on UK Implementation of

exclusive licensee to ensure that the complainant can benefit from the permitted act. According to section 296ZE(6), the obligation to comply with the direction is a duty owed to the complainant or, where the complaint is made by a representative of a class, to the representative as well as each person in the body represented. It is noteworthy that a failure to comply with a direction would result in a breach of statutory duty, which is actionable by the complainant or a representative of a body of complainants. However, the procedure does only apply where a complainant has lawful access to the copyrighted work, and it does not apply to 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."[77] Apparently, this provision copies article 6(4) para. 4 EUCD almost verbatim and, as a consequence, does not provide much guidance as regards the applicability of 296ZE in the online environment.

3. Denmark

Article 6(4) EUCD is transposed into national law through section 75d of the Danish Copyright Act.[78] In cases where voluntary measures (including agreements) have failed,[79] section 75d(1) states: "The Copyright License Tribunal, cf. section 47(1), may, upon request, order a rightholder who has used the effective technological measures mentioned in section 75 c(1) to make such means available to a user which are necessary for the latter to benefit from the provisions of section 15, section 16(1), section 17(1)-(4), section 18(1) and (2), section 21(1)(ii), section 23(1) and sections 26-28, 31, 33 and 68."[80] The catalog of exceptions applicable to technological protection measures includes public policy exceptions such as, *inter alia*, reproductions by hospitals, nursing homes, prisons, and the like; reproductions within archives, libraries, and museums; reproduction for visually handicapped and hearing-impaired individuals; reproduction for educational uses; etc. However, the exception for private copying is not mentioned in the catalog of section 75d(1) and does not apply to technological protection measures.[81] The Copyright License Tribunal – and administrative body – can instruct a rightholder to make works available for individuals or a group of beneficiaries.[82] If the rightholder does not comply with the order within four weeks from the decision of the Tribunal, the user may legally circumvent the effective technological measure, as long as the user has gained legal access to the work or the performance, etc.

Section 75d(3) clarifies that this procedure does not apply to situations where the works, performances or productions, etc. were made available to the public on agreed contractual terms in such a way that members of

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Directive 2001/29/EC on Copyright and Related Rights in the Information Society: Analysis of Responses and Government Conclusions, 13, online *available at* <http://www.patent.gov.uk/about/consultations/responses/copydirect/copydirect.pdf>.

[77] Section 296ZE(9).

[78] *Supra* note 44.

[79] Section 75d(2).

[80] *Supra* note 44.

[81] SORENSEN, s*upra* note 46, 38 *et seq*. For an overview of pre-EUCD private copying exceptions in Nordic countries in general and Denmark in particular see generally TARJA KOSKINEN-OLSSON, The Notion of Private Copying in Nordic Copyright Legislation in the Light of European Developments During Recent Years, 49 J. Copyright Soc'y U.S.A. 1003 (2002).

[82] The means will be defined on a case-to-case basis, e.g. by making cryptographic keys available, by providing analog copies of the digital work, etc. *See* SORENSEN, *supra* note 46, 38.

the public may access them from a place and at a time individually chosen by them. The exact scope of this limitation – here as elsewhere – remains to be defined by national courts.

4. Greece

Article 66A(2) of the Law 3057/2002 implements the European Copyright Directive and prohibits the circumvention of effective technological protection measures without the permission of the rightholder.[83] Article 66A(5) states that "[n]otwithstanding the legal protection provided for in paragraph 2 of this article, as it concerns the limitations (exceptions) provided for in Section IV of law 2121/1993, as exists, related to reproduction for private use on paper or any similar medium (art. 18), reproduction for teaching purposes (art. 21), reproduction by libraries and archives (art. 22), reproduction for judicial or administrative purposes (art. 24), as well as the use for the benefit of people with disability (art. 28A), the rightholders should have the obligation to give to the beneficiaries the measures to ensure the benefit of the ex[c]eption to the extent necessary and where that beneficiaries have legal access to the protected work or subject-matter concerned."[84] The scheme set forth in the Greek implementation as to cases where rightholders do not take voluntary measures such as agreements between rightholders and beneficiaries of the exception is distinct from other approaches by relying on mediation rather than adversarial procedures.[85] Article 66A(5) states that both the rightholders and parties benefiting from the exception

> "may request the assistance of one or more mediators selected from the list of mediators drawn up by the Copyright Organization. The mediators make recommendations to the parties. If no party objects within one month from the forwarding of the recommendation, all parties are considered to have accepted the recommendation. Otherwise, the dispute is settled by the Court of Appeal of Athens trying at first and last instance."

Again, however, the scheme does not apply to works or other subject-matter 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. And again, the implementation reproduces verbatim the relevant subparagraph of the EUCD without further clarifying the scope of this limitation.

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[83] For an overview, *see, e.g.,* VASSILIS D. MAROULIS, Implementing the EU Copyright Directive, Foundation for Information Policy Research Report, 79 *et seq*., online *available at* <http://www.fipr.org/copyright/guide/eucd-guide.pdf>.

[84] English translation online *available at* <http://www.culture.gr/8/84/e8401.html>.

[85] A similar design of the intervention mechanism has been taken by a number of new EU member states. *See, e.g*., art. 75(4) of the Copyright Act of the Republic of Lithuania: "When owners of copyright, related rights and *sui generis* rights do not take measures (i.e. do not provide with decoding devices, do not conclude agreements with the users of the rights, etc.) which would enable the users to benefit from the limitations […], the users […] may apply to the Council for mediation in such dispute. The mediator(s) shall present proposals and help the parties to reach agreement. […]. If the parties do not accept a proposal of the mediator(s), the dispute shall be settled by Vilnius regional court." *See* Republic of Lithuania, Law amending the law on copyright and related rights, 5 March 2003, No. IX-1355, official translation (on file with authors). The beneficiaries of an exception under Slovenian Law may also request mediation, *see* art. 166c of the Copyright and Related Rights Act of the Republic of Slovenia, as amended by the Act Amending the Copyright and Related Rights Act, Official Gazette RS No. 43/04, unofficial English translation online *available at* <http://www.uil-sipo.si/Laws/ZASP_EN_04.pdf>.

5. Austria

Paragraph 90c of the Austrian Copyright Act[86] provides legal protection for technological measures. However, the Austrian law does not contain any exceptions to this anti-circumvention provision. Indeed, article 6(4) EUCD leaves member states with two options. First, member states might immediately take steps in order to ensure that the beneficiaries of copyright exceptions, in fact, can benefit from the exception despite technical protection measures and lack of voluntary measures by rightholders. In the previous paragraphs, we have provided some variations on this approach which has been taken by several member states. Second, member states – due to uncertainty with regard to future technological developments and business practices in the field of protection measures – might pursue a "wait-and-see" strategy and only intervene later on if practical need for legislation has become evident.[87] This second approach has been chosen by the Austrian legislator. Instead, the explanatory report accompanying the bill expressed the expectation that the provision in practice will be implemented in such a way that technological protection measures will be designed in a manner that enables uses of the exceptions as laid out in article 6(4) EUCD. In a resolution, however, the Minister of Justice and the Department of Social Security, Generations, and Consumer Protection were mandated to submit a report to the Parliament by July 1, 2004 and propose legislative actions if the voluntary, market-driven approach had failed.[88] The report has recently been published.[89] The report concludes based on consultations with various stakeholders that the measures that have been taken voluntarily by the rightholders are in compliance with the requirements of article 6(4) EUCD. However, the report also identifies problematic areas, especially with regard to access and copy protection technology on CDs and DVDs that prevent consumers from making copies for private use and libraries from taking back-up copies.[90] Based on these findings, the report does not propose legislative measures, but announces that the Minister of Justice will be continuing to carefully monitor the developments in the context of technological protection measures.[91]

6. The Netherlands

The Dutch lawmaker, similar to the Austrian, decided not to immediately introduce specific exceptions applicable to works protected by technological protection measures. However, the Dutch Copyright Act –

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[86] Bundesgesetz über das Urheberrecht an Werken der Literatur und der Kunst und über verwandte Schutzrechte, StF: BGBl. Nr. 111/1936 i.d.F. der UrhG-Novelle 2003, online *available at* <http://www.bundeskanzler.at/2004/4/7/Urheberrechtsgesetz.pdf>.

[87] Recital 51 in part reads as follows: "Member States should promote voluntary measures taken by rightholders, […] 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 […]" (emphasis added.) Similarly, recital 52 states "[…] [i]f, *within a reasonable period of time*, no such voluntary measures to make reproduction for private use possible have been taken, Member States may take measures to enable beneficiaries of the exception or limitation concerned to benefit from it. […]" (emphasis added).

[88] Entschliessung vom 29.4.2003, E 5-NR/XXII.

[89] Bericht der Bundesministerin für Justiz im Einvernehmen mit dem Bundesministerium für soziale Sicherheit, Generationen und Konsumentenschutz an den Nationalrat betreffend die Nutzung freier Werknutzungen, July 1, 2004, online *available at* <http://www.justiz.gv.at/_cms_upload/_docs/bericht_freie_werknutzung.pdf>.

[90] Bericht der Bundesministerin, s*upra* note 89, 14 *et seq.* and 17 *et seq.* The report contains an interesting paragraph on the question of the *effectiveness* of technological measures. With regard to copy locks on CDs, the Minister of Justice suggests that those measures cannot be considered to be effective if they can be circumvented by easy-available standard-software. Consequently, so the argument goes, the circumvention of "weak" copy protection technology on CDs for private purpose and by using widely available standard-software would likely not violate para. 90c of the Act. *Id.*, at 16.

[91] Bericht der Bundesministerin, *supra* note 89, 21 *et seq.*

different from its Austrian counterpart[92] – gives more specific guidance with regard to this issue. article 29a(4) and, mutatis mutandis, article 19 of the Neighboring Rights Act,[93] empowers – but not obliges – the Minister of Justice to issue a decree setting forth obligations for rightholders to provide the means which enable certain uses such as usage by people with disabilities, uses for educational purposes, reprographic reproductions, reproduction for preservation purposes, use of judicial and administrative proceedings, etc.[94] Notably, the list also includes cross-references to the private-copy exceptions in the Dutch Copyright Act.[95] It remains to be seen whether the Dutch Minister of Justice – within the framework of article 6(4) EUCD – will make use of these powers. It has been reported that the Minister "expects that the parties involved ... will come to an understanding on the exempted uses concerned. He allows them some time to do so, before considering the introduction of an obligation to enable technologically blocked usage."[96]

7. Conclusion

An analysis of the implementation process of article 6(4) EUCD and the discussion of some of the approaches taken by the member states might lead to a number of conclusions depending on the inquiry's focus and purpose. In this section, we have explored different ways in which national implementations have addressed the problem of privately applied technological protection measures vis-à-vis the traditional exceptions to copyright within the framework as laid down in the EUCD. Against this backdrop, three observations seem noteworthy. First, incumbent member states have not made broad use of the possibility to take measures ensuring that private copying exceptions will survive technological protection measures.[97] One of the most visible exceptions, however, is Italy,[98] where article 71sexies (4) of the Italian Copyright Act grants the "right" to make one copy – which can be in analog form – for personal use notwithstanding the fact that the work is protected by technological measures, as long as the user has obtained legal access and under the condition that the act neither conflicts with the normal exploitation of the work nor unreasonably prejudices the legitimate interests of the rightholder.[99] The diagnosis of an overall trend against a "right to private

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[92] For background information, *see* SJOERA NAS, Implementing the EU Copyright Directive, Foundation for Information Policy Research Report, 107 *et seq*., online *available at* <http://www.fipr.org/copyright/guide/eucd-guide.pdf>.

[93] *Supra* note 56.

[94] KOELMAN and BRIËT, *supra* note 58.

[95] *Supra* note 56. *See* in this context the discussion in NAS, *supra* note 92, 102 *et seq*.

[96] KOELMAN & BRIËT, *supra* note 94. For further discussion, *see* NAS, *supra* note 92, 107.

[97] Several of the new EU member states, by contrast, have implemented the private copying exception. *See* art. 75(1) of the Copyright Act of the Republic Lithuania (*supra* note 85); Art. 42(2)(a) and art. 9(1)(c) of the Maltese Copyright Act as amended by Act No. IX of 2003 (An Act entitled the Various Laws (Amendment) Act 2003, Government Gazette of Malta No. 17,467, 2 September, 2003, online *available at* <http://www.doi.gov.mt/EN/parliamentacts/2003/Act%209.pdf>; Art. 166c(3)(3) and art. 50(1) [up to three copies] of the Copyright Act of the Republic of Slovenia (*supra* note 85).

[98] Section 71quinquies(1)(No. 2) of the Luxembourgian Copyright Act (*supra* note 73) also exempts reproduction for private use, but the explanatory statement declares: "En relation avec l'exception pour copie privée, […], il est entendu que les titulaires de droits ne peuvent être empêchés d'adopter et de garder en place des mesures adéquates en ce qui concerne le nombre de reproductions.", online *available at* <http://www.euro-copyrights.org/index/10/26>, *see, e.g.,* CORENTIN POULLET, Country Report Luxembourg, online *available at* <http://www.euro-copyrights.org/index/10/20>.

[99] Decreto Legislativo 9 aprile 2003, n. 68, "Attuazione della direttiva 2001/29/CE sull'armonizzazione di taluni aspetti del diritto d'autore e dei diritti connessi nella società dell'informazione", pubblicato nella Gazzetta Ufficiale n. 87 del 14 aprile 2003 - Supplemento Ordinario n. 61, online *available at* <http://www.parlamento.it/parlam/leggi/deleghe/03068dl.htm>.

copying" in the age of technological measures seems to be confirmed by recent court rulings in France, Belgium, and Germany:[100]

- The Tribunal de Grande Instance de Paris ruled in UFC v. Films Alain Sarde et al. that a copy control system on a DVD is not conflicting with provisions of the French Copyright Act, which limits rightholders' rights regarding reproductions strictly reserved for the copier's private use.[101] UFC, a consumer rights association, claimed it received complaints from consumers about DVD copy protections that prevent purchasers from making copies for private use. The court confirmed that such technical protection measures comply with the EUCD, though the EUCD is not yet transposed into French law.[102]

- In line with the French case, a Belgian court rejected in May 2004 a complaint made by the consumer organization Test-Achats against record companies in Belgium, which challenged the use of technical measures to protect music on CDs.[103] Test-Achats asked the court to prevent the record companies from using technical measures on CDs and to remove all copy-controlled CDs from the market.[104] In its ruling, the court held there is no right to make a private copy under Belgian law and rejected Test-Achats' demands. Test-Achats has announced an appeal.[105]

- Lastly, a Munich regional court held in the Copy Count case that software used to circumvent copy-protection measures on a CD constitutes copyright infringement under the German Copyright Act. The court rejected the software producer's argument that a user's right to make a private copy also permits circumvention of copy control technology.[106]

Thus, the answer whether Mr. Monk from our example can legally make a copy of his favorite DVD depends – despite EU copyright harmonization – on the applicable law and on a series of interpretative determinations to be made by national courts (e.g. whether copy control technologies that can be circumvented by easily available standard-software are considered to be effective or not).

Second, the analysis in this section illustrates that member states have gone different paths as far as the implementation of the public policy provision of article 6(4) EUCD is concerned. Some member states have

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[100] The following case summary is also published in URS GASSER, Copyright and Digital Media in a Post-Napster World: International Supplement, The Berkman Center for Internet & Society and GartnerG2, November 2004, online *available at* <http://cyber.law.harvard.edu/home/research_publication_series>.

[101] Tribunal de Grande Instance de Paris, 3ème chambre, 2ème section, N RG 03/08500, Judgement rendu le 30 Avril 2004, online *available at* <http://www.juriscom.net/jpt/visu.php?ID=513>.

[102] Recently, however, French authorities launched an investigation of EMI France and Fnac, a leading music retailer in France, over copy protection technology. The investigation is based on consumer protection laws and was ordered by a magistrate judge following a review of consumer complaints suggesting that EMI France's copy protection technology makes CDs unplayable on some systems. *See* CHRISTOPHE GUILLEMIN, French investigators probe copy-protected CDs, August 26, 2004 online *available at* <http://zdnet.com.com/2100-1104-5325887.html>.

[103] *See* <http://www.ifpi.org/site-content/press/20040107.html>.

[104] *See* <http://www.theregister.co.uk/2004/01/03/belgian_watchdog_sues_record_biz/>.

[105] *See* <http://www.edri.org/cgi-bin/index?id=000100000151>.

[106] *See* <http://www.zdnet.de/news/software/0,39023144,39120245,00.htm?h>.

decided not to intervene at this point, but to trust in market-forces or the effects of the "threat of regulation". Others have taken legislative measures to make sure that, in absence of voluntary measures or agreements, rightholders provide beneficiaries of public policy exceptions with appropriate means of benefiting from them. The actions taken by the member states have focused on the establishment of different types of complaint systems, ranging from mediation-based models to more formal administrative complaint procedures, and finally a system with direct recourse to courts. Consequently, the remedies available to DoGoodTech.org – as well as the costs associated with these procedures — are likely to vary significantly from jurisdiction to jurisdiction.

Third, member states seem to struggle with the vague language of article 6(4) EUCD in general and the definition of its scope in particular. The question, for instance, of the 'means' to achieve the goals stated in article 6(4), by and large, has not thoroughly been answered at the level of the EU member states. Apparently, it also remains unclear what the exact scope of article 6(4) para. 4 EUCD is. Thus, for instance, it is unclear whether Barbara Musici, the music-fan from our example, would have any remedy even if she would enjoy a "right" to make a private copy under, say, the Italian Copyright Act, because an online music store might be qualified as an interactive on-demand service.[107]

C. Approaches to Sanctions and Remedies

As discussed in Part 2, article 8 EUCD requires member states to provide for effective sanctions and remedies for infringements of rights and obligations as set out in the directive. The sanctions should be "effective, proportionate and dissuasive and should include the possibility of seeking damages and/or injunctive relief and, where appropriate, of applying for seizure of infringing material."[108] In this context, it is noteworthy that the recently enacted – and highly controversial – IP Enforcement Directive (EUIPD)[109] creates powerful new enforcement measures across Europe to ensure a high, equivalent, and homogeneous level of protection of IP rights in the EU common market. The directive, among other issues, requires that member states provide measures for preserving evidence by plaintiff's agents ("Anton Piller orders") precautionary seizure of the alleged infringer's property (including blocking bank accounts), and new powers to demand disclosure of personal and/or commercial information, along the lines of the subpoena powers granted by the DMCA in the US.[110] The directive applies to any IP infringements, including non-commercial infringements, although some remedies only apply to commercial infringements. The IP Enforcement Directive must be implemented by the member states by April 29, 2006.[111]

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[107] *See, e.g.,* URS GASSER, JOHN PALFREY *et al.*, iTunes: How Copyright, Contract, and Technology shape the Business of Digital Media – A Case Study, June 15, 2004, online a*vailable at* <http://cyber.law.harvard.edu/media/uploads/81/iTunesWhitePaper0604.pdf>, 23.

[108] Recital 58 EUCD.

[109] Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, Official Journal of the European Union, Nr. L 157 of 30 April 2004, 16-25, online *available at* <http://europa.eu.int/eurlex/pri/en/oj/dat/2004/l_195/l_19520040602en00160025.pdf>.

[110] In addition, committees of the EU Parliament and the Council are working on two pieces of legislation aimed at criminalizing piracy and counterfeiting. *See* <http://www.heise.de/newsticker/meldung/48232>.

[111] Art. 20 EUIPD.

In this section of our analysis, we primarily focus on the different regimes of sanctions that member states have put in place in order to comply with article 8 EUCD. Again, the analysis is not intended to be comprehensive rather than exploratory. The following example might illustrate the practical relevance of the inquiry: Hacker J.J. has strong feelings about what he calls the "big and bad entertainment industry" in general and the major U.S. movie studios in particular. To take a symbolic action, he orders a significant number of different, newly released movies on DVD from places and countries with the best price and hacks the regional coding on those discs. Consider the two scenarios: 1) J.J. circumvents the access control to get personal satisfaction, but uses the DVDs only for private, non-commercial purposes. 2) To take his private war against big media a step further, J.J. decides to do – in his view – some real harm and distribute unprotected copies of the DVDs via popular P2P networks. What sanctions does J.J. face under each scenario? The following paragraphs provide a brief overview of sanctions and remedies in selected member states – i.e. Greece, Germany, the United Kingdom, and Denmark – with an emphasis on the differences between the approaches taken by these states.

1. Greece

Article 66A(2) of the Greek Copyright Act[112] prohibits the circumvention of effective technological protection measures without rightholder's permission "when such an act is made in the knowledge or with reasonable grounds to know that he is pursuing that objective." Article 66A(3), in accordance with article 6(2) EUCD, bans "the manufacture, import, distribution, sale, rental, advertisement for sale or rental, or possession for commercial purposes" of circumvention devices or services. Article 66(4), finally, states that "the practice of activities in violation of the above provisions is punished by imprisonment of at least one year and a fine of 2,900-15,000 Euro". It also entails the civil sanctions of article 65 of Law 2121/1993, including payment of damages, pecuniary penalty, personal detention, restitution to the rightholder of the illicit profit, etc.[113] The one-member First Instance Court may order injunction in accordance with the Code of Civil Procedures".[114] Apparently, all these sanctions apply both to the circumvention of technological protection measures and trafficking in circumvention devices.

2. Germany

Paragraph 95a(1) of the German Copyright Act[115] prohibits the circumvention of effective technological measures protecting copyrighted works without authorization of the rightholder, if the person knows or has reason to know that the circumvention is aimed at enabling access to or the use of such a work. Paragraph 95a(3) outlaws the manufacturing, import, distribution, etc. of circumvention devices in accordance with article 6(2) EUCD. A violation of the anti-circumvention provisions as laid down in paragraph 95a results in liability. The rightholder has civil remedies as provided for in German torts law, such as injunction to prevent

[112] *Supra* note 84.

[113] MAROULIS, *supra* note 83, 82.

[114] It allows also seizure of the objects constituting proof of infringements or the creation of detailed inventory of such objects. *See* MAROULIS, *supra* note 83, 82.

[115] *Supra* note 39.

further infringement, claim for damages, etc.[116] Besides civil remedies, some acts of circumvention and trafficking in circumvention devices are qualified as criminal offences. According to paragraph 108b(1), any person "who circumvents, without the authorization of the rightholder, an effective technological measures with the intention to enable himself or someone else access to a work protected by this law ..., or to enable its use, ... shall be liable to imprisonment for up to one year or a fine."[117] It is noteworthy that paragraph 108b(1) does not impose these criminal sanctions if the act has been exclusively performed for, or in relation to, private use by the offender or individuals personally connected with him (such as family members and probably close friends).[118]

Criminal sanctions are also imposed on anyone who, contrary to paragraph 95a(3), for commercial purposes manufactures, imports, distributes, … a circumvention device.[119] If the offender acts for professional purposes ("gewerbsmässig"), the criminal sanction is imprisonment up to three years or a fine. Certain other acts in violation of paragraph 95a(3), in contrast, are not considered to be a crime, but might trigger an administrative fine up to 10,000 Euro or 50,000 Euro, respectively, according to paragraph 111a(2).[120]

3. United Kingdom

Section 296ZA as amended by the Copyright and Related Rights Regulations 2003[121] provides a new civil remedy against a person who "does anything which circumvents [technological protection] measures knowing, or with reasonable grounds to know, that he is pursing that objective."[122] Remarkably, both the copyright owner (or her exclusive licensee) and a person issuing copies of the work to the public or communicating it to the public have the same rights[123] against an alleged infringer as those in an infringement action.[124] Apparently, the mere circumvention of technological protection measures, contrary to the Greek approach, does not trigger any criminal sanctions as long as conducted for private and non-commercial use. Section 107 and section 198 of the Copyright, Designs and Patents Act 1988 as amended, however, make it a criminal offence to infringe copyright by communicating the work to the public in the course of business or to an extent that prejudicially affects the rightholder. Arguably, these provisions apply to situations where a "pirate" circumvents technological protection measures and, for instance, distributes the hacked file over P2P

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[116] *See, e.g.*, PEUKERT, s*upra* note 43.

[117] *Supra* note 39.

[118] But civil liability also exists in cases which do not give rise to criminal sanctions. BÄSLER, *supra* note 41, 22.

[119] Paragraph 108b(2).

[120] GILLIERON, *supra* note 23, 292.

[121] *Supra* note 51.

[122] Section 296ZA(1).

[123] The rights are concurrent, *see* sec. 296ZA(4).

[124] *See* sec. 296ZA(3). Intent to infringe is not required, *see, e.g.,* IAN BROWN, Implementing the EU Copyright Directive, Foundation for Information Policy Research Report, 123, online *available at* <http://www.fipr.org/copyright/guide/eucd-guide.pdf>.

networks.[125] Section 296ZB and section 296ZD, create a new offence and a new civil remedy, respectively, in relation to trafficking in devices and services which circumvent effective technological protection measures.

4. Denmark

As discussed above, section 75c(1) of the Danish Copyright Act[126] prohibits the circumvention of effective technological measures without the consent of the rightholder, and section 75c(2) outlaws trafficking in circumvention devices or services. A violation of the anti-circumvention provisions creates both civil and criminal liability. As in other jurisdictions, rightholders might seek for injunctions in order to prevent violation, or may claim for damages according to the general tort rules that are applicable.[127] Moreover, sec. 78(1) states that anyone "who with intent or by gross negligence violates section ... 75c is liable to a fine".[128] Remarkably, Danish law does not provide for imprisonment in the context of a violation of the anti-circumvention provisions. Reportedly, the Commission on Cyber crime under the Ministry of Justice – supported by rightholders organizations – has recommended increasing these relatively mild sanctions.[129] It is expected that this proposal will be put forward once it has been discussed more broadly.[130]

5. Conclusion

A brief analysis of some approaches to sanctions and remedies taken by EU member states suggests that member states have interpreted article 8 EUCD in general and article 8(1) EUCD in particular in different ways. In fact, significant differences seem to remain with regard to the interpretation of the member states' obligation to provide for "appropriate sanctions and remedies" as laid down in article 8(1) EUCD. While all countries impose civil sanctions in the case of a violation of anti-circumvention provisions, differences remain with regard to criminal sanctions. On the one end of the spectrum, the Greek copyright act sets forth significant criminal sentences – imprisonment of at least one year and a fine up to 15,000 Euro – for both acts of circumvention and trafficking in circumvention devices and services. On the other end of the spectrum, Danish copyright law only stipulates modest fines, but no imprisonment in the case of a violation of the anti-circumvention provisions. The U.K. and Germany mark middle ground by restricting criminal sanctions to acts of circumvention for non-private and commercial uses. Thus, the hacker, J.J., from our example could face significantly different sentences depending on the applicable member states law as far as scenario 1 is concerned. While he would not have to fear criminal sanctions in the case of private, non-commercial use under, say, U.K. law, he would face fines or even imprisonment in Greece under the same scenario.[131] Under scenario 2, in contrast, the outcome might look more similar among different jurisdictions. However, Danish

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[125] In fact, the new offences were designed with online piracy in mind; *see* The Patent Office, Implementation of the Copyright Directive (2001/29/EC) and related matters, Transposition Note, art. 8, online *available at* <http://www.patent.gov.uk/copy/notices/2003/copy_direct3a.htm>.

[126] *Supra* note 44.

[127] *See, e.g.,* SORENSEN, *supra* note 46.

[128] *Supra* note 44.

[129] SORENSEN, *supra* note 46.

[130] *Id.*

[131] As far as Danish law is concerned, one might conclude that the hacker, J.J., faces neither civil nor criminal sanctions under scenario 1, if courts follow the interpretation that the circumvention of an access control technology such as regional coding is not outlawed under the Danish copyright act, *see* discussion in sec. 1.2 above.

law stipulates relatively modest criminal sanctions when compared to other jurisdictions. Such differences in the sanction systems might make an important difference for J.J. under both scenarios.

Closing Remarks

The high-level overview of the transposition of article 6 and article 8 EUCD into EU member state law provided in this article leads to two conclusions. First, the analysis suggests that EU member states continue to struggle with some of the thorniest problems already identified at the level of the EUCD such as, *inter alia*, the definition of technological protection measures, scope of protection and the interface to the exceptions, respectively, and the question of effective, but also adequate sanctions and remedies. A preliminary review further suggests that national legislators leave it to the national courts and, ultimately, to the European Court of Justice not only to fine-tune the new legislation, but also to address and resolve rather fundamental issues and problems related to the legal protection of technological measures. Given the experiences with section 1201 of the DMCA in the United States,[132] one is tempted to predict intense, costly, and – at least from the lawyer's viewpoint – interesting battles over the European anti-circumvention provisions. Thus, the legal protection of technological measures – on both sides of the Atlantic – seems not to be a prime example for good legislation if we take predictability and, as a result, legal certainty as a benchmark.[133] This once again reminds us of the difficult relationship between law and technology.[134]

Second, the above review suggests that the EUCD, in fact, has led to a certain level of harmonization of member states' laws as far as technological protection measures are concerned. However, significant differences remain, and divergence in this context comes not as a surprise, given the functionality of a directive in general and the vagueness of article 6 and 8 EUCD in particular. The initial analysis of three central aspects of anti-circumvention legislation (i.e. definition, exception, and sanctions) further suggests that the different implementation measures taken by the EU member states might often be mapped on a spectrum of possible approaches. To be sure, in the European Union, such differences are politically accepted and might even be desired from a theoretical perspective, if we assume that competing legal systems can learn and improve over time. However, it remains to be seen what the ramifications of these differences will be, for instance with regard to the further development of digital media markets, technological innovation, and the evolution of the "regulatory ecosystem". And it is yet another question how such differences in national laws

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[132] Illustrative: ELECTRONIC FRONTIER FOUNDATION, Unintended Consequences: Five Years under the DMCA, September 24, 2004, online *available at* <http://www.eff.org/IP/DMCA/unintended_consequences.pdf>. For a stock taking from a different perspective, *see, e.g.,* ROBERT P. TAYLOR and ETHAN B. ANDELMAN, Anticircumvention under the DMCA: Where Do We Stand After Five Years?, 764 PLI/Pat 101 (2003).

[133] The inherent dilemma faced by legislators is concisely characterized by KAMIEL J. KOELMAN, The protection of technological measures vs. the copyright limitations, in: Urs Gasser (Ed.), Information Law in eEnvironments, Nomos: Baden-Baden and Schulthess: Zurich 2002, 25-36.

[134] For a recent overview and thoughtful analysis*, see* YVES POULLET, Technology and Law: From Challenge to Alliance, in: Urs Gasser (Ed.), Information Quality Regulation: Foundations, Perspectives, and Applications, Nomos: Baden-Baden and Schulthess: Zurich 2004, 25-52. *See generally* LAWRENCE LESSIG, Code and Other Laws of Cyberspace, New York: Basic Books 1999; JOEL R. REIDENBERG, Lex informatica: The Foundation of Information Policy Rules Trough Technology, 76 Texas L. Rev. 553 (1998).

will be accepted by increasingly global consumers/users of today's information society. Until then, however, one cannot be sure whether this Genie is the friendly ghost or the evil one.[135]

[135] *See supra* note 1.