THE PROTECTION OF INTELLECTUAL PROPERTY IN THE LEGAL FRAMEWORK OF ELECTRONIC COMMERCE AND THE INFORMATION SOCIETY: COMPUTER PROGRAMS, DIGITAL DATABASES, TECHNOLOGICAL ADJUNCTS TO COPYRIGHT, AND INTERNET SERVICE PROVIDERS' LIABILITY*

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Introduction

In order to promote the growth of electronic commerce as the economic basis of the so-called information society efforts are being made at the national and international levels to create a legal framework capable of ensuring an environment of confidence[1]. Intellectual property rights are among the most valuable rights in the digital economy brought about by the new electronic interactive media, in particular the Internet. "Already, the largest segment of business-to-consumer electronic commerce involves intangible products that can be delivered directly over the network to the consumer's computer [.]. While these intangible products, by their very nature, are difficult to measure, an increasing amount of the content that is being offered is subject to intellectual property rights [.]. This

* *Boletim da Faculdade de Direito*, Vol. LXXVI, Universidade de Coimbra, Coimbra, 2000, pp. 289-374 (texto elaborado a partir da comunicação *Technodigital Property for Cyberspace: Copyright Issues of Electronic Commerce in the Information Society* apresentada no Seminário *Intellectual Property in the Digital Age: Commodification, Infonomics, and E-Commerce*, promovido pelo Instituto de Estudos Europeus de Macau (IEEM) nos dias 5 e 6 de Junho de 2000, publicada in *Copyright Issues of Techno-Digital Property*, in *Intellectual Property in the Digital Age: Challenges for Asia*, IEEM Macau, 5/6 June 2000, IEEM Conference Series, C. Heath and A.K. Sanders (eds.), Kluwer Law International, The Hague-London-Boston, 2001, pp. 65-94).

[1] See, v.g., Alexandre Dias Pereira, *Comércio Electrónico na Sociedade da Informação: Da Segurança Técnica à Confiança Jurídica*, Coimbra, 1999.

commerce in intangible products raises a number of issues for intellectual property, in addition to those that would arise in respect of physical goods. For example, there is a growing role to be played by technological measures in protecting the rights of intellectual property owners. In addition, questions of the scope of rights and how existing law applies, jurisdiction, applicable law, validity of contracts and enforcement become more complex when the products offered have no necessary, physical manifestation."[2]

In this paper we will address some copyright issues of electronic commerce within the construction of the legal framework for the information society and its digital economy. First, we will address the issue on circumvention of technological measures used by copyright owners to protect their works, in particular computer programs and electronic databases, as well as on tampering with copyright management information. Second, we will address the issue of the liability of online service providers for copyright infringement when engaging in certain activities, such as: 1. transitory communications ("mere conduit"); 2. system caching; 3. storage of information on systems or networks at direction of users ("hosting"); 4. information location tools ("browsing" and "linking"). The main legal sources which this paper is based upon are the new WIPO Treaties (Dec. 1996), the European Directive Proposal (as amended) on Copyright in the Information Society [COM(99) 250 final (and the recent Common Position (EC) n.º 48/2000 adopted by the Council)], the European Directive on Electronic Commerce (2000/31/CE), and the U.S. Digital Millennium Copyright Act (Oct. 1998). Moreover, the European Directives on Computer Programs (91/250/CEE), Databases Protection (96/9/CE), and Encrypted Services (98/84/CE), as well as important case law of the E.U. Member States and the U.S. are also considered.

The study of these copyright issues of electronic commerce aims to explain how copyright has been adapted to the new technological paradigm. In other words, this paper is an essay on the adaptation of copyright to the digital computer and network technologies, in particular the Internet. As we have already suggested[3], copyright has been transformed by legal metamorphosis into a sort of technodigital property for cyberspace. Furthermore, it aims to explain how, in this adaptation process, due to the absence of Community harmonization of unfair competition, author's rights system of Civil Law countries are importing certain copyright concepts from Common Law countries. Finally, we will see that, instead of being replaced by the rule of technology and cyber-ethics in the brave new world of intelligent electronic agents, copyright has been called to put an end to the "electronic woodstock" and "anarchy online", establishing a legal form of property

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[2] *Primer on Electronic Commerce and Intellectual Property Issues*, WIPO, Geneva, May 2000, n.º 18.
[3] See Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra, 1998.

rights in Digitalia. Moreover, at the same time, copyright law is a leit-motiv to grant protection to the investment of producers in the digital economy by *sui generis* intellectual property rights and technological adjuncts, which can appropriate public domain information and control the freedom of expression on the World Wide Web (www).

§ 1. Property in Digitalia and "The End of the Electronic Woodstock"

1. Information is probably the main commodity of the emerging digital economy, and it's commonplace to say that information is the new petroleum of our societies. Accordingly, the construction of the "information society" has been put forward as a major political task for the third millennium[4]. The edification of the global information infrastructure is under way. A super-highway has already created the global village. We could call it Cyberland, Internetland, or Digitalia.

The petroleum of Digitalia is information, and information is everything that can be digitized. Information could be a free good like oxygen. The founders of cybernetics, namely Wiener[5], have argued that the free flow of information is of vital interest for human societies. The digital revolution could be of unprecedented contribution to this ideal. However, many things that can be reduced to bits are not *res communes omnium*. Intellectual property rights, in particular copyright and related rights, are one of the most important legal forms of appropriation of information. Information that otherwise would flow free as the wind is subject to *ius excluendi omnes alios*. One can exclude all from exploiting and using the petroleum of Digitalia.

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[4] See, in the E.U., *Europe and the Information Society*, Bangemann Report, 26.V.1994; Council Resolution of 21 November 1996 on *New Policy-priorities regarding the Information Society* (96/C 376/01). For the origins of the "Information Society" in the language of the European Commission, see the White Paper on *Growth, Competition and Employment* [Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century - White Paper; COM(93)700, 5 December 1993]. Since then the European Commission has presented several documents on the construction of the Information Society. See, more recently, *Green Paper on public sector information in the information society*, COM(98)585 final, adopted on 20 January 1999. At the national level, see, for example, in Germany, the BMWi Report, *Die Informationsgesellschaft*, Bonn, 1995, and, in Portugal, *Livro Verde Para A Sociedade da Informação Em Portugal*, Missão para a Sociedade da Informação 1997.

[5] Wiener, *Cybernetic or the Control and Communication in the Animal and the Machine*, 1948. According to Prof. Miguel Baptista Pereira: "Toda a informação armazenada fica também esclerosada e isolada e, por isso, Wiener formulou o princípio da circulação, que transforma a informação num processo, de cuja paralisação decorreria a decadência social, porque a informação é o cimento da sociedade. A conversão da informação em mercadoria armazenada com fins lucrativos é sinónimo de degradação e de enfraquecimento da corrente contínua, que deve irrigar a sociedade." (M. Baptista Pereira, *Filosofia da Comunicação Hoje*, in *Comunicação e Defesa do Consumidor*, Actas do Congresso Internacional organizado pelo Instituto Jurídico da Comunicação da Faculdade de Direito da Universidade de Coimbra, de 25 a 27 de Novembro de 1993, IJC: Coimbra, 1996, p. 65).

The concept of property has a major role in Digitalia, and it seems to make sense. However, some argued that the new wine could not fit in the "old bottles"[6]. The new wine would be digital information and technologies, and the "old bottles" would be traditional legal concepts, in particular copyright and other forms of intellectual property. Moreover, it was questioned the ability of Law to deal with this brave new world of electronic communications. It should be replaced by some kind of "Cyber-Ethics" and technology would do the rest. In particular, since copyright was an "artefact of Gutenberg" and therefore a product of the atom economy, it would be completely outdated in the digital age and, probably, "the answer to the machine" would be "in the machine" itself [7]. Nevertheless, one can wonder whether a strict technologist approach of the rule of technology and cyber-ethics wouldn't be pur*sui generis*ng the dream of a digital world free of Law.

2. However, one's dream is often another's nightmare. For information owners, a technologically self-ruled cyberspace could be nothing but an anarchist vision, since there would be no legal remedies for infringement. Digitalia is "no man's land", they argued, and therefore traditional legal concepts such as property and privacy should be called to play a major role in the construction of the legal framework for the information society. In short: *ubi societas, ibi ius*.

But in this process something else is happening. The question is not only of enforcing traditional rights in the digital environment. Law in Digitalia went further and deeper. The purpose of constructing an information society has served to create new legal forms of private and public appropriation of information.[8] The question of whether there would be

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[6] See J. P. Barlow, *Selling Wine Without Bottles. The Economy of Mind on the Global Net*, in B. Hugenholtz (ed.), *The Future of Copyright in a Digital Environment*, 1996, p. 169. For the state of the discussion before the new WIPO Treaties, see Ficsor, in M. Dellebeke (ed.), *Copyright in Cyberspace: Copyright and the Global Information Infrastructure*, 1997, p. 29

[7] See N. Negroponte, *Being Digital*, 1995, p. 58; C. Clark, *The Answer to the Machine is in the Machine*, in B. Hugenholtz (ed.), *The Future of Copyright in a Digital Environment*, 1996, p. 139.

[8] In fact, information owners have pursued in official reports and legislation drafts the so-called "maximalist agenda" based upon the following commands: *1. The exclusive right to read: copyright control over every use of copyrighted works in digital form by interpreting existing law as being violated whenever users make even temporary reproductions of works in the random access memory of their computers. 2. The exclusive right to transmit: copyright control over every transmission of works in digital form by amending the copyright statute so that digital transmissions will be regarded as distributions of copies to the public. 3. The end of fair-use rights: eliminate fair-use rights whenever a use might be licensed. 4. Eliminating first-sale rights for digitally transmitted documents: deprive the public of the "first sale" rights it has long enjoyed in the print world. 5. Helping documents spy on you: attach copyright management information to digital copies of a work, ensuring that publishers can track every use made of digital copies and trace where each copy resides on the network and what is being done with it at any time. 6. Outlawing decryption: protect every digital copy of every work technologically (by encryption, for example) and make illegal any attempt to circumvent that protection. 7. Turning online service providers into cops: force online service providers to become copyright police, charged with implementing pay-per-use rules. 8. Teaching children not to share: "Just say yes to licensing*". P. Samuelson, *The Copyright Grab*, Wired, 1996.

room left for copyright in the "brave new world of technical systems"[9], or whether it could be "unimportant on the Internet"[10] seems to have been answered already. The fact is that the Internet is a global marketplace. If it were just a limited community of computer maniacs, probably there would be no special problems. There would be no need to care, as long as they didn't abuse too much. As the Romans used to say, *de minimis non curat praetor*.

However, the World Wide Web is huge. The new "golden goose" is called electronic commerce, in particular direct electronic commerce[11]. In the name of the new economy, global efforts are being made to eliminate the "malign hacker-culture" and to put an end to "anarchy online". Of special importance is the work undertaken at the international level by International Organizations such as the UNCITRAL, WIPO, OECD[12]. Moreover, in the European Union and its Member States[13], the creation of the legal framework for electronic commerce in the information society is under way. In the U.S. the emerging digital economy is at the heart of much legislation and case-law[14].

Law has a preference for legitimate interests. There are many legitimate interests in the digital environment of electronic network communications. Regarding interests protected under copyright, there are several agents involved, such as: individual creators, copyright owners, and users (1); service providers, computer software, motion picture, music, broadcasting, electronic, publishing and other information and entertainment industries

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[9] T. Vinje, *A Brave New World of Technical Protection Systems: Will There Still be Room For Copyright*, EIPR 1996, p. 431.

[10] E. Schlachter, *The Intellectual Property Renaissance in Cyberspace: Why Copyright Could Be Unimportant on the Internet*, Berkeley Tech. LJ 1997, p. 15.

[11] According to the WIPO Premier: "There is a further distinction of particular relevance to intellectual property, especially copyright and related rights, in respect of commerce on digital networks: as noted, the Internet facilitates both commerce in physical products and commerce in intangible products. For commerce involving physical products, the Internet functions as a global system facilitating sales, in which the placing of an order and the making of payment can (but does not necessarily have to) take place online, while the goods themselves are delivered separately through a postal or other delivery service. For commerce involving intangible products, the Internet serves not only as a system to promote sales, but also as a system to effectuate the delivery of the intangible product itself, such as a piece of music or software, a film or a publication. This distribution can take place almost instantaneously, and the intangible product may travel virtually without restriction across national borders. Indeed, this aspect of electronic commerce may be its most compelling dimension: there is an inherent logic to using the Internet to buy and sell intangible products that need never be more than digital "bits." At the same time, however, there is a commensurate need for effective intellectual property protection that can address the international dimensions of this commerce." WIPO *Primer on Electronic Commerce and Intellectual Property Issues*, 2000, n.º 17.

[12] See, more recently, WIPO Primer on *Electronic Commerce and Intellectual Property Issues*, 2000; OECD Forum on *Electronic Commerce: Progress Report on the OECD Action Plan for Electronic Commerce*, Oct. 1999; Recommendations of the OECD Council Concerning Cryptography Policy (1997); *Uncitral Model Law On Electronic Commerce 1996 (with additional article 5 bis as adopted in 1998)*, and its *Guide To Enactment.*

[13] See *European Initiative for Electronic Commerce*, Communication of the Commission, COM (97) 157 final. See also, for example, Green Paper on the *Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation - Towards an Information Society Approach*; COM(97)623. At the national level, see, in Portugal, the *Iniciativa Nacional para o Comércio Electrónico* (Resolução do Conselho de Ministros n.° 115/98) and its *Documento Orientador* (Resolução do Conselho de Ministros n.° 94/99).

[14] See William J. Clinton & Albert Gore, Jr., *A Framework for Global Electronic Commerce*, 1997; *The Emerging Digital Economy*, U.S. Department of Commerce, Secretariat on Electronic Commerce, 1998.

(2); the academic, research, library and legal communities (3). Several official reports contain efforts to clarify the value of all these different interests in the process of adaptation of copyright to the digital environment[15]. At the same time, this issue has been the subject of intensive study and debate[16], demonstrating that copyright is one of the most important legal fields of the Electronic Revolution, playing a major role within the so-called Information Society Law or Internet or Cyberlaw[17].

The emerging digital law is supposed to serve the creation of the information society. Nevertheless, it can reasonably be said that in this emerging digital law it is of greater importance to begin with establishing property rights in Digitalia. In short, to clarify who owns what in cyberspace, in particular who owns information. This was the major task of the new WIPO Treaties on Copyright and certain Related Rights (December 1996)[18]. The mission cannot be said to have been fully accomplished, since several issues remained open, such as liability of online service providers and *sui generis* intellectual property for

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[15] See *Green Paper On Intellectual Property And The National Information Infrastructure*, *Working Group On Intellectual Property,* 1994, and *Intellectual Property and the National Information Infrastructure*, *The Report of the Working Group on Intellectual Property Rights,* Bruce Lehman, Ronald Brown, September 1995 (U.S.A); *Predicted Problems and Possible Solutions for Administering Intellectual Property Rights in a Multimedia Society*, IIP, Juin 1995 (Japan); *Highways to change: Copyright in the new Communications Environment, Report of the Copyright Convergence Group*, August 1994 (Australia); *Rapport Sirinelli — Industries culturelles et nouvelles technologies*, septembre 1994 (France); *Copyright and the Information Highway, Final Report of the Copyright Sub-Comittee*, Ottawa, March 1995 (Canada); *Green Book on Copyright and the Challenge of Technology*, COM(88) 172 final; *Green Book on Copyright in the Information Society,* COM(95), 382 final, and *Following,* COM(96) 568 final, 20.11.1996; *Green Paper combating counterfeiting and piracy in the Single Market*, COM/98/0569 final of 15 October 1998 (Europe); Schricker (Hrsg.), *Urheberrecht auf dem Weg zur Informationsgesellschaft*, 1997 (Germany).

[16] See, *inter alia*, *L'informatique et le droit d'auteur*, ALAI, 1989; WIPO *Worldwide Symposium on the Impact of Digital Technology on Copyright and Neighboring Rights*, Harvard 1993; *Num Mundo Novo do Direito de Autor?*, I, II, Lisboa 1994; Goldstein, *Copyright's Highway*, 1994; Becker/Dreier, *Urheberrecht und digitale Technologie*, 1994; Heymann (Hrsg.), *Informationsmarkt und Informationsschutz in Europa*, 1995; Fiedler/Ullrich (Hrsg.), *Information als Wirtschaftsgut*, Köln, 1996; Hugenholtz (ed), *The Future of Copyright in a Digital Environment*, 1996; Dellebeke (ed.), *Copyright in Cyberspace*, 1997; Boyle, *Software, Shamans, and Spleens*, 1997; Merger/Menell/Lemley/Jorde, *Intellectual Property in the New Technological Age*, 1997; Lee/Davidson, *Intellectual Property for the Internet*, 1997; Schricker (Hrsg.), *Urheberrecht auf dem Weg zur Informationsgesellschaft* (Dreier, Katzenberger, v. Lewinski, Schricker), 1997; Strowel/Triaille, *Le droit d'auteur, du logiciel au multimedia*, 1997; Vivant (dir.), *Les créations immatérielles et le droit*, 1997; Samuelson, *The Information Society and the Role of Copyright in It*, 1998; Lessig, *Code and Other Laws of Cyberspace*, 1999.

[17] See, *inter alia*, Katsch, *Law in a Digital World*, 1995; Perritt Jr., *Law and the Information Society*, 1996; Bensoussan (dir.), *Internet, aspects juridiques*, 1996; Demnard-Tellier (dir.), *Le multimedia et le droit*, 1996; Iteanu, *Internet et le droit*, 1996; Hilty (Hrsg.), *Infomation Highway (Beiträge zu rechtlichen und tatsäschlichen Fragen)*, 1996; Lopes Rocha/Macedo, *Direito no Ciberespaço*, 1996; Becker (Hrsg.), *Rechtsprobleme internationaler Datennetze*, 1996; Bender, *Computer Law*, 1997; Lehmann (Hrsg.), *Internet- und Multimediarecht*, 1997; Sédallian, *Droit de l'Internet*, 1997; Piette-Coudol / Bertrand, *Internet et la loi*, 1997; Hoeren, *Rechtsfragen des Internet*, 1998; Loewenheim/Koch (Hrsg.), *Praxis des Online-Rechts*, 1998; Bartsch/Lutterbek (Hrsg.), *Neues Recht für neue Medien*, 1998; Roßnagel, *Recht der Multimedia-Dienste: Kommentar*, 1999; *As Telecomunicações e o Direito na Sociedade da Informação*, IJC, 1999; *Direito da Sociedade da Informação*, I, FDUL/APDI, I, 1999. See also Katsch, *The Electronic Media and the Transformation of Law*, 1989; Giannantonnio (ed.), *Law and Computers*, I, 1989, II, 1991; Forester, *The Information Technology Revolution*, 1990; Egan, *Information Superhighways*, 1991; Vivant (sous la responsabilité de), *Lamy Droit Informatique*, 1992; Scott, *Multimedia: Law and Practise*, 1993; Egan, *EC Information Technology Law*, 1995; Webster, *Theories of the Information Society*, 1995; Tinnefeld/Phillips/Heil (Hrsg.), *Informationsgesellschaft und Rechtskultur in Europa*, 1995.

[18] On the new WIPO Treaties see, for example, A. Françon, *La Conference Diplomatique sur certaines questions de droit d'auteur et de droits voisins (Genève 2-20 décembre 1996)*, RIDA 1997, p. 3; T. Vinje, *The New WIPO Copyright Treaty: a Happy Result in Geneva*, EIPR 1997, p. 230.

databases. Moreover, the WIPO Treaties did not provide ready answers on the use of copyright defeating devices.

The WIPO treaties have answered to questions such as: Why should online transmission of copyrighted works be considered distribution of copies, when there's always a copy left behind which can be used? If a copyright owner can get paid for every access to his encrypted electronic book, why shouldn't the circumvention of technological protection measures be considered unlawful? If a copyright owner can patrol the Web in order to find unlawfully disseminated copies of his books, why shouldn't the tampering of information management systems be considered unlawful? Other issues, however, remained open at the international level: Why should "mere conduit", caching, hosting, or browsing be lawful, when online service providers know that these acts contribute to copyright infringement? Why should anyone be free to extract and re-utilize information content from electronic databases, when the production of such databases required substantial investments?

§ 2. Copyright Issues of Electronic Commerce: Basic Legal Framework

1. The construction of the legal framework for the information society and its digital economy is underway in the European Union[19]. Recently, a major step has been taken with

[19] This paper addresses only some copyright issues of electronic commerce. Other specific aspects of electronic commerce within the construction of the legal framework for the information society, such as electronic contracts, internet domain names and consumer protection, are not addressed by this paper. On the specific issue of electronic contracts, see *Uncitral Model Law On Electronic Commerce 1996 (with additional article 5 bis as adopted in 1998)*, and *Guide To Enactment Of The Uncitral Model Law On Electronic Commerce* (1996); Directive 1999/93/CE of the European Parliament and the Council of 13 December 1999 on a Community framework for electronic signatures (OJ L 13, 19.1.2000, p. 12); in Portugal, Regime Jurídico dos Documentos Electrónicos e das Assinaturas Digitais, approved by Decree-Law 290-D/99 of 2 August 1999. See Syx, DIT 3/1986, p. 133; V. Franceschelli, GI 1988, p. 314; Amory/Schauss, Giannantonio, in Giannantonio (ed.), Law and Computers, II, p. 1395, p. 1361, respectivamente; M. Pupo Correia/J. Mariano, *Introdução à problemática jurídica do EDI*, 2 ed., Lisboa, 1991; Fritzmeyer/Heun, CR 1992, p. 129, p. 198; Xueref/Brouss, DIT 1/1992, p. 6; Mynard, DIT 4/1992, p. 15; Caprioli, DIT 3/1993, p. 5, DIT 1/1994, p. 14; Kilian, CR 1994, p. 657; Finocchiaro, CI 1994, p. 432; Walden, CR 1994, p. 1; Zagami, DII 1996, p. 151; Finocchiaro, CI 1998, p. 956; Schumacher, CR 1998, p. 758; Caprioli, JCP 1998, p. 583; Rossnagel, NJW 1999, p. 1591; Symposium, JC&IL 1999, p. 721. On the issue of internet domain names, see: WIPO Internet Domain Name Process: Final Report, April 1999; Criação do Domínio Internet de Topo EU., Documento de Trabalho da Comissão, COM(2000) 153 final, 2.2.2000. See also Wegner, CR 1999, p. 250; Biermann, WRP 1999, p. 997; Bettinger/Freytag, CR 1999, p. 28; Ubber, WRP 1997, p. 497; Nordemann/Goddar/Tonhardt/Czychowski, CR 1996, p. 1996, p. 645; Baumer, CR 1998, p. 174; Kur, CR 1996, p. 325; Omsels, GRUR 1997, p. 328; Renck, NJW 1999, p. 3587; Mankowski, GRUR Int 1999, p. 995; Cerasani, Giuresprudenza Commerciale 1999, p. 645; Frassi, RDI 1997, II, p. 180; Mayr, AIDA 1996, p. 223; Peyron, Giur. It. 1997, I, p. 1857. On the specific issue of consumer protection in electronic commerce, see in particular Council Directive 93/13/ECC of 5 April 1993 on unfair terms in consumer contracts (OJ L 95, 21.4.1993, p. 29), Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts (OJ 144, 4.6.1997, p. 19); Directive 98/27/EC of the European Parliament and of the Council of 19 May 1998 on injunctions for the protection of consumers' interests (OJ L 166, 11.6.1998, p. 51) as amended by Directive 1999/44/EC of the European Parliament and of the Council of the Council of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees (OJ L 171, 7.7.1999, p. 12); Council Resolution of 19

the approval by the European Parliament of the Directive on electronic commerce[20]. This Directive deals with one of the most important copyright issues of electronic commerce: the liability of online service providers for copyright infringement when engaging in certain activities.

Another major step would be the adoption of the Proposal for a European Parliament and Council Directive on the harmonization of certain aspects of copyright and related rights in the Information Society, that the Commission transmitted to the Parliament and the Council on 21 January 1998[21]. In the amended proposal for a Directive, the

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January 1999 on the Consumer Dimension of the Information Society (OJ C 23, 28.1.1999, p. 1); for *Financial Services*, see Greenbook, COM(96) 209 final, 22/05/1996, and Communication, COM(97) 309 final, 26/06/1997, and amended Proposal for a European Parliament and Council Directive concerning the distance marketing of consumer financial services and amending Directives 97/7/EC and 98/27/EC; Recommendations of the OECD Council Concerning Guidelines For Consumer Protection in the Context of Electronic Commerce. See António Pinto Monteiro, *A protecção do consumidor de serviços de telecomunicações*, in *As telecomunicações e o direito na sociedade da informação*, IJC, Coimbra, 1999, p. 155 s; Dirk, CR 1997, p. 526; Valentino, Rassegna 1998, p. 375; Barbry, DIT 2/1998, p. 14; Köhler, Martinek, NJW 1998, p. 185, p. 207; Trochu, Recueil Dalloz 1999, p. 179; regarding *schrink-wrap* licenses, see cases *Beta v. Adobe*, 1996 (England), *Aztech PTE Ltd. v. Creative Technology Ltd*, 1996-7 (Singapure); *Coss v. TMData*, 1995 (Holland); *Step Saver Data Systems v. Wyse Technology*, 1990-1, *Arizona Retail Syst. v Software Link*, 1993, *Pro-CD v. Zeidenberg*, 1996 (U.S.A), see also my *Contratos de Software*, in A. Pinto Monteiro, *Direito dos Contratos e da Publicidade*, Coimbra 1996; Graham, CLJ 1992, p. 597; Ward/Durrant, CoL 1994, p. 174; Lemley, California LR 1995, p. 1239; Gardner, CL 1996, p. 5; Kochinke/Günther, CR 1997, p. 129; Girot, DIT 1/1998, p. 7. See also Alexandre Dias Pereira, *Comércio Electrónico na Sociedade da Informação: Da Segurança Técnica à Confiança Jurídica*, 1999; Idem, *A protecção do consumidor no quadro da Directiva sobre o comércio electrónico*, in *Estudos de Direito do Consumidor*, CDC/FDUC, II, 2000.

[20] Directive 2000/31/EC of the European Parliament and of the Council of June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal market ("Directive on electronic commerce"), OJ L 178, 17.07.2000. On 18 November 1998, the Commission adopted a proposal for a European Parliament and Council Directive on certain legal aspects of electronic commerce in the Internal Market [COM (1998) 586 final of 18.11.1998, OJ C 30, 5.2.1999, p. 4]. The proposal was transmitted to the Parliament and the Council on 23 December 1998. On 29 April 1999 (OJ C 169, 16.6.1999) the Economic and Social Committee gave its opinion on the proposal. The European Parliament, consulted under the co-decision procedure, proceeded to examine the proposal in the Committee on Legal Affairs and Citizens' Rights (responsible for the report), the Committee on Economic and Monetary Affairs and Industrial Policy, the Committee on the Environment, Public Health and Consumer Protection and the Committee on Culture, Youth, Education and the Media (committees for opinion). The Legal Affairs Committee, after receiving and considering the opinions of the three other Committees (adopted on 18 March 1999, 16 March 1999 and 24 March 1999 respectively), voted unanimously its report on 22 April 1999. The Parliament adopted its opinion (EP Report (A4-0248/99) of 6.5.1999) in the plenary session of 6 May 1999 approving the Commission's proposal subject to Parliament's amendments and calling on the Commission to, pursuant to Article 250(2) of the EC Treaty, alter its proposal accordingly. In the amended proposal for a Directive, the Commission has considered the Parliament's opinion regarding several aspects [Amended proposal for a European Parliament and Council Directive on certain legal aspects of electronic commerce in the Internal Market, COM(99) 427 final. See *Explanatory Memorandum*]. On 28 February 2000, the Council has adopted the Common Position with a view to the adoption of Directive of the European Parliament and of the Council on certain legal aspects of Information Society services, in particular electronic commerce, in the Internal Market ("Directive on electronic commerce") (OJ C 128, 8.5.2000, p. 2). On the initial Proposal [COM(98), 297 final], see my *Comércio Electrónico na Sociedade da Informação: Da Segurança Técnica à Confiança Jurídica*, Coimbra 1999; see also M. Lehmann, *Rechtsgeschäfte und Verantwortlichkeit im Netz – Der Richtlinienvorschlag der EU Kommission*, ZUM 1999, p. 180; T. Hoeren, *Vorschlag für eine EU-Richtlinie über E-Commerce. Eine erste kritische Analyse*, MMR 1999, p. 192; K. Brisch, *EU-Richtlinienvorschlag zum elektronischen Geschäftsverkehr*, CR 1999, p. 235.

[21] COM(97)628 final of 10.12.1997 (OJ C 108, 7.4.1998, p. 6). The Economic and Social Committee gave its opinion on that proposal on 9 September 1998 (OJ C 407, 28.12.1998, p. 30). The European Parliament, consulted under the co-decision procedure, examined the proposal in detail in its committees. On 20 January 1999 the Committee on Legal Affairs and Citizens' Rights debated the report drawn up by Mr R. Barzanti on its behalf and the Parliament gave its opinion in the plenary session of 10 February 1999 in favour of the proposal as amended (Opinion of Parliament of 10.2.1999).

Commission has considered the Parliament's opinion regarding several aspects[22]. This Proposal aims to implement a number of the new international obligations, mainly the

[22] Amended proposal for a European Parliament and Council Directive on the harmonisation of certain aspects of copyright and related rights in the Information Society, COM(99) 250 final; see the *Explanatory Memorandum*. On the initial draft Directive [COM(97) 628 final, 10.12.1997] see, for example, J. Reinbothe, *Der EU-Richtlinienentwurf zum Urheberrecht und zu Leistungsschutzrechten in der Informationsgesellschaft*, ZUM 1998, p. 429, A. Dietz, *Die EU-Richtlinie zum Urheberrecht und zu den Leistungsschutzrechten in der Informationsgesellschaft*, ZUM 1998, p. 438. See also Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998.

The legal concept of copyright proposed to serve the construction of the information society is *the concept of intellectual property as a form of property*. The Directive Proposal on Copyright is based on principles and rules already laid down in the *acquis communautaire*, and it develops those principles and rules and places them in the context of the information society. According to the Proposal, any harmonisation of copyright and related rights should take as a basis a high level of protection, since such rights are considered crucial to intellectual creation. Their protection would help to ensure the maintenance and development of creativity in the interests of authors, performing artists, producers, consumers, culture, industry and the public at large. In fact, copyright and related rights are considered to play an important role in this context as they protect and stimulate the development and marketing of new products and services and the creation and exploitation of their creative content. Moreover, a harmonised legal framework on copyright and related rights, through increased legal certainty and while providing for a high level of protection of intellectual property, would foster substantial investment in creativity and innovation, including network infrastructure, and lead in turn to growth and increased competitiveness of European industry, both in the area of content provision and information technology and more generally across a wide range of industrial and cultural sectors. This would safeguard employment and encourage new job creation, and furthermore if authors or performing artists were to continue their creative and artistic work they should have to receive an appropriate reward for the use of their work, as should producers in order to be able to finance this creative work. In fact, the investment required to produce products such as phonograms, films or multimedia products, and services such as 'on-demand` services, is considerable, and therefore adequate legal protection of intellectual property rights is considered necessary in order to guarantee the availability of such a reward and provide the opportunity for satisfactory returns on this investment. Accordinlgy, a rigorous, effective system for the protection of copyright and related rights is viewed as one of the main ways of ensuring that European cultural production receives the necessary resources and of safeguarding the independence and dignity of artistic creators and performers. Therefore, the legal concept adopted by the Directive Proposal on Copyright to achieve this goal is *the concept of intellectual property as a form of property*. In fact, considering that intellectual property has been recognized as an integral part of property, the proposed harmonization relates to compliance with the fundamental principles of law and especially of property, including intellectual property, as well as freedom of expression and the public interest. Nonetheless, it is considered that, although technological development has multiplied and diversified the vectors for creation, production and exploitation, no new concepts for the protection of intellectual property are needed, since the current law on copyright and related rights will only have to be adapted and supplemented to adequately respond to economic realities such as new forms of exploitation.

The conception of copyright as a property right is a *vexata quaestio,* although I agree with it (*Informática, direito de autor e propriedade tecnodigital*, cit., § 12 *et seq.*). For this discussion, see, notably, in Portugal, Cabral de Moncada, *Lições de Direito Civil*, 4.ª ed., 1995, p. 76; Manuel de Andrade, *Teoria Geral da Relação Jurídica*, 1966, p. 249; Mota Pinto, *Teoria Geral do Direito Civil,* 3. ed., 1992, p. 336; Oliveira Ascensão, *Teoria Geral do Direito Civil,* II (III), 1983-4 , p. 24-25, Idem, *A tipicidade dos direitos reais*, 1968, n° 103 s, *Direito Comercial:* II. *Direito Industrial*, 1988, p. 389 s; *Direito de Autor e Direitos Conexos*, 1992, p. 667 s; Orlando de Carvalho, *Direito das coisas*, 1977, p. 205, n. 4, *Direitos de personalidade de autor*, in *Num Novo Mundo do Direito de Autor?*, II, 1994, p. 543; Pires de Lima/Antunes Varela, *Código Civil Anotado*, III, 1972, p. 75-6; L. F. Rebello, *Introdução ao direito de autor*, 1994, p. 55. For other countries, see, in german literature: Dietz, *Das Urheberrecht in der Europaïschen Gemeinschaft*, 1978, p. 40; Delp, *Das Recht des geistigen Schaffens*, 6. Aufl, 1994, p. 19; Haberstumpf, *Handbuch des Urheberrechts*, 1996, p. 12; Hertin, in Fromm/Nordemann, *Urheberrecht: Kommentar,* § 7, 9. Aufl, 1998, p. 108; Hertin, *Urheberrecht*, 1996, p. 14; Hubmann/Rehbinder, *Urheber- und Verlagsrecht*, 8. Aufl., 1995, p. 80 s; Hubmann/Götting, *Gewerblicher Rechtsschutz*, 6. Aufl., 1998, p. 20; Delp, *Das Recht des geistigen Schaffens*, 6. Aufl, 1994, p. 19; Hübner, *Das Grundgesetz und der zivilrechtliche Eigentumsbegriff*, in *Rechtsdogmatik und Rechtsgeschichte*, 1997, p. 170-1; Rehbinder, *Urheberrecht*, (begr. Hubmann), 9. Aufl., 1996, p. 30, 80-3; Rintelen, *Urheberrecht*, p. 43; Schricker, in Schricker, *Urheberrecht - Kommentar*, Einl., 2. Auf., 1999, p. 56; Schricker, in Beier/Schricker/Fikentscher, *German Industrial Property, Copyright and Antitrust Laws*, 1996, II/A/2; Troller, *Immaterialgüterrecht*, I, 1983-85, p. 90, 103, 112; Ulmer, *Urheber- und Verlagsrecht*, 3. Aufl., 1980, p. 105-6; Wenzel, *Urheberrecht für die Praxis*, 3. Aufl., 1996, p. 21. For french literature, see: Berenboom, *Le Nouveau Droit d'Auteur (et le droits voisins)*, 1997, p. 38.; Bertrand, *Le droit d'auteur et les droits voisins*, 1991, p. 50-1; Bonet (dir.), *Code de la propriété intellectuelle*, 1997, p. 9; Colombet, *Propriété littériaire et artistique*, 6. ed., 1992, p. 14; Desbois, *La propriété littéraire et artistique*, 1953,

new WIPO Treaties[23], dealing respectively with the protection of authors and the protection of performers and phonogram producers.

Those Treaties, which have been adopted by the Diplomatic Conference held under the auspices of the World Intellectual Property Organization (WIPO) in December 1996[24], update the international protection for copyright and related rights with regard to the so-called "digital agenda", and improve the means to fight piracy world-wide. Among other aspects, they provide prohibitions on circumvention of technological measures used by copyright owners to protect their works[25], and on tampering with copyright management information[26]. The Community and a majority of Member States have already signed the Treaties and the process of making arrangements for the ratification of the Treaties by the Community and the Member States is under way.

2. On the other side of the Atlantic, the new WIPO Treaties have already been implemented by the Digital Millennium Copyright Act (DMCA)[27]. In fact, title I of the

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p. 56 s; Idem,*Cours de propriété littéraire et artistique*, 1969-70, p. 3, 10-35; Edelman, *La propriété littéraire et artistique*, 2. ed., 1992, p. 7; Plaisant, *Les droit des auteurs et des artistes executants*, 1979, p. 4-5, 119; Recht, *Le droit d'auteur: une nouvelle forme de propriété*, 1969, p. 229; Strowell, *Droit d'auteur et copyright*, 1993, p. 663-4 (following Recht's theory); see also, Strowel/Triaille, *Le droit d'auteur*, 1997, p. 5. For italian and spanish literature, see: Ascarelli, *Teoria della concorrenza e dei beni immateriali*, 3 ed., 1960, p. 767; De Cupis, *I diritti della personalità*, 1950, p. 259 s; Fabiani, *Autore (diritto di)*, in *Enciclopedia Giuridica Treccani*, XVI, 1989, p. 3; Santilli, *Il diritto d'autore nella societá dell'informazaione*, 1988, p. 222-3; Bercovitz Rodriguez-Cano, in Bercovitz Rodriguez-Cano, *Comentarios a la Ley de Propiedad Intelectual,* 1989, p. 25 s; Vega Vega, *Derecho de autor*, 1990, p. 39-40; Marco Molina, *La propriedad intellectual en la legislación española,* 1994, p. 109 s. For english literature, see Alces/See, *The Commercial Law of Intellectual Property*, 1994, p. 7 s; Bainbridge, *Intellectual Property*, 3rd ed., 1996, p. 10; Cornish, *Intellectual Property*, 3rd. ed., 1996, p. 9-10; Phillips/Durie/Karet, *Whale on Copyright*, p. 14.

[23] The WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT), December 1996.

[24] WIPO Copyright Treaty, Articles 11 and 12; WIPO Performances and Phonograms Treaty, Articles 18 and 19. Those Treaties have already been implemented in Brazil (Lei n.° 9.610, de 19 de Fevereiro de 1998) and in the U.S. (*The Digital Millennium Copyright Act of 1998*), where the prohibition circle has been enlarged to marketing activities of devices which main purpose is to circumvent technological protection measures. See Oliveira Ascensão, *O Direito de Autor no Ciberespaço*, Separata de Portugal-Brasil Ano 2000, Coimbra, 1999) / *A recente lei brasileira dos direitos autorais, compilada com os novos tratados da OMPI, www.digital-forum.net*. See also Alexandre Dias Pereira, *Direitos de Autor, Códigos Tecnológicos e a Lei Milénio Digital*, BFD 1999, p. 475-521.

[25] Article 11 of the 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 Bern Convention and that restricts acts, in respect of their works, which are not authorized by the authors concerned or permitted by law." See also Article 18 of the WPPT.

[26] Article 12 of the WCT states that Contracting Parties shall provide adequate and effective legal remedies against any person knowingly performing any of the following acts knowing, or with respect to civil remedies having reasonable grounds to know, that it will induce, enable, facilitate or conceal and infringement of any right covered by this Treaty or the Bern Convention: (i) to remove or alter any electronic rights management information without authority; (ii) to distribute, import for fabrication, broadcast or communicate to the public, without authority, works or copies of works knowing that electronic rights management information has been removed or altered without authority." See also Article 19 of the WPPT.

[27] The Digital Millennium Copyright Act (DMCA) of 1998, Pub. L. No. 105-304, 112 Stat. 2860 (Oct. 28, 1998). On the DMCA, see J. Ginsburg, *Chronique des États-Unis*, RIDA 1999, p. 21; P. Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised*, Berkeley Tech. LJ 1999, p. 520; Alexandre Dias Pereira, *Direitos de Autor, Códigos Tecnológicos e a Lei Milénio Digital*, BFD 1999, p. 475.

DMCA[28] implements the WIPO Treaties where they oblige member states to provide legal protection for the exploitation of works on digital networks, which serves as "technological adjuncts" to the exclusive rights granted by copyright law. Accordingly, title I creates two new prohibitions, and it adds civil remedies and criminal penalties for violating the prohibitions. Of the new prohibitions, one covers the circumvention of technological measures used by copyright owners to protect their works, and another one the tampering with copyright management information.

Moreover, title II of the DMCA[29] deals with another very important copyright issue of electronic commerce: the liability of online service providers for copyright infringement. In fact, Title II of the DMCA creates limitations on the liability of online service providers for copyright infringement when engaging in certain activities. This title adds a new section to the Copyright Act to create four new limitations on liability for copyright infringement by online service providers based on the following categories of acts, such as: 1. transitory communications ("mere conduit"); 2. system caching; 3. storage of information on systems or networks at direction of users ("hosting"); 4. information location tools ("browsing", "linking").

3. It is important to study these copyright issues of electronic commerce for they have been dealt under different approaches from legislation and case-law.

To begin with, as far as the copyright defeating devices are concerned, in Europe there were mainly two approaches to the question of the legal protection of technological protection measures. For example, while in Germany case law held the sale and distribution of copyright defeating devices as well as other devices designed to circumvent technological protection measures to be unfair competition under §1 UWG[30], in Common Law countries these acts may be dealt with under the principle of contributory infringement under copyright law[31], i.e., acts of inducing, causing and providing the means to carry out the infringement, knowing or having reason to know of the infringement. The

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[28] The WIPO Copyright and Performances and Phonograms Treaties Act of 1998.

[29] The Online Copyright Infringement Liability Limitation Act.

[30] See: OLG Stuttgart, "Feilhalten von Hardlock-Entfernen", 10.2.1989; OLG München, "Unprotect", 3.11.1994; LG München, "Dongle", 1.12.1994; OLG Frankfurt am Main, "Piratenkarten", 13.6.1995; BGB, "Dongle-Umgehung", 9.11.1995. The decision LG Manheim, "Dongle", 20.1.1995, has considered it lawful under copyright to circumvent a technological protection measure in order to correct errors of a program. In Holland case law deems those acts to constitute tort liability: See: Hague District Court, "FilmNet v. Planken", 20.11.1986; Court of Appeal, "Esselte v. Ten", 2.5.1991; Supreme Court, "Groeneveld v. Television Distribution Systems NV - TDS", 17.12.1993. See Lehmann, Grosheide, *Le droit d'auteur et protection techniques*, in Dellebeke (ed.), *Copyright in Cyberspace*, Amsterdam, 1997, p. 364-5, p. 408-9.

[31] See: UK Copyright, Designs and Patents Act of 1988, Part VII, § 296; U.S. Communications Act of 1988 [47U.S.C § 605(e)(4)] and Audio Home Recording Act of 1992 [Serial Copy Management System, 17 U.S. Code § 1002(c)]. See also NAFTA, Art. 1707; TRIPS Agreement (Art. 46); NII Copyright Protection Act of 1995 [§ 1201. Circumvention of Copyright Protection Systems; § 1202. Integrity of Copyright Management Information].

secondary infringement approach has been adopted at the European level for harmonization purposes[32].

Regarding the issue on liability of on-line services providers, in Europe two Member States (Germany[33] and Sweden[34]) have adopted specific legislation. However, in other member States, the situation of case-law is one of uncertainty. There is case law regarding liability of service providers for privacy infringement and providing access to defamatory material[35]. But there's also case law establishing no monitor obligation for online intermediaries[36]. In comparison, in the United States on-line intermediaries have been sued for copyright infringement, either for direct infringement[37], contributory infringement[38], and vicarious infringement[39].

§ 3. Information Society Services: Notion and Examples

1. Electronic commerce is based upon the so-called information society services. Before entering into the discussion of those copyright issues of electronic commerce, it is important to find a definition of those services.

The *acquis communautaire* already provides a definition of information society services. In other words, the definition of Information Society services already exists in Community law. It is provided by Directive on Technical Standards[40], and it has been adopted by Directive on Conditional Access Services[41] and Directive on Electronic Commerce[42].

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[32] See Art. 7.° of the Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs (OJ L 122, 17.5.1991, p. 42, as amended by Directive 93/98/EEC). See also, at the European level, *Green Paper on copyright and the challenge of technology - copyright issues requiring immediate action*, COM(88)172; *Green Paper on Copyright and Related Rights in the Information Society*; COM(95)382 (Sec. XI); *Follow-Up of the Green Paper on Copyright and Related Rights in the Information Society*, COM(96) 586 final, 20.11.1996.

[33] Federal Act Establishing the General Conditions for Information and Communication Services (*Informations-und Kommunikationsdienste-Gesetz*-IuKDG), August 1 1997.

[34] Act on Responsibility for Electronic Bulletin Boards (1998:112).

[35] *Estelle Haliday v. Valentin Lacambre*, February 1999, Cour d'Appel de Paris (confirming the decision of the Tribunal de Grande Instance de Paris of June 1998); *DEMON*, London High Court, March 1999 (obliging host service providers to monitor content).

[36] See *UEJF v. Calvacom, Compu-serve and others*, TGI Paris, 12 June 1996.

[37] *Playboy Enters., Inc v. Frena*, 839 F. Supp. 1552 (M.D. FLA. 1993).

[38] *Sega Enterprises v. MAPHIA*, 948 F. Supp. 923 (N.D. CAL. 1996.

[39] *Religious Technology Center v. Netcom On-line Communication Services*, Inc, 907 F. Supp. 1361 (N.D. Cal. 1995).

[40] Directive 98/34/EC of the European Parliament and the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations (OJ L 204, 21.7.1998, p.37), as amended by Directive 98/48/EC of the European Parliament and the Council of 20 July 1998 (OJ L 217, 5.8.1998, p.18).

[41] Directive 98/84/EC of the European Parliament and of the Council of 20 November 1998 on the legal protection of services based on, or consisting of, conditional access (OJ L 320, 28.11.1998, p.54).

[42] Directive on electronic commerce, Art. 2(a) [Directive 2000/31/EC of the European Parliament and of the Council of June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal market ("Directive on electronic commerce"), OJ L 178, 17.07.2000].

According to this definition, "Information Society services" are any service normally provided for remuneration (1), at a distance (or without the parties being simultaneously present) (2), by electronic means (or sent initially and received at its destination by means of electronic equipment for the processing - including digital compression- and storage of data, and entirely transmitted, conveyed and received by wire, by radio, by optical means or by other electromagnetic means) (3) and at the individual request of a recipient of services (provided through the transmission of data on individual request) (4).[43] In short, this definition covers any service normally provided for or against remuneration, at a distance, via networks, by means of electronic equipment for the processing (including digital compression) and storage of data, and at the individual request of a recipient of a service. Services which do not imply data processing and storage are not covered by this definition.

2. Information Society services span a wide range of activities of the so-called digital economy. In particular, those economic activities can consist of: selling goods on line (1), offering on-line information or commercial communications (2), providing tools allowing for search, access and retrieval of data (3), online activities via telephony and telefax (4), transmitting information via a communication network (5), providing access to a communication network (5) or hosting information provided by a recipient of the service (6)[44].

Accordingly, services that are transmitted point to point, such as video on demand or the sending of commercial communications by e-mail are Information Society services. By contrast, television broadcasting within the meaning of the Directive on Television Broadcasting Directive[45], and radio broadcasting are not Information Society services because they are not provided at individual request. Other examples of non- information

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[43] In Germany, a similar notion is provided for by §2 TDG (*Teledienstgesetz*) under Article 1 of the *Informations- und Kommunikationsdienste-Gesetz* (IuKDG), from August 1, 1997. Telecommunication services as such (§3 TDK, Telekommunikationsgesetz, July 25, 1996) and broadcasting are excluded. See Engel-Flechsig, ZUM 1997, p. 106. In Portugal, the Act on cable distribution provides interactive services of addressed nature accessible either on individual (such as Internet services and video-on-demand) or on adhesion. See Decree-Law n.° 241/97 of 18 September 1997. Moreover, the definition of information society services as provided for by Directive on Technical Standards (98/34/EC) has been introduced into national law by Decree-Law n.º 58/2000 of 18 April 2000 which implements that Directive.

[44] The DMCA provides a definition of service provider for “mere conduit” activities, according to which a service provider is an entity offering the transmission, routing, or providing connections for digital online communications, between or among points specified by a user, of material of the user’s choosing, without modification to the content of the material as sent or received [Sec. 512(k)(1)(A)]. For other activities (system caching, hosting, browsing), a service provider is defined as a provider of online services or network access, or the operator of facilities thereof [Sec. 512(k)(1)(B)].

[45] Directive 89/552/EEC of 3 October 1989 on the co-ordination of certain provisions laid down by Law, Regulation or Administrative Action in Member States concerning the pur*sui generis*t of television broadcasting activities (OJ L 298, 17.10.1989, p.23). Directive as amended by Directive 97/36/EC of the European Parliament and of the Council (OJ L 202, 30.7.1997, p. 60).

society services are: the use of electronic communication or equivalent individual communications for instance by natural persons acting outside their trade, business or profession including their use for the conclusion of contracts between such persons (1); the contractual relationship between an employee and his employer (2); activities which by their very nature cannot be carried out at a distance and by electronic means, such as the statutory auditing of company accounts or medical advice requiring the physical examination of a patient (3)[46].

PART I. Circumvention of Technological Protection Measures and Integrity of Copyright Management Information

§ 4. "Technological Adjuncts" to the Exclusive Rights

1. New opportunities to exploit works or other subject matter in the framework of on-line services are provided by new communication technologies. However, at the same time, these new technologies bring about new risks of piracy. Chapter III of the Directive Proposal on Copyright provides for protection of technological measures (1) and rights-management information (2), in order to implement the new WIPO Treaties.

It is understood that a common search for technical measures to protect works and to provide the necessary information on rights are essential insofar as the ultimate aim of these measures is to give effect to the principles and guarantees laid down in law. It means that technological protection measures and information management systems are not meant to create a sort of technological or digital property[47] that would grant rightholders more power than recognized by copyright law. For example, decompilation of a computer program for purposes of interoperability is a lawful act, and therefore the legal protection of technological measures shall not make it unlawful to circumvent that protection for purposes of decompilation. The same applies, *mutatis mutandis*, to back-up copies of computer programs or lawful access to databases.

However, "gray zones" such as private copying are dealt in a different way. In fact, private copying is not deemed to be a user's right. Accordingly, it is considered that when applying the exception on private copying, Member States shall take due account of

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[46] See Recital 18 of the Directive on Electronic Commerce (2000/31/EC).

[47] On the so-called "digital property rights" see M. Stefik, *Shifting the Possible: How Trusted Systems and Digital Property Rights Challenge Us To Rethink Digital Publishing*, Berkeley Tech. LJ 1997, p. 137. Using the expression "digital property", see also L. Harris, *Digital Property: Currency of the 21st Century*, 1998.

technological and economic developments, in particular with respect to digital private copying and remuneration schemes, when effective technological protection measures are available, since such exceptions shall not inhibit the use of technological measures or their enforcement against circumvention.

2. In the U.S., title I of the DMCA[48] implements the WIPO Treaties. These Treaties oblige member states to provide legal protection for the exploitation of works on digital networks, which serve as "technological adjuncts" to the exclusive rights granted by copyright law.

Accordingly, title I of the DMCA creates two new prohibitions, and it adds civil remedies and criminal penalties for violating the prohibitions. The new prohibitions are, one on circumvention of technological measures used by copyright owners to protect their works, and another one on tampering with copyright management information.

The DMCA[49] makes it a criminal offense to violate, willfully and for purposes of commercial advantage or private financial gain, the prohibition of circumvention of technological protection measures (section 1201) and the protection of the integrity of copyright management information (section 1202). Under Section 1204, penalties may range up to a $500,000 fine or up to five years imprisonment for a first offense, and up to a 1,000,000 fine or up to 10 years imprisonment for subsequent offenses[50]. These criminal penalties have been adopted to implement the WIPO Treaties[51] obligations to provide adequate and effective protection against circumvention of technological measures used by copyright owners to protect their works, and to prevent tampering with the integrity of copyright management information.[52]

§ 5. Circumvention of Technological Protection Measures

1. Technological development allows rightholders to make use of technological measures, namely SCMS and "cryptographic envelopes", designed to prevent and inhibit

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[48] The WIPO Copyright and Performances and Phonograms Treaties Act of 1998.

[49] The Digital Millennium Copyright Act of 1998, Pub. L. No. 105-304, 112 Stat. 2860 (Oct. 28, 1998).

[50] Courts are also given the power to grant a range of equitable and monetary remedies similar to those available under the Copyright Act, including statutory damages, and they have the discretion to reduce or remit damages in cases of innocent violations, where the violator proves that it was not aware and had no reason to believe its acts constituted a violation (section 1203). Regarding nonprofit libraries, archives and educational institutions, on one hand, they are entitled to a complete remission of damages where they prove that they were not aware and had no reason to believe their acts constituted a violation; on the other hand, they are entirely exempted from criminal liability.

[51] The WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) , December 1996.

[52] Arts. 11, 12 WCT, Arts. 18,19 WPPT.

the infringement of any copyright or any rights related to copyright, including the so-called *sui generis* rights provided by law. The danger, however, exists that illegal activities might be carried out in order to enable or facilitate the circumvention of the technical protection provided by these measures.

The Directive Proposal on Copyright is based upon the understanding that there is a need to provide for harmonized legal protection against any activity enabling or facilitating the circumvention without authority, whether granted by the rightholders or conferred by law, of such measures. Accordingly, such a legal protection is provided to technological measures that effectively inhibit and/or prevent the infringement of any copyright, rights related to copyright or *sui generis* rights provided by law, without, however, preventing the normal operation of electronic equipment and its technological development.

However, according to the Recitals of the draft Directive, such legal protection:

- implies no obligation to design devices, products, components or services to correspond to technological measures (1);

- respects proportionality and does not prohibit those devices or activities which have a commercially significant purpose or use other than to circumvent the technical protection (2);

- does not hinder research into cryptography (3);

- does not affect the specific provisions of protection provided for by Directive on Computer Programs[53], and, in particular, it does not inhibit decompilation permitted by Art. 6.° of that Directive (4).

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[53] Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs (OJ L 122, 17.5.1991, p. 42.). On this Directive see Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998. See also Czarnota, Bridget / Hart, Robert, *Legal Protection of Computer Programs in Europe. A Guide do the EC Directive*, London: Butterworths, 1991; Goldstein, Paul, *The EC Software Directive: a View from the United States*, in Lehmann/Tapper, *A Handbook of European Software Law*, p. 199; Jongen, Herald / Meijboom, Alfred (eds.), *Copyright Software Protection in the EC*, Deventer: Kluwer, 1993; Lehmann, Michael (Hrsg.), *Rechtsschtuz und Verwertung von Computerprogrammen*, 2. Aufl., Köln: Schmidt, 1993; Lehmann, Michael / Tapper, Collin (eds.), *A Handbook of European Software Law*, Oxford: Clarendon, 1993; Pereira, Alexandre Dias, Informática, direito de autor e propriedade tecnodigital, Coimbra, 1998; Idem, *Contratos de 'Software'*, in António Pinto Monteiro, *Direito dos Contratos e da Publicidade (Textos de apoio ao Curso de Direito da Comunicação no ano lectivo de 1995/1996)*, Coimbra 1996; Sucker, Michael, *The Software Directive - Between the Combat Against Piracy and the Preservation of Undistorted Competition*, in Lehmann/Tapper (eds.), *A Handbook of European Software Law*, p. 11. Among many articles, see notably, Dreier, Thomas, *The Council Directive of 14 May 1991 on the Legal Protection of Computer Programs*, EIPR 1991, p. 319; Foglia, Renato, *La direttiva CEE sulla tutela del software*, Foro 1993, p. 307; Franceschelli, Vincenzo, *La direttiva CEE sulla tutela del software: trionfo e snaturamento del diritto d'autore*, RDI 1991, p. 169; Kroker, Erik Richard, *The Computer Software Directive and the Balance of Rights*, EIPR 1997, p. 247; Lehmann, Michael, *Die Europäische Richtlinie über den Schutz von Computerprogrammen*, GRUR Int., 1991, p. 327; Moritz, Hans-Werner, *Die EG-Richtlinie vom 14. Mai 1991 über den Rechtsschutz von Computerprogrammen im Lichte der bestrebungen zur Harmonisierung des Urheberrechts*, GRUR Int. 1991, p. 697; Silva, Miguel Moura e, *Protecção de programas de computador na Comunidade Europeia*, DJ 1993, p. 253; Verstrynge, Jean-François, *Protecting Intelectual Property Rights Within the New Pan European Framework*, DIT 2/1992, p. 6; Vinje, Thomas, *Die EG-Rechtlinie zum Schutz von Computerprogrammen und die Frage der Interoperabilität*, GRUR Int. 1992, p. 250 (<=> DIT 2/1992, p. 13); Vivant, Michel, *Le programme d'ordinateur au Pays des Musées. Observations sur la*

Regarding this last aspect, the draft Directive makes it clear that the prohibition on circumvention of technological protection measures ("copyright busting devices") does not affect the reverse engineering exception, having regard of the importance of the imperative of interoperability for the promotion of global electronic communication systems. It is expressly considered that important progress has been made in the international standardization of technical systems of identification of works and protected subject matter in digital format. Moreover, in an increasingly networked environment, differences between technological measures could lead to an incompatibility of systems within the Community. In order to encourage compatibility and interoperability of the different systems and to encourage the development of global systems[54], it is expressly considered that the legal protection of technological protection measures shall not inhibit decompilation permitted by Directive on Computer Programs.

In our opinion, the terms under which this Directive provides for the lawfulness of reverse engineering[55] do include hard-, soft- and dataware interoperability, according to the definition of interoperability thereby provided ("the ability to exchange information and mutually to use the information which has been exchanged"). In the digital environment there is no "wine" (data) without "bottles" (software). If one has "the right to drink the wine", then *a fortiori* one should be entitled "to open the bottle", and vice versa. And one should also be allowed to manufacture and market devices for opening the bottle. The same applies, for example, for back-up copies, error correction, and "other legitimate

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directive du 14 mai 1991, JCP 1991, p. 485; Idem, *Ingénierie inverse, ingénierie perverse?*, JCP 1991, p. 56; Voss, Christopher, *The Legal Protection of Computer Programs in the European Economic Community*, CLJ 1992, p. 441; Wiebe, Andreas, *European Copyright Protection of Software from a German Perspective*, CL&P 1993, p. 79; Idem, *Reverse Engineering und Gemeinsschutz von Computerprogrammen*, CR 1992, p. 134; Zeno-Zencovich, Vincenzo, *La direttiva comunitaria sulla tutela giuridica dei programmi per elaboratore*, DII 1992, p. 25.

The EC Directive has been implemented into Portugal by Decree-Law n.° 242/94 of 20 October. For an analysis of the Portuguese software law see, notably, Cordeiro, Pedro da Costa, *A lei portuguesa do 'software'*, ROA 1994, p. 713; Rocha, Manuel Lopes / Cordeiro, Pedro, *A protecção jurídica do software*, 2.ª ed., Lisboa: Cosmos, 1995; Pereira, Alexandre Dias, *Informática, direito de autor e propriedade tecnodigital*, Coimbra, 1998; Idem, *Contratos de 'Software'*, in António Pinto Monteiro, *Direito dos Contratos e da Publicidade (Textos de apoio ao Curso de Direito da Comunicação no ano lectivo de 1995/1996)*, Coimbra 1996; Saavedra, Rui, *A protecção jurídica do software e a Internet*, Lisboa: SPA/D.Quixote, 1998; Vieira, José Alberto, *Notas gerais sobre a protecção de programas de computador em Portugal*, in *Direito da Sociedade da Informação*, FDUL/APDI, Vol. I, Coimbra: Coimbra Editora, 1999, p. 73.

[54] An example of the importance of interoperability in electronic communications is provided by Decision n.° 1720/1999/EC of the European Parliament and of the Council of 12 July 1999 adopting a series of actions and measures in order to ensure interoperability of access to trans-European networks for the electronic interchange of data between administrations (IDA).

[55] See M. Lehmann, *Die europäische Richtlinie über den Schutz von Computerprogrammen*, in M. Lehmann (Hrsg.), *Rechtsschutz und Verwertung von Computerprogrammen,* 2.Aufl.,1993, p. 4.

purposes". I also argue that even if genetic software code (algorithms and so on) is to be protected by patent law or trade-secret law[56], the imperative of interoperability in electronic communications, as provided for by Directive on Computer Programs, should prevail over such legal forms of protection. In fact, the decompilation exception is not a strict copyright exception, but indeed a intellectual property exception *tout court*.[57].

The Directive on Computer Programs already required Member States to provide special measures of protection (Art. 7), in particular appropriate remedies against a person committing any act of putting into circulation, or the possession for commercial purposes of, any means the sole intended purpose of which is to facilitate the unauthorized removal or circumvention of any technical device which may have been applied to protect a computer program (Art. 7, par. 1, Ind. c).

This secondary infringement is provided without prejudice of the decompilation exception for interoperability purposes[58]. The Community's legal framework on the protection of computer programs bas been in the first instance limited to establishing that Member States should accord protection to computer programs under copyright law as literary works. However, this copyright approach is mitigated by a *sui generis generis* provision on decompilation. In fact, the unauthorized reproduction, translation, adaptation or transformation of the form of the code in which a copy of a computer program has been made available constitutes an infringement of the exclusive rights of the author.

Nevertheless, it is considered that circumstances may exist when such a reproduction of the code and translation of its form within the meaning of Article 4 (a) and (b)[59] are

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[56] See the Report of the European Commission, COM(2000) 1999 final, 10.04.2000.

[57] See Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998, §§ 52, 54, 55; see also Idem, *Internet, direito autor e acesso reservado*, in *As Telecomunicações e o Direito na Sociedade da Informação*, Instituto Jurídico da Comunicação, Coimbra 1999, p. 272; Idem, *Comércio Electrónico na Sociedade da Informação: Da Segurança Técnica à Confiança Jurídica*, Almedina: Coimbra, 1999, p. 17-8; Idem, *Programas de Computador, Sistemas Informáticos e Comunicações Electrónicas: Alguns Aspectos Jurídico-Contratuais*, ROA, 1999, pp. 994-5.

[58] Directive on Computer Programs, Article 6 (Decompilation): 1. The authorization of the rightholder shall not be required where reproduction of the code and translation of its form within the meaning of Article 4 (a) and (b) are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that the following conditions are met: (a) these acts are performed by the licensee or by another person having a right to use a copy of a program, or on their behalf by a person authorized to do so; (b) the information necessary to achieve interoperability has not previously been readily available to the persons referred to in subparagraph (a); and (c) these acts are confined to the parts of the original program which are necessary to achieve interoperability.

[59] According to Article 4 (restricted Acts), subject to the provisions of Articles 5 and 6, the exclusive rights of the rightholder within the meaning of Article 2, shall include the right to do or to authorize: (a) the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole. Insofar as loading, displaying, running, transmission or storage of the computer program necessitate such reproduction, such acts shall be subject to authorization by the rightholder; (b) the translation, adaptation, arrangement and any other alteration of a computer program and the reproduction of the results thereof, without prejudice to the rights of the person who alters the program; (…). Other exceptions are provided for

indispensable to obtain the necessary information to achieve the interoperability of an independently created program with other programs. In order to promote the imperative of interoperability, it is considered that in these limited circumstances only, performance of the acts of reproduction and translation by or on behalf of a person having a right to use a copy of the program is legitimate and compatible with fair practice and must therefore be deemed not to require the authorization of the rightholder.[60]

An objective of this exception is to make it possible to connect all components of a computer system, including those of different manufacturers, so that they can work together. In fact, it is considered that the function of a computer program is to communicate and work together with other components of a computer system and with users. For this purpose, a logical and, where appropriate, physical interconnection and interaction is required to permit all elements of software and hardware to work with other software and hardware and with users in all the ways in which they are intended to function. The parts of the program which provide for such interconnection and interaction between elements of software and hardware are generally known as 'interfaces', and this functional interconnection and interaction is generally known as 'interoperability'. Such interoperability can be defined as the ability to exchange information and mutually to use the information which has been exchanged[61].

It should be noted that the Directive on Computer Programs provides a *sui generis generis* intellectual property right on the information necessary to achieve interoperability, since it cannot be used for goals other than to achieve the interoperability of the

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under Article 5, according to which: in the absence of specific contractual provisions, the acts referred to in Article 4 (a) and (b) shall not require authorization by the rightholder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose, including for error correction (1); the making of a back-up copy by a person having a right to use the computer program may not be prevented by contract insofar as it is necessary for that use (2); the person having a right to use a copy of a computer program shall be entitled, without the authorization of the rightholder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do (3).

This Article shall, however, be interpreted according to the Recital where it is stated that: 1. the exclusive rights of the author to prevent the unauthorized reproduction of his work have to be subject to a limited exception in the case of a computer program to allow the reproduction technically necessary for the use of that program by the lawful acquirer - this means that the acts of loading and running necessary for the use of a copy of a program which has been lawfully acquired, and the act of correction of its errors, may not be prohibited by contract; 2. moreover, in the absence of specific contractual provisions, including when a copy of the program has been sold, any other act necessary for the use of the copy of a program may be performed in accordance with its intended purpose by a lawful acquirer of that copy; 3. finally, a person having a right to use a computer program should not be prevented from performing acts necessary to observe, study or test the functioning of the program, provided that these acts do not infringe the copyright in the program.

[60] Moreover, the provisions of the Directive on Computer Programs are without prejudice to the application of the competition rules under Articles 85 and 86 of the Treaty if a dominant supplier refuses to make information available which is necessary for interoperability as defined in this Directive. Furthermore, the Community is fully committed to the promotion of international standardization, and the provisions of this Directive are without prejudice to specific requirements of Community law already enacted in respect of the publication of interfaces in the telecommunications sector or Council Decisions relating to standardization in the field of information technology and telecommunication.

[61] Directive on computer programs, Recitals 10-12.

independently created computer program (Art. 7, 2(a)), even if it does not constitute copyright infringement[62]. In fact, the object of copyright protection is defined in three steps.[63]

First, Member States are required to protect computer programs, by copyright, as literary works within the meaning of the Bern Convention for the Protection of Literary and Artistic Works. For the purposes of this Directive, the term 'computer programs' shall include: 1. programs in any form, including those which are incorporated into hardware; 2. their preparatory design material leading to the development of a computer program provided that the nature of the preparatory work is such that a computer program can result from it at a later stage.

Second, protection applies to the expression in any form of a computer program. It means that ideas and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright under this Directive. Any way, for the avoidance of doubt, the Recital makes it clear that only the expression of a computer program is protected and that ideas and principles which underlie any element of a program, including those which underlie its interfaces, are not protected by copyright under the Directive. In accordance with this principle of copyright, to the extent that logic, algorithms and programming languages comprise ideas and principles, those ideas and principles are not protected under this Directive.

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[62] According to Article 7, 2, the provisions of paragraph 1 shall not permit the information obtained through its application: (a) to be used for goals other than to achieve the interoperability of the independently created computer program; (b) to be given to others, except when necessary for the interoperability of the independently created computer program; or (c) to be used for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright. 3. In accordance with the provisions of the Bern Convention for the protection of Literary and Artistic Works, the provisions of this Article may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the right holder's legitimate interests or conflicts with a normal exploitation of the computer program.

This result is different from what is provided for integrated circuits. See Art. 5 of the Council Directive 87/54/EEC of 16 December 1986 on the legal protection of topographies of semiconductor products. See also §906(a) the U.S. Semiconductor Chip Protection Act of 1984, and Art. 6(2) of the Treaty on Protection of Intellectual Property in Respect of Integrated Circuits (WIPO, 1989). On the legal protection of topographies of semiconductor products see Alexandre Dias Pereira, *Circuitos Integrados: Protecção Jurídica de Topografias de Produtos Semicondutores*, in *Direito Industrial*, FDUL/ADPI, 2000; see also Ascensão, José de Oliveira, *Direitos do utilizador de bens informáticos*, in *Comunicação e Defesa do Consumidor*, Actas do Congresso Internacional organizado pelo Instituto Jurídico da Comunicação da Faculdade de Direito da Universidade de Coimbra, de 25 a 27 de Novembro de 1993, Coimbra 1996; Christie, Andrew, *Integrated Circuits and their Contents: International Protection*, London, 1995, p. 136; Franceschelli, Vincenzo, *La protezione giuridica del firmware e delle topografie dei prodotti a semiconduttori*, Rivista di Diritto Industrialle, 1988, p. 232; Giannantonio, Ettore, *The legal protection of semiconductor chips* , in E. Giannantonio (ed.), *Law and Computers*, Selected Papers from the 4th International Congress of the Italian Corte Suprema di Cassazione, Rome Spring 1998, I. *Legal Informatics*, p. 1221; Gotzen, Frank (ed.), *Chip Protection: A New Form of Intellectual Property*, Brussel: Bruylant, 1990; Mendes, Manuel Ohen, *Tutela Jurídica das Topografias de Circuitos Integrados*, in *Direito da Sociedade da Informação*, Vol. I, Coimbra: Coimbra Editora, 1999, p. 89; Pereira, Alexandre Dias, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998; Oman, R., *Urheberrecht, Computerprogramme und Halbleiterchips in den USA*, GRUR Int. 1992, p. 886; Schroeder, Dirk, *Computer Software Protection and Semiconductorchips*, London: Butterworths, 1990; Vivant, Michel, *Pour une épure de la propriété intellectuelle*, in *Propriétés Intellectuelles*, Mélanges en l'honneur de André Françon, Paris: Dalloz, 1995.

[63] See Directive on computer programas, Article 1.°, Recitals 6-8 and 13-15.

Furthermore, in accordance with the legislation and jurisprudence of the Member States and the international copyright conventions, the expression of those ideas and principles is to be protected by copyright.[64]

Third, a computer program shall be protected if it is original in the sense that it is the author's own intellectual creation. No other criteria shall be applied to determine its eligibility for protection. In fact, in respect of the criteria to be applied in determining whether or not a computer program is an original work, no tests as to the qualitative or aesthetic merits of the program should be applied.

In our opinion, the definition of the object of protection does not include logic, algorithms and programming languages as such. They are considered elements of computer programs, they are distinguished from ideas and principles, and they are considered to be a form of expression, which also covers preparatory design material leading to the development of a computer program. However, this form of expression is not original in the sense that their form of expression is exactly their functional content, and functional methods and operative processes are not copyrightable.[65]

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[64] This basic principle on the scope of protection of copyright has been recently adopted at the international level by the TRIPS Agreement (Art. 10, 1) and the WIPO Treaty on Copyright (Art. 4), and was already provided for (§ 102(b)) by the the US Copyright Act (1976) according to case law (*Baker v. Selden*, 1879). The US Courts have done a strict application of this principle when protecting computer programs as literary works: see, for example, "Whelan" (1986) "Lotus v. Paperback" (1990), "Computer Associates" (1992), "Lotus v. Borlan" (1992) e "Apple v. Microsoft" (1994). The result was that the "Golden Nugget" of software, its most valuable part, was left unprotected, and now there is strong call for software patent protection. On the US experience see, namely, Ginsburg, Jane, *Four Reasons and a Paradox: The Manifest Superiority of Copyright over Sui generis Generis Protection of Computer Software*, Columbia Law Review 1994, p. 2559; Lunney Jr., Glynn, *Lotus v. Borland: Copyright and Computer Programs*, Tulane LR 1996, p. 2397; Menell, Peter, *An Analysis of the Scope of Copyright Protection for Application Programs*, Stanford LR 1989, p. 1045; Miller, Arthur R., *Copyright Protection for Computer Programs, Databases and Computer-generated works: Is Anything New Since CONTU?*, Harvard LR 1993, p. 977; Samuelson, Pamela / Davis, Randal / Kapor, Mitchell / Reichmann, J. H., *A Manifesto on the Legal Protection for Computer Programs*, Columbia LR 1994, p. 2318; Schachter, Roditi, *La protezione giuridica del software negli Stati Uniti*, Lda 1985, p. 171; Vance, Verne, *Three United States Courts Take a Closer Look at the 'look and feel' of Computer Software*, CL&P 1993, p. 14; Weinreb, Lloyd L., *Copyright for Functional Expression*, Harvard LR 1998, p. 1251; Wilkins, Jon S., *Protecting Computer Programs as Compilations under Computer Associates v. Altai*, Yale LJ 1994, p. 435. Veja-se, também, Drexl, J., *What is Protected in a Computer Program? Copyright Protection in the United States and Europe*, New York: VCH, 1994; Merger, Robert / Menell, Peter / Lemley, Mark / Jorde, Thomas, *Intellectual Property in the New Technological Age*, New York: Aspen, 1997; Samuelson, Pamela, *Computer Software Copyright Law in the United States: 1992 and Beyond*, in Meijboom / Prins (eds.), *The Law of Information Technology in Europe 19992*, Amsterdam: Kluwer, 1991.

[65] See Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998, §§ 25, 41, 52. On the legal protection of computer programs, specially under copyright law, see also Ascensão, José de Oliveira, *A protecção jurídica dos programas de computador*, ROA, 1990, p. 69; Besarovic, Vesna, *La protection juridique des programmes d'ordinateur*, Lda 1987, p. 146; Dietz, Adolf, *Copyright Protection for Computer Programs: Trojan Horse or Stimulus for the Future Copyright System?*, UFITA 1989, p. 57; Dreier, Thomas, *Rechtsschutz von Computerprogrammen*, CR 1991, p. 577; Jehoram, Cohen, *Hybrids on the Borderline Between Copyright and Industrial Property Law*, RIDA 1992, p. 107; Florida, Giorgio, *La protezione del software nel sistema delle esclusive sulle creazioni intelletualli*, DII 1989, p. 71; Franceschelli, Vincenzo, *Computer, diritto e protezione giuridica del software*, Rdc 1986, p. 371; Lucas, André, *Les programmes d'ordinateur comme objet de droits intellectuels*, JCP 1982, p. 3081; *Tailoring Legal Protection for Computer Software*, Stanford LR 1987, p. 1329; Rebello, Luiz Francisco, *Protecção Jurídica dos Programas de Computador*, *Memórias da Academia de Ciências de Lisboa*, XXIII, 1983, p. 201; Rogel Vide, Carlos, *Nuevas Tecnologias y Propiedad Literaria*, RDP 1996, p. 699; Alpa, Guido (a cura di), *La tutela giuridica del software*, Milano: Giuffrè, 1984; Bertrand, André, *La protection des logiciels*, Paris: PUF, 1994; Dworkin, Gerald , *Copyright, Patent or Sui generis Generis Protection for Computer Programs*, in Hansen, Hugh (ed.), *International Intellectual Property Law and Policy*, I, London:

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These elements are, in short, the information necessary to achieve interoperability. The Directive on Computer Programs provides a *sui generis generis* intellectual property right in this technological information since it cannot be used for goals other than to achieve the interoperability of the independently created computer program (Art. 7, 2(a)), even if it does not constitute copyright infringement[66]. On the other hand, these elements might be protected under patent law[67]. In fact, protection of computer programs under copyright law is without prejudice to the application, in appropriate cases, of other forms of protection; however, any contractual provisions contrary to Article 6 are deemed null and void[68]. In our opinion, the limitation to the contractual freedom should also apply even if those elements were protected under patent law, unfair competition or trade secrets.

2. The Directive Proposal on Copyright obliges to provide adequate legal protection against the circumvention and against circumvention related activities regarding the obligations as to technological measures (Art. 6).[69]

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[66] Article 7, 2: The provisions of paragraph 1 shall not permit the information obtained through its application: (a) to be used for goals other than to achieve the interoperability of the independently created computer program; (b) to be given to others, except when necessary for the interoperability of the independently created computer program; or (c) to be used for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright. 3. In accordance with the provisions of the Bern Convention for the protection of Literary and Artistic Works, the provisions of this Article may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the right holder's legitimate interests or conflicts with a normal exploitation of the computer program.

[67] See the Report of the European Commission, COM(2000) 199 final, 10.04.2000, p. 20-1. See also *Promoting innovation through patents - Green Paper on the Community patent and the patent system in Europe*, COM(97)314, June 1997. Specifically on the question of software patenteability, see Alexandre Dias Pereira, *Patentes de Software: Sobre a Patenteabilidade dos Programas de Computador*, in *Direito Industrial*, FDUL/APDI, 2000. See also, *inter alia*: Hanneman, Henri W., *The Patenteability of Computer Software*, Deventer: Kluwer, 1985; Teufel, Fritz, *Patentschutz für Software im amerikanisch-europäischen Vergleich*, in Fiedler, Herbert / Ullrich, Hanns (Hrsg.), *Information als Wirtschaftsgut*, Köln: Schmidt, 1997, p. 183; Benyacar, David, *Mathematical Algorithm Patenteability: Understanding the Confusion*, Rutgers LJ 1993, p. 129; Christie, Andrew / Syme, Serena, *Patents for Algorithms in Australia*, Sydney LR, 1998, p. 517; Dragotti, Gualtiero, *Software, brevetti e copyright: le esperienze statunitensi*, RDI 1994, I, p. 539; Hellfel, Axel von, *Hardware, Firmware, Software: Is the Exclusion of Software Patenteability Realistic in the Light of Technological Developments?*, CL&P 1993, p. 18; Kindermann, Manfred, *Softwarepatentierung*, CR 1992, p. 577, p. 658; Merges, Robert P., *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts*, Berkeley Tech. LJ. 1999, p. 577; Newman, Jonathan, *The Patenteability of Computer-Related Inventions in Europe*, EIPR 1997, p. 701; Swinson, John, *Copyright or Patent or Both: An Algorithmic Approach to Computer Software Protection*, Harvard JOLT 1991, p. 145-214; Ullmann, Eike, *Urheberrechtlicher und patentrechtlicher Schutz von Computerprogrammen (Aufgaben der Rechsprechung)*, CR 1992, p. 641; Vietzke, Lance, *Software Patent Protection*, CLJ 1993, p. 25; Wiebe, Andreas, *Know-how-Schutz von Computersoftware (Eine rechtsvergleichende Untersuchung der wettbewerbsrechtl. Schutzmöglichkeiten in Deutschland und den USA)*, München: Beck, 1993.

[68] Article 9 (Continued application of other legal provisions): 1. The provisions of this Directive shall be without prejudice to any other legal provisions such as those concerning patent rights, trade-marks, unfair competition, trade secrets, protection of semi-conductor products or the law of contract. Any contractual provisions contrary to Article 6 or to the exceptions provided for in Article 5 (2) and (3) shall be null and void.

[69] The initial Proposal was not directed simply against the circumvention of technological measures as in the WIPO Treaties, but covered only any activity, including preparatory activities such as the manufacture and distribution, as well as services, that facilitate or enable the circumvention of these devices. In fact, it was considered that the real danger for intellectual property rights would not be the single act of circumvention by individuals, but the preparatory acts carried out by commercial companies that could produce, sell, rent, or

On one hand, Member States are required to provide adequate legal protection against the circumvention without authority of any effective technological measures designed to protect any copyright or any rights related to copyright as provided by law or the *sui generis generis* right provided for in Chapter III of Directive on Databases[70], which the person concerned carries out in the knowledge, or with reasonable grounds to know that he or she pursues that objective[71].

On the other hand, they are required to provide adequate legal protection against any activities, including the manufacture or distribution of devices, products or components or the provision of services, carried out without authority, which are promoted, advertised or marketed for the purpose of circumvention of (1), or have only a limited commercially significant purpose or use other than to circumvent (2), or are primarily designed, produced, adapted or performed for the purpose of enabling or facilitating the circumvention (3)[72] of, any effective technological measures[73] designed to protect any copyright or any right related to copyright as provided by law or the *sui generis* right provided for in Chapter III of Directive on Databases (4).[74]

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advertise circumventing devices. This was also the original Proposal of the NII Copyright Protection Act of 1995 (§ 1201).

[70] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases (OJ L 77, 27.3.1996, p. 20).

[71] A similar expression ("knowingly or having reasonable grounds to know") is already used in the provisions on enforcement in the WTO/TRIPS Agreement (Art. 45.°). It excludes from protection those activities which are carried out without the knowledge that they will enable circumvention of technological protection devices.

[72] This solution ensures that general-purpose electronic equipment and services are not outlawed merely because they may also be used in breaking copy protection or similar measures.

[73] For purposes of this provision "technological measures" are defined as any technology, device or component that, in the normal course of its operation, is designed to prevent or inhibit the infringement of any copyright or any right related to copyright as provided by law or the *sui generis generis* right provided for in Chapter III of Directive on Databases. Moreover, those technological measures shall be deemed "effective" where the access to or use of a protected work or other subject matter is controlled through application of an access code or any other type of protection process which achieves the protection objective in an operational and reliable manner with the authority of the right holders. Such measures may include decryption, descrambling or other transformation of the work or other subject matter.

[74] Moreover, the protection of technological measures provided for by Directive Proposal on Copyright is complemented by Directive on Conditional Access Services (Directive 98/84/EC of the European Parliament and of the Council of 20 November 1998 on the legal protection of services based on, or consisting of, conditional access). Protection is granted to the following services, where provided against remuneration and on the basis of conditional access: television broadcasting (1) radio broadcasting (2), and information society services (3); or the provision of conditional access to the above services considered as a service in its own right (4). The legal protection of service providers against illicit devices which allow access to these services free of charge is deemed necessary in order to ensure the economic viability of the services. According to the Directive, Member States are required to provide appropriate legal protection against the placing on the market, for direct or indirect financial gain, of an illicit device which enables or facilitates without authority the circumvention of any technological measures designed to protect the remuneration of a legally provided service. Those commercial activities which concern illicit devices include commercial communications covering all forms of advertising, direct marketing, sponsorship, sales promotion and public relations promoting such products and services. In this sense, certain activities are considered infringing: the manufacture, import, distribution, sale, rental or possession for commercial purposes of illicit devices (1); the installation, maintenance or replacement for commercial purposes of an illicit device (2); and the use of commercial communications to promote illicit devices (3). Regarding the private possession of illicit devices, this Directive is without prejudice to the application of any national provisions which may prohibit the private

B. Technological Protection for Databases: The *Sui generis Generis* Right and Public Domain Information

The draft Directive extends the prohibition on circumvention of technological protection measures to this intellectual property *sui generis generis* right created by the European legislator[75]. This result is not currently admitted in the U.S. in view of the *Feist* decision[76], which requires that for a database to be copyrightable it must be original in the sense that it must have "a modicum of creativity". The same applies to the integrity of copyright management information.

Accordingly, if the investment in the production of a database is worth protecting under the *sui generis generis* right, the maker will have the right to prevent access to, extraction from and re-utilization of his database content to every one without authority, even if that content is purely made of public domain information. And the same applies to the integrity of management information of his "*sui generis* generis" right. Nonetheless, it is considered that Article 10 (1) of the Bern Convention is not affected by this Directive[77], in order to leave some room left, although minimal if one considers the exceptions to the *sui generis generis* right, for the free flow of information.

1) Protection of investment

Chapter III of the Directive on Database Protection provides the so-called *sui generis generis* right. The creation of the *sui generis generis* right is based upon consideration that, although copyright remains an appropriate form of exclusive right for authors who have created databases, nevertheless, in the absence of a harmonized system of unfair-

possession of illicit devices. See *Green Paper on the Legal Protection of Encrypted Services in the Internal Market*, COM(96)76, March 1996

[75] See Chapter III (*sui generis generis* right) of the Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the Legal Protection of Databases. On this Directive see, notably, Alexandre Dias Pereira, *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998, specially §§ 39 *et seq.* e § 53; see also Cornish *et al.*, *Protection of and vis-à-vis databases*, in Dellebeke (ed.), *Copyright in Cyberspace: Copyright and the Global Information Infrastructure*, ALAI, Amsterdam: Cramwinckel, 1997, p. 435 s; Lehmann, *Die neue Datenbankrichtlinie und Multimedia*, NJW-CoR 1996, p. 249; Mallet- Poujol, *La directive concernant la protection juridique des bases de donées: la gageure de la protection privative*, DIT 1/1996, p. 6; Weber, *Schutz von Datenbanken: Ein neues Immaterialgüterrecht*, UFITA 1996, p. 5; Goebel, *Informations- und Datenbankschutz in Europa*, in Heymann (Hrsg.), *Informationsmarkt und Informationsschutz in* Europa, p. 106; Berger, *Der Schutz elektronischer Datenbanken nach der EG-Richtlinie vom 11.3.1996*, GRUR 1997, p. 169; Flechsig, *Der rechtliche Rahmen der europäischen Richtlinie zum Schutz von Datenbanken*, ZUM 1997, p. 577; Guglielmetti, *La tutela delle banche dati con diritto sui generis generis nella direttiva 96/9 CE*, CI 1997, p. 177; Tissot, *La protection juridique du contenu des autoroutes de l'information*, in Hilty (Hrsg.), *Information Highway*, p. 199; Glavarría Iglesia / Torre Forcadelli, *La protección jurídica de las bases de datos por el derecho de autor*, RDM 1998, p. 1830. The Databases Directive has been implemented into Portuguese national law by Decree-Law n.° 122/2000 of 4 July.

[76] *Feist Publications Inc. v. Rural Telephone Service Co. Inc.* (1991).

[77] See Recital 37 of the Directive on Database Protection.

competition legislation or of case-law, other measures are required in addition to prevent the unauthorized extraction and/or re-utilization of the contents of a database[78]. It is considered that the making of databases requires the investment of considerable human, technical and financial resources while such databases can be copied or accessed at a fraction of the cost needed to design them independently. It means that the unauthorized extraction and/or re-utilization of the contents of a database constitute acts which can have serious economic and technical consequences. And, therefore, protection of investment in the making of databases is deemed necessary.

On the other hand, databases are considered a vital tool in the development of an information market within the Community, and this tool will also be of use in many other fields. In fact, the exponential growth, in the Community and worldwide, in the amount of information generated and processed annually in all sectors of commerce and industry calls for investment in all the Member States in advanced information processing systems[79]. Such an investment in modern information storage and processing systems would not take place within the Community unless a stable and uniform legal protection regime was introduced for the protection of the rights of makers of databases In fact, the increasing use of digital recording technology exposes the database maker to the risk that the contents of his database may be copied and rearranged electronically, without his authorization, to produce a database of identical content which, however, does not infringe any copyright in the arrangement of his database. In addition to aiming to protect the copyright in the original selection or arrangement of the contents of a database, this Directive seeks to safeguard the position of makers of databases against misappropriation of the results of the financial and professional investment made in obtaining and collection the contents by protecting the whole or substantial parts of a database against certain acts by a user or competitor.

The object of this *sui generis generis* right is to ensure protection of any investment in obtaining, verifying or presenting the contents of a database for the limited duration of the right. Such investment may consist in the deployment of financial resources and/or the expending of time, effort and energy. Moreover, the objective of the *sui generis generis* right is to give the maker of a database the option of preventing the unauthorized extraction and/or re-utilization of all or a substantial part of the contents of that database.

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[78] Moreover, it is provided by the Recital that in addition to the protection given under this Directive to the structure of the database by copyright, and to its contents against unauthorized extraction and/or re-utilization under the *sui generis generis* right, other legal provisions in the Member States relevant to the supply of database goods and services continue to apply.

[79] By the time of adoption of the Directive on Databases Protection there was a very great imbalance in the level of investment in the database sector both as between the Member States and between the Community and the world's largest database-producing third countries.

2) Definition of Databases

Regarding the definition of databases, this Directive concerns the legal protection of databases in any form, and for its purposes, 'database` shall mean a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means.[80] Protection applies to collections, sometimes called 'compilations`, of works, data or other materials which are arranged, stored and accessed by means which include electronic, electromagnetic or electro-optical processes or analogous processes. Electronic databases within the meaning of this Directive may also include devices such as CD-ROM and CD-i. However, protection under this Directive is extended to cover non-electronic databases, and it relates to databases in which works, data or other materials have been arranged systematically or methodically, although it is not necessary for those materials to have been physically stored in an organized manner.

Moreover, the term 'database` is understood to include literary, artistic, musical or other collections of works or collections of other material such as texts, sound, images, numbers, facts, and data, and it covers collections of independent works, data or other materials which are systematically or methodically arranged and can be individually accessed. On the contrary, a recording or an audiovisual, cinematographic, literary or musical work as such does not fall within the scope of this Directive. Also, as a rule, the compilation of several recordings of musical performances on a CD does not come within the scope of this Directive, both because, as a compilation, it does not meet the conditions for copyright protection and because it does not represent a substantial enough investment to be eligible under the *sui generis generis* right. Third, the term 'database` is not taken to extend to computer programs used in the making or operation of a database[81], although it is considered that protection under this Directive may also apply to the materials necessary for the operation or consultation of certain databases such as thesaurus and indexation systems.

3) The *Sui generis Generis* Right: Object, Owners and Users' Rights

The object of protection is defined under Article 7, according to which Member States are required to provide for a right for the maker of a database[82] which shows that there

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[80] See Article 1, par. 1 and 2.

[81] In fact, protection under this Directive does not apply to computer programs used in the making or operation of databases accessible by electronic means (Art. 1, 3). Those computer programs are protected by Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs.

[82] According to Recital 41, the maker of a database is the person who takes the initiative and the risk of investing, and this excludes subcontractors in particular from the definition of maker. On the other hand,

has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction[83] and/or re-utilization[84] of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database (1). Moreover, the repeated and systematic extraction and/or re-utilization of insubstantial parts of the contents of the database implying acts which conflict with a normal exploitation of that database or which unreasonably prejudice the legitimate interests of the maker of the database shall not be permitted (4). According to the Recital, the special right to prevent unauthorized extraction and/or re-utilization relates to acts by the user which go beyond his legitimate rights and thereby harm the investment, and the right to prohibit extraction and/or re-utilization of all or a substantial part of the contents relates not only to the manufacture of a parasitical competing product but also to any user who, through his acts, causes significant detriment, evaluated qualitatively or quantitatively, to the investment (42). In fact, notwithstanding the right to prevent extraction and/or re-utilization of all or a substantial part of a database, it is laid down that the maker of a database or rightholder may not prevent a lawful user of the database from extracting and re-utilizing insubstantial parts. However, that user may not unreasonably prejudice either the legitimate interests of the holder of the *sui generis generis* right or the holder of copyright or a related right in respect of the works or subject matter contained in the database (49).

Accordinlgy, Article 8 provides for rights and obligations of lawful users. On one hand, the maker of a database which is made available to the public in whatever manner may not prevent a lawful user of the database from extracting and/or re-utilizing insubstantial

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according to Article 11, the right to prevent unauthorized extraction and/or re-utilization in respect of a database applies to databases whose makers are nationals or habitual residents of third countries or to those produced by legal persons not established in a Member State, within the meaning of the Treaty, only if such third countries offer comparable protection to databases produced by nationals of a Member State or persons who have their habitual residence in the territory of the Community. In fact, Article 11 provides that the *sui generis generis* right applies to database whose makers or right holders are nationals of a Member State or who have their habitual residence in the territory of the Community, as well as to companies and firms formed in accordance with the law of a Member State and having their registered office, central administration or principal place of business within the Community; insofar as, where such a company or firm has only its registered office in the territory of the Community, its operations are genuinely linked on an ongoing basis with the economy of a Member State. However, agreements extending the *sui generis generis* right to databases made in third countries and falling outside those provisions may be concluded by the Council acting on a proposal from the Commission.

[83] 'Extraction` means the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form (Art. 7, 1(a)). It is considered that when on-screen display of the contents of a database necessitates the permanent or temporary transfer of all or a substantial part of such contents to another medium, that act should be subject to authorization by the rightholder. See Recital 44.

[84] 'Re-utilization` means any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by on-line or other forms of transmission. The first sale of a copy of a database within the Community by the rightholder or with his consent shall exhaust the right to control resale of that copy within the Community (Art. 7, 1(b)). However, in the case of on-line transmission, the right to prohibit re-utilization is not exhausted either as regards the database or as regards a material copy of the database or of part thereof made by the addressee of the transmission with the consent of the rightholder (50). Moreover, public lending is not an act of extraction or re-utilization.

parts of its contents, evaluated qualitatively and/or quantitatively, for any purposes whatsoever[85]. On the other hand, however, a lawful user of a database which is made available to the public in whatever manner may not perform acts which conflict with normal exploitation of the database or unreasonably prejudice the legitimate interests of the maker of the database. Moreover, a lawful user of a database which is made available to the public in any manner may not cause prejudice to the holder of a copyright or related right in respect of the works or subject matter contained in the database.

4) The *sui generis generis* right and copyright protection

The *sui generis generis* right, which may be transferred, assigned or granted under contractual license, applies irrespective of the eligibility of that database for protection by copyright or by other rights and of the contents of that database for protection by copyright or by other rights.

Chapter II provides for copyright protection of databases. First, regarding the object and criteria of protection (Art. 3), databases which, by reason of the selection or arrangement of their contents, constitute the author's own intellectual creation shall be protected as such by copyright. No other criteria applies to determine their eligibility for that protection. In fact, the criteria used to determine whether a database shall protected by copyright is defined to the fact that the selection or the arrangement of the contents of the database is the author's own intellectual creation, and such protection covers (only) the structure of the database. No criterion other than originality in the sense of the author's intellectual creation is applied to determine the eligibility of the database for copyright protection, and in particular no aesthetic or qualitative criteria should be applied[86].

The author's exclusive rights includes *inter alia* the right to determine the way in which his work is exploited and by whom, and in particular to control the distribution of his work to unauthorized persons. According to Article 5, the author of a database has the exclusive right to carry out or to authorize, in respect of the expression of the database which is protectable by copyright, the following acts: 1. temporary or permanent reproduction by any means and in any form, in whole or in part; 2. translation, adaptation, arrangement and any other alteration, and any reproduction, distribution, communication, display or performance to the public of the results of these acts; 3. any communication,

[85] The same applies where the lawful user is authorized to extract and/or re-utilize only part of the database, in respect only to that part. It should be noted that Article 15 provides for the binding nature of some provisions, in terms that any contractual provision contrary to Articles 6 (1) and 8 shall be null and void.

[86] See Recital 16.

display or performance to the public; 4. any form of distribution to the public of the database or of copies thereof[87].

On the other hand, Article 6 provides for exceptions to the author's exclusive rights. A list is drawn up of exceptions to restricted acts, taking into account the fact that copyright as covered by this Directive applies only to the selection or arrangements of the contents of a database. Accordingly, Member States are given the option of providing for such exceptions in certain cases. However, this option must be exercised in accordance with the Bern Convention and to the extent that the exceptions relate to the structure of the database. Moreover, a distinction is drawn between exceptions for private use and exceptions for reproduction for private purposes, which concerns provisions under national legislation of some Member States on levies on blank media or recording equipment.

So, to begin with, the performance by the lawful user of a database or of a copy thereof of any of the acts listed in Article 5 which is necessary for the purposes of access to the contents of the databases and normal use of the contents by the lawful user does not require the authorization of the author of the database[88]. Then, Member States have the option of providing for limitations on the rights set out in Article 5 in the following cases: 1. reproduction for private purposes of a non-electronic database; 2. where there is use for the sole purpose of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved; 3. where there is use for the purposes of public security of for the purposes of an administrative or judicial procedure; 4. where other exceptions to copyright which are traditionally authorized under national law are involved, without prejudice to the above referred cases. Finally, the exceptions must respect the so-called three-step rule of the Bern Convention[89], according to which Article 6 may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the rightholder's legitimate interests or conflicts with normal exploitation of the database.

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[87] The principle of exhaustion applies to the first sale in the Community of a copy of the database by the rightholder or with his consent, since that first sale exhausts the right to control resale of that copy within the Community. It is considered, moreover, that the copyright protection of databases includes making databases available by means other than the distribution of copies, and the question of exhaustion of the right of distribution does not arise in the case of on-line databases, which come within the field of provision of services. This also applies with regard to a material copy of such a database made by the user of such a service with the consent of the rightholder. In fact, unlike CD-ROM or CD-i, where the intellectual property is incorporated in a material medium, namely an item of goods, every on-line service is in fact an act which will have to be subject to authorization where the copyright so provides. Nevertheless, once the rightholder has chosen to make available a copy of the database to a user, whether by an on-line service or by other means of distribution, that lawful user must be able, according to Recital 34, to access and use the database for the purposes and in the way set out in the agreement with the rightholder, even if such access and use necessitate performance of otherwise restricted acts.

[88] The same applies where the lawful user is authorized to use only part of the database in respect only to that part.

[89] See Bern Convention for the protection of Literary and Artistic Works, Article 9(2).

This copyright protection, however, is not required for the *sui generis generis* right to apply. In fact, this right applies irrespective of the eligibility of that database for protection by copyright.

5) Data, Facts, and Exceptions to the *Sui generis Generis* Right

Moreover, protection of databases under the *sui generis generis* right is without prejudice to rights existing in respect of their contents[90]. In this sense, it is explicitly considered that the right to prevent unauthorized extraction and/or re-utilization does not in any way constitute an extension of copyright protection to mere facts or data, and the existence of a right to prevent the unauthorized extraction and/or re-utilization of the whole or a substantial part of works, data or materials from a database should not give rise to the creation of a new right in the works, data or materials themselves[91]. Namely, the provisions of this Directive are without prejudice to data protection legislation[92], because protection of databases by the *sui generis generis* right is without prejudice to existing rights over their contents. In particular where an author or the holder of a related right permits some of his works or subject matter to be included in a database pursuant to a non-exclusive agreement, a third party may make use of those works or subject matter subject to the required consent of the author or of the holder of the related right without the *sui generis generis* right of the maker of the database being invoked to prevent him doing so, on condition that those works or subject matter are neither extracted from the database nor re-utilized on the basis thereof.

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[90] The same applies for copyright protection of databases since it does not extend to their contents and is without prejudice to any rights subsisting in those contents themselves. Article 13 on continued application of other legal provisions provides that this Directive shall be without prejudice to provisions concerning in particular copyright, rights related to copyright or any other rights or obligations subsisting in the data, works or other materials incorporated into a database, patent rights, trade marks, design rights, the protection of national treasures, laws on restrictive practices and unfair competition, trade secrets, security, confidentiality, data protection and privacy, access to public documents, and the law of contract.

[91] Nonetheless, this *sui generis generis* may serve as a proprietary basis for public sector information. On this issue, see *Green Paper on Public Sector Information in the Information Society*, COM(98) 585 final; see also Alexandre Dias Pereira, *Bases de Dados de Órgãos Públicos: O Problema do Acesso e Exploração da Informação do Sector Público na Sociedade da Informação*, in *Direito da Sociedade da Informação*, II, FDUL/APDI, 2000 (em publicação).

[92] Regarding personal data protection, it is considered that the objective of the Directive on Databases Protection, which is to afford an appropriate and uniform level of protection of databases as a means to secure the remuneration of the maker of the database, is different from the aim of Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, which is to guarantee free circulation of personal data on the basis of harmonized rules designed to protect fundamental rights, notably the right to privacy which is recognized in Article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms. On the Directive on Data Protection, see Dammanann/Simitis, *EG-Datenschutzrichtlinie. Kommentar*, Baden-Baden, 1997; Ehmann/Helfrich, *EG-Datenschutzrichtlinie: Kurkommentar*, Köln, 1999; Simitis, *Vom Markt zur Polis: Die EU-Richtlinie zum Datenschutz* / Kilian, *Europäisches Datenschutzrecht — Persönlichkeitsrecht und Binnenmarkt*, in M.-T. Tinnefeld / L. Phillips / S. Heil (Hrsg.), *Informationsgesellschaft und Rechtskultur in Europa*, Baden-Baden, 1995; Ehmann/Helfrich /Zimmer-Helfrich (Hrsg.), *Die EG-Datenschutzrichtlinie*, Köln, 1996; Heredero Higueras, *La Directiva Comunitaria de Protección de los Datos de Carácter Personal*, Pamplona: Aranzadi, 1997.

Exceptions to the *sui generis generis* right are provided for under Article 9[93]. Member States are given the option of providing for exceptions to the right to prevent the unauthorized extraction and/or re-utilization of a substantial part of the contents of a database in the case of extraction for private purposes, for the purposes of illustration for teaching or scientific research, or where extraction and/or re-utilization are/is carried out in the interests of public security or for the purposes of an administrative or judicial procedure. However, according to the Recital, such operations must not, however, prejudice the exclusive rights of the maker to exploit the database and their purpose must not be commercial. Moreover, Member States, where they avail themselves of the option to permit a lawful user of a database to extract a substantial part of the contents for the purposes of illustration for teaching or scientific research, may limit that permission to certain categories of teaching or scientific research institution.

Moreover, Article 10 (1) of the Bern Convention is not affected by this Directive[94]. It means that, according to that provision of the Bern Convention, it shall be permissible to make quotations from a work which has been lawfully made available to the public, provided that their making is compatible with fair practice, and their extend does not exceed that justified by the purpose, including quotations from newspaper articles and periodicals in the form of press summaries. On the other hand, in the interests of competition between suppliers of information products and services, protection by the *sui generis generis* right must not be afforded in such a way as to facilitate abuses of a dominant position, in particular as regards the creation and distribution of new products and services which have an intellectual, documentary, technical, economic or commercial added value. Therefore, the provisions of this Directive are without prejudice to the application of Community or national competition rules.[95]

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[93] According to Article 9, Member States may stipulate that lawful users of a database which is made available to the public in whatever manner may, without the authorization of its maker, extract or re-utilize a substantial part of its contents, in the following cases: 1. extraction for private purposes of the contents of a non-electronic database; 2. extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved; 3. extraction and/or re-utilization for the purposes of public security or an administrative or judicial procedure.

[94] See Recital 37.

[95] The European Court of Justice has already applied twice Community competition rules in this field. See Vinje, DIT 2/1993, p. 16 (on *Magill*), Bonet, RTDE 1998, p. 591 (on *Ladbroke*).

As for the term of protection, Article 10 provided for the term of protection of the *sui generis generis* right, as well as for the term of protection of new investments in the re-making of the database. The *sui generis generis* right runs from the date of completion of the making of the database, and as a rule it expires fifteen years from the first of January of the year following the date of completion. Meanwhile, any substantial change, evaluated qualitatively or quantitatively, to the contents of a database, including any substantial change resulting from the accumulation of successive additions, deletions or alterations, which would result in the database being considered to be a substantial new investment, evaluated qualitatively or quantitatively, qualify the database resulting from that investment for its own term of protection. The burden of proof regarding the date of completion of the making of a database lies with the maker of the database, and the burden of proof that the criteria exist for concluding that a substantial modification of the contents of a database is to be regarded as a substantial new investment lies with the maker of the database resulting from such investment. In this case, a

3. In the U.S., the obligation to provide adequate and effective protection against circumvention of technological measures used by copyright owners to protect their works is implemented in new section 1201. This section divides technological measures into two categories. On one hand, measures that prevent unauthorized access to a copyrighted work. On the other hand, measures that prevent unauthorized copying, distribution or public performance of a copyrighted work.[96]

First, the act of circumvention is prohibited in the first category of technical measures (access), but not the second (copying). The act of circumventing a technological measure that prevents copying is not prohibited not only because the copying of a work may be fair use under certain circumstances, but also because it was to assure that the public will have the continued ability to make fair use of copyrighted works.

Second, the act of circumventing a technological measure in order to gain access is prohibited, because the fair use doctrine is not a defense to the act of gaining access to a work. The prohibition on the act of circumvention of access control measures does not take effect until October 28, 2000.

Third, making or selling devices or services that are used to circumvent either category of technological measures is prohibited, where they are primarily designed or produced to circumvent (1); they have only limited commercially significant purpose or use other than to circumvent (2); they are marketed for use in circumventing (3).[97]

Nonetheless, the prohibition on circumvention of technological measures meets several exceptions[98]. Law enforcement, intelligence and other governmental activities are exempted from the prohibition of circumventing both access and copying technological measures. Other exemptions are provided in respect with the category of technological measures that control access to works, such as exceptions for: nonprofit libraries, archives and educational institutions (1), reserve engineering (2), encryption research (3), protection of minors (4), personal privacy (5), security testing (6). First, the prohibition on the act of circumvention of access control measures is subject to an exception that permits

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substantial new investment involving a new term of protection may include a substantial verification of the contents of the database.

[96] See *The Digital Millennium Copyright Act of 1998*, U.S. Copyright Office Executive Summary, December 1998.

[97] There's however a "no mandate" general rule, according to which the prohibition on circumvention devices does not require manufacturers of consumer electronics, telecommunications or computer equipment to design their products to respond to any particular technological measure. Moreover, two general saving clauses are provided according to which the new prohibition do not affect rights, remedies, limitations or defenses to copyright infringement, including fair use, nor enlarge or diminish vicarious or contributory copyright infringement.

[98] See DMCA, Sec. 1201(a)(d)(f)(g)(h)(i)(j).

nonprofit libraries, archives and educational institutions to circumvent solely for the purpose of making a good faith determination as to whether they wish to obtain authorized access to the work. Second, the reserve engineering exception permits circumvention, and the development of technological means for such circumvention, by a person who has lawfully obtained a right to use a copy of a computer program for the sole purpose of identifying and analyzing elements of the program necessary to achieve interoperability with other programs, to the extent that such acts are permitted under copyright law. Third, an exception for encryption research permits decompilation of access control measures, and the development of the technological means to do so, in order to identify flaws and vulnerabilities of encryption technologies. Fourth, an exception for protection of minors allows a court applying the prohibition to a component or part to consider the necessity for its incorporation in technology that prevents access of minors to material on the Internet. Fifth, the personal privacy exception permits circumvention when the technological measure, or the work it protects, is capable of collecting or disseminating personally identifying information about the online activities of a natural person. Finally, the security testing exception permits circumvention of access control measures, and the development of technological measures for such circumvention, for the purpose of testing the security of a computer, computer system or computer network, with the authorization of its owner or operator.

C. The Brave New Digital Property

In comparison with the European draft Directive on Copyright, the DMCA expressly codifies these several exceptions into the Copyright Law, instead of only considering their lawfulness in the Recital. The European way doesn't follow a "copyright-based" approach to the issues of electronic communications, since most of them are horizontal issues in the sense that they do not affect only the interests of copyright owners. Nevertheless, the DMCA has the advantage of removing doubts as to the lawfulness of several activities on circumvention of technological protection measures, although it is not clear whether the fair use clause of the Copyright Act still continues to apply to the new "access right".

However, the latest developments of the European copyright directive seem to reinforce the protection of technological adjuncts to copyright, related rights and *sui generis* intellectual property rights. As a matter of fact, as it was very recently reported in the Common Position adopted by the Council (43-45), in its amendment 47, the European

Parliament had suggested that it be stipulated in Article 5(4) (current Article 5(5)) that the legal protection of technological measures prevailed over the exceptions listed in Article 5. However, the Commission had addressed this issue under Article 6(3) of its amended proposal, providing that only technological measures preventing or inhibiting the infringement of copyright were protected under Article 6. According to the Commission's amended proposal, technological measures designed to prevent or inhibit acts allowed by law (e.g. by virtue of an exception) were not protectable under Article 6, because the exceptions provided for in Article 5 prevailed over the legal protection of technological measures provided for in Article 6. However, the Council has decided to take a different approach, which it considers to be capable of striking a reasonable balance between the interests of rightholders and those of beneficiaries of exceptions.

In fact, the Council has adopted in Article 6(3) first sentence of its Common Position a definition of the protectable technological measures which is broader than the one provided for in the Commission's amended proposal or the one set out in Parliament's amendment 54. In the Council's definition the terms '... designed to prevent or restrict acts, in respect of works or other subject matter, which are not authorised by the rightholder of any copyright ...', are intended to make it clear that Article 6(1) protects against circumvention of all technological measures designed to prevent or restrict acts not authorised by the rightholder, regardless of whether the person performing the circumvention is a beneficiary of one of the exceptions provided for in Article 5. Moreover, in Article 6(3) second sentence, the Council deleted the term 'access to' considering that questions relating to access to works or other subject matter fell outside the field of copyright. But, on the other hand, in order to provide safeguards for the protection of the legitimate interests of beneficiaries of exceptions, the Council has added a new paragraph 4 to Article 6, accompanied by new explanatory recitals 51 and 52. In short, in Article 6(4), the Council: 1.º lays down an obligation on Member States, in the absence of voluntary measures taken by rightholders, to take appropriate measures to ensure that rightholders make available to beneficiaries of the exceptions/limitations listed in subparagraph I the means of benefiting from these exceptions or limitations; 2.º provides Member States with the option, in the absence of voluntary measures taken by rightholders, of taking appropriate measures under certain conditions to ensure that rightholders make available to users the means of benefiting from the exception of private copying (subparagraph 2); 3.º extends the legal protection provided for in Article 6(1) to technological measures designed to ensure the availability of the means of benefiting from the exceptions/limitations (subparagraph 3); 4.º provides that agreed contractual terms for on-demand supply of works or other subject matter will prevail over the provisions of

subparagraphs 1 and 2 of Article 6(4); 5.º extends the application of this paragraph to technological measures applied in the context of two of the existing Community Directives in the field of copyright and/or related rights.[99]

Many aspects of the Common Position are arguable. I am not against copyright - I think it makes sense in our societies and should be even more promoted. Moreover I do not sustain any kind of "anarchy on line" or "electronic woodstock". But the Common Position goes very far on what exceptions are concerned with relation to technological adjuncts. It seems that it will be a matter for Member States to decide whether those exceptions may justifify circumventing technological fences, including second sourcing markets. And it does also apply to the *sui generis* database right. It sounds very much like "technodigital property", in the end. Only decompilation and certain rights of legitimate users of computer programs are clearly exempted at the European level (but let's us wait for software patents in Europe to see what is, in legal terms, the value of the imperative of interoperability in electronic communications).

If the Common Position goes ahead, there won't be much oxygen left (free information) within a few years. In a certain way I understand it since Europe must preserve and protect its cultural heritage, as well as it must establish a legal environment which may promote multimedia investment in Europe. However, sometimes it just seems too much proteccionism. But that's perhaps a debate between North and South, or perhaps only a pure academic discussion. Mark Stefik spoke a few years ago on "digital property rights". Others followed the approach. By the time, legislation like the DMCA had not yet been enacted. The European Database Directive and the future copyright information society directive allowed me to speak, based upon positive legal terms, about "technodigital property".

Today, digital technologies did in fact overrrule copyright. Curiously, the approach of the Common Position denies that "access" may have any thing to do with copyright: the word "access" or "accessibility" has been simply erased of the text of the amended proposal. It means that there would be no right of acess either for copright owners or for users. It seems that a legitimate user of a database is not allowed to circumvent the technological fence, which has been wrongly closed off. *A fortiori*, he shall not also look for a second sourcing, be it a service provider, to open a bottle which wine he had bought (or

[99] See Common Position (EC) n.º 48/2000 adopted by the Council on 28 September 2000 with a view to adopting Directive 2000/.../EC of the European Parliament and of the Council of ... on the harmonisation of certain aspects of copyright and related rights in the information society (2000/C 344/01), OJ C 344/1, 1.12.2000.

at least thought he had) the right to drink. The principle is to cut down the "malign hacker culture" by the sword...

But perhaps copyright policy makers are right. Perhaps we should apply the concept of "Risikogesellschaft" to cyberspace and the information society. Copyright is called upon to prevent the actual risks of global electronic networks. It has a cost, but it's probably the right thing to do. It's interesting that the WIPO Primer on Electronic Commerce and Intellectual Property Issues does the analogy of the Internet with the global climate[100]. Perhaps that's the way it should be. Or perhaps that's the way it shouldn't, perhaps they are wrong.

D. Encrypted (Conditional Access) Services

In Europe, the protection of technological measures provided for by Copyright Directive is complemented by Directive on Conditional Access Services[101].

The objective of this Directive is to approximate provisions in the Member States concerning measures against illicit devices which give unauthorized access to protected services[102]. This Directive is based upon the consideration that the opportunities offered by digital technologies provide the potential for increasing consumer choice and contributing to cultural pluralism, by developing an even wider range of services. However, the viability of those services will often depend on the use of conditional

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[100] See Primer on *Electronic Commerce and Intellectual Property Rights*, WIPO 2000, I. The Impact of Electronic Commerce on Intellectual Property: "1. In a fundamental respect, the international character of electronic commerce raises questions for the nature of traditional legal systems in general, and intellectual property law in particular. Both are based on notions of sovereignty and territoriality. The Internet, in contrast, like the movement of weather within the global climate, largely ignores distinctions based on territorial borders. Instead, infrastructure, code and language have thus far had a greater bearing on the reach of its currents."

[101] Directive 98/84/EC of the European Parliament and of the Council of 20 November 1998 on the legal protection of services based on, or consisting of, conditional access. For the legislative history of this Directive see also: Proposal from the Commission (OJ C 314, 16. 10. 1997, p. 7 and OJ C 203, 30. 6. 1998, p. 12), Opinion of the Economic and Social Committee (OJ C 129, 27. 4. 1998, p. 16), Opinion of the European Parliament of 30 April 1998 (OJ C 152, 18. 5. 1998, p. 59), Council Common Position of 29 June 1998 (OJ C 262, 19. 8. 1998, p. 34) and Decision of the European Parliament of 8 October 1998 (OJ C 328, 26. 10. 1998). Council Decision of 9 November 1998. The Commission undertook a wide-ranging consultation based on the Green Paper *Legal Protection of Encrypted Services in the Internal Market*, and the results of that consultation confirmed the need for a Community legal instrument ensuring the legal protection of all those services whose remuneration relies on conditional access. The European Parliament, in its Resolution of 13 May 1997 on the Green Paper (OJ C 167, 2. 6. 1997, p. 31.), called on the Commission to present a proposal for a Directive covering all encoded services in respect of which encoding is used to ensure payment of a fee, and agreed that this should include information society services provided at a distance by electronic means and at the individual request of a service receiver, as well as broadcasting services. The importance of this issue was also recognized by the Commission Communication on *A European Initiative in Electronic Commerce*, COM(97) 157 final, 15.4.1997. For more detailed information, see *Legal Protection of Encrypted Services in the Internal Market*, Green Book, COM(96) 76 final. See also Kurihara, UFITA 1996, p. 93; Weisser, ZUM 1997, p. 877; Engel, ZUM 1997, p. 309; Cave/Cowie, C&S 1998, p. 77; and my *Informática, direito de autor e propriedade tecnodigital*, Coimbra 1998).

[102] See Directive on Conditional Access Services, Art. 1. According to Art. 6, first sentence, implementation deadline was 28 May 2000.

access[103] in order to obtain the remuneration of the service provider. Protected Services include the following services, where provided against remuneration and on the basis of conditional access: television broadcasting [104] (1) radio broadcasting [105] (2), and information society services (3)[106]; or the provision of conditional access to the above services considered as a service in its own right (4).

The legal protection of service providers against illicit devices which allow access to these services free of charge is deemed necessary in order to ensure the economic viability of the services. Therefore Member States shall provide appropriate legal protection against the placing on the market, for direct or indirect financial gain, of an illicit device which enables or facilitates without authority the circumvention of any technological measures designed to protect the remuneration of a legally provided service[107]. Those commercial activities which concern illicit devices include commercial communications covering all forms of advertising, direct marketing, sponsorship, sales promotion and public relations promoting such products and services. Such commercial activities are detrimental to consumers because they are misled about the origin of illicit devices, and a high level of consumer protection is needed in order to fight against this kind of consumer fraud. In this sense, certain activities are considered infringing: the manufacture, import, distribution[108], sale, rental or possession for commercial purposes of illicit devices (1); the installation, maintenance or replacement for commercial purposes of an illicit device (2); and the use of commercial communications to promote illicit devices (3) [109]. Regarding the private possession of illicit devices, this Directive is without prejudice to the application of any national provisions which may prohibit the private possession of illicit devices. The same applies to the application of Community competition rules and to the application of Community rules concerning intellectual property rights.

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[103] Conditional access are technical measures and/or arrangements whereby access to the protected service in an intelligible form is made conditional upon prior individual authorization.

[104] As defined in Article 1(a) of Directive 89/552/EEC (OJ L 298, 17. 10. 1989, p. 23). Directive as amended by Directive 97/36/EC of the European Parliament and of the Council (OJ L 202, 30. 7. 1997, p. 60)

[105] Meaning any transmission by wire or over the air, including by satellite, of radio programs intended for reception by the public.

[106] It is a service provided at a distance by electronic means and at the individual request of a service receiver, within the meaning of Article 1(2) of Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on information society services (OJ L 204, 21. 7. 1998, p. 37. Directive as amended by Directive 98/48/EC, OJ L 217, 5. 8. 1998, p. 18).

[107] In other words, illicit devices are any equipment or software designed or adapted to give access to a protected service in an intelligible form without the authorization of the service provider. This definition is based upon the definition of conditional access devices, which are any equipment or software designed or adapted to give access to a protected service in an intelligible form.

[108] The distribution of illicit devices is considered to include transfer by any means and putting such devices on the market for circulation inside or outside the Community.

[109] It means that not only strict conditional access services are protected but also the so-called associated services such as the installation, maintenance or replacement of conditional access devices, as well as the provision of commercial communication services in relation to them or to protected services.

Furthermore, Member States are required to take all appropriate measures to guarantee the application and effectiveness of Community law, in particular by ensuring that the sanctions chosen are effective, dissuasive and proportionate and the remedies appropriate. It means that each Member State shall take the measures necessary to prohibit on its territory the activities listed in Article 4, and to provide for the sanctions and remedies laid down in Article 5. According to this Article, the sanctions shall be effective, dissuasive and proportionate to the potential impact of the infringing activity, and Member States shall take the necessary measures to ensure that providers of protected services whose interests are affected by an infringing activity, carried out on their territory, have access to appropriate remedies, including bringing an action for damages and obtaining an injunction or other preventive measure, and where appropriate, applying for disposal outside commercial channels of illicit devices. Moreover, it is considered that national law concerning sanctions and remedies for infringing commercial activities may provide that the activities have to be carried out in the knowledge or with reasonable grounds for knowing that the devices in question were illicit[110].

§ 6. Integrity of Copyright Management Information

1. The distribution of works, specially on networks, has been facilitated by digital technologies. Consequently, in order to render easier the management of rights attached to them, rightholders need to better identify the work or other subject matter, the author or any other rightholder, and to provide information about the terms and conditions of use of the work or other subject matter. However, illegal activities may be carried out in order to remove or alter the electronic copyright-management information attached to it ("digital watermarking"), or otherwise to distribute, import for distribution, broadcast,

[110] See Directive on Conditional Access Services, Recital 22. Another important aspect relates to the freedom to provide conditional access services within the Internal Market. In effect, Member States may not, for reasons falling within the field coordinated by this Directive: restrict the provision of protected services, or associated services, which originate in another Member State (1); or restrict the free movement of conditional access device (2).

In fact, the Treaty provides for the free movement of all services which are normally provided for remuneration. This right, as applied to broadcasting and information society services, is also a specific manifestation in Community law of a more general principle, namely freedom of expression as enshrined in Article 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms. That explicitly recognizes the right of citizens to receive and impart information regardless of frontiers and, therefore, any restriction of that right must be based on due consideration of other legitimate interests deserving of legal protection. On the other hand, the cross-border provision of broadcasting and information society services may contribute, from the individual point of view, to the full effectiveness of freedom of expression as a fundamental right and, from the collective point of view, to the achievement of the objectives laid down in the Treaty.

communicate to the public or make available to the public copies from which such information has been removed without authorization.

In view of this, the European draft Directive on Copyright aims to provide for harmonized legal protection against any of those activities. Article 7 imposes obligations concerning rights-management information[111]. First, they shall provide for adequate legal protection against any person performing without authorization any of the following acts: the removal or alteration of any electronic rights-management information (1); the distribution, importation for distribution, broadcasting, communication or making available to the public, of copies of works or other subject matter protected under this Directive or under Chapter III of Directive on Databases from which electronic rights-management information has been removed or altered without authorization (2), if such person knows, or has reasonable grounds to know, that by so doing he is inducing, enabling or facilitating an infringement of any copyright or any rights related to copyright as provided by law, or of the *sui generis* right provided for in Chapter III of Directive on Database Protection (3)[112].

2. It should be noted that one of the conditions is that the information has been removed or altered without authorization. Without authorization means, for example, that the provision does not cover the removal or alteration of rights-management information done with the permission of the rightholder (or his intermediary) or permitted or even required by law, such as for data protection reasons according to the Directive on Data Protection[113]. In particular, the Directive Proposal on Copyright considers that these technical means, in their technical functions, should incorporate privacy safeguards in accordance with Directive on Personal Data.

This last aspect is of greater importance. In fact, any such "rights-management information systems" referred to above may, depending on their design, at the same time process personal data about the consumption patterns of protected subject matter by individuals and allow for tracing of on-line behavior . In fact, in the world of digital

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[111] "Rights-management information" is defined as any information provided by rightholders which identifies the work or other subject matter referred to in the Directive or covered by the *sui generis generis* right provided for in Chapter III of Directive on Databases Protection, the author or any other rightholder, or information about the terms and conditions of use of the work or other subject matter, and any numbers or codes that represent such information.

[112] In fact, the forbidden activity, in order to benefit from protection, shall lead to, or be preparatory to, an infringement of an intellectual property right provided by law, since the provision does not cover complementary activities such as the fraudulent communication of rights-management information to a public authority.

[113] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and the free movement of such data (OJ L 281, 23.11.1995, p. 31). See also Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector (OJ L 24, 30.1.1998, p. 1).

technology and global networks, users often leave behind long-lasting "electronic footprints", that is, digital records of where they have been, what they spent time looking at, the thoughts they aired, the messages they sent, and the goods and services they purchased. These data tend to be detailed, individualized and computer-processable, especially the so-called "cookies", which are small data packets created by a Website server and stored on the user's hard drive.[114]

3. In the U.S., the obligation to protect the integrity of copyright management information (CMI) is implemented in section 1202. CMI is defined as identifying information about the work, the author, the copyright owner, and in certain cases, the performer, writer or director of the work, as well as the terms and conditions for use of the work. Information concerning users of works is explicitly excluded.

On one hand, regarding false CMI: the knowing provision or distribution of false CMI is prohibited, if done with the intent to induce, enable, facilitate or conceal infringement. On the other hand, as for the removal or alteration of CMI: the intentional removal or

[114] Cookies were developed to assist in client/server interaction and data collection, and may be accessed by the server during current and subsequent visits to the Website. Cookies may be used to facilitate the collection, aggregation and re-use of header, click-stream and voluntarily disclosed data. This is typically accomplished by assigning a unique code to each visitor and storing this number in a cookie which is retrieved each time the site is visited. Information which is subsequently collected about the user can then be linked to this code number. The development of digital computer and network technologies, and in particular the Internet, has brought with it a migration of social, commercial and political activities from the physical world into the electronic environment. However, the integration of global networks into everyday life raises concerns over the protection of personal privacy. Thus, although the development of global networks and digital technology has brought many social and economic benefits, recent technology increases the risk that personal information may be automatically generated, collected, stored, interconnected and put to a variety of uses by online businesses or government bodies, without the data subject's knowledge or consent. First, simply "browsing" on the Web can make a considerable quantity of information available to the sites visited, even if much of this information is needed to enable Internet interaction and much of it is maintained in aggregate form. Whenever a Web page is accessed, certain "header information" is made available by the "client" (the user's computer) to the "server" (the computer that hosts the Website being accessed). This information can include: the client's Internet Protocol (IP) address, from which the domain name and the name and location of the organisation who registered this domain name can be determined through the Domain Name System (1); basic information about the browser, operating system and hardware platform used by the client (2); the time and date of the visit (3); the Uniform Resource Locator (URL) of the Web page which was viewed immediately prior to accessing the current page (4); if a search engine was used to find the site, the entire query may be passed on to the server (5); and, depending on the browser, the user's e-mail address (if this has been set in the browser's preference configuration screen) (5). Second, when a user browses through a Website, he or she can generate "click-stream data" such as the pages visited, the time spent on each page and information sent and received. Third, personal data is also often disclosed voluntarily. Many commercial sites ask users to complete and submit Web page forms in order to register, subscribe, join a discussion group, enter a contest, make suggestions or complete a transaction. The kind of data which are typically requested may include information such as the user's name, address, home or work telephone number and e-mail address. Data relating to age, sex, marital status, occupation, income and personal interests is also sometimes collected. In addition, purchasing forms will usually require credit card details, including the card type, number and expiration date. If a visitor is asked to send information to a Website by e-mail, then the site (like any e-mail recipient) will be able to ascertain the visitor's e-mail address from the "e-mail header". See *Inventory of Instruments and Mechanisms Contributing to the Implementation and Enforcement of the OECD Privacy Guidelines on Global Networks*, Working Party on Information Security and Privacy, OECD, May 1999.

alteration of CMI without authority, as well as the dissemination of CMI or copies of works, knowing that the CMI has been removed or altered without authorization, is prohibited.[115]

PART II - Liability of Online Service Providers

§ 7. The Right of Reproduction and the "Three Step Test"

1. The European Directive on electronic commerce[116] deals with one of the most important copyright issues of electronic commerce: the liability of online service providers when engaging in certain activities, notably "mere conduit", "system caching" and "hosting". In the U.S., title II of the DMCA[117] creates limitations on the liability of online service providers for copyright infringement based on the following categories of acts: 1. transitory communications ("mere conduit"); 2. system caching; 3. storage of information on systems or networks at direction of users ("hosting"); 4. information location tools ("browsing", "linking").

The issue on liability of online service providers[118] is related to the definition of the scope of the reproduction right. The Diplomatic Conference that led to the adoption of the new WIPO Treaties could not answer this issue.

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[115] Limitations on the liability of broadcast stations and cable systems for removal or alteration of CMI are provided in certain circumstances where there is no intent to induce, enable, facilitate or conceal an infringement.

[116] Directive 2000/31/EC of the European Parliament and of the Council of June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal market ("Directive on electronic commerce"), OJ L 178, 17.07.2000.

[117] The Online Copyright Infringement Liability Limitation Act.

[118] On this issue, see, *inter alia*, Vandenberghe, *European Perspectives*, in Sieber (ed.), *Liability for On-Line Data Bank Services*, Köln 1992, p. 387; Sieber, *Haftung für Online-Datenbanken*, in Fiedler (Hrsg.), *Rechtsprobleme des elektronischen Publizierens*, Kóln 1996, p. 69; Koelman, *Liability for Online Intermediaries*, Amsterdam 1997. See also D'Orazio / Zeno-Zencovich, *Profili di responsabiltà contrattuale e aquiliana nella fornitura di servizi telematici*, DII 1990, p. 421; Dupuis-Toubol/Tonnelier/Lemarchand, *Responsabilité civile et Internet*, JCP 1997, p. 640; Koch, *Zivilrechtliche Anbieterhaftung für Inhalte in Kommunikationsnetzen*, CR 1997, p. 193; Waldenberger, *Zur zivilrechtlichen Verantwortung für Urheberrechtsverletzungen im Internet,* ZUM 1997, P. 176; Schaefer/Rasch/Braun, *Zur Verantwortlichkeit von Online-Diensten und Zugangsvermittlern*, ZUM 1998, p. 358, p. 451; Macmillian/Blakeney, *The Internet and Communications Carrier's Copyright Liability* , EIPR 1998, p. 52; Zeno-Zencovich, *La pretesa estensione alla telematica del regime della stampa: note critiche* DII 1998, p. 15; Mille, *Hipervínculos y Marcas*, DAT 1998, p. 1; Strowel, *Liaisons dangereuses et bonnes relations sur l'Internet: A propos des hyperliens*, A&M 1998, p. 296; Julia-Barceló, *Liability for on-line intermediaries: a European perspective*, EIPR 1998, p. 453; Nathenson, *Internet Infogul and Invisible Ink: Spamdexing Search Engines with Meta Tags*, Harvard JOLT 1998, p. 60; Gross, *Contributory and Vicarious Liability: Sega Enterprises v. MAPHIA*, Berkeley Tech. LJ 1998, p. 101; Kane, *Internet Service Provider Liability: Blumenthal v. Drudge*, Berkeley Tech. LJ 1999, p. 483; R. Julià-Barceló, *On-Line Intermediary Liability Issues: Comparing EU and U.S. Legal Frame-works*, ECLIP EP 27028 16 December 1999; Livory, *Commentaire sur la décision du Tribunal de grande instance de Paris*, DIT 1999, p. 69; Verbiest, *Entre bonnes et mauvaises références: a propos des outils de recherce sur Internet*, A&M 1999, p. 34; Carneiro Frada, *Vinho Novo em Odres Velhos»? A Responsabilidade Civil das "Operadoras de Internet" e a Doutrina Comum da Imputação de Danos*, ROA 1999, p. 341; Oliveira Ascensão, *A Segunda Geração de Referências na Internet: Hyperlinks, Frames, Metatags*, in www.digital-forum.net/Jurinet (21/06/2000); Alexandre Dias Pereira, Informática, *Direito de Autor e Propriedade Tecnodigital*, Coimbra 1998, §§ 3 e 45 (em publicação no Boletim da Faculdade de Direito, STVDIA IVRIDICA, 55, Coimbra Editora).

At the European level, the draft Directive on Copyright provides the exclusive right to authorize or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part; at the same time, however, it makes clear that access and service providers would be exempted from reproduction rights for certain incidental temporary "caching" copies arising during transmission over the Internet. It means that, despite the broad definition of the right of reproduction, those copies which are of a mere technical nature (1), are an integral part of another act (2), and have no separate economic significance (3), are excluded from the reproduction right, and therefore do not require authorization of the rightholder. Nonetheless, according to the WIPO Treaties, the Directive Proposal on Copyright applies the "three step test" to this exception to the reproduction right.

2. The question as to whether the scope of the reproduction right should be adapted or clarified to explicitly cover electronic reproductions was subject of discussions in the course of the negotiations which took place in the framework of WIPO and which led to the adoption of the new WIPO treaties.

Regarding the definition of what constitutes an act of reproduction, particularly concerning temporary or incidental reproductions in the electronic environment, no new provisions were considered necessary for authors' right, because the concept of this right is not limited by reference to particular technologies or formats of creation. The definition contained in Article 9(1) of the Bern Convention[119] was considered equally valid in the digital environment and was incorporated accordingly into the WIPO obligations[120].

In this sense, a statement adopted by the Diplomatic Conference, which adopted the new WIPO Treaties clarifies that the existing international rules are sufficiently wide to cover reproductions made in the digital environment[121]. According to this statement, "the reproduction right as set out in Article 9 of the Bern Convention, and the exceptions permitted thereunder, fully apply in the digital environment, in particular to the use of works in digital form. It is understood that the storage of a protected work in digital form in an electronic medium constitutes a reproduction within the meaning of Article 9 of the Bern Convention."

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[119] Art. 9(1) Bern Convention provides that "authors of literary and artistic works protected by this Convention shall have the exclusive right of authorizing the reproduction of these works in any manner or form".

[120] See Article 1(4) WCT. The broad definition of Article 9(1) Bern Convention has also been used for the definition of the reproduction right of performers and phonogram producers (Articles 7 and 11 WPPT), in more precise terms than the wording of the respective provisions in the Rome Convention and the WTO/TRIPs Agreement.

[121] See Agreed Statements to the WCT concerning Article 1(4), and to the WPPT concerning Articles 7, 11 and 16.

Regarding limitations of and exceptions to the rights, both the new WIPO Treaties refrain from listing particular exceptions. They, however, make the "three step test" of Article 9(2) Bern Convention applicable to all exceptions concerning authors' rights granted by the Treaty[122]. It was understood that these provisions permit Contracting Parties to carry forward into, and to devise new exceptions and limitations that are appropriate in the digital environment, provided that these comply with the standards set out in the Bern Convention[123]. According to the "three steps test", limitations to the reproduction right are allowed in "certain special cases" (1), which do not "conflict with a normal exploitation of the work" (2) and do not "unreasonably prejudice the legitimate interests of the author" (3).

This result differs from the Basic Proposal[124], according to which, it would be a matter for legislation in Contracting Parties subject to the "three step test" to limit the right of reproduction in cases where a temporary reproduction has the sole purpose of making the work perceptible or where the reproduction is of a transient or incidental nature, provided that such reproduction takes place in the course of use of the work that is authorized by the author or permitted by law. According to this proposal, the "three step test" could not allow limitations to the reproductions right for incidental, technical, and in some cases technically indispensable instances of reproduction which form part of another use of a protected work, if that use was not authorized or otherwise lawful. If this proposal were to be adopted, public access to the WWW would be reduced since online intermediaries would be held liable for any use not authorized by recipients of their services. First, online intermediaries would be obliged to monitor the material flowing through their systems. Second, this would increase the costs of operating online services due to investments in monitoring technologies and insurance. Third, these costs would be supported by their users, who at the same time would have their privacy invaded.

For these reasons, supported by intensive lobbying, liability of on-line service providers is not included in the provisions of the WIPO Treaties, and service and access providers have confirmed their support for the WIPO Treaties in their present form, i. e., without any provision on liability. Despite the proposal, it was common view during the Conference that these Treaties do not alter the existing national regimes on liability and that the issue should be left to the national or domestic legislator.

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[122] See Article 10 WCT, and *mutatis mutandis* Article 16 WPPT.

[123] See Agreed Statements to the WCT concerning Article 10.

[124] Article 7(2) (Scope of the Right of Reproduction, Limitations) of the Basic Proposal for the Substantive Provisions of the Treaty on Certain Questions Concerning The Protection of Literary and Artistic Works To Be Considered By the Diplomatic Conference.

§ 8. The European Legal Framework and the U.S. DMCA

1. At the European level, neither the existing E.U. copyright Directives nor the draft Directive on Copyright include provisions concerning liability of online service providers. It is viewed as a horizontal issue concerning not only copyright but also issues as defamation, privacy, unfair competition, trademarks, misleading advertising, pornography and racist and violent content.

It is considered that this problem would be addressed horizontally in Directive on Electronic Commerce[125] and that these provisions relating to liability in the context of electronic commerce should come into force within a time scale similar to that of the Directive on Copyright, since they should provide a harmonized framework of principles and provisions relevant to inter alia important parts of this Directive[126]. Nevertheless, the provisions of the draft Directive on Copyright make clear that access and service providers would be exempted from reproduction rights for certain incidental temporary "caching" copies arising during transmission over the Internet because they have no separate economic significance.

On one hand, the draft Directive on Copyright provides the exclusive right to authorize or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part (Art. 2). This provision sets out a broad, comprehensive definition of the reproduction right covering all relevant acts of reproduction, and follows the approach of the *acquis communautaire* for computer programs[127] and electronic databases[128]. In fact, the scope of the acts covered by the reproduction right are defined with regard to the different beneficiaries in conformity with the *acquis communautaire*, and a broad definition of these acts is considered to be needed to ensure legal certainty within the Internal Market.

But, on the other hand, temporary acts of reproduction are exempted from the reproduction right, such as transient and incidental acts of reproduction which are an integral and essential part of a technological process, including those which facilitate effective functioning of transmission systems, whose sole purpose is to enable use to be

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[125] See also the initial and the amended Proposals: COM(1998)586 final of 18.11.1998; COM(99) 427 final. The European horizontal approach differs from the U.S., where copyright issues are dealt by the DMCA and other issues are dealt by the Communications Decency Act of 1996 (CDA), which gave providers of Internet services immunity against liability claims derived from defamatory material placed in or disseminated by their facilities. See *Blumenthal v. Drudge*, 992 F.Supp. 44 (D.D.C. 1998).

[126] Directive Proposal on Copyright, Recital 12.

[127] Article 4 of Council Directive 91/250/ECC on the legal protection of computer programs (OJ L 122, 17.5.1991, p. 42).

[128] Article 5 of the European Parliament and Council Directive 96/9/EC on the legal protection of databases (OJ L 77, 27.3.1996, p. 20).

made of a work or other subject matter, and which have no independent economic significance (Art. 5, 1).

It means that, despite the broad definition of the right of reproduction, those copies which are of a mere technical nature (1), are an integral part of another act (2), and have no separate economic significance (3), are excluded from the reproduction right, and therefore do not require authorization of the rightholder. Nonetheless, in accordance with the WIPO Treaties, the Directive Proposal on Copyright stipulates the "three step test" be applied to this exception to the reproduction right, albeit limited to certain specific cases and it shall not be interpreted in such a way as to allow their application to be used in a manner which unreasonably prejudices the right holders' legitimate interests or conflicts with the normal exploitation of their works or other subject matter (Art. 5.°, 4).

The question then is which "certain specific cases" would pass the "three step test". For example, certain forms of "browsing" or "caching" may not be subject to the control of the rightholder.

The Directive Proposal on Copyright provides that the exclusive right of reproduction should be subject to an exception to allow certain acts of temporary reproduction, such as transient and incidental reproductions, forming an integral part of, and essential to, a technological process carried out for the sole purpose of enabling the use of a work or other protected subject matter and which have no separate economic value on their own. And Recital 23 clarifies that under these conditions this exception should include acts of caching or browsing[129]. Therefore, according to the Copyright Proposal, despite the broad definition of the right of reproduction, copies which are of a mere technical nature, are an integral part of another act, and have no separate economic significance, are excluded from the reproduction right, and therefore do not require authorization of the rightholder, insofar as they pass the "three step test". Acts of caching and browsing are considered to pass this test.[130]

2. These principles are implemented in the Directive on Electronic Commerce. This Directive provides in detail the "certain specific cases" which pass the "three step test" and therefore are exempted from the right of reproduction. Three groups of "certain specific cases" are provided: "mere conduit", "caching", and "hosting". Another group of cases, "browsing", is referred for further study in what concerns liability of providers of hyperlinks and location tool services, although it is considered in the Copyright Proposal

[129] See Recital 23.

[130] Moreover, regarding the right of communication to the public, Article 3(4) also provides that the mere provision of physical facilities for enabling or making a communication does not in itself amount to an act of communication to the public, according to the Agreed Statement adopted by the Diplomatic Conference concerning Article 8 WCT.

as a case capable of passing the "three step test". In any case, this test will not be passed by providers of information society services, such as on-line travel agencies or on-line bookstores. If they post infringing copyright material on their Websites, they are to be regarded as content providers, to whom no limitation is provided in terms either of the right of reproduction or the right of communication to the public.[131].

In comparison, in the U.S., the DMCA creates four new limitations on liability for copyright infringement by online service providers, based on four categories of conduct by a service provider: transitory communications ("mere conduit") (1); system caching (2); hosting (3); information location tools (4). We will analyze each of these categories of conduct as they are provided for in Directive on Electronic Commerce as well as in the U.S. DMCA.

§ 9. "Mere Conduit" (Transitory Communications: Carriers and Access Providers)

[131] The WIPO Treaties define the right of communication to the public as the exclusive right of authorizing any communication to the public of their works, by wire or wireless means, including the making available to the public of their works in such a way that members of the public may access these works from a place and at a time individually chosen by them. See Article 8 WCT. See also Articles 10 and 14 WPPT. These "on-demand transmissions" are characterized by the fact that a work or other subject matter stored in digital format is made available to third parties interactively, i.e. in such a way that they may access it and request its transmission individually regarding time and place. Economically, the interactive on-demand transmission is a new form of exploitation of intellectual property, and, in the end, it was generally accepted, in legal terms, that the distribution right only applies to the distribution of physical copies and does not cover the act of transmission. See Agreed Statements adopted by the Diplomatic Conference concerning Articles 6 and 7 WCT and Articles 2(e), 8, 9 and 13 WPPT.

The classification of on-demand digital transmissions within the right of communication to the public has been proposed by the European Commission [see *Following of the Green Paper*, COM(96) 586 final, p. 12-4], having in regard that Directive on Databases Protection covers on-demand transmission" of the content of a database because it protects any form of making available to the public all or a substantial part of the contents of the database by on-line or other forms of transmission under the *sui generis generis* right (Article 2(2)(b)). However, the initial approach was to include on-demand transmission within the right of distribution (See *Green Paper*, COM(95)382 final, p. 59; NII White Paper, p. 213).

The draft Directive on Copyright harmonizes the right applicable to the communication to the public of works, where this has not yet been done by existing Community legislation (Article 3). The legal uncertainty regarding the nature and the level of protection of acts of on-demand transmission of copyright works and subject matter protected by related rights over networks is overcome by providing for harmonized protection at Community level. An exclusive right to make available to the public copyright works or any other subject matter by way of interactive on-demand transmissions, which are characterized by the fact that members of the public may access them from a place and at a time individually chosen by them, is provided for all right holders recognized by this draft Directive. However, this right does not cover direct representation or performance, and the mere provision of physical facilities for enabling or making a communication does not in itself amount to communication within the meaning of this Directive. Moreover, as it was stressed during the WIPO Diplomatic Conference, the critical act is the "making available of the work to the public", thus the offering a work on a publicly accessible site, which precedes the stage of its actual "on-demand transmission". Whether any person actually has retrieved it or not is not considered relevant, and the public is meant to consist of individual members of the public. Moreover, the element of individual choice hints at the interactive on-demand nature of access. In this sense, the protection offered by the provision thus not comprise broadcasting, including new forms of it, such as pay-TV or pay-per-view, as the requirement of individual choice does not cover works offered in the framework of a pre-defined program. Similarly, is does not cover so-called near video-on-demand, where the offer of a non-interactive program is broadcast several times in parallel at short intervals. Furthermore, the provision does not cover mere private communication, which is clarified by using the term public. See the *Explanatory Memorandum*.

1. Cases of “mere conduit” include two different situations[132]. First, the transmission in a communication network of information provided by the recipient of the service. In this situation, ISS providers act as carriers of information in communication networks transmitting information provided by third parties[133]. Second, the provision of access to a communication network, such as the Internet. In this situation, ISS providers act as access providers.

In these two situations of mere conduit the ISS provider’s liability is excluded on condition that he: does not initiate the transmission (1); does not select the receiver of the transmission (2); and does not select or modify the information contained in the transmission (3). For example, where an end user requests to forward an e-mail to a mailing list, and the provider transmits the message to each one of the addresses contained in the mailing list, the provider will not be considered to have initiated the transmission or selected the recipient.

Moreover, those acts of “mere conduit” (transmission and provision of access) include the automatic, intermediate and transient storage of the information transmitted in so far as this takes place for the sole purpose of carrying out the transmission in the communication network, and provided that the information is not stored for any period longer than is reasonably necessary for the transmission. This rule applies to the so-called process of “packet switching transmission”, during which acts of reproduction technically take place countless times in the course of routing and transmission to the end user.

2. In the U.S., the DMCA also provides a limitation for transitory communication[134], which covers not only acts of transmission, routing, or providing connections for the information, but also the intermediate and transient copies that are made automatically in the operation of a network. This limitation for transitory communication limits the liability of service providers in circumstances where the provider merely acts as a data conduit, transmitting digital information from one point on a network to another at someone else’s request.

In detail, those circumstances are: the transmission must be initiated by a person other than the provider (1); the transmission, routing, provision of connections, or copying must be carried out by an automatic technical process without selection of material by the service provider (2); the service provider must not determine the recipients of the

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[132] See Directive on Electronic Commerce, Article 12.

[133] This is usually carried out by telecommunications operators and consists of providing facilities for the transmission of data such as cables, routers and switches.

[134] See DMCA, Sec. 512(a).

material (3); any intermediate copies must neither ordinarily be accessible to anyone other than anticipated recipients nor be retained for longer than reasonably necessary (4).

§ 10. "System Caching"

1. Then, cases of "caching" are those where an IIS consists in the transmission in a communication network of information provided by a recipient of the service, with the automatic, intermediate and temporary storage of that information being performed for the sole purpose of making more efficient the information's onward transmission to other recipients of the service upon their request.

In this group of cases, the service provider (in particular, the local server) retains the material so that subsequent requests for the same material can be fulfilled by transmitting the retained copy, rather than retrieving the material from the original source on the network. In other words, caching consists of storing to a local server copies of high demand material that originates on remote servers, so that when an end-user requires certain material, it is transmitted from the local server rather than from the source computer, and therefore data has less distance and time to travel. It means that caching allows a quicker and more efficient use of the Internet, because it reduces the service provider's bandwidth requirements and reduces the waiting time on subsequent requests for the same information.

2. Despite this benefit, caching can result in the delivery of outdated information to subscribers and can deprive website operators of accurate "hit" information (information about the number of requests for particular material on a website) from which advertising revenue is frequently calculated. For this reason, the person making the material available online may establish rules about updating it, and may utilize technological means to track the number of "hits".

In view of this, the Directive on Electronic Commerce provides a "caching" liability limitation[135] on condition that: the provider does not modify the information (1); the provider complies with conditions on access to the information (2); the provider complies with rules regarding the updating of the information, specified in a manner consistent with industrial standards (3); the provider does not interfere with the technology, consistent with industrial standards, used to obtain data on the use of the information (4); and the provider acts expeditiously to remove or to bar access to the information (5) upon

[135] See Directive on Electronic Commerce, Article 13.

obtaining actual knowledge of the fact that: the information at the initial source of the transmission has been removed from the network (5.1); access to it has been disabled (5.2); a court or an administrative authority has ordered such removal or disablement (5.3).

3. In the U.S., the DMCA establishes a limitation for system caching[136], which applies to acts of intermediate and temporary storage, when carried out through an automatic technical process for the purpose of making the material available to subscribers who subsequently request it, provided that: the content of the retained material is not modified (1); the provider complies with rules about "refreshing" material (replacing copies of material with material from the original location) when specified in accordance with a generally accepted industry standard data communication protocol (2); the provider does not interfere with technology that returns "hit" information to the person who posted the material, where such technology meets certain requirements (3); the provider limits users' access to the material in accordance with conditions on access (e.g., password protection) imposed by the person who posted the material (4); any material that was posted without the copyright owner's authorization is removed or blocked promptly once the service provider has been informed that it has been removed, blocked, or ordered to be removed or blocked, at the originating site (5).

§ 11. "Hosting" (Information Residing on Systems or Networks at the Direction of Users)

1. Cases of "hosting" are those where an information society service consists in the storage of information provided by a recipient of the service, and the information is stored at the request of a recipient of the service. In this group of cases, the server provider rents space to users for their content upon the server (e.g., a Web page), which may include different materials (software, text, graphics, sound). In short, hosting has to do with infringing material on websites (or other information repositories) hosted on the service providers' systems.

The Directive on Electronic Commerce provides this "hosting limitation"[137] to ISS providers on condition that: the provider does not have actual knowledge that the activity is illegal and, as regards claims for damages, is not aware of facts or circumstances from

[136] See DMCA, Sec. 512(b).
[137] See Directive on Electronic Commerce, Article 14.

which illegal activity is apparent (1); the provider, upon obtaining such knowledge or awareness, acts expeditiously to remove or to disable access to the information (2).[138]

2. In the U.S., the DMCA establishes a limitation for information residing on systems or networks at the direction of users[139]. This limitation is provided if the ISP: does not have a requisite of knowledge[140] (1); does not receive a financial benefit directly attributable to the infringing activity, and has the right and ability to control it (2); takes down or blocks access to the material expeditiously, upon receiving proper notification of proper infringement (3).

Regarding this last condition, a service provider must have filed with the Copyright Office a designation of an agent to receive notifications of claimed infringement, and a detailed "notice and takedown procedure" is provided[141].

§ 12. No Monitor Obligation and The Knowledge Standard

1. In any group of cases ("mere conduit", "caching", "hosting"), the Directive on Electronic Commerce imposes no general obligation on providers to monitor the information which they transmit or store, nor a general obligation actively to seek facts or circumstances indicating illegal activity.[142]

However, this no general obligation to monitor does not affect the possibility for Member States to require service providers, who host information provided by recipients of their service, to apply duties of care, which can reasonably be expected from them and which are specified by national law, in order to detect and prevent certain types of illegal activities. Moreover, Member States may establish obligations for information society services providers promptly to inform the competent public authorities of alleged illegal activities or information undertaken by recipients of their service or obligations to communicate to the competent authorities, at their request, information enabling the identification of recipients of their service with whom they have storage agreements.[143]

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[138] These hosting cases will fall outside de three step rule when the recipient of the service is acting under the authority or the control of the provider (Art. 14.°, par. 2).

[139] See DMCA, Sec. 512(c).

[140] The knowledge standard means that he does not have actual knowledge of the infringement (1), is not aware of facts or circumstances from which infringing activity is apparent (2), or upon gaining such knowledge or awareness, responds expeditiously to take the material down or block access to it (3).

[141] See DMCA, Sec. 512(c)(3) (procedures for proper notification and rules as to its effect)

[142] See Directive on Electronic Commerce, Art. 15, 1.

[143] Directive on Electronic Commerce, Recital 48 and Art. 15, 2.

2. Then, the Directive on Electronic Commerce does not provide a "notice and takedown procedure" similar to the procedure provided for, in the U.S., by the DMCA[144]. It doesn't say, for example, what is the effect regarding the subscriber of removing material or disabling access to it after receiving notice that it is infringing.

Without an obligation to monitor and a notice and takedown procedure how are online service providers going to be considered to have awareness of the facts and circumstances from which the illegal activity is apparent?

The Directive on Electronic Commerce is meant to constitute the appropriate basis for the development of rapid and reliable procedures for removing and disabling access to illegal information. However, the Directive considers that such mechanisms are to be developed on the basis of voluntary agreements between all concerned parties, since it is considered to be in the interest of all parties involved in the provision of information society services to adopt and implement such procedures[145]. Nevertheless, the attribution of liability following the taking down of content is one of the aspects the Commission shall re-examine in its report[146].

Moreover, the Proposal was also not meant to preclude the development and effective operation, by the different interested parties, of technical systems of protection and identification and of technical surveillance ("cookies") instruments made possible by digital technology within the limits laid down by Directives 95/46/EC and 97/66/EC[147]. However, technical screening devices, such as filtering mechanisms, have not shown to work properly, meaning that not only they may not detect all illicit material and but also they can filter out some legitimate material. But even if they did work properly, it is not certain whether online service providers themselves will use those monitoring systems: online services providers are most likely to obtain the requisite of knowledge through notices from third parties, since software manufacturers and other copyright owners, such as phonogram producers, are regularly patrolling the Web to identify sites containing infringing material. Moreover, the implementation of filtering software and rating systems

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144 See DMCA, Sec. 512.

145 See Directive on Electronic Commerce, Recital 49.

146 Article 21, 2, of the Directive on Electronic Commerce states: "In examining the need for an adaptation of this Directive, the report shall in particular analyze the need for proposals concerning the liability of providers of hyperlinks and location tools services, "notice and take down" procedures and the attribution of liability following the taking down of content."

147 Confidentiality of electronic messages is guaranteed by Article 5 of Directive 97/66/EC. According to that Directive, Member States must prohibit any kind of interception or surveillance of such electronic messages by others than the senders and receivers and abstain from prohibiting or restricting the use of cryptographic methods or tools for protecting confidentiality or ensuring authenticity of the information transmitted or stored.

do not provide host service providers with the required level of knowledge since editorial control involves the use of judgment, and no computer program has such capacity[148].

3. Unlike the DMCA, the Directive on Electronic Commerce does not clarify what constitutes an adequate notice to provide the host intermediary with the required level of knowledge, and it does not address the scope of liability that host service providers will face as a result of removing material incorrectly believed to be illegal.

In the U.S., the DMCA establishes a procedure for notification of the existence of illegal material. In particular, it requires that copyright owners who notify an on-line intermediary of allegedly infringing material include a list of specified elements that, *inter alia*, will permit the on-line intermediary to identify the material. If the notification rules are complied with, the on-line intermediary will be regarded as having the required level of knowledge. If, upon receiving proper notification, the host provider removes or blocks access to the identified material, then the provider will benefit from the liability limitation provided the host provider has notified the owner of the site access to which has been blocked. In addition, the person who misrepresents that material as infringing will be liable for damages incurred by a host service provider or a user as a result of the information's having been removed or access disabled.[149]

Instead of establishing a statutory "notice and take-down" procedure like the DMCA, the Directive on Electronic Commerce only includes an obligation to re-study the need for legislation on "notice and take-down" procedures within three years after adoption of the Directive, and relies upon and promotes self-regulation and private solutions for notice and take-down. The result of this legal uncertainty could be that, to avoid liability, European service providers would take down material upon receipt of almost any type of notice, and they would include provisions in their users' agreements permitting them to remove material at their discretion. In view of this legal uncertainty, freedom of expression and fair competition on the Web might be compromised.

However, the Directive on Electronic Commerce[150] provides that mere conduit, caching and hosting limitations do not affect the possibility for a court or administrative authority, in accordance with Member States' legal systems, to require the service provider to terminate or prevent an infringement[151]. Regarding hosting activities it goes further to

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[148] See *Lunney v. Prodigy Services Company* (1998 N.Y. App.). See also, however, *Stratton Oakmont v. Prodigy*, 1995 (N.Y. Misc. Lexis, 229, N.Y. Sup. Ct Nassau, 1995).

[149] See DMCA, Sec. 512(c)(3)/(g)(1)/(f).

[150] Directive 2000/31/EC of the European Parliament and of the Council of June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal market ("Directive on electronic commerce") (OJ L 178, 17.07.2000).

[151] See Directive on electronic commerce, Article 12, 3, and Article 13, 2.

leave the possibility for Member States to establish procedures governing the removal or disabling of access to information[152].

It seems that those orders from courts or administrative authorities will fulfill the knowledge standard regarding the service provider. After notification from these authorities the intermediary will be regarded as having the required level of knowledge. Moreover, upon receiving that notification, if the host provider removes or blocks access to the identified material, then he should benefit from the liability limitation provided the host provider has notified the owner of the site to which access has been blocked.

§ 13. Information Location Tools (Browsing, Crawling, Linking, Metataging)

1. The Directive on Electronic Commerce does not address the search engine function carried out by information location tool providers, which allow information to be easily located and accessed by Internet users. It means that, if an on-line intermediary provided both access and hosting services, he could benefit from the limitations of liability for "mere conduits" and for "hosting"; however, if he provided also a search engine he would not be able to benefit from any liability limitation provided by Directive on Electronic Commerce, which does not exempt any activity involving selection, modification or creation of material by the ISS provider itself.

Information location tools, such as "crawlers" and other search engines, identify and index Web sites according to "meta tags" contained in the respective HTML or XML documents, and display a list of links to Web sites where the request information is located. Examples of famous search engines are Euroseek, Lycos, Altavista, Yahoo. Despite its important role in the Internet, providing links to Web sites may raise some legal questions.

To begin with, crawlers may link to Web sites with copyright infringing content and the ILT provider may know about that[153]. In the U.S., the DMCA provides an answer to this question. Section 512 (d), relating to hyperlinks, online directories and search engines, limits liability for the acts of referring or linking users to a site that contains infringing material by using such information tools, if the provider does not have actual knowledge that the material is infringing or, in the absence of such actual knowledge, is not aware of facts or circumstances from which the infringing activity is apparent (1); or upon gaining

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[152] See Directive on electronic commerce, Art. 14, 3.

[153] See, for example, *Church of Scientology v. several Internet Providers,* the District Court of the Hague, 9 June 1999, (the Court found that knowingly giving access to or hosting links that upon activation by an end-user displayed Church of Scientology's copyright material is a copyright infringement).

such knowledge or awareness, acts expeditiously to take the material down or block access to it (2); does not receive a financial benefit directly attributable to the infringing activity, in a case where the service provider has the right and ability to control such activity (3); and upon proper notification of claimed infringement responds expeditiously to remove, or disable access (4).[154]

In Europe, the Directive on Electronic Commerce doesn't answer the question of linking to infringing sites. Nevertheless, it is provided a "re-examination procedure", under which the Commission will have three years following adoption of the Directive to re-evaluate the importance of addressing the scope of liability of information location tool providers and hyperlink providers[155]. This is a delicate question, because it implies a compromise between different legal traditions of Member States[156]. In *droit d'auteur* countries the question could be solved as a matter of unfair competition, while in the United Kingdom, the CPDA 1988 would provide a basis to impose liability for linking to infringing material: the secondary infringement, which requires knowledge. So, if the Directive were to establish rules similar to the DMCA, it would probably enlarge the copyright notion of secondary infringement to *droit d'auteur* countries.

On the other hand, it could be argued that there would be infringement of any of the rights of the copyright owner of a Web site where an information location tool provider provides a link to that site without the site owner's permission[157]. However, the mere provision of links to another Web site should not be deemed copyright infringement. Linking interactive documents is the very heart of the new interactive media, notably the Internet, and mere linking means that the information location tool provider is simply pointing the user at that Web site by providing the means by which the browser can make his own copy. Temporary copies made by the Internet user when browsing the Web (RAM copies) are excluded from the scope of the reproduction right. In other words, browsing the Web falls outside the right of reproduction, since it only makes copies which are of a

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[154] See DMCA, Section 512 (d).

[155] Directive on electronic commerce, Article 21 (Re-examination) states: 1. Not later than three years after the adoption of this Directive, and thereafter every two years, the Commission shall submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this Directive, accompanied, where necessary, by proposals for adapting it to developments in the field of Information Society services (...). 2. In examining the need for an adaptation of this Directive, the report shall in particular analyze the need for proposals concerning the liability of providers of hyperlinks and location tool services, notice and take down procedures and the attribution of liability following the taking down of content. (...).

[156] See J. Ellins, *Copyright Law, Urheberrecht und ihre Harmonisierung in der Europaïschen Gemeinschaft*, Berlin, 1997, *passim*.

[157] See *Washington Post v. Total News* case [No. 97 Civ. 1190 (S.D.N.Y. 1997) (the defendant provided several links to the plaintiff's news sites, and, once activated, the links incorporated the content of the second site into frames of the primary site, instead of sending the browser to the linked sites)).

mere technical nature (1), are an integral part of another act (2), and have no separate economic significance (3): acts of caching and browsing pass the "three step test"[158].

However, there are certain linking techniques of interactive documents, such as linking to an internal part of a Web page ("deep-linking") or merging the content of a linked site to the Web site of another ("in-linking"), which might be considered infringing. In fact, these techniques may cause the owner of the linked site to lose revenue from advertising posted on its homepage and are capable of creating confusion as to the identity of the site owner[159]. Nonetheless, these are not strict problems of copyright law[160]. The same applies, *mutatis mutandis*, to "pagejacking" and "mouse-trapping"[161].

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[158] See Directive Proposal on Copyright, Art. 5, 1, and Recital 23.

[159] See TicketMaster, *Inc v. Microsoft Corp* , Civ. 3055 (C.D. CAL.); *Shetland Times Limited v. Shetland's News*.

[160] The WIPO Primer on Electronic Commerce and Intellectual Property Issues has addressed this issues, mainly in the field of trademark protection: "Given the rapid and continuing development of electronic commerce, it is almost impossible to give an exhaustive list of ways in which trademarks can be used on the Internet and to project what new forms of use might raise questions in the future. For the present, some of these practices, such as "hyperlinking" or "metatagging" are currently indispensable for an efficient use of the World Wide Web. Nevertheless, they pose potential threats to trademark owners since they facilitate the creation of associations, thus increasing the danger of confusion, dilution or other forms of unfair exploitation of trademarks. On the other hand, the growing familiarity of consumers with Internet technology will probably influence the legal assessment of such practices. The general problem with such cases is that each jurisdiction seems to draw the line between acceptable and infringing practices differently. Such differences make it difficult for enterprises to formulate a coherent marketing strategy for their activities in electronic commerce. The following examples illustrate this concern:

(i) Use of Trademarks as Metatags. A metatag is a keyword embedded in a web site's HTML code as a means for Internet search engines to categorize the contents of the web site. Metatags are not visible on the web site itself (although they can be made visible together with the source code of the page); however, a search engine seeking out all web sites containing a particular keyword will find and list that particular site. The more often a keyword appears in the hidden code, the higher a search engine will rank the site in its search results. In various jurisdictions, trademark owners have challenged the unauthorized use of their trademark as a metatag. / One problem in such cases is that the trademark is not primarily used to distinguish particular goods or services. It is used in a way that is normally not visible to the human eye, to make a search engine list a particular web site in response to a search. The user has to click on one of the listed search results if he or she wants to view the content of that web site itself. Some courts have nevertheless regarded this as a trademark infringement, stating that such use might suggest sponsorship or authorization by the trademark owner, or using the concept of "initial interest confusion" relying on the fact that consumers looking for the products of the trademark owner might wrongly be directed to the web site of someone else. If this is the web site of a competitor, consumers might simply stop there and use the competing product, even though they are no longer confused when viewing that web site. In other jurisdictions, such use might be regarded as an act of unfair competition. In other contexts, the use of another's trademark as a metatag may be legitimate "fair use," for example, if a retailer uses a trademark as a metatag to indicate to prospective customers that it is offering the trademarked goods.

(ii)"Sale" of Trademarks as Keywords. The web sites of Internet search engines are among the most frequented sites on the Internet. As such, they are particularly attractive to advertisers. Some of these search engines "sell" keywords to advertisers who want to target their products to a particular group of Internet users. This results in the outcome that, whenever the keyword is entered into the search engine, an advertisement appears along with any search results. Retailers, for example, have purchased keywords so that their advertisements are displayed whenever it appears that products bearing a particular trademark are being sought. This has been challenged by trademark owners who are concerned that such advertisements might divert customers from their own web site, or from the web sites of their preferred or authorized web retailers. The legal treatment of such cases is, as yet, unclear.

(iii) Acceptable Unauthorized Use. Legal systems may provide exceptions for the "fair use" of a sign that is protected as a trademark. Such exceptions often apply when a sign is used fairly and in good faith in a purely descriptive or informative manner. It is also often stipulated that such use should not extend beyond that which is necessary to identify the person, entity or the goods or services, and that nothing is done in connection with the sign which might suggest endorsement or sponsorship by the trademark holder. Such exceptions may be equally applicable when a sign is used on the Internet. Other examples of acceptable unauthorized trademark use include use in a non-commercial context or use that is protected by the right of

CONCLUSION

This paper has addressed two major copyright issues of electronic commerce within the construction of the legal framework for the information society and its digital economy. First, the issue on circumvention of technological measures used by copyright owners to protect their works, in particular computer programs and electronic databases, as well as on tampering with copyright management information. Second, the issue on the liability of online service providers for copyright infringement when engaging in certain activities, such as: 1. transitory communications ("mere conduit"); 2. system caching; 3. storage of information on systems or networks at direction of users ("hosting"); 4. information location tools ("browsing", "crawling", and "linking").

The main legal sources which this paper was based upon are the new WIPO Treaties (Dec. 1996), the European Directive Proposal (as amended) on Copyright in the Information Society [COM(99) 250 final], the European Directive on Electronic Commerce (2000/31/CE), and the U.S. Digital Millennium Copyright Act (Oct. 1998). Moreover, the European Directives on Computer Programs (91/250/CEE), Databases Protection (96/9/CE), and Encrypted Services (98/84/CE), as well as important case law of the European Union's Member States and the U.S. have also been considered.

The study of those copyright issues of electronic commerce aimed to explain how copyright has been adapted to the new technological paradigm. In other words, this paper essayed to study some solutions already provided by the process of adaptation of copyright to the digital computer and network technologies, in particular the Internet. As the title of this paper suggests, copyright has been transformed by legal metamorphosis into a sort of *technodigital property for cyberspace*. Furthermore, in this adaptation process and in the absence of Community harmonization of unfair competition, we have identified a tendency according to which author's rights system of Civil Law countries are importing legal categories from the copyright concept of Common Law countries.

Finally, it seems that copyright law will play a major role in the construction of the information society and in the improvement of electronic commerce. Instead of being replaced by the rule of technology and cyber-ethics in the brave new world of intelligent electronic agents, copyright has been called to put an end to the "electronic woodstock"

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free speech, such as consumer criticism expressed in relation to a particular trademark." *Primer on Electronic Commerce and Intellectual Property Issues*, WIPO, Geneva, May 2000, I. The Impact of Electronic Commerce on Intellectual Property, 53-55.

[161] See *Federal Trade Commission v. Pereira*, U.S. District Court of Eastern Virginia, 20 September 1999.

and “anarchy online”, establishing a legal form of property rights in Digitalia. However, at the same time, the adaptation of copyright to the digital environment shows that copyright law is being used as a *leit-motiv* to grant protection to the investment of producers in the digital economy. In other words, copyright law, at least in the sense of European *droit d'auteur*, is being “taken-over” by *sui generis* intellectual property rights and technological adjuncts, which can be used to appropriate public domain information and control access to information and the freedom of expression within electronic communications.

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Abstract - Intellectual property rights are among the most valuable assets for direct electronic commerce since their objects can be worldwide delivered by digital network transmissions. However, at the same time, copyright and related rights holders fear that the information society may become a new “risk society”. Their interests call for the establishment of property rights in “digitalia” in order to put an end to the so-called “anarchy online” and to the “electronic Woodstock”. This article explores important issues of copyright and related rights in the framework of the provision of information society services. Part I analyses the “technological adjuncts”

concerning the circumvention of technological protection measures and the integrity of copyright management information. This issue is specially developed in what concerns the lawfulness of circumvention devices against anti-decompilation measures of computer programs. Moreover, this "brave new technological property" raises also several concerns regarding de protection of databases, in particular the impact of technological protections to the sui generis right granted to public domain information databases producers. In fact, a concept of "digital property" or "techno-digital property" seems fully to apply in these situations. Another example is provided by the legal protection of conditional access services. On the other hand, part II addresses the issue of liability of online service providers. More in detail, it is considered whether the "three step test" could justify new limits to the right of reproduction concerning certain activities of online service providers, such as mere conduit, system caching, hosting and the provision of information locations tools (browsers and hyperlinks). The answer to this question has been provided by the European directives on electronic commerce and copyright in the information society, which harmonize the liability of providers of information society services implementing a general principle of freedom of navigation in the Internet in similar terms to the US Digital Millennium Copyright Act. However, several issues were left open for further consideration, such as the procedures of notice and take down and the use and sale of trademarks as meta-tags.

Sumário: O comércio electrónico coloca novas questões aos direitos de propriedade intelectual, no âmbito da construção jurídica da sociedade da informação. Este escrito versa, por um lado, sobre a tutela jurídica de medidas tecnológicas de protecção e gestão de direitos de autor e conexos (em especial sobre programas de computador e bases de dados), e, por outro, sobre aspectos da responsabilidade dos prestadores de serviços da internet, analisando comparativamente o acervo jurídico-comunitário da sociedade da informação e a lei estadunidense.