

ADAPTING COPYRIGHT TO THE INFORMATION SUPERHIGHWAY

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1. Towards the Information Superhighway

`... within the foreseeable future we will have computer systems in which thousands or even millions of authors' works - books, articles, pictorial works, maps, music, plays, recordings, motion pictures, and other forms of artistic expression - are permanently stored in a single copy. These computer systems will be linked, by wire or laser beams or communications satellites or some other method, with other computers throughout the world. These in turn will be linked with viewing screens in public institutions and in private homes and businesses. Any work from this great body of authorship could instantly be inspected by anyone in reach of a viewing screen, and that person could obtain a copy of any or all of the works merely by pressing buttons. In many cases the demand and need for printed copies will completely disappear'.¹

More than 25 years have passed since Barbara Ringer predicted the advent of the digital networked environment and the profound impact this would have on the law of copyright. In 1996 much of Barbara Ringer's prediction has materialized. Today, more than 25 million computer owners are linked on a global scale by the Internet, the forerunner of the information superhighway. Internet users all over the world have direct access to vast quantities of text, data, maps, photographs, computer games, still and moving images, and sound recordings. Spectacular advances in network fidelity, data compression and storage capacity will enable the Internet (or any other computerized telecommunication network) to eventually carry nearly the complete Berne Convention catalogue of works. Moreover, the digital environment will enable traditionally distinct categories of works to merge into new breeds of works containing information in a plurality of `modes', so-called *multimedia* works.

Indeed, the advent of the information superhighway has not taken the copyright community entirely by surprise. The copyright problems of computerized information storage and retrieval systems have been studied ever since the early 1970's.² Problems relating to the dissemination of copyrighted works through cable networks are equally well researched. Moreover, `multimedia' works have been in existence, albeit in a

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1 B. Ringer, `The Use of Copyrighted Works in Information Storage and Retrieval Systems', German translation in: *GRUR Int* 1968, 18.

2 See e.g. E. Ulmer, *Elektronische Datenbanken und Urheberrecht*, Munich, 1971; D. Goose, *Die urheberrechtliche Beurteilung von elektronischen und Mikrofilm-Datenbanken*, Berlin, 1975; P.B. Hugenholtz, *Auteursrecht en information retrieval. Verveelvoudiging en openbaarmaking in het computertijdperk*, Deventer, 1982; P. Katzenberger, `Urheberrechtsfragen der elektronischen Textkommunikation', *GRUR Int* 1983, 895; F. Gotzen, `Grandes orientations du droit d'auteur dans les états-membres de la C.E.E. en matière de banques de données', in: *Banques de données et droit d'auteur*, Paris, 1987, 85; A. Lucas, *Le droit de l'informatique*, Paris, 1987, 289; *Les nouveaux moyens de reproduction*, XXXVII Travaux de l'Association Henri Capitant, Journées néerlandaises, Paris, 1988; M. Vivant (ed.), *Lamy droit de l'informatique*, nos. 1563-1617.

somewhat primitive form, for many years; video games and moving pictures are well-known examples of `multimedia' works *avant la lettre*.

So, one might conclude, we have seen it all before: the arrival of the information superhighway is an evolutionary, not a revolutionary development. The existing copyright system has proven to be flexible enough in the past. There is no need for radical changes in the future; never change a winning team.

Arguably, this down-to-earth approach would make a sensible and pragmatic short-term solution. If the European Software Directive³ has proven anything, it is that legislators should not overreact to the problems presented by new information technologies. In the long run, however, this conservative approach will probably not suffice. The development of the information superhighway is, admittedly, a gradual process. But the combined effects of mass digitalization, networking on a global scale, and information delivery on demand, will eventually require more than just piece-meal changes to the present copyright system. The emerging digital networked environment is affecting the very economic underpinnings of the present copyright system. In the end, a thorough rethinking of the copyright paradigm will be probably be inevitable.⁴

No such exercise will be undertaken in this paper. Its main purpose is to suggest short term solutions, primarily from a European perspective, to some of the most pressing copyright problems of the digital networked environment. The focus of this paper, then, will be on the scope and limitations of the existing catalogue of protected rights (§§ 2-4). How do the various acts of network communication (digitization, uploading, transmission, browsing, viewing, downloading) fit in into the current system? Is there an imminent need for redefinition or clarification of the exploitation rights? Will existing copyright exemptions survive in the new environment? Does the good-old `old media' exhaustion rule come into play?

Prior to these discussions, I will make some general observations on the nature of the `information superhighway', as it affects - or may affect - the law of copyright, both in theory and practice.

1.1 The information superhighway

In this paper, the `(information) superhighway' shall be short-hand for the digital networked environment of the near future. The superhighway is neither a new product, nor a new service, nor a new type of network. It represents the integrated, broad-band, high-speed, general-purpose telecommunications network of the coming century. The superhighway will not be a single physical network, but a conglomerate of local, regional, national and transnational telecommunications infrastructures, interlinked to form a global information superhighway.

From a technical perspective, the superhighway is not homogenous. The necessary physical links will be provided by copper wires, optical fibres, radio links and satellites, or a combination thereof. In the superhighway a variety of existing telecommunications

3 Directive of the Council of the European Communities of 17 May 1991, O.J.EC L 122/42.

4 See Egbert J. Dommering, `Copyright being washed away through the electronic sieve', elsewhere in this volume.

infrastructures, such as the telephone network, cable networks, satellite networks and broadcasting stations will converge. The infrastructure of the superhighway will not be operated by a single, monopolistic telecommunications operator. It will not be a monolithic network; parts of it will be controlled by operators under a state monopoly, other parts by private companies. Users and information providers will probably not deal with these network operators directly; access and service providers will provide the necessary telecommunications services and facilities.

The superhighway will be a broad-band network, permitting the communication of data, text, audio, video and images at high speed and high fidelity. As an integrated 'network of existing networks', the superhighway will carry both digital and analogue signals. In contrast to most existing cable networks, the superhighway will permit interactive, two-way communication. Information can be uploaded and downloaded to and from any point in the network; consumers will be able to receive information on individual demand. Conversely, information users may become information providers as well.

Will tomorrow's superhighway be the Internet of today? Perhaps. Clearly, many of the criteria in the above-mentioned definition presently apply to the Internet. However, the Internet's limited bandwidth does not, as yet, make full scale audio and video services (either broadcast or on-demand) a realistic option. These technical limits notwithstanding, most of the copyright problems discussed in this paper exist - and require urgent solution - in the context of the Internet as well.

1.2 Convergence

The emerging superhighway and the multimedia programs it will carry, exemplify the general trend towards convergence in the telecommunications and information industry. This tendency can be perceived on different levels.

Convergence of 'platforms'

In analogue times, different modes of communications required dedicated 'platforms'. For switched voice telecommunications (POTS: 'plain old telephone service'), narrow-band networks were used, which were traditionally operated by state-controlled PTTs. Radio and television programs were disseminated over hertzian waves or, in a later stage of development, via broad-band cable networks. Similarly, for various forms of off-line communications genre-specific media were employed. Printed paper carried text or photo's, vinyl records carried sound, celluloid film carried moving pictures.

In the emerging digital environment, the medium is gradually being 'liberated' from the message. PTT-operated telephone networks will soon carry full-motion video programs. Cable networks will provide interactive programming and person-to-person voice and data communications. Compact discs will carry motion pictures and all sorts of interactive multimedia programs. Traditional print media are giving way to electronic delivery systems as the preferred platform for disseminating text and data.

This convergence of 'platforms' directly affects the structure of the present copyright system. In the digital environment the existing borderlines between the different genres of works are becoming blurred and hard to maintain. This is problematic, since the present copyright system does not protect each genre equally; in most European

countries, e.g., a computer program is better protected than, say, a novel⁵. Moreover, in many countries the rightholder's exploitation rights are defined in platform or genre specific terms: right of printing, right of broadcasting, right of cable distribution, etc.

Convergence of roles

As the Internet experience clearly demonstrates, traditional actors in the communications process (information producer, provider, publisher, intermediary and user) will take on new roles in the digital networked environment. The Internet is structured as an 'open platform model', as opposed to the 'broadcasting model' of most existing mass media. On the Internet authors may freely disseminate their works without the intervention of traditional publishers: authors are becoming 'publishers'. Moreover, digital technology enables users to actively search and manipulate information available on the network: users are becoming authors. Furthermore, traditional intermediaries, such as university libraries, may take on new roles as information providers: intermediaries are becoming publishers as well. This convergence of roles may eventually affect the existing system of rights allocation in copyright and neighbouring rights legislation.

1.3 Communicating on the superhighway: a change of paradigms?

The digital networked environment of the superhighway represents a change of paradigms for the traditional copyright industries. Mass circulation of copies carrying identical information products is replaced by transmission of customized information on demand. In this process, the 'public sphere' between information provider and information user is gradually dissolving.⁶ The act of 'publishing' thereby loses much of its original connotation. The increasingly 'private' nature of information distribution on the superhighway is amplified by the increasing use of encryption techniques.

Information on demand

The superhighway infrastructure enables users to actively communicate with information providers: *interactivity*. Users can retrieve information of their choice from information banks at innumerable points on the network. Conversely, publishers and other information providers will 'customize' information to accommodate specific user demands, employing detailed 'user profiles' drawn up from previous usage patterns. In this process of interactive and customized information usage, the information product will gradually lose its 'concrete' form of expression. Instead, the product will merely serve as a source file for an infinite variety of derivative information products on demand.

Interactivity and customization combined will make existing (or future) legal distinctions between 'stand-alone' and collective works (such as audiovisual works and databases) difficult to maintain. On the superhighway, the collective work will rarely be consumed in its entirety. Instead, the interactive user will use only the most useful (customized)

5 Pursuant to the European Software Directive, *supra* note 3, most copyright exemptions that apply to ordinary 'writings', e.g. for private copying, are not valid in respect of computer programs.

6 Th. Dreier, 'Copyright digitized: philosophical impacts and practical implications for information exchange in digital networks', paper presented at WIPO Worldwide Symposium on the Impact of Digital Technology on Copyright and Neighbouring Rights, Harvard University, 31 March - 2 April 1993, p. 11-14.

`bits and pieces' - the `nuggets' of the treasure trove. For this reason alone, creating a separate `multimedia' work category would be ill advised.

It is expected delivery on demand will gradually replace `broadcasting' (the simulcasting of information to a passive audience) as the principal communication pattern of the superhighway. In the future, unlike today's Internet, proprietary information will probably no longer `roam around freely over the net'.⁷

Metering

The intelligence built into the superhighway will enable information providers to precisely monitor and control the individual user's information consumption. Whereas in the present world of physical copies, royalties are calculated on a per-copy basis, on the superhighway royalties can - and will - be charged per actual use. A per-use (`pay-as-you-go') royalty scheme may be either time-based or volume-based; of course, flat rate schemes are possible as well.

Direct licensing

Many rightholders believe (or wish to believe) that the built-in intelligence of the superhighway will enable them to grant and administrate licenses to individual users themselves. Works disseminated over the superhighway will carry identifying `tags', inviting prospective users to (automatically) contact right owners, or `permission headers', pre-determined licensing conditions to which users may agree in real time.⁸ `Self-administration of rights' might gradually replace collective licensing or collective administration of rights. Thus, the digital networked would bring back to rightholders what they (nearly) lost in the age of mass copying: the power to transact directly with information users.

Encryption

Encryption of information-carrying signals is already customary in some branches of the information industry: satellite-to-cable broadcasting, subscription television, pay television, etc. To other branches, such as the book trade, encryption is totally alien. The computer software industry retains painful memories of the market failure of the `copy protection' schemes applied in the 1980's. Consumers simply refused to buy computer programs containing anti-copying algorithms or devices. At present, copy protection has become all but extinct.

Many in the information industry predict that encryption (on various levels) will eventually replace copyright law as the principal means of protection on the superhighway. According to the oft-quoted Charles Clark, `the answer to the machine is in the machine'.⁹ However, the recent experiences of the software industry indicate that, perhaps, it would be imprudent to solely rely on technical solutions.

7 Allen N. Dixon & Laurie C. Self, `Copyright protection for the information superhighway', *EIPR* 1994, 465, at 466.

8 `Technological strategies for protecting intellectual property in the networked multimedia environment', *The Journal of the IMA Intellectual Property Project* 1994, Vol. 1, no. 1.

9 Charles Clark, `The Answer to the Machine is in the Machine', elsewhere in this volume, ...

Ironically, the implementation of encryption technology is being hampered, in many countries, by existing or proposed restrictions under public telecommunications law, for reasons of public security, to use encryption hardware devices or encoding software.

2. Exploitation Rights on the Superhighway

Copyright owners are protected by a bundle of exclusive exploitation rights. National legislators have applied different methods in defining the catalogue of exclusive rights, enumerating the various 'restricted acts'. In some countries, copyright laws provide for rather detailed, media-specific definitions of the restricted acts. In others broader, and more abstract, notions of 'reproduction', 'distribution' and 'communication to the public' are applied.

Either way, the exploitation rights serve as abstractions of the various acts that constitute exploitation from an economic point of view. Many restricted acts are patterned after existing modes of exploitation: publication in book form, public performance, broadcasting, etc. However, the digital networked environment of the superhighway represents a radical change in the way copyrighted works are exploited. Mass distribution of copies or signals carrying identical information is replaced by transmission on individual demand of customized information.

Thus, the existing set of exploitation rights, as defined in national or international legal instruments, does not necessarily reflect the manner in which protected works are communicated in the digital networked environment. The advent of the superhighway, therefore, presents legislators with a choice: either expand or modify existing 'old media notions'¹⁰ or redefine the catalogue of restricted acts, taking into account the peculiarities of the new environment.

In examining these rights legislators (and courts) should not, in my opinion, focus on technological detail, but follow the *normative approach* inherent in the law of copyright. Existing rights and limitations are not merely technical, descriptive notions, but purpose-oriented; they must be applied and interpreted accordingly.

Communicating copyrighted works on the superhighway may involve one or more of the following acts:

- * digital reproduction, adaptation
- * temporary storage
- * providing on-line access
- * point-to-point transmission
- * broadcasting
- * dissemination in closed user groups
- * decoding
- * screen display or use

2.1 Digital reproduction and adaptation

10 P. Geller, 'The Universal Electronic Archive', *IIC*, Vol. 25 (1994), 54.

There is general agreement that the storage of a protected work in a digital medium amounts to a *reproduction* (copy) within the meaning of article 9 (1) of the Berne Convention. The words 'in any manner or form' in this provision are clearly meant to cover all methods of reproduction, including storage in electronic digital form. Clearly, there is reproduction whenever protected works stored in digital form are *uploaded* or *downloaded* to or from a host computer or server. Uploading and downloading will result in copies of the work being permanently stored in the server's and/or end user's computers. Of course, any further duplication of the digitally stored work will be considered a subsequent act of reproduction.

Under normal circumstances, converting a work into a digital format will not, as such, result in an *adaptation* or other alteration. The conversion process does not alter the composition or form of expression of the work; the converted file is a reproduction, not an adaptation, translation or transformation. Arguably, the same is true for any comparable act of data compression, decompression, encoding or decoding.

Of course, this is different if the work is digitally reworked or manipulated; the manipulated work will, indeed, qualify as an (unauthorized) adaptation. It goes without saying that digital manipulation bears the risk of infringing moral rights as well.

2.2 Temporary storage

In various stages of its journey through the digital network the work will be temporarily stored, either in whole or in part. Every act of transmission will involve one or more acts of loading the work in a (volatile) computer memory. In the process of being routed through the network, the work is constantly being 'stored and forwarded'. Furthermore, the acts of downloading and screen display may involve subsequent acts of temporary storage of (parts of) the protected work.

Opinions differ as to whether temporary storage qualifies as an act of reproduction. Article 4(a) of the Software Directive¹¹ and articles 5(a) and 7 (2) of the recently adopted European Database Directive¹² all refer to 'temporary reproduction'. The Software Directive seems to take an especially broad view of the reproduction right; according to its article 4 (a), the protected acts include:

'... the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole. In so far as loading, displaying, running, transmission or storage of the computer program necessitates such reproduction, such acts shall be subject to authorization of the rightholder.'¹³

However, under close scrutiny article 4 (a) of the Directive does not guarantee an exclusive right of loading, displaying or running the protected program; these acts must 'necessitate such reproduction'. This definition leaves a certain latitude to national courts

11 *Supra*, note 3.

12 Directive 96/..., of the European Parliament and of the Council on the Legal Protection of Data Bases, O.J. EC, ...

13 Under article 5 (1) of the Software Directive no authorization for these acts is needed 'where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose (...)'.

and legislators in determining the scope of the notion of 'reproduction'¹⁴.

At present, in many countries the copyright status of temporary storage is unclear. An exception is the United Kingdom; under Section 17 (6) of the Copyright, Designs and Patents Act (CDPA) '[c]opying in relation to any description of work includes the making of copies which are transient or are incidental to some other use of the work.' In contrast, Section 101 of the United States Copyright Act distinguishes between merely 'transitory' storage and more permanent or stable forms of reproduction. This follows from the definition of the term 'fixed' used in the definition of 'copies' in Section 101:

'A work is "fixed" in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.'

Perhaps, not all forms of temporary storage should be treated equally under copyright law. Acts of short-lived copying as mere byproducts of a technical communication process, such as the 'store-and-forward' mechanisms used on the Internet and other digital networks, should not be qualified as acts of reproduction. A similar argument can be made in respect of screen display; see below at § 2.7.

2.3 Providing on-line access; delivery-on-demand

What makes the superhighway infrastructure really different from existing broadcasting or cable networks is its capacity for two-way communication. By linking an existing information bank to a publicly accessible host or server, the information contained in the information bank becomes instantly available to the (general) public. Does this amount to a restricted act? Probably not under the Berne Convention. The Convention does not provide for a general *right of communication to the public*, such as the Dutch 'recht van openbaarmaking'¹⁵.

Providing on-line access and disseminating works over networks are acts of exploitation that do not fit nicely in those national laws that list the protected acts in a platform-specific manner. The copyright status of electronic delivery on demand appears to be especially problematic in Germany. Electronic delivery-on-demand probably does not qualify as either 'distribution', 'broadcasting' or other act of communication restricted by the German Copyright Act. By contrast, the performance right in France, including a broadly defined right of 'télédiffusion', appears to be especially well adapted to the digital environment.¹⁶

Many national legislators fail to deal with the mere act of making a work *accessible* (by electronic or other means) to the public. In this respect, the Spanish Copyright Act is a

14 Cf. Bundesgerichtshof (German Supreme Court), Decision of 20 January 1994 ('Holzhandelsprogramm'), *Computer und Recht* 1994, 275. The Court left expressly undecided the question of whether the act of running a computer program is restricted under the Software Directive.

15 Dutch Copyright Act, article 12.

16 Article L-122 (2) of the French Copyright Act; see A. Lucas & H.-J. Lucas, *Traité de la propriété littéraire et artistique*, Paris, 1994, no. 338. See for a general overview of the law in EU and EFTA Member States: P.B. Hugenholtz and D.J.G. Visser, *Copyright problems of electronic document delivery: a comparative analysis*, Report to the Commission of the European Communities, Luxembourg, 1995.

notable exception. Under article 20 § 2 (h) of the Spanish Act 'communication to the public' includes 'public access to computer databases by means of telecommunication, where such databases incorporate or constitute protected works.'¹⁷

According to the European Commission's preferred interpretation of the Directive on rental and lending rights¹⁸, the delivery-on-demand in a networked environment could amount to an act of 'rental' or 'lending'.¹⁹ From an economic perspective, this broad interpretation (or extension) of the rental right is, perhaps, understandable. For similar reasons, phonogram producers convincingly argue for exclusive electronic delivery rights. Indeed, the superhighway has the capability of substituting the distribution of physical copies by on-line delivery on demand. Moreover, the solution proposed by the Commission is attractive in so far as that it 'automatically' harmonizes an exclusive right of electronic delivery-on-demand on the European level.

However, the Commission's electronic rental right is conceptually flawed. Systematically, the rental right has its origins in the exhaustion doctrine, which - the Commission assumes - should not be applied to any rights of transmission. The rental right is devised as an exception to the exhaustion rule²⁰. It would be systematically unsound to simply transplant this right into the digital networked environment, where physical copies no longer are distributed. Therefore, application of the Directive to electronic delivery-on-demand would not appear to be justified.

2.4 Point-to-point transmissions, closed user groups

Under current copyright law, the act of transmitting a protected work over the network does not as such amount to a restricted act, unless the transmission is part of a broader process involving reproduction or communication to the public.

Here too, a normative approach is called for. The rationale of the right of communication to the public is, primarily, of an economic nature; copyright owners must be protected against acts of exploitation outside the private sphere.

Under current copyright law, the act of transmitting a protected work over the network does not as such amount to a restricted act, unless the transmission is part of a broader process involving reproduction or communication to the public. 'Point-to-point' transmissions of protected works (e.g. involving two computer users connected by a modem or exchanging messages by e-mail) is basically no different from sending letters by ordinary mail, and should be treated accordingly.

How then can (unrestricted) point-to-point transmissions be distinguished from electronic delivery services that, in principle, should fall within the scope of the specific rights? Following the normative approach previously advocated, we should not focus on merely technical acts of digital transmission. Arguably, the right of communication to the public

17 Article 20 § 2 (h) Law on Intellectual Property, no. 22, of 11 November 1987, as amended on 7 July 1992 [WIPO Translation].

18 Council Directive 92/100 on rental and lending rights and certain rights related to copyright in the field of intellectual property, O.J. EC no. L 346 of 27 November 1992, 61.

19 Commission of the European Communities, *Green Paper. Copyright and Related Rights in the Information Society*, Brussels, 19 July 1995, COM (95) 382 final, 58-59. See J. Reinbothe and S. Von Lewinski, *The EC Directive on Rental and Lending Rights and on Piracy*, London, 1993, 41-42.

20 See *infra* § 4.

might be triggered by the act of publicly offering (the transmission of) a protected work. Thus, rightholders would be protected against - even unsuccessful - delivery services, whereas point-to-point transmissions of an incidental or private nature would remain outside the scope of copyright.

Closed user groups and local area networks add complexity to the problems of defining the scope of existing exploitation rights. The question arises whether offering or transmitting a protected work to a closed user group qualifies as a communication to the *public*. In this context the notion of 'public' is critical.

National copyright laws do not apply the notion of 'public' in a uniform manner. The copyright status of secondary cable distribution is an interesting example. In some countries, such as The Netherlands²¹, all forms of cable distribution beyond the circle of family and friends are considered restricted acts. In other countries, such as Austria²², cable retransmission by means of small community antenna systems is exempted from the broadcasting right.

2.5 Broadcasting

Even though delivery-on-demand will eventually be the preferred communication pattern on the superhighway, acts of 'broadcasting' information will still be common in the digital networked environment. Broadcasting is a common phenomenon on the Internet; electronic mail boxes are filled each day with unsolicited information simulcast from a single source to a plurality of users.

In respect of alphanumeric data and texts, acts of 'superhighway' broadcasting are probably not covered by any specific Berne Convention minimum right. Article 11 BC is applicable only to dramatic, dramatico-musical and musical works. Article 11bis BC concerns either primary over-the-air broadcasting or secondary wireless or cable distribution. Article 11ter BC refers to 'recitations'; article 14 (1) (ii) BC to cinematographic adaptations. Even so, superhighway broadcasts will, in most cases, be considered acts of broadcasting, cable distribution, public performance or communication to the public by wire protected under national copyright laws.

Encrypted signals can be 'communicated to the public', assuming the codes are made available to a user group that is sufficiently 'public'. Compare article 1 (2)(c) of the European Satellite and Cable Directive:²³

'if the programme-carrying signals are encrypted, then there is communication to the public by satellite on condition that the means for decrypting the broadcast are provided to the public by the broadcasting organization or with its consent.'

Needless to say, the *absence* of encryption in a disseminated work should not be regarded

21 Hoge Raad (Supreme Court of the Netherlands), Judgement of 24 December 1993 (*Centraal Antennesysteem et al. v. BUMA*), [1994] 3 Ent.L.R. E-43.

22 Article 17 (3), Austrian Copyright Act.

23 Council Directive 93/83 on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission, O.J. EC no. L 248 of 6 October 1993, 15; cf. Section 6 (2) of the United Kingdom CDPA 1988.

as a forfeiture of copyright protection or an implied license to redistribute or reproduce the work.²⁴

2.6 Decoding

Decoding encrypted information in a digital environment will, under normal circumstances, amount to an act of reproduction. A copy of the encrypted work is produced, unless the decoding is achieved in real-time, e.g. by using special decoding hardware, and the decoded file is not (temporarily) stored in or after the process. The act of decoding *as such* is not normally a restricted act, either under the Berne Convention or under national copyright laws.

A notable exception is the Software Directive; article 4 (b), read in conjunction with article 6, provides for a (conditional) right to prevent *decompilation*. Moreover, Article 7(1)(c) prohibits the unauthorized possession of or trade in computer software decoding devices. Similar prohibitions, aimed at preserving telecommunications secrecy or preventing computer crime, exist in many national telecommunications or computer crime laws. Arguably, copyright law is not the appropriate vehicle for such provisions; the trade in decoding devices is not an act of exploitation or use of the protected work.

Moreover, encryption techniques and other forms of technical protection are not instruments of protecting intellectual property - i.e. the work as such. They are merely means of protecting the signals or physical objects that carry information, be it copyright protected or not. Technical protection schemes are content-neutral; legal enforcement measures, therefore, belong to quite a different realm than copyright.

2.7 Screen display

In the 'paper' world, the act of reading a document or viewing a television program does not qualify as a restricted act. This may be different in the digital networked environment. By displaying an electronically delivered document on a user terminal, part of the document is temporarily stored in the RAM memory of the user's computer, unless the user is equipped with a 'dumb' terminal (lacking memory facilities). Thus, screen display may be considered a (partial) reproduction of the work. Moreover, screen display may qualify as a 'public display', 'communication to the public' or comparable act, whenever a plurality of users watch the same computer terminal or screen.

Whether or not screen display amounts to a (partial) reproduction of the work displayed, is a contested issue. Arguably, qualifying screen display as reproduction would be a - technologically inspired - overstretching of the reproduction right. The mere reception or consumption of information by the end user has traditionally remained outside the scope of the copyright monopoly.²⁵ The transition into the digital networked environment does not, as such, seem to justify such a radical extension of the exclusive right. Arguably, the right of privacy and the freedom of reception guaranteed in articles 8 and 10 of the European Convention on Human Rights would be unduly restricted by such an

24 P. Gyertyánfy, 'Conflicts and changes. The new technologies in the protection and administration of copyright', WIPO Harvard Symposium, *supra* note 6, p. 8.

25 P.B. Hugenholtz, 'Convergence and Divergence in Intellectual Property Law: The Case of the Software Directive', in: Willem F. Korthals Altes, Egbert J. Dommering, P. Bernt Hugenholtz & Jan J.C. Kabel (eds.), *Information Law towards the 21st Century*, Deventer/Boston 1992, 319, 323.

all-encompassing right.

Proponents of an exclusive right of screen display, however, argue that the screen display of a protected work is comparable to an act of 'printing' in the paper world.²⁶ Indeed, a work wholly or partly displayed on screen can be permanently stored or printed; thus the display can serve as a source file for subsequent (unauthorized) acts of copying.

In all, the copyright status of screen display appears to be a crucial question. Should the copyright monopoly include a *use right* in the digital networked environment? For computer programs, article 4 (a) of the Software Directive seems to point in that direction. In my opinion, we should be careful not to automatically extend this rule to *all* categories of works in new environment.²⁷ Freedom of reception considerations may, perhaps, not carry much weight in respect of computer programs; the superhighway will eventually carry the very works (political and literary commentary, journalistic expression, etc.) for which article 10 of the European Convention on Human Rights was written.

3. Limitations and Exemptions

National copyright laws are very different in defining the statutory limitations (exemptions) to the restricted acts. Some legislators provide for lengthy, hard-to read and hard-to-apply, detailed sets of copyright privileges, such as the United Kingdom's breathtaking set of library privileges²⁸. Other laws contain only minimal exemptions, employing general notions of 'private use'. Most European copyright laws contain at least the following limitations:

- * copying for personal (scientific, educational or private) use
- * library privileges
- * educational and scientific exemptions
- * special rules for reprographic reproduction
- * freedom of quotation
- * freedom of news reporting

The present system of copyright limitations presents users of copyrighted works with a bewildering array of detailed rules and regulations, most of which were written in a pre-electronic era. The existing set of limitations is especially hard on users and producers of *multimedia* works. In respect of multimedia works several incompatible regimes concur: reprography, home taping, computer software and/or database protection, etc. Which set of limitations will prevail in a given situation, is entirely unclear.

The inflexibility of current platform specific limitations combined with the expanding right of reproduction threatens to upset the traditional balance between copyright protection and user freedoms. Not surprisingly, libraries, intermediaries and users are pressing for the preservation of copyright limitations in the digital environment. This

26 See 'The Printed Word', Preparatory document for and report of the WIPO/UNESCO committee of governmental experts, Geneva, 7-11 December 1987, *Copyright*, 1988, 74, § 182-191.

27 Cf. EC Green Paper, *supra* note 19, 51-52.

28 Sections 32-41 CDPA; see Hugenholtz & Visser, *supra* note 16, at ...

concern is reflected in the Green Paper of the NII Working Group on Intellectual Property Rights:

‘As more and more works are available primarily or exclusively on-line, it is critical that researchers, students and other members of the general public have opportunities *on-line* equivalent to their current opportunities *off-line* to browse through copyrighted works in their schools and public libraries.’²⁹

Right owners, on the other hand, argue that many of the existing limitations should *not* be preserved in the new environment. Existing statutory licenses for photocopying, home taping and other mass private reproduction, do not reflect a fundamental ‘freedom to copy’. These statutory licenses have been introduced for merely practical reasons; no individual licensing of mass private reproduction was considered feasible. According to right owners, all this is changing in the digital networked environment. As licensing practices developed in the database publishing industry seem to indicate, licensing individual electronic usage is becoming a reality. From the right owner’s perspective, in the digital environment the ‘normal exploitation’ of a work, as protected under article 9 (2) of the Berne Convention, would include *each and every act of use*.

There is merit in both arguments. Consequently, it would be too facile to recommend a mere restatement of existing limitations and exemptions. The rationale of many existing limitations may not justify simply converting them to the digital environment. Instead, we must differentiate. Exemptions having their origins in market failure (i.e. the inability of copyright owners to transact directly with users) deserve critical review and, perhaps, should not survive in the new environment.

However, many existing copyright exemptions do *not* exist because of market failure, but in order to protect human rights and basic societal needs. Copyright exemptions are not, necessarily, exceptions. Exemptions are instruments in finding the necessary balance between property rights in information and safeguarding the public interest. Private copying exemptions are principally aimed at protecting the individual’s private sphere. Library privileges, archival exemptions, rights of news reporting and quotation rights are intended, *inter alia*, to safeguard our cultural heritage and foster the free flow of information. Other exemptions protect basic academic freedoms or serve essential educational purposes. These exemptions must, indeed, be preserved, as much as possible, in the digital networked environment.

Moreover, if the digital use right, mentioned above, would become reality, there are convincing arguments for *extending* the scope of existing exemptions in order to regain the necessary balance. Rights and exemptions are somehow intertwined; if the scope of rights increases, it may be necessary to broaden the exemptions accordingly.

4. Exhaustion of Rights

One of the most pressing problems to emerge from the previous paragraphs is the potential proliferation of exclusive rights pertaining to acts of digital communication.

29 Preliminary Report (Green Paper) of the Working Group on Intellectual Property Rights, *Intellectual Property and the National Information Infrastructure*, Washington D.C., July 1994, 133.

Applying a broad notion of 'reproduction', every such act - including transmission, reception and use - would be restricted. Arguably, a copyright of such an all-encompassing nature would be counterproductive and unduly restrictive to the information trade.

Moreover, an 'all-inclusive' copyright would be difficult to reconcile with basic European Union freedoms. The dissemination of information through the superhighway will not stop at national boundaries. In many cases the information provider will be located in one Member State, whereas the end user is located in another Member State. In addition, the server or host might be located in a third Member State. If every act of disseminating a protected work through the network would qualify as a restricted act, the freedom to provide transborder information services might be severely hampered by exclusive intellectual property rights exercised on a national territorial basis. This would undermine the creation of a European information market.

In reviewing the scope of the exclusive right, we should take a close look at the 'exhaustion' (i.e. first sale) principle: does it apply in the digital networked environment? At present, copyright laws in many Member States provide for a right of distribution in respect of material copies of the protected work. Once these copies have been brought into circulation by or under license of the copyright owner, subsequent (secondary) acts of distribution, rental not included, fall outside the scope of the copyright monopoly (*national exhaustion*).

A similar exhaustion rule has been developed by the European Court of Justice in respect of transnational distribution of goods protected by intellectual property rights (*European exhaustion*).³⁰ According to the Court's interpretation of Articles 30 and 36 of the EC Treaty, absent harmonisation of intellectual property rights at the community level, the 'specific subject-matter' of intellectual property does not justify the exercise of distribution or importation rights on a per-country basis. Thus, the distribution right is exhausted in the entire Community, whenever a product is put on the market in a Member State by or under license of the rightholder. In other words, the distribution right can be exercised only once: in the Member State where the copies are first circulated, the 'country of origin'.

4.1 Exhaustion theories

Of course, the exhaustion doctrine has its roots in 'the technological paradigm of printing'.³¹ Should this principle be applied in a similar manner in the digital networked environment? Prior to answering this question, we shall take a brief look at the rational underpinnings of the exhaustion rule³²:

Ownership theory

According to this theory, the exhaustion principle reflects a trade-off between rights of intellectual property and property rights in physical goods. Property rights in protected

30 Cf. e.g. European Court of Justice, Judgement of 20 January 1981, Cases 55/80 and 57/80 (*Membran & K-Tel*), 2 CMLR 44.

31 Cf. U.S. Congress, Office of Technology Assessment, *Intellectual property rights in an age of electronics and information*, Washington D.C., 1986, 205.

32 [note: exhaustion theories]

goods would be unduly restricted if distribution rights were to remain intact after the goods are put on the market with the copyright owner's consent.

Freedom of commerce theory

By the same token, the free trade of goods would be excessively restricted if no exhaustion existed. This is essentially the reasoning underlying the European exhaustion rule developed by the Court of Justice.

Legal security

Market players have a legitimate interest in knowing the copyright status of goods being traded on the market. Since no public record of valid copyrights presently exists, legal security requires exhaustion after the initial (licensed) transaction.

Remuneration theory

Under this theory copyright owners are adequately compensated for the initial act of putting the protected goods on the market. Copyright owners do not 'deserve' additional compensation for any subsequent acts of distribution. However, upon critical examination, this 'theory' does not offer much guidance. If exhaustion would affect the existing 'physical' distribution right, the copyright owner would no longer need to be fully compensated for the initial (first) sale. The copyright owner might, then, decide to amortize his investment over a string of primary, secondary and subsequent acts of distribution.

Legislative tool

Some scholars do not consider the exhaustion principle a 'principle' at all.³³ Exhaustion is merely a legislative tool, an easy and elegant way of restricting the exclusive right of distribution in the general interest. Instead of applying a general exhaustion rule, legislators would be free to opt for more specific instruments in curtailing the distribution right.

Application to digital networked environment

Without assessing the relative value of the various exhaustion 'theories' described above, it is obvious that not all theories are equally relevant to the digital networked environment. Clearly, the (prevailing) property theory cannot serve as a reference point. On the superhighway the exercise of intellectual property rights in respect of secondary 'distribution' does not directly affect any property rights in physical goods.

On the other hand, the 'commerce theory' offers a strong argument for extending the exhaustion rule to the new environment. In the not too distant future, much of the national and intra-community 'physical' information trade will be replaced by information exchanges over the superhighway.

Arguably, the 'legal security' argument carries relatively little weight in respect of digital

distribution of works. The digital environment facilitates the identification of disseminated works - and their copyright status. Status information, possibly including licensing conditions, can be carried by the work itself in so-called permission headers or software envelopes.³⁴

The true value of all these arguments, as they relate to the digital networked environment, will become clear only after generally accepted trade customs have developed. If the present, rather anarchistic etiquette of the Internet would become the prevailing norm on the information superhighway, the commerce theory and the legal security argument would make a strong case in favour of applying the exhaustion principle in the digital networked environment. On the other hand, if the superhighway were to conform to the emerging trade customs of the electronic publishing industry, these arguments would carry little weight.

Not surprisingly, rightholders are adamantly opposed to the idea of applying the exhaustion principle to the digital network. Thus, both the U.S. White Paper and the EC Green Paper flatly reject any application of the exhaustion principle to the superhighway.³⁵

4.2 Exhaustion of the broadcasting right

Most copyright laws in the European Union confine the exhaustion rule to acts of *physical* distribution. Germany is a notable exception; according to the German Supreme Court, the rule is a fundamental principle of copyright law, that applies to *all* exploitation rights. Accordingly, the (immaterial) broadcasting right is exhausted by secondary cable distribution under certain specific circumstances. In its decision of 7 November 1980 (*Gema/Deutsche Bundespost*)³⁶, the Bundesgerichtshof decided that copyright owners may not exercise their broadcasting rights in respect of cable transmissions in 'shadow areas', where the initial hertzian broadcast cannot be received because of physical impediments. The decision of the Bundesgerichtshof has been harshly criticized in German literature; many scholars believe it to be in conflict with article 11bis of the Berne Convention.

On the European level, the Court of Justice has refused to apply the well-established European exhaustion rule to secondary cable transmissions. In its two decisions in the *Le Boucher* case³⁷, the Court considered that the broadcasting right of a film producer was not exhausted by the licensed primary broadcast in a neighbouring Member State. The rightholder could therefore legitimately oppose the unauthorized retransmission of the film via cable networks. The Court of Justice observed that 'the right of a copyright owner and his assigns to require fees for any showing of a film is part of the essential function of copyright in this type of literary and artistic work'.

34 See *supra* note 8.

35 Report (White Paper) of the Working Group on Intellectual Property Rights, *Intellectual Property and the National Information Infrastructure*, Washington D.C., 1995, 95; EC Green Paper, *supra* note 19, 48.

36 German Supreme Court (Bundesgerichtshof), Judgement of 7 November 1980 (*Gema/Deutsche Bundespost*), *GRUR* 1981, 413.

37 European Court of Justice, Judgement of 18 March 1980, Case 62/79 (*Coditel v. Ciné-Vog Films*), *RIDA* 105 (1980), 156; European Court of Justice, Judgement of 6 October 1982, Case 262/81 (*Coditel v. Ciné-Vog Films II*), *RIDA* 115 (1983), 120.

It is interesting to note that the Court in *Le Boucher* focused on the economics of exploiting the work at issue (i.e. film). Films are exploited on a per-performance basis; therefore, application of the exhaustion rule would effectively destroy the copyright. Even though *Le Boucher* does not take into account alternative modes of exploitation of cinematographic works (video, rental, pay-per-view), the decision contains a strong argument against extending the exhaustion rule, whether on the national or European level, to the digital networked environment. Presumably, the prevailing mode of exploitation on the superhighway will be delivery on demand; copyright owners will be remunerated *per use* ('pay-as-you-go'). If exhaustion would be applied, on-demand program delivery services would not be copyright protected after the initial act of making the program publicly available (i.e. 'retrievable').

5. Conclusions

Paradoxically, most modern copyright laws have more problems in adapting to the new electronic media than their 'antiquated' counterparts. Traditional *old media* exclusive rights and limitations are mostly defined in platform-independent ways, thus accommodating not only traditional print and other analogue media, but also many of the electronic media of the present and future. By contrast, legislators attempting to keep up with current technological development are faced with narrowly defined, platform specific rights and limitations, that can not be easily stretched to fit in the digital networked environment. Moreover, courts and commentators seem to favour a broad interpretation of the copyright owners' exploitation rights, whereas existing copyright limitations tend to be narrowly construed to the detriment of intermediaries and consumers.

The previous chapters have amply demonstrated that applying 'old media' notions to the new environment does not always yield satisfactory results. The replies to the European Commission's questionnaire on the information superhighway (in preparation of the DG XV hearing of 7-8 July 1994 in Brussels) indicate that most rightholders prefer to make only piecemeal changes to the copyright system.³⁸ Respondents have suggested to 'clarify' the existing catalogue of rights so as to include the acts of transmission, uploading, downloading, public display and access. A similar approach is evident in the pending Berne Protocol proposals.

This 'minimalist' approach is not favourably looked upon by copyright doctrine. According to Geller the advent of the superhighway calls for more radical changes to the present copyright system. Geller does not subscribe to the view that current copyright notions are adequate or would need only piecemeal amending:

'I therefore question the ultimate wisdom of trying to adapt Berne provisions to networked archives by giving definitional first-aid to such basic, but limited notions.'³⁹

Indeed, it seems inevitable that the digital networked environment will eventually

38 *Replies from Interested Parties on 'Copyright and neighbouring rights in the Information Society'*, European Commission (DG XV), Brussels, 1995.

39 P. Geller, *supra* note 10, 58.

necessitate more radical changes to the copyright system. Arguably, a long-term revision of the copyright system is necessary - not only to insure adequate protection to rightholders, but also to protect the legitimate interests of users of protected works. Overstretching 'old media notions', such as the right of reproduction, obviously bears the risk of overprotection.

Contours of a new law

Any future over-all revision of the copyright system must take into account the specific nature of the communication process of the digital networked environment, as well as the peculiar economics of providing, distributing and using information on the network. In the future, exclusive rights on the superhighway must no longer be (solely) based on expanded notions of copying and reproduction, but be redefined so as to become 'network-oriented'⁴⁰

Thus, the new law must be built on a sound analysis of the economics of digital network dissemination. Unfortunately, many legislators and scholars seem to be losing sight of the economic underpinnings of the existing set of exploitation rights. A dogmatic preoccupation with merely technical acts of reproduction may result in an unwanted proliferation of the copyright monopoly.

Moreover, the new law must be made 'multimedia proof' as much as possible. The emerging multimedia environment is rapidly making technology specific rulemaking, either within or outside the framework of intellectual property, obsolete. As heterogeneous categories of works, specific media and technologies 'converge' into a homogeneous multimedia environment, existing regulatory distinctions between specific work categories, media or technologies will be increasingly difficult to maintain.

Finally, the new law must respect fundamental rights and freedoms of users and intermediaries. In this context, it is unfortunate that considerations of informational privacy and freedom of expression are virtually absent from the European Commission's Green Paper. Clearly, these basic freedoms are at stake, if, as the Green Paper seems to suggest, the economic rights of rightholders were to be stretched to comprise acts of intermediate transmission and transient reproduction, as well as acts of private viewing and use of information.

Even so, a clear picture of the future of copyright in the digital environment does not emerge from the previous discussions. This should come as no surprise. The superhighway is a multi-purpose, multi-user, multimedia environment, capable of delivering in a variety of ways almost the complete Berne Convention catalogue of works. The copyright problems of the superhighway, then, are the problems of the entire information and entertainment industry. To these there are no quick and easy answers. In the context of this paper, only a few of these problems have been addressed, with a special view to offering short-term solutions to the European legislator.

Moreover, one important fact should not be overlooked. Even though the superhighway has become the buzz-word of the nineties, it does not, as yet, exist. The closest thing to the superhighway presently in existence is the Internet - hardly a suitable laboratory for

40 Cf. Dommering, *supra* note 4, *passim*.

studying copyright in the digital environment. Since copyright problems are directly related to market conditions, it would be simply premature to propose more than minor changes to the present copyright system.

As the European Commission rightly observes, 'regulation [must] not simply respond to isolated requests for action on a one-off basis'⁴¹ The information superhighway may, in the future, merit certain radical changes to the copyright system. At present, the omnipresent superhighway has yet to be paved; no pressing need for immediate action, either on the national, European or global level, therefore exists.

Short-term regulatory measures

In examining (and, possibly, redefining) the catalogue of exploitation rights, legislators and courts should follow a *normative approach*. Rather than 'overstretching' the existing right of reproduction, the right of communication to the public, as it exists in many countries (albeit in different forms), appears to be a more suitable and flexible instrument for protecting intellectual property on the information superhighway. Instead of focusing on merely technical (intermediate) act of reproduction and transmission, the right of communication to the public is conceptually linked to the essence of the economic right, i.e. *making protected works available to the public*.

How, then, should today's legislator find the necessary balance between copyright, freedom of services and essential user freedoms? Instead of the all-or-nothing approach of the exhaustion rule, two alternative solutions are possible. The first is to accept that most communication on the superhighway will involve a plurality of restricted acts. The interests of right owners and users would, then, be accommodated by carving out more or less broadly defined limitations and exemptions. The (inevitable) proliferation of exclusive rights would be offset by expanding the existing set of limitations. In so far as these limitations would directly concern acts of intended transmission or 'consumption' of information, these exemptions might not be overridden by contract. The legitimate software user's right to produce a back-up copy of the computer program, guaranteed under article 5 (2) of the Software Directive, serves as an example.

Alternatively, one might decide to directly curtail the exclusive right, for instance by excluding various acts of usage from the reproduction right, so as to avoid unwanted overprotection. From a systematic perspective, the latter solution is more attractive - and certainly more elegant.

If a European 'superhighways' legislative initiative were contemplated at this point in time, the following short-term regulatory measures might be contained therein:

- * Grant to copyright owners a broadly defined, exclusive right of communication to the public⁴² (by any means now known or to be developed) in respect of all categories of works. This right should cover, at least, the following restricted acts:

41 EC Green Paper, *supra* note 19, 33.

42 To be sure, this broad right of communication to the public must not be confused with the limited right protected under articles 11, 11bis and 11ter of the Berne Convention. The compulsory licensing provision of article 11bis (2) would, therefore, not apply.

- a) `broadcasting', i.e. simulcasting to the public via wire or wireless means;
and
 - b) making a work publicly available on demand, by wire or wireless means.
- * The act of screen display and related acts of temporary storage may not be restricted by copyright, in so far as these acts are necessary for private viewing, and do not qualify as communication to the public.
- * Acts of temporary storage may not be restricted by copyright, in so far as these acts are necessary for transmitting a work or information product, and do not qualify as communication to the public.
- * Last, not least: preserve essential copyright exemptions.

Amsterdam, 25 March 1996