INTELLECTUAL PROPERTY RIGHTS ON THE INFORMATION SUPERHIGHWAY

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Chapter I - Towards the Information Superhighway

1.1 Introduction

"... 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".[2]

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 1994 much of Barbara Ringer's prediction has materialised. 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 computerised telecommunication network) to eventually carry the complete Berne Convention catalogue of works. Moreover, the digital environment will allow traditionally distinct categories of works to merge into new breeds of works containing information in a plurality of "modes", so-called multimedia programmes.

Indeed, the coming of the information superhighway has not taken the copyright community entirely by surprise. The copyright problems of computerised information storage and retrieval systems have been studied ever since the early 1970's.[3] 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 somewhat primitive form, for many years. Computer games (combining text, sound and images with a measure of interactivity) have been awarded copyright protection, either as audio-visual works or computer programs, ever since the early 1980's.

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.

The replies to the Superhighways questionnaire, prepared by the European Commission for the hearing of 7-8 July 1994, seem to indicate that this - rather optimistic - view is shared by many players in the information industry. Arguably, this conservative approach would make a sensible and pragmatic short-term solution. In the long run, however, the industry position will difficult to maintain. 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, radically affect the economic underpinnings of the present copyright system. In the long run, a thorough rethinking of the copyright paradigm will be inevitable.[4]

The Commission of the European Communities (DG XV) has asked the Institute for Information Law of the University of Amsterdam to conduct a short-term study of intellectual property issues relating to the information superhighway. The specifications of the study, as defined by the European Commission, are reproduced in Annex I. Even though the all-encompassing and pervasive nature of the information superhighway would merit a broad reevaluation of the present system of intellectual property law, for practical reasons this study will concentrate on a limited number of issues, mainly relating to copyright law. Chapter II of the study will deal with problems of authorship and ownership of rights. Chapter III will focus on the scope and definition of the exclusive rights. Chapter IV concludes with a number of recommendations for action.

1.2 Definitions

No attempt shall be made to precisely define either the "superhighway" or "multimedia".

superhighway

In this study, the term superhighway shall be short-hand for the digital networked environment of the 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 is not 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 infrastructures, such as the telephone network, cable networks, satellite networks and broadcasting stations will converge.

The superhighway will be a broad-band network, permitting 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 on the network. 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.

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. The status under telecommunications law of the superhighway is currently debated. Will universal service obligations apply? If so, this may affect the liability of network operators for cases of copyright infringement.

multimedia

The superhighway will carry a lot of multimedia programmes. Understandably, this has

led many people to believe that the notions of "superhighway" and "multimedia" refer to the same innovative phenomenon. Of course, this isn't true. The superhighway is short-hand for the telecommunications infrastructure of the future. The term "multimedia" denotes a category of programmes or information products, that may - or may not - be delivered through the superhighway. The superhighway is the medium, multimedia the message. The copyright problems of multimedia are quite different from the copyright issues relating to the superhighway. In this study, multimedia-related problems shall be discussed only insofar as they relate directly to the digital networked environment.

Adding to this terminological confusion, the notion of multimedia all but eludes definition. The term implies the delivery of digitalized information in mixed mode multimedia information products combine text, sound and visual (still or moving) data. Another characteristic feature of multimedia is interactivity: users may interact with the information stored in the multimedia programme.

Multimedia programmes are distributed either off-line, i.e. on physical carriers (CD-I, CD-ROM, software diskette), or on-line, i.e. via cable, LAN or other telecommunication networks.

What distinguishes multimedia programmes from traditional information products is a much richer variety of underlying works. The typical multimedia programme contains graphics, film, video, music, photographs, paintings, animation, text, data, maps, games, and multimedia software. The typical multimedia programme is a blend of all categories of works protected by copyright law.

As has been observed before, the term "multimedia" is a misnomer. The very essence of a multimedia programme is that is carries a multiplicity of works in a variety of modes on a **single** medium.

1.3 Convergence

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

Convergence of infrastructure and media

In analogue times, different modes of telecommunications required specific "dedicated" infrastructures. Person-to-person voice telecommunications required a copper wire, narrow-band (telephone) network, traditionally operated by state-controlled PTT's. Radio and television programmes were distributed by radio transmitters using hertzian waves as a means of propagating information-carrying signals. In a later stage, broad-band cable networks were put to a similar use.

Similarly, for off-line communication "dedicated" mode-specific media were employed. Printed paper carried text, vinyl records carried sound, celluloid film rolls carried moving pictures. The digitalization of telecommunication networks and information carriers has "liberated" the medium from the message. Networks and media are becoming "content neutral". PTT-operated telephone networks will soon carry full-motion video programmes. Compact discs already carry all sorts of multimedia programming.

The convergence of infrastructures and media requires a rethinking of the fundamentals of telecommunications law. Will the superhighway, incorporating public (PTT-operated) and private telecommunication networks, be considered a "common carrier"? The answer is directly relevant to the difficult issues of copyright liability in the digital networked

environment.

The convergence of infrastructures and media also directly affects the structure of the present copyright system. The catalogue of protected work categories, defined in the Berne Convention, is either mode or media specific. In the digital environment the borderlines between the different work categories are becoming blurred and hard to maintain; see § 2.2. Similarly, the copyright owner's exclusive rights are presently defined in mode or media specific terms. This convergence calls for a re-examination (and, perhaps, redefinition) of the catalogue of exclusive rights; see chapter III. Even more urgent are the convergency problems in respect of the present set of copyright limitations and exemptions. With few exceptions, national legislators have defined these provisions in a highly mode or media specific fashion. New technologies defy the existing definitions of current limitations. A reappraisal of the present set of limitations and exemptions in the light of the superhighway must be placed high on the agenda of national and European legislators; see § 3.3.

Convergence of roles

One of many critical copyright issues of the future is the convergence of roles in the digital network environment. Historically, the information and entertainment industries are structured according to the specific media (platforms) employed to deliver the information or entertainment product. Superhighways and multimedia transcend these technology-inspired borderlines. Thus, players from all branches of the information and entertainment industries will be competing in the information marketplace of the future: print media, electronic publishers, software producers, film producers, music industry, broadcasters, PTT's, cable-operators, hardware manufacturers, etc. This development is exemplified by a growing number of cross-industry alliances and mergers. In many cases, these alliances involve software or entertainment companies linking up with telecommunications or cable-operators, thus providing right owners with access to and control over multimedia delivery channels.

As market players from very different backgrounds merge into a homogenous multimedia programmes and services industry, typical problems of convergence become apparent. Over the years, each traditional branch of the industry has developed its own specific trade customs and practices. Licensing structures and practices have become highly branch specific. In some areas, such as the film and software industries, licenses are granted on an individual basis. In other areas, such as the music industry, collective licensing and administration of rights play an essential role. Licensing practices are equally divergent. In the film and book publishing industries, primary modes of exploitation are protected by designating specific "windows" - periods of exclusive exploitation. In other industries, such as the music industry, new products or programmes are immediately put onto the market in different modes.

As the INTERNET experience clearly demonstrates, traditional actors in the communications process (information producer, provider, publisher, intermediary, user) will take on new roles in the digital network environment. The INTERNET enables authors to freely disseminate their works without the intervention of a traditional publisher: 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 undermines the existing system of rights allocation in copyright and neighbouring rights legislation. See § 2.3 sub b.

1.4 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 customised information on demand. In this process, the "public sphere" between information provider and information user is gradually dissolving.[5] 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 many points on the network. Conversely, publishers and other information providers will "customise" information to accommodate specific user demands, employing detailed "user profiles" drawn up from previous usage patterns. In this process of interactive and customised 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 customisation 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 (customised) "bits and pieces" - the "nuggets" of the treasure trove. For this reason, creating a separate "multimedia" work category would be ill advised.

It is expected delivery on demand will gradually replace "broadcasting" - 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".[6]

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 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 right holders 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. "Self-administration of rights" would gradually replace collective licensing or collective administration of rights. Thus, the digital networked would bring back to right holders what they (nearly) lost in the age of mass copying: the power to transact directly with information users.

Other commentators are less optimistic; they fear that the digital networked

environment will, instead, only worsen the possibilities of arriving at individual contractual solutions. According to Goldstein:

"Many of the policy factors pertinent to photocopying are also relevant to digital technology: widely available means of reproduction; diffuse user community; high costs for enforcing rights against infringers; and high transaction costs for negotiating individual licenses."[7]

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 and the press, 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.

The information industry generally expects that encryption (on various levels) will replace copyright law as the principal means of protection on the superhighway. According to the oft-cited Charles Clark, "the answer to the machine is in the machine". However, the recent experiences of the software industry indicate that, perhaps, it would be imprudent to solely rely on technical solutions.

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

1.5 The diminishing role of copyright

The role of copyright will probably diminish in the digital networked environment of the future. Copyright has always been - and still is - the principal legal instrument in controlling the mass distribution of information products and services. The economic function of copyright is to substitute for the information provider's lack of power to conduct individual transactions with individual information users. Even though mass distribution and "broadcasting" of information will remain possible on the superhighway, mass distribution will gradually be replaced by delivery on individual demand. In this process contractual ties (licenses) between information providers and users will gradually supersede the "rough justice" of copyright law. Again, the experiences of the computer software industry serve as an example of what the future may bring. The widespread practice of licensing software to individual users has diminished the practical importance of software legislation.

On the superhighway, copyright law will, perhaps, no longer be the legal cornerstone of the information trade. Rather, the future role of copyright will be to act as a legal "safety net" whenever technical or contractual protection schemes would fail.

Moreover, copyright will lose ground to the right of privacy. As information transactions gradually disappear from the public sphere, the right of privacy will serve as an important non-contractual vehicle of protection. The same is true for a wide variety of secrecy provisions of an administrative or criminal nature based on national and international telecommunications law or special laws aimed at preventing "computer crime".

Chapter II - Authorship and ownership issues

2.1 Introduction

The superhighway will affect the copyright system on many different levels: subject matter, authorship, ownership of rights, scope of protection and limitations, moral rights, et cetera. While this study shall focus on the scope of protection (i.e. the catalogue of restricted acts), relevant issues of authorship and ownership shall be briefly discussed in this chapter.

2.2 Protected subject matter

No radically new types of intellectual creations are expected to flow on the superhighway. The products and services offered on the superhighway will initially resemble existing formats. Information providers on the superhighway will deliberately concentrate on delivering "old-style" information products through the new medium. Only after information users have become accustomed to the net, will innovative information products and services have any chance of succeeding.

This is not to say that the superhighway will be without its share of "subject matter" related copyright issues. Many of the most pressing copyright problems of today will be amplified in the context of the superhighway.

databases

This is especially true for the protection of databases. The need for adequate protection of the (uncopyrightable) contents of a database will become even more urgent than it is today in the digital networked environment of the future. In its proposal for a Council Directive on the protection of databases, the European Commission has correctly assumed that traditional notions of (continental European) copyright are inadequate in dealing with the growing needs of the information industry. Due to the proliferation of digital technology, the economic value of data compilations is, increasingly, in the information as such, rather than in the way the data are presented.

The superhighway infrastructure of the future will enhance the need for protection of pure "contents" (information) per se. In view of the net's capability of carrying images as well as text and data, producers of "non-original" imagery, such as satellite photographs, will be claiming protection on equal footing as "traditional" database producers.

The globalisation of the information market demands that theDatabase Directive be followed, as soon as possible, by a global solution along similar lines.

multimedia

Opinions differ as to whether multimedia programmes are to be considered a new type of intellectual creation, or merely a (admittedly "high-tech") type of derivative work. Multimedia programmes are certainly difficult to fit into the existing categories of works. According to the European Commission, multimedia programmes qualify as "databases" under the proposed Directive. As explained in the explanatory memorandum, "...the term 'database' is to be taken to include collections of any types of materials in the literary, artistic or musical field such as text, images, sounds, and also numbers, data, facts and pieces of information and the like" (§ 1.1. of the Expl. Mem.).

Moreover, many multimedia programs, containing sound and moving images, will qualify as "cinematographic works" (cf. Article 14bis of the Berne Convention), "films" (cf.

Article 2 § 1 of theEC Directive on Rental and Lending Rights) or "audiovisual works" (as defined in various national copyright laws). Additionally, many multimedia programmes will be regarded as collective works.

Of course, problems of categorisation do not necessarily affect the level of (copyright) protection. Courts in all member states of the European Union are flexible in awarding copyright protection to intellectual creations that do not fit nicely in existing, statutorily defined categories. An impressive body of case law on the protection of computer programs, predating the EuropeanSoftware Directive, illustrates this point. It is, therefore, unlikely, that multimedia programs would remain unprotected for reasons of "categorisation".

2.2 Authorship

The digital networked environment of the future will make it easier to become an author. Lowering the threshold of creation is what the INTERNET - the superhighway prototype - is all about. The superhighway will enable users to retrieve "raw" or edited information from a variety of sources and rework the information retrieved into a customised information product. Digital technology will make it easy for information users and prospective authors to reshape and manipulate pre-existing information products. Moreover, the digital network greatly facilitates co-operative creation; authors can work together on a single information product, even though they are physically located in different cities or countries.

"Digital plasticity" combined with interactive or co-operative creation will result in a spectacular growth of derivative works being circulated on the information superhighway. Each act of user-produced customisation will add an extra layer of copyright protection. Eventually, as the INTERNET example already demonstrates, the network will be polluted with endless varieties of the same underlying work, each subject to a cumulation of derivative copyrights.[8]

Does this development merit any kind of legislative intervention, such as compulsory licensing of underlying works? Hardly. The same technology that enables users to become co-authors (by adding value to the pre-existing information product), facilitates the **removal** of protective layers of information. As the Explanatory Memorandum to the proposed Database Directive explains, the digital environment enables users to quite easily extract the unprotected contents from the copyright protected work ("filtering").

2.3 Ownership

Multimedia programmes raise a number of difficult issues of ownership. If multimedia works were to be considered "cinematographic works", special national ownership provisions, as allowed under article 14 bis of the Berne Convention, would apply. If a multimedia product would be qualified as a "database" different ownership rules might be applicable by virtue of Article 3 of the proposed Database Directive.

Who owns electronic rights?

A crucial problem for multimedia producers is to identify the party that holds the electronic rights in a particular work to be included in a multimedia production. This is especially problematic in cases of grants of rights or transfers predating the computer age. How should a broad transfer of rights executed in analogue times be interpreted in the light of multimedia exploitation? In some countries (notably Germany and the Netherlands) such a transfer will be narrowly construed in favour of the original grantor or licensor. Thus, a transfer of "all copyrights" to a book publisher will probably **not**

include electronic rights, if publishing in electronic form was not originally intended. In other countries (notably France) the original grantor has a right to receive a "proportional" remuneration from the copyright owner for unforeseen forms of exploitation. The problem of *residual rights* - rights that have remained with the original author of the work - appears to be a major obstacle in many multimedia deals.

Multimedia licensing problems

Typically, multimedia products are made from a multitude of pre-existing works, owned by a multitude of copyright owners, exercising a multitude of (sometimes overlapping) rights. Adding to the producer's difficulties, right owners will belong to different segments of the entertainment and information industry (music, cinema, software, education), applying different licensing practises. Multimedia publishers wishing to acquire rights by the book might end up negotiating with hundreds or even thousands of right holders for one single multimedia product. From time to time, multimedia program developers run into licensing problems so complex that further development of the product is aborted.

Of course, to a certain extent, the copyright problems of the multimedia industry are growing pains. The emergence of every new medium necessarily involves the development of new licensing practises. We have seen similar problems before, notably in film and television production. However, the endless possibilities of combining pre-existing works of any type or form into a single multimedia programme might merit the conclusion that multimedia, indeed, represents a radical - rather than an evolutionary - development. Even so, it would be unwise to rush into any kind of non-voluntary solution[9] even before the multimedia programme market has had a chance of developing in a non-regulated environment.

Chapter III - Protected rights on the superhighway

3.1 Introduction

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 European Union member states, copyright laws provide for rather detailed, media-specific definitions of the restricted acts. In other member states, broader - and more abstract - notions of "reproduction", "distribution" and "communication to the public" are employed.

There is a general consensus that the existing catalogue of exclusive rights, as they are defined on the national or international level, do not adequately reflect the manner in which protected works are communicated in the digital networked environment. Most restricted acts are definitionally linked to traditional modes of exploitation: publication in book form, public performance, broadcasting, etc. The advent of the superhighway, therefore, presents legislators with a choice: either expand existing "old media notions"[10] or redefine the catalogue of restricted acts, taking into account the peculiarities of the digital networked environment.

In this chapter, the different acts involved in disseminating protected works via the superhighway will be analyzed and tested against current copyright notions (§ 3.2). Next, the problems of applying the existing set of copyright limitations and exemptions to the digital networked environment will be briefly discussed (§ 3.3). Finally, a possible model for future legislation, inspired by the exhaustion principle and the recent Satellite and Cable Directive, is critically examined (§ 3.4). In view of the limited scope of this

study, no long term solutions will be presented.

In describing the scope and limitations of the exclusive rights, this chapter will focus on copyright law. Since most neighbouring rights (or related rights) regimes apply copyright notions in defining the scope of the exclusive rights, no separate treatment of neighbouring or related rights in this chapter is considered necessary.

3.2 Restricted acts

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

* digitalization: storing the work in a digital medium

* digital reproduction

* data compression and encryption

* temporary (ephemeral) storage

* point-to-point transmission

* point-to-multipoint transmission

* providing on-line access

* customising

* uploading and downloading

* decoding

* screen display/use

In the process of communicating works on the superhighway different actors are involved: the author or producer of the information, the information provider or publisher, the provider of "host" or "server" facilities, the operator(s) of the telecommunications network, intermediaries, end users.

3.2.1 Digitalization, conversion, encryption

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. [11] Of course, any duplication of the digitally stored work will be considered a subsequent act of reproduction.

Under normal circumstances, converting a work into a digital format does not 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, the digital environment allows for all sorts of digital reworking and manipulation of the electronically stored work. Insofar as this process results in an alteration of the composition or form of expression of the work, the manipulated work will, indeed, qualify as an (unauthorized) adaptation. Clearly, digital manipulation bears the risk of infringing moral rights as well; see Chapter IV.

3.2.2 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 (from producer to provider, from provider to host, from host to intermediary to user) will involve one or more acts of loading the work in a (volatile) computer memory. In the process of being digitally transmitted, the work is disassembled into small digital "packets" which will be temporarily stored at different "nodes" before being routed through the network. At its final destination, the information will be reassembled with no loss of quality or fidelity of the signal. Furthermore, the acts of downloading and screen display may involve 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 Directive and article 6(a) of the proposed Database Directive (amended proposal) both refer to "temporary reproduction". In respect of computer software, the Software Directive seems to take a very broad view of the reproduction right. According to Article 4 (a) of the Directive, the protected acts include:

"... the permanent or temporarily reproduction of 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 right holder."[12]

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 and legislators in determining the scope of the notion of "reproduction".[13]

At present, in many Member States the copyright status of temporary storage is unclear. An important exception is the United Kingdom; under Section 17 § 6 "[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 USCA:

"A work is 'fixed' is 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 permitted to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."

Arguably, the mere act of data processing per se is not a "fixation".[14]

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 "packet-switching", should not be qualified as acts of reproduction. See the discussion of screen display (§ 3.2.9 below).

3.2.3 Point-to-point transmission

The act of transmitting a protected work (either via cable or wireless means) does not as such amount to a restricted act, unless the point-to-point transmission is part of a broader process involving communication to the public (such as broadcasting or cable distribution). "One-on-one" transmission of a protected work (e.g. involving two computer users connected by a modem or exchanging a message via e-mail) is no different from sending a letter by ordinary mail ("snail-mail"). Neither of these acts of private communication is considered a restricted act.

Of course, in many instances a digital transmission will eventually result in a (further) reproduction of the work at the receiver end (by the host or server, intermediary or end user). Such acts of reproduction should not, however, be confused with the act of transmission as such.

3.2.4 Point-to-multipoint transmission (broadcasting)

Even though delivery-on-demand will 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 this context the notion of *public* is critical. According to the Berne Convention Protocol Memorandum (§ 153) "the principle is increasingly accepted that every use should be considered 'public' (rather than 'private') that goes beyond the circle of family members and close social acquaintances of a family or an individually person."

National copyright laws do not apply the notion of "public" in a uniform manner.[15] The copyright status of secondary cable distribution serves as an important example. In some countries, such as The Netherlands[16] , all forms of cable distribution beyond the circle of family and friends are considered restricted acts. On the other hand, legislators in Austria and Denmark have expressly exempted small community antenna television networks (involving user groups up to 500 or 25 users respectively) from the secondary broadcasting right.

In respect of alphanumerical 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. The same is **not** true for existing neighbouring rights regimes. The Rome Conventions does not protect against unauthorized communication by wire. Even though many national laws grant protection in excess of the Rome Convention minimum, phonogram producers in most countries do not, at present, enjoy exclusive rights of broadcasting or distribution by wire. In view of the superhighway's capacity to deliver a multitude of audio channels at compact disk quality, there are compelling arguments in favour of granting an exclusive, broadly defined, exclusive broadcasting and cablecasting right to phonogram producers.

distribution

Broadcasting (or any other way of disseminating) a work over the information superhighway will probably **not** qualify as an act of distribution. Distribution implies the putting into circulation of **physical copies** of the work. According to the European Commission's interpretation of the Directive on rental and lending rights the delivery-on-demand in a networked environment would amount to an act of "rental" or "lending". From an economic perspective, this broad interpretation of the rental right is understandable.[17] 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.

However, from a systematic point of view, the Commission's interpretation is somewhat dubious. The special regime for rental and lending rights contained in the Directive has its origins in the exhaustion doctrine, which is merely applicable to the distribution of physical copies. The Directive's purpose is to "correct" the exhaustion rule as far as rental and lending are concerned. In the networked environment no exhaustion rule currently applies (see § 3.5 below). Therefore, application of the Directive to electronic delivery-on-demand would not appear justified.

3.2.5 Providing on-line access to the public

What makes the superhighway infrastructure really different from existing broadcasting or cable systems is its capacity for two-way communication. This facility enables the information provider to provide access to a body of works to the (general) public without actual mass transmission of the work.

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* or the *droit de représentation* in France.

The Berne Protocol Memorandum (§ 156-158) proposes to define a "communication to the public" as:

"the transmission by electronic, or similar means (either by wire or without wire) of the image or sound or both of the work or the sound of the sound recording (including the display of the work and the performance or broadcast of a work or a sound recording) in a way that the said image or sound can be perceived by any person on the same conditions at a place or places whose distance from the place where the transmission is started is such that without the electronic, electric or similar means the images or sound would not be perceivable at the said place or places."[18]

Interestingly enough, by concentrating on the act of **transmission** the Protocol proposal does not deal with the mere act of making the work **accessible** (by whatever means) to the public, such as covered by Article 20 § 2 (h) of the Spanish Copyright Act:

(1) Communication to the public shall be taken to mean any act whereby two or more persons may have access to the work without prior distribution of copies to each of them. [...]

(2) The following in particular shall be considered acts of communication to the public:

[...]

h. public access to computer data bases by means of telecommunication, where such data bases incorporate or constitute protected works.

Encrypted signals can be "communicated to the public", assuming the codes are made available to a user group that is sufficiently "public" (see § 157 of the Berne Protocol Memorandum). Compare Article 1 § 2 (c) of the Satellite and Cable Directive (Council Directive 93/83/EEC):

"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."[19]

3.2.6 Customizing

Of course, customizing information delivered to individual users qualifies as acts of adaptation or alteration of the protected work, assuming copyright protected elements (composition, selection or arrangement) of the original work are copied. The same is true for any such acts committed by the end user. Unauthorised customisation of protected works may infringe on authors' moral rights as well.

3.2.7 Decoding

Decoding encrypted information will, under normal circumstances, amount to a restricted act. By decoding, a reproduction of the encrypted work is made (see § 3.2.1), 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 mere act of decoding as such is not 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 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.

Needless to say, the **absence** of encryption in a disseminated work should not, under normal circumstances, be regarded as a forfeiture of copyright protection or an implied license to redistribute or reproduce the work.[20]

3.2.8 Uploading or downloading

A further act of reproduction takes place whenever a protected work, stored in digital form, is "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 or end user's computers.

3.2.9 Screen display

In the "paper" world, the act of reading a document or viewing a television programme

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 might be considered a (partial) reproduction of the work. Moreover, screen display might qualify as a "public display", "communication to the public" or comparable act, whenever a plurality of users look at the same computer terminal or television 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. The transition into the digital networked environment does not, as such, seem to justify such a radical extension of the exclusive right. Arguably, the freedom of reception guaranteed in Article 10 § 1 of the European Convention on Human Rights would be unduly restricted by such an all-encompassing right.

On the other hand, proponents of an exclusive right of screen display, argue that the screen display of a protected work is comparable to an act of "printing" in the paper world. [21] Indeed, a work partially displayed on screen can be permanently stored or printed; thus the display would serve as a source file for subsequent (unauthorized) acts of copying.

The copyright status of screen display is 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 this direction (see § 3.2.2). Arguably, this rule should not be automatically extended to **all** categories of works in the digital networked environment. 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, et cetera) for which Article 10 ECHR was written.

3.3 Limitations and exemptions

National copyright regimes vary in the way the statutory limitations or exemptions to the restricted acts are defined and interpreted. Some laws provide for lengthy, hard-to read and hard-to-apply, detailed sets of copyright privileges. 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 existing system of copyright limitations presents users of copyrighted works with a bewildering array of detailed rules and regulations, many of which were written in a pre-

electronic era. The existing exemptions are mostly defined in media-specific ways, making it difficult for users or providers of information services to benefit from existing copyright exemptions. Adding to this, information providers offering transnational services are insecure as to whether exemptions may be "exported". Can an electronic document delivery service operating under a national statutory license be stopped at national borders by local right holders? European case law seems to answer in the affirmative.[22]

The Berne Convention expressly limits the scope of any statutory limitations of the reproduction right. According to Article 9 (2) BC

"[i]t shall be a matter for legislation in the countries of the Union to permit the reproduction of such [literary and artistic] works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author".

Assuming that delivery on demand will become the principle method of exploiting information on the superhighway, Article 9 (2) of the Berne Convention is a convincing argument against applying existing "old media" copyright limitations to the digital networked environment. Every single unauthorized reproduction would, arguably, "conflict with a normal exploitation of the work". Moreover, the possibility of acquiring licensed (authorized) copies of a work will probably be greater in the digital networked environment than in the "paper world". Even so, there will certainly remain "certain special cases" in which limitations are justified. The freedom of expression and information rationale of many statutory limitations must not be overlooked.

The NII Green Paper mirrors concern over the continued existence of the general "fair use" exemption in the digital networked environment:

"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."[23]

This view reflects a more nuanced approach than the quite radical position taken by the WIPO bureau; under the Berne Protocol proposals most existing limitations would effectively be abolished.[24]

The scope of existing limitations and exemptions in respect of electronic delivery systems is currently being studied in the context of the MULTILEGAL study commissioned by the European Commission (DG XIII).

3.4 Redefining the catalogue of exclusive rights

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

This "minimalistic" approach is not favourably looked upon by legal doctrine. According to Geller[25] 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."

Geller convincingly argues that the emerging digital networked environment must lead to a **redefinition** of many of the acts currently protected under copyright.[26] Indeed, it seems inevitable that the digital network environment will eventually necessitate fundamental changes in the copyright system. A thorough revision of the copyright system is necessary not only to insure adequate protection to right holders, but also to balance the scope of the copyright monopoly in the digital networked environment against the legitimate interests of users of protected works. Overstretching "old media notions", such as the right of reproduction or display, bears the risk of overprotection.

Any overall 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. Arguably, 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".[27]

3.5 Exhaustion

Of course, no radical revision of the copyright system can be achieved within a limited time frame. No such revision will, therefore, be investigated in the present study. Any short-term solution to the copyright problems of the superhighway will necessarily involve only minor changes to the existing legal and conceptual framework.

One of the most pressing problems to emerge from the previous paragraphs is the potential proliferation of exclusive rights pertaining to acts of communicating works via the superhighway. Applying a broad notion of "reproduction", *every* such act - including transmission, reception and use - would be restricted. Copyrights of such an all-encompassing nature would be counterproductive and unduly restrictive to the information trade.

Moreover, an "all-inclusive" copyright will run counter to basic communitary 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 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 IP rights exercised on a national territorial basis. This would undermine the creation of a European information market.

In reshaping the exclusive right, we should first take a close look at the "exhaustion" 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*). According to the Court's interpretation of Articles 30 and 36 of the Treaty, absent harmonisation of IP rights on the community level, the "specific subject-matter" of intellectual property does not allow for exercising distribution 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 right holder. In other words, the distribution right can be exercised only once - in the Member State where the copies are first circulated ("country of origin").

3.5.1 Exhaustion theories

Should the exhaustion 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 rule:[28]

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 IP protected 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.

Commerce theory

By the same token, commerce would be excessively restricted if no exhaustion principle applied. 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.[29]

Many scholars do not consider the exhaustion principle a "principle" at all. 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.

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 digital networked environment. In the (not too distant) future,

much of the national and intra-community "physical" information trade will we 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.[30]

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, representatives of right holders responding to the Superhighways questionnaire are unanimous in rejecting the idea of applying the exhaustion principle to the digital network. Similarly, the NII Green Paper - without giving too much thought to the economics of exhaustion - flatly rejects extension of the "first sale doctrine" (as the exhaustion principle is labelled in the U.S.) to the superhighway. The NII Working Group proposes to expressly clarify (in Section 109 of the US Copyright Act) that the first sale doctrine does not apply to transmission.[31]

3.5.2 Exhaustion of the broadcasting right

Most national copyright laws in EU Member States limit application of the exhaustion doctrine to acts of **physical** distribution. Germany is a notable exception; according to the Bundesgerichtshof, the exhaustion 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) the BGH 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 transmission. In its decision in the *Le Boucher* case[32], the Court considered that the broadcasting right of a film producer was not exhausted by the licensed primary broadcast in a Member State. The right holder in the neighbouring Member State 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".

It is important 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 - either on a national or a 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 delivery services would not be copyright protected after the initial act of making the entire information bank (containing a dynamic collection of protected works) publicly available.

3.6 The European Satellite and Cable Directive: a model for the superhighway?

In its Council Directive of 27 September 1993[33] the Council of the European Communities has presented a reference model for future regulation of the information superhighway. In the Explanatory Memorandum the following reasons (among many others) for Community intervention are given:[34]

* national copyright laws differ from country to country in respect of transfrontier satellite broadcasting and cable retransmission;

* legal uncertainty constitutes an obstacle to the free circulation of television programmes within the Community and threatens the interest of right owners;

* individual holders of exclusive rights in various Member States may block the exploitation of the copyrights and related rights;

* the cumulative application of several national laws to one single act of broadcasting must be avoided.

Many of these arguments are equally relevant to the digital networked environment. The Directive applies different legal instruments in dealing with satellite broadcasting and cable distribution respectively. The copyright problems of satellite broadcasting are solved by granting a *right of injection* - right of communication to the public by satellite - to the copyright owner in the Member State where the relevant act of "injection" (uplink) occurs. No national broadcasting rights (or other rights) may be invoked by right holders in the countries where the broadcast signal can be directly received. Thus, by applying the *country-of-origin* principle, the unitary act of (licensed) satellite broadcasting effectively exhausts any national rights existing under the "Bogsch theory".

The problems of cable retransmission are solved along very different lines. Here, the blanket license schemes developed in negotiations between organisations of right holders and cable operators, are taken as a starting point. Community intervention is limited to strengthening the position of organizations of right holders; no secondary cable rights may be exercised by individual right holders (with the exception of broadcasting organisations). National rights of cable retransmissions are expressly guaranteed; no compulsory or statutory licensing is allowed. In respect of cable retransmission, exhaustion of the broadcasting right is effectively prohibited.

Thus, the Satellite and Cable Directive presents two possible models for European regulation of the superhighway. Of these two, the cable model does not, at present, seem workable in the digital networked environment. No general mechanism for licensing and administrating secondary digital transmission rights is currently in place. Many right holders, such as film producers and publishers, are vehemently opposed to collective licensing and administration of electronic rights. Right holders take the view that digital transmission rights are of a "primary" rather than a "secondary" nature; right holders, therefore, prefer to stay in direct control of these rights. Moreover, it is widely believed that the built-in intelligence of the digital network will facilitate various forms of **direct licensing** of protected works to intermediaries and end users. No (mandatory)

intervention by collecting societies would, therefore, be necessary.

Assuming the superhighway would not be subjected to any form of (mandatory) collective licensing or administration of rights, the problems of applying (cumulatively) different national laws to a single act of network communication remain unsolved; these problems might become major obstacles to offering transfrontier information services over the superhighway. If, for instance, both the transmission and the screen display directly resulting from an act of "network communication" would be considered separate restricted acts, an authorized communication originating from one Member State might be prevented - by exercising "local" IP rights - from reaching its intended user group.

In this respect, the satellite broadcasting model applied in Directive 93/83/EEC merits serious consideration. Applying this model, "injecting" a work in the network - either by an act of "broadcasting" or by making the work available through a host or server - would be considered an act of communication to the public only in the country-of-origin, i.e. the Member State where the information provider who introduced (uploaded) the work into the network, is located. "Local" right holders could, thereafter, not prevent the "injected" work from being made available - and transmitted - to the public in other Member States. Thus, for instance, a video-on-demand operator based in the United Kingdom could offer its services to customers in the entire European Union, without having to acquire national rights of communication to the public, broadcasting, cable distribution, transmission, reproduction, screen display or any other (potentially) applicable rights in all countries concerned. Following the example of the Satellite and Cable Directive, the operator would have to secure permission from the U.K. right holder(s) only.

Of course, any subsequent acts of communication to the public, transmission or reproduction, not directly related to the initial act of "network communication", would not be exhausted. Users of the service would not be allowed to reproduce downloaded films for further distribution; nor would the server or host have the right to sublicense the digital diffusion right without authorization.

The satellite broadcasting model appears attractive prima facie. However, under close scrutiny it has severe shortcomings.

In the first place, it will be difficult to precisely define the act of communicating a work to the public via the superhighway as a unitary act. Unlike distribution of goods or broadcasting, acts of "superhighway communication" are not naturally limited in time or place. Communication in the digital networked environment is "ubiquitous"; the work is immediately available anytime, anyplace, anywhere - for an unlimited length of time. For instance, applying (European) exhaustion to an act of uploading a work to a publicly accesible server, might result in the work being perpetually available to the public all over Europe - without any further authorization. Arguably, this would unfairly reduce the scope of the exclusive right.

In the second place, assuming the superhighway would eventually become the principal delivery medium for many information products, exhaustion would make copyrights (or related rights) very difficult to exploit. Right owners would have only a single opportunity to exercise their exclusive right *in toto* . Copyright licenses or transfers would necessarily imply a total buy-out for all further networked distribution in the entire European market.

Of course, the drawbacks of this "one-shot" copyright might be mitigated by complex contractual relations between right holders, service providers, servers and end users. Perhaps, by applying contractual protection reinforced by encryption techniques, the loss of copyright protection "down-stream" would not have a detrimental effect on the

information trade. Even so, applying the exhaustion rule to the superhighway would probably destabilize the copyright system. Instead, more subtle instruments should be considered to balance the interests of right owners and users.

alternatives

Instead of the all-or-nothing solution of the exhaustion rule, two alternative approaches are possible. One is to accept that most communication on the superhighway involves one or more restricted acts. The interests of right owners and users would, then, be accommodated by carving out broadly defined limitations and exemptions. Proliferation of exclusive rights would be offset by expanding the existing set of limitations. Insofar as these limitations would directly concern acts of intended "consumption" of information, these exemptions might not be contractually overrided. The legitimate software user's right to produce a back-up copy of the program (Article 5 (2) of the Software Directive) may serve 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 in the digital environment. From a systematic perspective, the latter solution is more attractive - and certainly more elegant.

Chapter IV - Conclusions

"Humans have not inhabited cyberspace long enough or in sufficient diversity to have developed a Social Contract which conforms to the strange new conditions of that world. Laws developed prior to consensus usually favor the already established few who can get them passed and not society as a whole."

John Perry Barlow

All in all, a clear picture of copyright in the digital networked environment does not emerge from the previous discussions. This should come as no surprise. The superhighway is a multipurpose, 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 study, only a few of these problems have been addressed, with a 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 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 initial reaction by industry representatives to the Superhighways questionnaire seems to confirm, the time isn't ripe for action. On the other hand, a Commission initiative might serve as a catalyst in raising industry awareness.

If a European "superhighways" initiative were contemplated at this point in time, the following short-term proposals might be contained therein:

* Grant to owners of copyrights and related rights a broadly defined exclusive right of **communication to the public** (by any means now known or to be developed) in

respect of all categories of works. This right should include, inter alia, the following restricted acts:

- "broadcasting", i.e. simulcasting to the public via wire or wireless means; and

- making a work publicly available on demand, by wired or wireless means.

* Grant to owners of coprights and related rights an exclusive right to encode and decode.

* The act of screen display and related acts of temporary storage may not be regarded as restricted, insofar as these acts are necessary for private viewing or use by authorized individuals, and the act does not qualify as a communication to the public. This provision may not be overrided by contract.

* Acts of temporary storage necessary for transmitting a work or information product may not be regarded as restricted acts.

Other issues

At least three other copyright issues merit further study in the superhighway context: moral rights, liability and copyright contracts.

A recent study by the Tokyo Institute of Intellectual Property, commissioned by the Ministry of Intellectual Property of Japan (MITI), identifies the **moral rights** problem as one of the critical legal issues in developing multimedia products.[35] It is suggested the validity of a waiver of the right of integrity must be established in Japanese law - consistent with the situation in the United States and the United Kingdom. Moreover, the study proposes to restrict the right of integrity to acts which are prejudicial to the author's honor or reputation.

The **liability** question is directly related to questions of public telecommunications law. Should the operator of the superhighway have the legal status of a common carrier? If so, does this status make the operator immune from copyright liability?

It is generally believed that **copyright contracts** will be a main source of legal protection in the future digital networked environment. Many of these "superhighway contracts" will be standard transactions that will take place more or less automatically. Is there a need to create a European legal framework for (electronic) copyright contracts?

* * * * *

Amsterdam, 15 August 1994