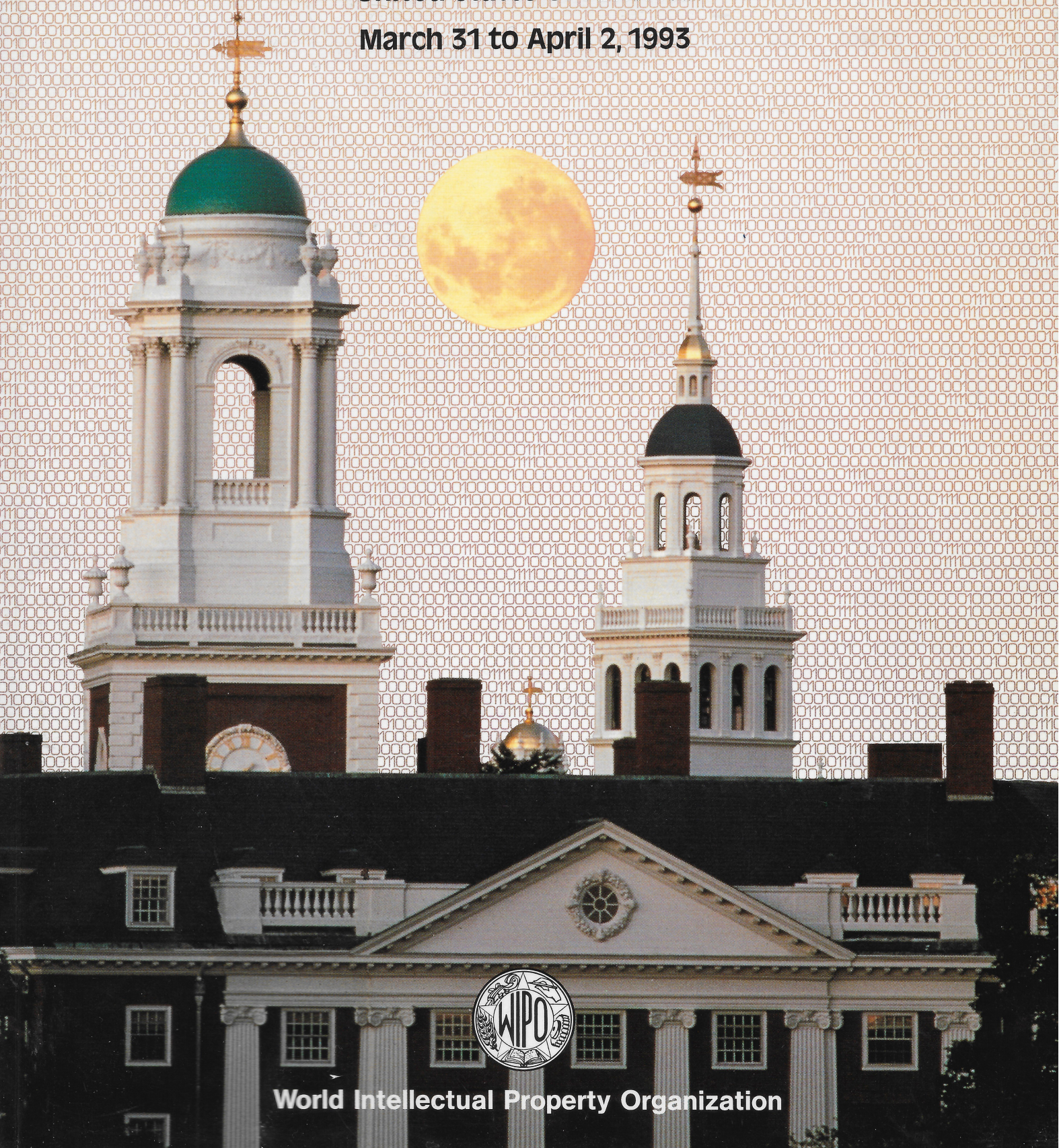


WIPO WORLDWIDE SYMPOSIUM ON THE IMPACT OF DIGITAL TECHNOLOGY ON COPYRIGHT AND NEIGHBORING RIGHTS

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**THE IMPACT OF DIGITAL TECHNOLOGIES
ON THE AUTHOR'S RIGHT AND NEIGHBORING RIGHTS***

by

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The emergence of digital technologies in France

The emergence of digital technologies attracts particular interest in France in different sectors of activity: R & D, industry, press and publishing, broadcasting and libraries.

From a technological point of view, French laboratories and companies play an important role in the perfection of digital technologies. The French company Thomson holds the basic patents concerning digital memorization in the form of minute pit, used in the manufacture of CDs. Thomson Consumer Electronics' laboratory has worked, since 1989, on the implementation of image and video compression and decompression algorithms, in accordance with the MPEG-1 norm. This laboratory already works on higher definition possibilities, such as 1440 x 960 pixels, destined perhaps to become an MPEG-3 standard. CCETT (joint France Telecom-TDF research center in telecommunications and television) set, within the context of the Eureka 147 project, the MUSICAM high quality musical compression standard, audio component of the MPEG standard which is the base of DCC and DAB. French experts equally play an important role within the ISO in the setting of new standards relative to multimedia (MPEG-2, MHEG ...).

* This document presents the first results of the study "L'impact des nouvelles technologies de communication sur le droit d'auteur et les droits voisins", lead by IDATE (Institut de l'Audiovisuel et des Télécommunications en Europe, Montpellier, France) for the French Ministry of National Education and Culture's Office of Literary and Artistic Property. This study is carried out by Dr. André Lange (IDATE), Professor André Lucas (Université de Nantes), Jean-Alain Sidi (XIS, Montpellier) and Dean Michel Vivant (Université de Montpellier).

The views expressed are solely the responsibility of IDATE.

Translated from French by Michaël O'Mahony (IDATE-Leeds Metropolitan University).

From the industrial point of view, the principal French consumer electronic company, Thomson, is participating in the development of terrestrial digital television in the United States, within the context of the ATRC consortium, one of four applicants to have sought approval of a project by the FCC. The ATF-Gigadisc company is the sole independent manufacturer in Europe and one of the major suppliers of opto-digital discs. French companies (France Télécom, Thomson, Matra) are equally active in the field of material and software production for synthesis imaging and visual telephony. Thomson has just entered the field of virtual reality in acquiring the patents of the American company VPL, one being the already famous interface glove.

In the field of digital broadcasting, testing of the DAB is underway in France and other European countries (Germany, Great Britain). The first regular service, consisting of ten local programmes, will be assured in the Parisian region by 1994, with experimental receivers. A national set up is predicted from the beginning of 1996. Research of a possible European strategy for terrestrial frequencies is in progress within the European Radiocommunication Office (CEPT).

The prospects for the setting up of terrestrial digital television are less pressing in France than in the United States. According to STI/France Télécom, terrestrial digital television could begin in a standard television version, or an improved version in 1998, with a HDTV version on the horizon by 2002/2005. Canal Plus, the principal French pay-TV operator, is very interested in satellite digital television development and has set up a joint-venture with News International (main shareholder of BSkyB) in this area. The two large European satellite operators (EUTELSAT and the European Satellite Company) are presently clarifying their offer on this matter. France Télécom and cable operators are also attentive to recent developments announced by their American colleagues, in relation to the resorting to compression in order to multiply the number of channels available on cable networks.

The French publishing world is evidently anxious to establish a foothold in the field of electronic and multimedia publishing. French producers and directors are well positioned in the field of synthesis imaging and computer assisted cartoon animation. The annual Imagina conferences, organized by the INA (Institut National de l'Audiovisuel), have become one of the largest world meetings in this domain. Publishing on digital media (CD-ROM, CDTV, CD-I, Data Discman ...) is still weak in relation to what it is in the United States: out of more than 2,000 titles registered worldwide at the end of 1992, 118 were published in France. This relative lateness in publishing can be explained by the slow development of the number of applications (notably for the CD-ROM) and by the caution taken by publishers in developing the market for these media. Large publishers, however, affirm their intention to take an active role in this field, as innovators and not merely as transferees of rights in existing material. Numerous small multimedia publishing and electronic game design companies have also appeared. Several publisher specialized associations have been created (AFEE, CLEF, GAME). It is evident that authors' rights and neighboring rights are a matter of concern for publishers. GAME and the Syndicat National de l'Edition published in January 1993 a "White Paper on Legal Questions Relative to Multimedia Works."

The Ministry of National Education and Culture plays an active role in the encouragement and support of multimedia publishing developments, as has just been illustrated at the European Assises of Multimedia and Interactivity (Paris, January 21-23, 1993). The Ministry has launched two major fine arts data base projects: the NARCISSE project, supported by the European Commission, allows exchanges of digital data and reproduction of 18th century works between various European museums; the Videomuseum project is the storage on an interactive laserdisc of photographs and data on all the fine art works registered in French public collections.

Also, technical and publishing developments are equally the object of the European Commission's attention through different programmes: ESPRIT (R&D support), IMPACT (multimedia programmes conception support) and MEDIA (MEDIA Investment Club, dedicated to the development of programmes for new technologies).

The main cause of the feeble development of the number of applications for CD-ROM in France is related to the importance of networks, in terms of databases. France is particularly active in the development of publishing services on the Teletel network (better known as the "Minitel") which offers access to 18,000 different services, 3,000 of which are professional databases. On the other hand, several applications in the cultural field already exist on the ISDN Numeris. Among these applications, one may mention the Audiocatalogue system (help-to-sell system for compact discs introduced by FNAC, the principal French record retailer), as well as an experiment in municipal library access to the image bases on BPI videodisc at the Georges Pompidou Centre, and also services allowing newspapers access to the image banks of major photographic agencies.

In the field of application of digital technology to libraries, one could essentially mention the Bibliothèque de France's ambitious digitalization programme, which began in 1992, which forecasts the scanning of 300,000 traditional works, as well as making computer assisted reading stations available to researchers.

In the regulatory field, an important initiative has already been taken in order to take into account the appearance of new publishing forms. A new law has been adopted on legal registration ("dépôt légal") (Loi no 92-546, 20 juin 1992, J.O. 23 juin 1992) which broadens the obligation to register to include multimedia documents. An obligation to register was also established for software, databases, expert systems and other artificial intelligence products, as from the time they are made available to the public.

Concerning the influence of new technologies, and in particular digital technologies, in the field of literary and artistic property rights, strictly speaking, the Ministry of National Education and Culture's action concentrates on the establishment, in collaboration with collecting societies, of a study and research center for authors' rights and neighboring rights. The objectives of this center, the statutes of which are in the process of being adopted, will be the gathering of information, the preparation and follow up of research and studies, the publication of works and the organization of events, meetings and conferences.

The blueprint for this center has taken the form of completion of a preliminary study, carried out under the responsibility of IDATE, on the theme "The impact of new communication technologies on authors' rights and neighboring rights." This study aims to establish a census of new technologies likely to have an impact on authors' and neighboring rights, to gather analyses of the different professions concerned and to prepare the ground for legal reflection.

At present, a draft report is being examined by the Ministry of National Education and Culture's Office of Literary and Artistic Property, and is the object of consultation with professionals, in particular rights collection and distribution companies. It will not therefore be a question, at this stage of reflection, of presenting definitive results and a fortiori official proposals. Rather, it will present the main trends of thought as they emerge from the preliminary investigations.

The principal characteristics of digital technologies in the economy and the use of works

Through their diversity of specification and usage, digitalization and compression technologies present various characteristics which by their nature can pose, directly or indirectly, problems for the protection of authors' rights and neighboring rights.

In the field of publishing media, the major characteristic of digital technologies (optical discs family) or opto-magnetic (rewritable discs) is the capability to store audio, pictorial (fixed or moving) elements, text and software on the same medium. These technologies are of a nature therefore, which favours the development of multimedia products, which represent new expression and distribution possibilities and open new interesting markets for rightsowners. The characteristics of these may lead to a convergence around new publication, distribution and use modalities, the different "worlds" of the author's right: publishing, film and TV industry, music publishing and phonographic production, fine arts, photography and information technology. This convergence requires an examination of the continued viability of traditional concepts (division between rights of reproduction and communication to the public) and of the coming together of different administration practices (individual versus collective administration, scope of the limitation allowing quotations from protected works, ...).

Another characteristic of optical or opto-magnetic discs is more trivial: they are simply more durable than traditional media (vinyl records, magnetic tape). This facilitates, in theory, the generalization of rental and lending practices, which favor private copying and piracy. It has appeared necessary to European legislators to assure rightsowners the rental right. This question has been taken into consideration primarily by the European Commission, and on November 19, 1992, the Council of Ministers adopted the Directive on rental right and lending right and on certain rights related to copyright in the field of intellectual property, which established for rightsowners an exclusive right to authorize or prohibit.

In the signal distribution domain, digital and compression technologies permit the multiplication of services distributed by cable (Digital Instrument compression technologies for CATV, already adopted by TCI, the major U.S. cable operator; DMX for radio ...) rather than by the terrestrial method. The BBC laboratories have just demonstrated that the COFDM standard for terrestrial digital broadcasting, which has already completed its tests for digital audio broadcasting (DAB), can equally be used for an economic broadcasting (in terms of hertzian spectrum use) of television channels. Digitalization and compression technologies are therefore of a nature to increase the offer of programmes and to perfect the modalities of rights administration (systems for pay-per-view and for video-on-demand channels, etc.) and of marketing (for example, broadcasting of the same channel on several timetables). In opening new markets and new rights administration possibilities, digital and compression technologies open, in principle, when applied to distribution, interesting prospects for rightsowners.

One of the characteristics which most worries rightsowners is obviously that digital technologies allow large scale reproduction with a high image and sound quality. The broadcasting of radio or television programmes in digital quality obviously creates opportunities for private copying and piracy. Furthermore, the possible convergence of various digital technologies could modify the traditional notions of media. Determination of the form, place and characteristics of the first fixation of a work can become extremely complex.

The prospect of the pure and simple disappearance of the medium begins to be envisaged, not without trepidation, as a possible prospect for certain professions (notably the phonographic industry). The production function (which couples right administration with product exploitation) could find itself fundamentally modified due to the dematerialization of the distribution of works.

The consequences of this trend towards a dematerialization of exploitation can hardly, at this stage, be determined in any way other than by hypothesis. The history of communication technology shows that distances are sometimes very large between the purposes of these technologies imagined by their promoters and the actual use of them by consumers. In terms of cultural consumption, public practices are not solely guided by economic and technological criteria. The success of the video testifies that a style of network distribution (television) has not killed, but has, on the contrary, facilitated the emergence of a prerecorded product-based distribution (home video). It seems that material possession of cultural media (books, records, videocassettes, etc.) is destined to maintain an important role in symbolic and emotional representations of large consumer sectors. In other respects, from the publishing strategy's point of view, the evolution of competition in the United States between the video and pay-per-view markets indicates that producers' choices are essentially determined by the possibilities of rising revenues and the margins attainable in minimizing the number of intermediaries. Now, on this point, it seems likely that a pay-per-view strategy will eventually turn out to be more profitable for producers than a prerecorded product distribution strategy.

Coupled with progress realized in the software and expert systems fields, digital technologies allow the development of computer aided design (CAD) or computer controlled design (CCD). In the creation domain, it gives rise to new possibilities, notably in the fields of music creation, computer graphics, cartoon animation, and virtual reality. These increased possibilities bring up again the traditional questions on the role of the aleatory and protection of algorithms and of their influence on the expression of the author's personality.

Digital technologies and the evolution of information technology towards multimedia offer the image and sound control field possibilities which seem unlimited in the future. These possibilities can lead to some original forms of creation (such as, for example, the resorting to special effects, particularly spectacular in some recent film productions). However, the possibilities are not without risk for rightsowners, from the point of view of economic rights and of the moral right. Apart from authors, these possibilities can also concern performers. The production, at normal costs, of fictional films with clone actors is becoming a reality, as the production process of an adaptation of Jules Verne's "20,000 Leagues Under the Sea" illustrates, where the actor Richard Bohringer allowed himself to be scanned. Technically, scanning a single actor could allow the production of an unlimited number of films. In the music field, the practice of sampling (an extremely precise excerpt of an audio element in view of its reuse in another work) promises to develop, and it is interesting to note that 14 lawsuits (the majority of which were resolved amicably) have been filed in Great Britain. The question of the respect of rights is going to become much more important as scanning technologies become commonplace and accessible to both individuals and companies.

Digital technology equally favors the development of interactive technologies which are evidently going to have important consequences on the ways in which works are used. However, one must note that it is probable that the majority of works which will be offered to consumers on interactive media, such as CD-ROM or CD-I, will have been developed using this interactivity.

Digital technologies strengthen the internationalization of production and circulation of works

In the context of the WIPO conference, it appears necessary to underline the fact that digital technologies strengthen the internationalization of the production and circulation of works.

The emergence of optical scanning, electronic publishing and of multimedia is often compared to the revolution in the 16th century which brought about printing. The Canadian communication sociologist, T. Innis, followed by Marshall McLuhan, developed the theory that the invention of printing favored the emergence of nationalism. One can argue, on the contrary, that the technological revolution attributed to digital technologies appears to accelerate the internationalization of information and culture to which telecommunications, cinema, record, radio, television and video are certainly already used to, but which are going to find themselves magnified by new media and networks. It would not be fruitless to recall that the characteristics of digitalization and compression indeed necessitate reflection on an international scale, on their implication for authors', performers' and producers' rights.

Firstly, one should note that optical scanning technology will enable the discovery of media relying on a universal standard not just in the field of sound, but equally in that of image. The relative dividing up of the markets which had brought about the existence of three norms (NTSC, PAL and SECAM) as much for television as for video and videodiscs, finds itself surpassed by the appearance of the CD-I and by the probable arrival on the market of the full motion video CD (CD FMV) and the digital videorecorder.

Compression technologies are also going to encourage new forms of international communication. Thus radio digital technology (DAB) opens up the possibility for international radio services, broadcast by satellite, of a quality--and therefore probably of an audience--far superior to those of traditional short wave services.

Furthermore, the international compatibility of ISDNs and the development of satellite telecommunication networks are already resulting in the occurrence of a certain number of delocalization phenomena at different stages of the work's fixation, reproduction or representation. Telecommunication networks are beginning to be used in international collaboration between scientific researchers or between designers. In this case, the determination of the applicable national law can turn out to be important.

The emergence of digital technologies will not only modify the conditions of circulation and exploitation of works: it has already had some important consequences on the internationalization of the three industrial sectors converging towards multimedia: telecommunications, information technology and the culture industry (intended, in a large sense, as including publishing, phonographic production, film, TV and home video sectors and even the fine arts). The two sectors which concern intellectual property protection (those of the culture industry and information technology programmes) are already strongly internationalized. In particular, the level of investment in the production of films, TV programmes or multimedia works increasingly necessitates international coproduction, and this trend will continue to grow in strength. The growing value of works, resulting from an increase in demand, creates international concentration phenomena in the form of the setting-up of rights libraries.

This strengthening of the internationalization of production and circulation of works resulting from the emergence of digital technologies necessitates, inevitably, the examination of international solutions.

The trends of legal thought

The reactions of numerous professionals to the emergence of digital technologies and media often convey a sense of concern in facing what would be a legal void. The IDATE team considers that there are no grounds for exaggerating this: the major principles of traditional copyright, in its continental form, have integrated without too much trouble the different reproduction and broadcasting technologies dating from the 19th century onwards and will have to, on the whole, continue to be pertinent for digital technology.

Affirming the durability of traditional principles can not, however, lead to an ostrich's attitude, which would refuse to take into consideration the important effects which digital technology can have. Moreover, a policy making reference to these principles or being based on them, can be the means to finding a solution truly adapted to a new problem.

1) Conditions for the protection of authors' rights

New technologies raise again certain old questions on authors' rights, the importance of which there are no grounds to overestimate (the role of chance in creation, the role of interactivity). On the other hand, new technologies, notably because they always bring more intellectual activities into market reasoning, contribute to the setting down of the key notion of originality, and can lead to calling into question of the author's preeminence. The insertion into the author's right of the protection of software, of certain media programmes and of databases (under examination at the moment in a directive project by the European Commission) must not alter the notion of originality of a work linked to the literary and artistic dimension which presided, in France and the majority of European countries, over the emergence of authors' rights. The importance of this question has been appreciated in the Community Directive on computer program protection.

Moreover, an evolution too oriented towards protection of investment rather than protection of creation would risk changing the nature of the literary and artistic property right, pulling it towards the competition right.

The existence in French law of special rules applicable to certain works (software, film and audiovisual works and most probably in the near future, databases) leads certain professionals to practice a nominalist approach, aiming to relate the new work forms (in particular multimedia publishing products) to such and such a category. In order to be legitimate, this approach cannot be classified as a principle of reflection: not only does it risk questioning the basis of protection of the author but above all, it risks leading to artificial distinctions which would not be operational in facing the growing diversity of technological possibilities. The same work could, for example, be classified at the same time as software, a media work and a database, thus making it all the more difficult to determine the rights pertaining to it.

2) The exclusive character of the rights

Generally, it appears that technical progress threatens the rights' exclusiveness for practical (difficult to control its use), legal (incidence of competition law in the name of public interest) and political (pressures exerted by the users and legislators to limit the exclusive right in the name of the right of access to culture) reasons. At the same time, certain categories of rightsovers, notably phonographic producers and actors, who believe themselves to be threatened by certain digital technologies have just demanded an advantageous exclusive right.

The sliding of the notion of an exclusive right towards a remuneration right would risk calling the nature of the authors' rights into question, in disconnecting this from the exploitation of the work. This risk is all the greater for, in resorting to costly technologies, the author finds himself more and more often in the situation of an employee.

3) The structure of economic rights

Digital technology is characterized by growing complexity of systems (multiplication of computer and interface peripherals, couplings of published media with networks, book publishing from HDTV pictures ...). This process stands to modify considerably the conditions of exploitation and to blur the contours of the summa divisio between reproduction and communication to the public. Are the notions of reproduction and communication to the public still adequate for immaterial product communication? Nevertheless, this traditional distinction is not destined to disappear and will still have to play a large role, even if it can be necessary sometimes to complete it. If such is the case, the establishment of certain distinct rights, such as the right of distribution, initiated in the "computer programmes" and "rental and hiring" directives, should be taken into consideration.

4) The moral right

Digital technology considerably increases the manipulation possibilities of works and performances (special effects, sound work, etc.). The fact that the consumer himself can, during his free time, instigate such manipulation carries evident risks of infringement of the moral right. This risk will be greatly increased during the creation of any product which can be distributed or commercialized. It is clear that French jurists and a large number of French professional circles remain faithful to the traditional notion of the moral right. In particular, the colorization of feature films without the consent of the director is considered as unacceptable.

5) Administration modalities

It seems inevitable that new technologies will enlarge the field of application of collective administration. The high memory capacity of digital media make possible the publishing of encyclopedic type works, regrouping works from widely varying origins. For certain types of right negotiations, the possibility of user access to rightsowners will make it necessary to resort more often to collective administration. One can cite as an example the case of the Videomuseum project, which allowed the compilation on interactive discs (non-commercializable but consultable on a limited number of sites) of a database comprising reproductions of works of fine arts found in public collections. This project was made possible by an agreement with the two collecting societies specializing in the rights of draftsmen and sculptors.

Such a prospect nevertheless poses important practical problems: certain barriers (between authors' rights and neighboring rights or between musical work and film or audiovisual work, etc.) could break down. It is probable that an increase in cooperation and agreements between collective administration organizations managing rights in different works or in different countries will be necessary in order to facilitate user negotiations. There will always be the risk that rightsowners are not members of a society or that the representativeness of collection and distribution societies is not perfect.

The development of price lists applicable to the new media or uses (such as corporate communication, destined to become one of the markets for multimedia technologies) already constitutes food for thought for collecting societies. The internationalization of the circulation of media permitted by standardization will increasingly require that price lists take international sales potential into account.

The use of technology for the protection and administration of authors' and neighboring rights

Often perceived as a threat to literary and artistic property rights, digital technology can, however, be used to such ends as the protection of these rights.

The insertion in the subcode of CD-audio, of the ISRC code and of the SCMS system provide a first illustration of the possibilities offered. The ISRC code and the SCMS system would have to carry some elements of response to the concerns of authors, actors and producers facing the emergence of digital broadcasting (such as DAB or DMX). These systems facilitate collective administration (ISRC code) or avoid the multiplication of copies from the same recording. Still, it is an imperative that the imposition of such systems be implemented within the context of industrial agreements (such as the Athens agreement) and, if necessary, by international regulations.

The CITED project (Copyright in Transmitted Electronic Documents) launched in the context of the European Commission's ESPRIT II programme, is dedicated to these questions and the first conclusions were presented at the end of 1992. This project aims to establish:

- a model for the protection of authors' rights revolving around digital information; this model must be capable of surveying protected digital information;
- corresponding orientations;
- technical tools allowing the application of this model to specific sectors. Some of these tools are the same as those used in the security industry. However, the objective pursued is to protect the information dependent on an author's right, without which this protection does not restrict legal access to the information.

Ms. Laurence Guédon's (APP) paper on the possibilities of a protection system in the information technology field equally indicates the shift of work in this direction.

One cannot neglect the possibilities offered by coding and access control systems. In France, the first generation of decoders used by the Canal Plus channel turned out to be relatively simple to pirate. But the growing sophistication of access control systems (generally using keys or smart cards) offers increased guarantees against piracy, right from the signal's emission. Furthermore, their possibilities of addressing allows the creation of new markets, and devices assuring a precise payment according to the broadcasting zone's limitation and marketing strategies taking account of actual subscriber consumption.

Conclusion

For the electronic consumer, telecommunication and information technology industries, plus different sectors of the world publishing industry, digital technology represents important new opportunities. It is obvious that new media and network success will not come solely from their technical qualities, as the existence of a program offer constitutes one of the major prerequisites for the industrial success of these new technologies. At present, production of programmes for these new media necessitates important investment, more risky than the development of the player base, indeed the durability of the product itself is not assured.

In this context, certain new media promoters could be tempted to pressure the legislator into reducing the protection which producers and actors enjoy. Without giving way on principles, they can, if they judge it appropriate, make contractual agreements with publishers and producers taking account of the necessity to ensure the commercial success of these new media. Thus, at the launching of new audio media (CD-audio and, more recently, DCC and Mini-Disc), phonographic producers and authors/composers agreed to reduce the level of rights over a transitional launch period, in view of the promotion of these new media.

Commercial imperatives cannot justify calling authors' rights into question. At a time where the emergence of new reproduction and broadcasting technologies can lead to an appreciable evolution of the balance between professions concerning authors' and neighboring rights, caution arises.

Balanced solutions must be found, tactfully treating commercial interests and respecting a cultural policy where works of the mind are not considered as mere commodities. It appears evident that the majority of French jurists and professional circles remain faithful to the continental civil law concept of authors' rights. At the same time, they are aware that a protection system should not constitute a handicap for publishing activity which could in the long run be favorable to the publishers or producers of countries where authors are less protected.

The role of the legislator, confronted by a variety of sometimes contradictory reasoning, is to carry out choices which assure an equilibrium between the different interests. Without predicting their future choices, one can assume that the French public authorities will continue to promote the research of international solutions which take into account principles implemented in countries applying the continental idea of authors' and neighboring rights.