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## **IPR in the ensuing global digital economy**

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### **Abstract**

This article covers the evolution of traditional intellectual property rights (IPR) laws and associated concepts from printed to digital works, and discusses how the characteristics of digital replication pose problems for traditional IPR systems. It highlights international treaties on copyright, including the Universal Copyright Convention, the Berne Convention, the Performers and Phonograms treaty and the Sui-Generis Protection of Databases. It provides some insight into the Indian software industry by discussing the scope of Indian copyright law, the rights of owner, infringement, penalties, and makes a comparison with US law. The article concludes that judicious participation by all countries in the development of a globalized IPR regime would strengthen the global digital economy.

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### **Introduction**

Intellectual property is an area of law that has evolved with development of technology. The increasing use of both computers and communication technology has given rise to a digital economy. This new economy is changing the way products are produced, the nature of products and their distribution. Certain distinctive qualities of the digital medium have given rise to challenging legal issues. Thus, intellectual property rights (IPR) have come to be recognized as an important tool for economic dominance. The objective of this paper is to analyze an emerging digital IPR regime with respect to copyright protection.

### **Evolution of traditional IPR laws**

Initially, copyright originated with the printing press. The rights granted under copyright matched the type of creative work involved, the medium of work and the realities of existing market economics. Paper versions of intellectual works brought up the rights of reproduction, distribution and modification (i.e. derivative works). Performance and display rights were added to protect music, theater and art. When sound was placed on tangible media and broadcast over radio waves, related rights were also included. Once computer programs were recognized as protectable forms of expression, further modifications to traditional copyrights followed.

Many concepts associated with existing rights are not easily transferable from a paper-based to a digital world. These include some of the exemptions on the exclusive rights of a copyright owner, such as fair use, the “first sale doctrine” and library use.

### **Characteristics of digital media replication**

The characteristics that influence digital media replication include: ease of replication, ease of transmission, compactness, multiple use, and the fixation of digital and multimedia works (Samuelson, 1991).

### **Ease of replication**

The ease with which works in digital form can be replicated poses problem for the law. In the existing copyright regime, making copies for personal or private use is considered fair use and lawful. Technological improvements in reproduction have resulted in generating "perfect" multiple copies, which made it more difficult for copyright owners to exercise control over replication of their works. The copyright system in the print world has focussed on sales of copies of copyright works, whereas in the digital world rights owners have charged for access and use.

### **Ease of transmission**

Digital works are easily transmitted and used by multiple users. This poses problem for traditional IPR systems. A pirated version of a digital work can be loaded onto a networked computer system that generates virtual copies for simultaneous use.

### **Compactness and multiple use**

Compactness has the potential to create new kinds of legal problems. Compactness makes it possible to put company records, whole libraries, encyclopedias and the like, in a set of compact discs. This has resulted in the development of elaborate systems with access restrictions and regulations, that has in turn raised issues about regulation, types of rights to be controlled, and kinds of access to information sources.

### **Fixation of digital works**

Users can modify works in digital form easily and quickly. Through digital sampling techniques, sound recordings can be mixed and combined with others to produce a new sound recording. Photographs and video recordings in digital form can also be manipulated to add, delete and combine elements from different works. Computer programs can be transmuted unrecognizably. Thus, users can customize copyright works and sell them as if they were new. Under "first sale doctrine" for traditional print materials, the owners of physical copies of protected works have rights that allow them to exercise control over that particular physical instance of the work. Indian lawmakers have an obligation to amend copyright status to provide

some authority for exercising similar control over what users do to transform copies of a copyright work in digital form.

### **Multimedia works**

Increasingly a variety of types of works are being fixed in a single tangible medium as "multimedia". Works protected by copyright are becoming less differentiated by type, and are becoming more related to one another, because they exist in same medium. The equivalence of works in digital form makes it more difficult to classify such works into separate categories for copyright purposes. This has given rise to consideration of forming a separate multimedia category under present copyright laws. In the future it may even lead to eliminating categorization.

### **Significant international treaties on copyright**

The World Intellectual Property Organization (WIPO) is responsible for the administration of international intellectual property treaties and revisions to them. The most significant international treaties relating to copyright protection are Universal Copyright Convention (UCC) and Berne Convention (WIPO, 1971a; 1971b).

#### **Universal Copyright Convention (UCC)**

The UCC was adopted in 1952, and is administered jointly by UNESCO and WIPO as a lower level copyright convention. A total of 92 countries are members to this convention. Under this treaty, each member state grants the same protection to published and unpublished works from any other member state as it grants to its own nationals for works either first published in its territory or for unpublished works created within its territory. Formalities such as registration are permitted under UCC in order to bring an infringement suit.

#### **Berne Convention**

The Berne Convention was adopted in 1886 in order to protect international copyright through mutual cooperation. As of March 1997, 121 states were members to this convention. The

Berne Convention contains a more far-reaching regulation of copyright than does UCC. Berne members constitute a union that is open to all countries of the world provided that they meet certain minimum protective requirements. These requirements include equal treatment for foreign nationals, granting certain moral rights to authors with regard to the exploitation of their works, granting of certain economic rights, and the adoption of certain minimum terms of protection for various works. Berne also provides copyright protection without requiring any formalities.

### **WIPO**

Recognizing the profound impact of digital technologies, WIPO invited 160 member countries to a diplomatic conference in December 1996. The main theme was on the digital agenda and sought to modify existing norms, and to create new ones to cope with creation, adoption, transmission and distribution of works in digital media. WIPO has prepared three draft treaties: Copyright, the Protection of Performers and Producers of Phonograms, and Sui-Generis Protection of Databases. At the end, the first two treaties were adopted and will come into force after ratification by the member countries (WIPO, 1996a; 1996b; 1996c).

#### **Copyright Treaty**

This treaty complements the Berne Convention. It covers computer programs in any modes or forms of expression which are protected as literary works. The most important article concerns the rights of communication to the public: "the making available to the public of their works by wire or wireless means, in such a way that members of the public may access these works from a place and at a time, individually chosen by them". This covers the online digital delivery of works, and functions as a basic rule for digital department stores, digital bookstores, digital record and video shops. Author's rights include providing access to protected works. Contracting parties or member countries of the treaty can fulfill the requirements by granting authors a right of communication, transmission or distribution by transmission.

#### **Performers and Producers of Phonograms Treaty**

This treaty was intended to cover all relevant aspects of protection of performers and producers of phonograms. The definitions have been modernized to keep pace with digital influence. For example, the definition of broadcasting now explicitly covers transmission by satellite and encrypted signals. The performers and the makers of phonograms have been granted the right of reproduction, both direct and indirect, in any manner or form, and an exclusive right to make their phonogram-based performances publicly available via interactive on-demand delivery methods.

#### **Databases Treaty**

This is the third treaty that was deferred. It is a new instrument for protection of databases called Sui-Generis protection. It intended to extend to any database if collection, verification or other steps in its production involve substantial investment in the form of human or financial resources. The idea is to consider databases as vital elements of a global infrastructure, to encourage development of databases and commercialization. The reservation by scientific communities, government departments and other institutions handling large volumes of data was that protection would break the principle of full and open exchange of scientific and other databases from exchanging data.

### **Indian scenario**

#### **Evolution of software industry**

Every sunrise software industry among developing countries goes through a pattern of evolution, and the Indian software industry has been no exception. India has taken too much time to move from one stage of evolution to another. The software industry has had different core competencies at different phases of its evolution. It commenced with strengths in on-site development or "body shopping", with little or no value added to skills from the employer's side. In the next phase it specialized in off-site development by executing projects at the customer's site, which added value to the employees' skill base. The developer lost any

intellectual rights to the developed code once it was delivered to the customer. Finally, the software industry has reached a stage where it churns out products such as software packages that are ready made for immediate use.

India came through the first stage of evolution quite comfortably. The last few years have seen Indian software development firms increase their off-site development business. The present trend in the industry is to design, develop and market software packages that are sold at par with international brands. In essence, intellectual property is being developed by companies, which are claiming rights to them. The off-site developers are also demanding rights from their customers to retain intellectual property, so that the same software modules can be used for similar projects in order to reduce the duplication of coding, to save time and generate more revenue. India's major software markets include the USA, UK, Australia, New Zealand, Germany, France, The Netherlands and Japan. All have an established legal system in place for protection of computer software.

### Indian IPR Law

India is a member of both UCC and the Berne Conventions. The GATT negotiations led to agreement on Trade-Related Intellectual Property Rights (TRIPS) that included provisions relating to protection of computer software and databases under copyright law. The Indian IPR for computer software are covered under the provisions of the Indian Copyright Act 1957. Several amendments to Indian copyright law were introduced in 1994, which came into effect on 10 May 1995 as one of the toughest in the world. For the first time in India, copyright law clearly explained the rights of the copyright holder, the position on software rental, and the rights of users to make backup copies. It imposed heavy punishments and fines for the infringement of software copyrights.

### Copyright

Copyright is defined as a form of intellectual property protection granted under Indian Law to creators of original works of authorship, such as literary works (including computer programs, tables, and compilations, including computer databases that may be expressed in

words, codes, schemes or in any other form, and including a machine readable medium), dramatic, musical and artistic works, cinematographic films and sound recordings. Also, copyright applies to both published and unpublished works. The copyright lasts for the life of individual authors plus 60 years.

Copyright owners have rights to do or to authorize any of the following with respect to a work or any substantial part thereof:

- (1) In the case of a literary, dramatic or musical work that is not a computer program: to reproduce the work in any material form, including storing of it in any medium by electronic means; to issue copies of the work to the public; to perform the work in public, or to communicate it to the public; to make any cinematographic film or sound recording in respect to the work; to make any translation of the work; to make any adaptation of the work; and to do, in relation to a translation or adaptation of work, any of the acts specified in relation to work in the sub-clauses.
- (2) In the case of a computer program: to do any of the acts specified in (1), and to sell or give on hire, or offer for sale or hire a copy of computer program, regardless of whether such a copy has been sold or given on hire on earlier occasions. It may be noted that copyright confers a number of rights, some or all of which can be granted to others either exclusively or non-exclusively.

The exceptions to making copies or adaptations are: in order to utilize the computer program for the purpose for which it was supplied; or to make backup copies purely as a temporary protection against loss, destruction or damage in order only to utilize the computer program for purpose for which it was supplied. These exceptions do not constitute an infringement of copyright, and they apply only when a computer program is sold (i.e. when the title to the program copy passes); they do not apply when a program copy is licensed. A licensee has only those rights that are specified in license agreement.

A copyright in work is considered to be infringed:

- When any person without a license granted by the owner of the copyright or the



Registrar of Copyrights or in contravention of conditions of a license so granted, or of any conditions imposed by a competent authority under the copyright act, does anything, the exclusive right to which is conferred by the copyright act upon the owner of the copyright, or permits for profit any place to be used for communication of work to the public where such communication constitutes an infringement of the copyright in the the work.

- When any person makes for sale or hire, or sells or lets for hire, or by way of trade displays or offers for sale or hire, or distributes either for the purpose of trade or to such an extent as to affect prejudicially the owner of the copyright, or by way of trade exhibits in public, any infringing copies of the work.

The copyright infringer may be tried under both civil and criminal law. With amendments to Indian Copyright Act in 1994, criminal penalties (Section 63 B) stipulate a minimum jail term of seven days that can be extended up to three years and fines ranging from Indian Rupees 50,000 to 200,000, plus a jail term (NASSCOM, 1998).

The Indian Copyright Law resembles that of the USA (Title 17, US Code) in most of the provisions. The prominent differences include the duration of copyright and definition of computer software. The duration of copyright in the USA is the author's life plus 70 years, while in India it is the author's life plus 60 years. The US copyright act defines computer software as a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result. Under the Indian act, a computer program means a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result. The definition of computer includes any electronic or similar device having information processing capabilities. The term computer program includes programs in any form including those that are incorporated into hardware.

### Problems with copyright

The key problems associated with copyright protection include: first, that the protection of computer programs is too long; and second, that ideas cannot be protected, such as when a computer programmer looks at someone else's program and steals its ideas. If a programmer steals the form of expression from other computer programs, that programmer is liable for copyright infringement.

### Ramifications of digital networks and copyright law

Select situations where copyright problems would not be resolved when accessing or using information include:

- *Web publishing.* In case of copyrighted Web-based information, the technical interchange from computer to computer during surfing could be in a form of transmission that infringes multiple copyrights.
- *Data revolution.* Library services have been based on "fair use" and the "first sale doctrine". Any library with copyright works on a Web site, gopher site, or FTP site could be liable for a lawsuit as a transmitter. Resources for the creation of technology-based protection tools to safeguard digital copyrights may have to come from libraries and publishers of digital works.
- *Increase in information value.* Those who believe that information gains value through use and thorough manipulation by a multitude of users, should not claim copyright and should: push information to users as rapidly as possible; establish a reputation as a generator of quality data; reduce the time-to-market for research data; build publication vehicles such as CDs that users use for faster retrieval; and allow data by subscription rather than by one-time purchase (Walls, 1996).
- *Hyperlinks.* A hyperlink used by a site does not directly cause any substantive content to be copied, but merely provides a pointer to another site. Since readers are free to click on a hyperlink, though, the owner of the linked site may feel that access should be direct, rather than through the link.

- *Use of library computer terminals.* Library users may make use of computer terminals to view movies, listen music on video/audio tapes or CDs, run software programs, or download and print copyright materials from databases. Since a library is a public place, there is potential for infringement if the users exceed the licensed number of people.
- *Preservation of materials.* A library might make digital copies of materials in its collection of original paper works that are beginning to deteriorate physically, and might refresh existing digital ones as part of a preservation plan. This involves making an exact replica of the original and transferring it into latest storage media. Even though a library has purchased initial copies of these works, it does not mean that the library is free to make copies (Benton Foundation, 1997).
- *Electronic rights management:* Several digital copyrightable products ranging from electronic documents to multimedia products are emerging in the network environment. The components of electronic copyright management included in the National Information Infrastructure (NII) White Paper are: a registration and recording system, a digital library system with affiliated repositories of copyright works, a rights management system and a transaction monitoring system to check illegal use of systems (Gervais, 1998).
- *Digital broadcasting and convergence.* In the past, broadcasting regulations primarily covered contents. In the USA, satellite based video services like Direct-To-Home are regarded as a telecommunication service, whereas in Europe they are treated as a broadcast service. The IPR framework may need to address various concerns from the broadcasters' and the right holders' point of view.

## Conclusion

Today the pace of digital technologies, their convergence, and their push in terms of gaining

economic dominance in the global market, is taking place at a speed not known in history before. The legal and regulatory framework is having trouble coping with this. Judicious participation by one and all in the development of a globalized IPR regime would strengthen everyone's comparative and competitive advantages as part of a global digital economy.

## References

- Benton Foundation (1997), "Intellectual property". Available: <http://www.benton.org/Library/KickStart/kick.intellectualproperty.html>
- Gervais, D.J. (1998), "Electronic rights management and digital identifier systems". Available: <http://www.wipo.int/eng/meetings/1998/acmc/index.htm>
- NASSCOM (1998), "Protecting IPR". Available: <http://www.nasscom.org/protect.html>
- Samuelson, P. (1991), "Digital media and the law", *Communications of the ACM*, Vol. 34 No. 10, pp. 23-31.
- WIPO (1971a), "Universal copyright convention". Available: [http://www.tufts.edu/departments/fletcher/multi/texts/UNTS1\\_3444.txt](http://www.tufts.edu/departments/fletcher/multi/texts/UNTS1_3444.txt)
- WIPO (1971b), "Berne Convention, for the Protection of Literacy and Artistic works". Available: <http://www.wipo.int/eng/general/copyright/bern.htm>
- WIPO (1996a), "WIPO Copyright Treaty (WCT)". Available: <http://www.wipo.int/eng/general/copyright/wct.htm>
- WIPO (1996b), "WIPO performances and phonograms treaty (WPPT)". Available: <http://www.wipo.int/eng/general/copyright/wppt.htm>
- WIPO (1996c), "Draft treaty on intellectual property in respect of databases". Available: <http://www.wipo.org/eng/diplconf/6dc-sta.htm>
- Walls, A. (1996), "Intellectual Property, Copyright and the Internet: Is it worth the effort?". <http://www.libraries.psu.edu/iasweb/copyrt/walls.html>

## Further reading

- Tysver, D.A. (1999), "Database Legal Protection". Available: <http://www.bitlaw.com/copyright/database>
- US Copyright Office (1988), "The digital millennium copyright act summary". Available: <http://www.loc.gov/copyright/legislation/dmca.pdf>
- US Copyright Office (1998), "Copyright Law". Available: <http://www.loc.gov/copyright/title17>