Chapter- IV: Software Protection in Convergent Multimedia Environment

INTRODUCTION

[A] Legal Issues of Software copyright
1. Right of Reproduction.
   a) The European Union
   b) The US Position
   c) The WIPO Copyright Treaty
2. Right of Communication to the Public
3. The Right of Distribution

[B] Technical challenges of software copyright
1. Ease of reproduction.
2. Ease of dissemination
3. Concentration of value
5. Jurisdictional Issues

[C] Software Piracy
   a) Indian Perspective
   b) Software Piracy in U.S.A.
   c) Latin America
   d) North America
   e) Asia Pacific Countries
   f) Remedies

[D] Software Patents

RECAPITULATION
INTRODUCTION

The ability of copyright law to absorb changes and the general perception that digitisation imposes new revisions of the international Conventions and Treaties inspired different positions among scholars. W. Cornish (1999) recognises that new technologies for the creation and storage of cultural works threatens copyright, but adds that what is historically remarkable is its resilience. On the contrary, referring both to patents and copyrights, J. Reichman (1995) suggests that new hybrid legal regimes emerged outside classical frameworks, thus violating economic premises and historical balances of rights. Nevertheless, both authors underscore the increased extension of copyright protection. Increased capacity to store, transmit and process information enhances the ubiquity of creativeness, on one hand, multiplying the distribution chains for cultural goods and, on the other hand, making it easier to copy them the immediate consequence of both is a gradually decreasing on the number of exceptions to the monopoly. This trend touched all fair uses, and led to the question about what will be the implications on economic competition and technological diffusion.

Copyright in the last century has illustrated how the law has dealt with technological developments. The latest challenge has been posed by the advent

---


147 The advent of Radio broadcasting and later that of the television broadcasts followed by the photocopying machines. Copyright law managed to encompass these changes without having to be changed.
Chapter IV: Software Protection in Convergent Multimedia Environment

of the digital technologies. As a response to the aforementioned, the two 'fast tracked' WIPO Digital Treaties were adopted in 1996.148

In some respects copyright is relevant to convergence, not at all. The titles of copyright conferences typically do not refer to “convergence”, but use the terms “information society” or “digital environment” or multimedia environment. Why? Copyright law has by and large been formulated according to principles of “technological neutrality”. It has focused on the nature of the use of the work, rather than the medium by which the use is accomplished, or the physical facilities or equipment involved. Thus the law has granted to music composers the right to reproduce the work, to adapt it, to perform it publicly, and to communicate it to the public.

Nevertheless convergence is of course relevant to copyright. The same forces that give rise to convergence have also given rise to problems for copyright model of technological neutrality: the technique and media have changed to such an extent that rights drafted to be neutral and capacious may either no longer fit, or may fit too much. It has therefore become necessary to re-examine the question of what rights should exist in which works, and how they can be enforced and licensed, in order to maintain meaningful incentives and appropriate balances. In other words, the causes of convergence may also lead to a potential convergence of separate right in the copyright “bundle” and a shift in the established boundaries, categories and roles of copyright law.

[A] Legal Issues of Software Copyright

Now these days Software is one of the most important technologies of the information age. Software is defined as a set of instructions which when incorporate in a machine readable form is capable of causing a computer to perform a particular task. The definition under WIPO, draft model provisions for the protection of computer software comprises of three components:

148 The WIPO Copyright Treaty and The WIPO Performances and Phonograms Treaty
Chapter IV: Software Protection in Convergent Multimedia Environment

i. Computer Programme.
ii. Programme descriptions, and
iii. Supporting material.

"Software" is a general term for what is fed into a computer, whereas the machines themselves are known as the hardware." Thus, the question of the extent to which proprietary rights may exist in computer programmes has becomes an important issue. But the U.K. Copyright Act 1956 and its Indian counterpart, Copyright, 1957 and similarly the American Copyright Law prior to 1976 revision, were all silent on the question of computers probably as it were still days for computers. But 1994 Amendment has significantly changed the position. These changes are of particular importance to the computer industry in that a new "rental right" of computer programs has been created, the traditional fair dealing exceptions has been eliminated and radical new penalties have been imposed on users of infringing programs. India has most stringent copyright laws in the world. The term 'literary work,' includes computer programmes, tables and compilations including databases.149

Copyright confers on the authors of a literary, dramatic or musical work, the exclusive right to reproduce the work in any material form including the storing of it in any medium by electronic means. This extends to computer programmes. As provided vide section 2(0) and in section 14 (a) (i). The definition of 'cinematograph film' and 'sound recording' contained in section 2 are also including 'digital' copies of such work. The law is crystal clear about the rights of licensee. A computer programme licensee does not have a right to lend on otherwise transfer programme copy, unless authorized by the copyright owner. The copyright, Act 1957 was extensively amended in 1999 and covered a remaining gaps and make it ensuring compliances with TRIPs; WIPO copyright treaty, and WIPO Performances and Phonograms Treaty.

149 Section 14(a)(1), Copyright (Amendment) Act 1994.
i. These amendments had been enacted in complete oblivion of the emergence of the Internet and its implications: our Copyright Act is fully protected the new challenges of Software Piracy\(^{150}\).

This provision was clearly in consonance of Article 8 of WCT. Which provides the authors 'the exclusive right of authorizing any communication to the public of their works, by wire, or wireless,' the Copyright (Amendment) Act 1994 does appear to cover the dissemination of copyrighted work through the Internet.

It is clear that copyright Act protects computer programmes by considering it as literary work and includes tables, and compilations including databases. It is not necessary for the creation or enforcement of copyright to register the copyright.

---

\(^{150}\) The related provisions are:

i. Section 2(ffb) provides that "computer includes any electronic or similar device having information processing capabilities further section 2 (o) deals that computer programme and databases are considered literary work section 2(ffc) define computer programme means a set of instructions expressed in words, codes, schemes or in other form including a machine readable medium capable of sensing a computer to perform a particular task or achieve a particular result.

ii. Section 14(9)(i). Which confers on the author of a literary, dramatic or musical work the exclusive right to reproduce the work in any material form including the storing of it in an in medium by electronic means. This includes computer programmes under S.2 (o) of the Act 1994 and also includes digital works.

iii. Section 52 confers certain acts not to be the infringement of copyright. Certainly the digital delivery system is a real threat to the Software Industry.

iv. Section 2 (ff) provides the "Communication to public means making any work available for being seen or heard or other wise enjoyed by the public directly or by any means of display or diffusion other than by issuing copies of such work regardless of whether any member of the public, actually sees, hears, or otherwise enjoys the work so made available.

Explanation:- For the purposes of this clause communication through satellite or cable or any other means of simultaneous Communication to more than one household or place of residence including residential rooms of any hotel or hostel shall be deemed to be communication to public.

v. Section 2 (dd) provides that "broadcast" means Communication to the public:

i. By any means of wireless diffusion, whether in any one or more of the forms of signs, sounds, or visual images, or

ii. By wire and includes a re-broadcast.
1. Right of Reproduction

The right "to reproduce the copyrighted work" is normally termed as the basic right granted to the copyright owner. There are various acts that are considered to be reproduction.\footnote{M. Ficsort Towards a Global Solution: The Future of Copyright in a Digital Environment Edited by P. Bernt Hugenlollz. 1995. P 124}

Inclusion of a copyright protected work or the object of a related right in any offline, digital storage device, for example Compact Disc Read Only Memory (hereinafter referred as CD-ROM), and Digital Video Discs (hereinafter referred as DVD); Scanning of printed works; any other digitisation of copyrighted works; Uploading of copyright protected works; Downloading of protected works; Storage, including transient storage of protected works

In digital technology, the well-established lines between copying and reading, sale and reuse, performance and viewing become blurry.\footnote{T Litman. Digital Copyright and information policy.1999. http://wwwmsencom/-litman/carohm} A good example is the dilemma concerning ephemeral or temporary copies used to view works online.\footnote{Due to the technological processes of computer technology, temporary copies are also made when a temporary copy is received in the memory of a computer for display on the computer screen. Thus the simple access of the work online would constitute a reproduction. See J. Ginsburg. Putting Cars on the Information Highway; Authors, Exploiters, and Copyright in Cyberspace., In Columbia Law Review , 1995. p. 1476.} The pertinent question is whether such copies, made as a result of the internal workings of a computer, infringe on the authors' right of reproduction.

The Berne Convention does not define the scope the right of reproduction. Article 9(1) of the Berne Convention covers all forms of reproduction in any manner or form. This provision is encompassed in Article 9 of the Trade Related aspects of Intellectual Property Rights (hereinafter referred as TRIPS) Agreement as well as Article 1 (4) of the WCT. This was presumed to extend to digital works.\footnote{Art 9 of the Berne Convention covers all forms of storage including electronic forms.} There were scholars who had certain doubts as to
whether transitional storage may always be considered fixation and thus reproduction. They were of the opinion that works were not sufficiently fixed if they were purely evanescent not transient in nature as those briefly projected on the screen shown electronically on Television or cathode ray tube, or captured momentarily in the Random Access Memory (hereinafter referred as RAM) of a computer.

Another interesting aspect that has been brought about by the digital age is that of hypertext links. There are several arguments but the general consensus is that the hyper-linking does not necessarily amount to a reproduction unless a party deliberately pastes advertisements on the page he has made the hyperlink to while by-passing the initial front page.

a) The European Union: Currently the European Opinion on the above matter is not yet law but is contained in the Proposed "Infosoc" Directive. The exclusive right of reproduction should be subject to an exception to allow certain acts of temporary reproduction, which are transient or incidental reproductions, forming an integral and essential part of a technological process carried out for the sole purpose of enabling efficient transmission in a network by third parties. These acts should have no separate economic value of their own. The Proposed Directive however leaves it to the member states to make exceptions. The Infosoc Directive grants the copyright owner the right to

---


156 Although the author uses the term memory, he is quick to point out that the computer's memorisation does not amount to fixation.


159 Id Article 5 (2)
control the temporary reproduction of his copyrighted works in cyberspace but provides for exceptions and limitations.\textsuperscript{160}

\textbf{b) The US Position:} A simultaneous fixation (or any fixation) meets the requirements if its embodiment in a copy or phono-record is sufficiently permanent or stable to permit it to be perceived reproduced or otherwise communicated for a period more than transitory duration.\textsuperscript{161} For software and multimedia works, reproduction occurs by making a temporary copy and copying it into the RAM of the users' computer.

From the foregoing, it is clear that it would not be justified to deny the characterisation and qualification of an act that involves fixation even if the fixation was for a fraction of a second in the fear of over stretching the application of the right of reproduction. Under United States Case Law, the Ninth Circuit Court held that the loading of copyright software into the random access memory of the computer for the purpose of viewing system error and diagnosing problems in the computer was considered copying under copyright.\textsuperscript{162} The decision has been followed in subsequent US court decisions.

c) The WIPO Copyright Treaty: The Treaty is silent on the issue of the temporary or ephemeral copies.\textsuperscript{163} This was due to the controversy it created during the 1996 WIPO Diplomatic conference that eventually adopted the two WIPO treaties.\textsuperscript{164} During the conference, both the EU and the US representatives supported the inclusion of temporary (or ephemeral) copies within the reproduction right, but this was met with stiff opposition especially from the representatives of the telecommunication companies and Internet service providers. Some Delegations were willing to accept the controversial proposed Article 7 (1) if it were modified while others were willing to accept it without

\textsuperscript{160} Id

\textsuperscript{161} United States Copyright Act, section 101

\textsuperscript{162} \textit{MAI Systems Corporation v Peak Computer Inc.}, 991 f.2d 511 (1993)

\textsuperscript{163} Art 8 & 9 of the treaty. Save for the inclusion of Article 9 in the Treaty.

\textsuperscript{164} The WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty
alteration but subject to the amendment of Article 7 (2). Eventually the controversial Section 7 did not secure a place in the final treaty. In place of the draft, an agreed statement was adopted by vote confirming the application of Article 9 of the Berne Convention (with its exceptions) in the digital environment.

There is currently no international consensus about the treatment of temporary copying vis-à-vis the right of reproduction granted to the copyright owner. This is a fundamental challenge presented to copyright law by the digital agenda, for the refusal to cover such copies would undermine the very basis of copyright, while to give copyright owners more protection online than they have in the analogue world would upset the balance between the users' interest on the one hand and the copyright owners' interests on the other.

2. Right of Communication to the Public

Digital Transmission is the transmission of works and objects of neighboring rights via the digital networks such as the Internet. The question was how to treat the digital transmissions.

The right of communication to the public is covered by the Berne Convention. Under the national level, differing concepts are used for broadcasting, communication to the public and public performance. There are some countries where the concept of performance is broader and covers the communication to the public and broadcasting while in some other countries

---


167 M. Fiesort. Towards a Global Solution: The Future of copyright in a digital environment at page 123

168 See Articles 11, which grants the right to broadcasting and communication to the public. Article 11 bis, which grants the same right to authors of literary and artistic works and Article I Iter (ii) that grants the authors of literary works the exclusive right of authorising any communication to the public of the recitation of their works.

169 Id See the law of Intellectual Property Code of France, articles L.122-2 and L.122-1 and the Copyright act of the United States of America, Section 101
the right of broadcasting covers the communication to the public. In certain countries the concept of communication includes the communication to the public.

**The World Copyright Treaty:** The WCT provides for the exercise of the right to communication to the public, by wire or wireless means, by the copyright owners, including the making available to the public of their works in such a way that the members of the public may access these works from a place and at a time individually chosen by them.

Article 8 gives the authors an exclusive right of all communications to the public, including the making available of the members of the public in any circumstances and the provision of physical facilities for facilitating communication does not in itself amount to communication to the public. This ensures that an exclusive right, in particular, in respect of on demand transmissions, thus excluding any form of broadcasting of predetermined programmes.

The mere provision of services for the transmission of digital works should not be construed as communication to the public. This means that telephone companies and online service providers are not liable for infringing the exclusive right of communication to the public by providing the users with facilities for transmitting digital works.

The proposed "Infosoc" Directive adapts a similar approach as that adopted by the WCT. The US Law does not contain a provision for communication to the public and thus treats digital transmissions as distributions to the public. However, case law recognises the rights of the authors to control

---

170 Id Section 39(1) of the Copyright Decree of Nigeria 37 Article 8 of the WCT
171 Article 8 of the WTC
173 This was one of the issues that were discussed at the WIPO conference in Geneva in 1996 and was part of the US digital Agenda.
174 Article 3 of the Directive
the digital productions of their work \footnote{See The case of Sega Enterprises Ltd v Maphia 857 F 2nd 679 [1994].} and the right to control digital transmissions of their works to the public.\footnote{See The case of Playboy Enterprises v Frena 839 F Supp 1552 [1993].}

\section*{3. The Right of Distribution}

Just as the author has the exclusive right to control the reproduction of his works, he also has the exclusive right to control the distribution of the works. The right of distribution is related to the right of reproduction. The right holder will not be able to effectively exercise the right of reproduction if he has no control over the distribution of the reproductions of his works. The exercise of this right is in perfect harmony with the doctrine of exhaustion: the right-holder only exhausts the right of distribution with regard to the specific copy that has been put on the market and he has not waived his other rights such as the reproduction of the work.

In the digital era, distribution is no longer part of the derived from the right of reproduction but is part of the reproduction process itself. The Berne Convention does not recognise the right of distribution except in the case of cinematographic works.\footnote{Article 14 (1) and 14 bis (1) of the Berne Convention.} The WCT, however, grants the authors of literary and artistic works the exclusive right to authorise the making of the available to the public of the original works through transfer of ownership.\footnote{Article 6(1) of the WCT. 'Nothing in the treaty shall affect the freedom of contracting parties to determine the conditions, if any, under which the exhaustion of the right in paragraph one applies after the first sale or transfer of ownership of the original or copy of the work with the authorisation of the author'; Article 6 (2) of the WCT. The performers also have the right of authorising the broadcasting and communication to the public of their fixed performance as well as the fixation of their unfixed performances They also have the same rights vis-à-vis their fixed performances The performers and producers of phonograms also enjoy the right to equitable remuneration for broadcasting and communication to the public.}

The mode and media of reproduction, distribution and communication to the public is no longer restricted to the traditional formats such as the paper format for books and documents, audiovisual cassettes for audiovisual works and
the traditional analogue means of communication. The works can now be transmitted over the Internet and electronic copies of the various copyrighted works are easily available to the users at a cheaper rate and of high quality.

[B] Technical challenges of software copyright

According to the Berne convention\textsuperscript{179}, the definition of the protected subject matter encompasses every production in the literary, scientific and artistic domain, regardless of its form of expression; musical composition with or without words; dramatic works; cinematographic works; drawings, paintings, architectural drawings, sculptures and photographic works, amongst others. Pursuant to art. 10 of the 1994 TRIPS computer software shall be regarded a literary work.\textsuperscript{180}

All these works - with the exception of visual arts ones (sculptures and paintings) - can be put into digital form.

Digitisation has dramatically changed the environment in which copyrighted works are exploited. This technological revolution, which, brought about scores of new fancy expressions and definitions, like information society, information superhighways and globalisation, cyberspace to quote the most popular ones - is due to the combination of different factors.

Development of electronic networks and of other communication technologies, have played a major role in this technological revolution

These factors directly affect the operation of rights on protected works and therefore pose the latest challenges to copyright, for the reasons enumerated hereunder.

\textsuperscript{179} Article 2 of the Berne Convention.

\textsuperscript{180} Sec. 2(o) of the copyright Act. The same provision extends the protection granted to intellectual creations to compilation of data by reason of their selection or arrangement of contents.
Chapter IV: Software Protection in Convergent Multimedia Environment

1. Ease of reproduction

First of all, as said before, digital works can be reproduced rapidly and cheaply without any tangible loss of quality.\(^\text{181}\)

Secondly, due to the widespread use of the digital technology in cyberspace, digital works can be reproduced and distributed by anyone with the requisite facilities. In addition one can purchase low cost equipment such as CD burners and reproduce Compact discs for commercial purposes.

Moreover, whenever a file is transmitted from one user to another, a temporary file is created to facilitate the transmission of digital works. Digital technology involves cases of ubiquitous\(^\text{182}\), incidental temporary reproductions.\(^\text{183}\) Actually the definition of temporary reproduction, encompassing in itself the concept of transient and of mere ephemeral reproduction has become one of the hottest points in the legal debate around the scope of protection of copyright in the digital era.\(^\text{184}\)

Anyway, this relentless, ubiquitous activity of reproduction of information, be it voluntary or not, temporary or permanent, could not but urge the need for an adjustment of the existing legal framework of copyright.

2. Ease of dissemination

The combination between digital technology and the worldwide networks of telecommunications (so far Internet is perhaps the most well known between

\(^{181}\) Sections 37 and 38 of the copyright act.


\(^{183}\) Temporary and involuntary reproductions may take place in the server of the telecommunication provider when works are transmitted from a user to another or in the Random Access Memory of Personal Computers every time one listens in audio streaming to a musical work by means of his P.C. (we will come later on this issue) or, more simply, every time an Internet user browses on the net, temporarily downloading the contents of a web site.
those means) ignited this process of potentially unlimited dissemination of the digitised works.

By a few 'clicks' and a basic program for electronic mail, not only can one send the same works via the Internet to hundreds of recipients all over the world but also these persons can engage in further mailing generating an endless dissemination, starting from a single digital copy of a work. In other words, once a digital version of a copyright work is first put on the net, or made otherwise available to third parties, it becomes virtually subject to infinite reproduction and dissemination and it looks almost impossible to stop such process. This is obviously regarded as a threat to right owners and, obviously, lawmakers that set the previous rules for copyright could not predict and aptly cover such an aspect.

This scenario will get even more appalling (for right owners) when broadband technology will allow even more speed circulation on the net of huge amount of data and when the actual Internet network will be complemented by other communication technologies.

3. Concentration of value

Digital works can be compressed and stored in Compact Discs and other technical devices that make a high concentration of information available in one single carrier such as CDs and the Digital Video Disc -DVD which has a higher storage capacity for audio-visual works.

This specific feature of digital technology sensitively contributes to the dissemination of knowledge in so far as it substantively reduces all practical disadvantages previously coupling the circulation of tangible carriers of information. Not surprisingly encyclopaedias, directories, in the recent times increasingly delivered in digital version.

Moreover this storage capacity gave birth to a new category of works resulting from the combination of images, sounds and texts, the so-called multimedia works. Such works take advantage of the interactivity of the P.C.
Chapter IV: Software Protection in Convergent Multimedia Environment

operation and have a tremendous impact in communication and didactic activities. Moreover, these are works that require remarkable investments and human resources and usually result in a valuable compilation of protected works. Multimedia works do fall within the scope of protection of copyright, though creating several problems in determining their concrete legal framework. Needless to say, multimedia works are exposed to the same threatens as the other copyright works.

Coming back to the compression and storage of information issue, CDs, as highlighted above, can easily be reproduced by unprofessional operators. Some software programs already popular in the market may further compress stored data in order to ease their transmission on the net (by breaking them into small packages of information). It is the case of the so-called Mp3 files for musical works, on which we will soon revert. Therefore, people may take advantage of these new opportunities offered by technology basically in two ways: either by simply duplicating CDs or by creating their own CDs from files retrieved on the net.

This phenomenon shall be liable to cut off the intermediary level from the marketplace in the next few years (what is to point then to go to a shop and buy intangible goods, such as digitised works?) and is able to transform each user in a potential competitor of the seller who first put the digital product in the market. 185

This convergence of information and communication technology is considerably altering the terms of business in copyrighted works and has an impact in the way works are created, distributed, reproduced, performed, licensed, managed and sold. 186

Above all, this created broad awareness of some paramount issues.

185 M. Ricolfi, Intellectual Property and Legal Order
First of all the strong potential for massive global piracy which is alerting right owners (that is to say quite often, publishers and recording industries) seeing their substantial investments vanishing by means of unauthorised reproductions on the net.

Secondary and some how consequently, this revealed the need for an extra-territorial approach in determining a new set of rules to face these technical challenges. There are a number of major jurisdictional issues, which still need to be suitably solved and meanwhile create a high level of uncertainty in justice.

Moreover, network and communication are global in their very essence: therefore legal solutions need to be global too. Thus the promotion of the WIPO Copyright Treaty by the international community, the TRIPS Agreement came too early to address the issues brought about by the Internet such as the digital transmissions and the ephemeral copies that are essential to the Internet.

4. Collective Management of Copyright

The technological advances have both negative and positive connotations to the collective management of copyright. The exclusive rights granted by copyright are the basis for collective management and the challenges to these rights do affect the collective management as in the case of the right to reproduction and the issue of temporary copies: the collecting societies can only collect royalties in the digital environment if they fall within the scope of 'reproductions.'

Multimedia involves the storage and use of text, sounds, graphics and moving images in digital format. Its contents are normally varied and contain a variety of works. The different works incorporated in the multimedia works are protected under copyright. For instance, any original literary works or original dramatic works contained therein are protected as literary and dramatic works respectively. Works that are normally defined as literary, dramatic, musical and artistic can all be recorded in digital form; a compendium of a coalescence of

---

different copyrights for instance, a digitised encyclopaedia. Digitisation provides a homogenous medium whereby a whole range of works, which were previously distinct is stored as one product.

The three main characteristics of a multimedia work are:

a) it must be stored in a digital form

b) the possibility of storing the copyright protected works in different categories

c) interactivity.

There are different types of multimedia products. The producer of a multimedia work requires the authority of various right holders to use their works in his production. There is need to obtain a balance between the authors' interests and the producer. This is where the collecting society comes in. The producer cannot go to each individual right holder to get their individual authority and it is thus more practicable to go through the respective collective administration societies to obtain the authorisation.

The individual management of rights has been proposed as an alternative to the collective management of rights. The proponents of this theory believe that with the new technologies, a right holder would be able to monitor and license the use of his works by the multimedia producers. But the individual management would be costly and difficult for the users as well as the right holder.

5. Jurisdictional Issues

The use of works in cyberspace is governed by copyright legislation but the main question is, which country's legislation is applicable as the Internet has no physical boundaries as such. The copyright works can be downloaded from practically any corner of the earth where the necessary facilities are available. In the case of the infringement of these rights, which laws would be used to determine the case? Would the law be that of the country where the works are
Chapter IV: Software Protection in Convergent Multimedia Environment

uploaded (country of origin) or would it be that of the country where the works are downloaded? (recipient country).  

It is trite law that the extent of the protection as well as the means of redress afforded to the author to protect his rights shall be governed exclusively by the laws of the country where the protection is claimed. Ordinarily, copyright is claimed where the work is exploited and thus the place where the infringement has occurred.

In the digital world, one has to consider the following; firstly, the place where the given transmission is deemed to have taken place and secondly, what country's legislation to apply. There are several schools of thought on this matter and one proposes the general analogy of the Internet transmissions to the Satellite broadcasting approach. This would mean that the law of the country of origin should apply. Others are of the opinion that the laws of the recipient country should apply. This could be problematic as the works are downloaded in several countries, so which of these laws would apply?

The jurisdictional issues raised by the Internet cases are still subject to the Private International law rules and in most cases will rely upon the law of the countries where the infringement took place.

[C] Software Piracy

Advances in digital technology, as was pointed out in the introduction are presenting various challenges to the copyright world. The ease at which copyrighted works can be copied, reproduced and disseminated in cyberspace

---

188 See opinion by P. Schonning. The Internet and the applicable copyright Law: A Scandinavian Perspective". In E.I.P.R 1999. 45.
189 Berne Convention Article 5 (2)
190 The Berne Convention refers to lex loci delicti
191 See the Satellite and Cable Directive 93/83 of September 1993
193 As there are many countries involved, the possibility of forum shopping arises.
makes it easier for the transmission of unauthorised work by third parties. The problem is not peculiar to the digital age but has simply been amplified and this is detrimental to the copyright industry as a whole. The measures that have been taken to try and curb this menace are both legal and technical.

Software Piracy or counterfeiting is defined as the illegal copying of software combined with unauthorised duplication of genuine trademarks and documents. Software piracy takes place in many forms, the most common occurrence being in the following:

**Office Copying:** Generally, licenses for one or a few copies of a computer package/programme may be purchased for a business or in a workplace. As requirements increase, illegal copies are made from one of the licensed programmes and installed in other computers. In addition, office software is often illegally copied into the home computer of an employee or vice-versa.

**Network Piracy:** Software piracy often occurs on computer networks when a software program is accessed by more users than what a license permits. Many network user organisations fail to realise this as a violation of copyright law.

**Internet Piracy:** With the advent of Internet and the increasing use of Internet, the software piracy has grown dramatically in recent years. Through Internet, programs are uploaded to bulletin board systems or commercial on-line services, which, in turn, can be downloaded or sent via electronic mail to individuals who may not hold a license to use these.

**Resellers:** The sellers of computer software particularly the unauthorised retailers are also involved in selling pirated softwares. They simply copy the original (licensed) softwares into floppy discs or in CD ROMs and sell them to the end users or install them in users' hardware.
**Hardware Sellers:** Computer dealers more particularly, the unauthorised hardware suppliers who assemble components and sell computers to the users with software already installed. Unfortunately, in most of the cases these computers are loaded with unlicensed software. In such cases, unless a license and software manuals are provided with the sale, it is likely that programs have been illegally copied.

**Counterfeiting:** Counterfeitters try to fool the consumers by selling duplicate softwares. The purchasers feel that they have bought a legitimate product in the sense that the packaging and manuals look like original products. These may actually be fakes and carry the common risk of operational defects and viruses.

This is hard fact that software publishers are unable to compete with counterfeit operation that duplicate their programmes and distribute them directly to consumers on street corners and shops throughout the world at a very low price. In Asia pacific countries where domestic governments are very fastly investing billions of dollars in building technology infrastructures, such large investment go unprotected without substantially enhanced education and strong copyright laws and its enforcement campaigns to end the piracy menace. In India, the expansion of software products into international markets has played a key role in the software industry’s success. To maintain a competitive advantage, in International markets it is necessary to rely on intellectual protection, education and computer infrastructure. On the other hand, some argue that the lower levels of personal income justify software piracy. This is misleading, because Globally, Computer software is only used by a relatively small group of individuals and organisations affluent enough to have a purchase capacity, not the average citizen. If individuals and organizations can afford to buy computer hardware, they have no excuse for pirating software.

Our submission is that the software piracy can be prevented, if the Government can play a significant role in shaping an environment friendly to
software industry development by protecting intellectual property, encouraging research and development through the introduction of R&D credit system and to reduce import duty, concessions for corporate licenses, site licenses, and reducing taxes on capital gains. The emerging nations, as well as a more developed nations, must be encouraged to protect and enforce intellectual property rights and to reduce all tariff and non-tariff based barriers to trade.


The Business Software Alliance (hereinafter referred as BSA) and Software and Information Industry Association (hereinafter referred as SIIA) released a global study on software piracy. It estimate 231 Million Software application were pirated world wide during 1998 out of the 615 million application installed. This is an increase of 2.5 million from what was pirated in 1998. Piracy related revenue losses to the global software Industry were estimated at U.S. $ 11 billion. Globally 5% to 7% of world trade is in counterfeited and pirated products. It is very difficult to estimate the losses. U.S. copyright industries alone estimate that $ 20-22 billion dollars is lost each year due to copyright piracy around the world on the other hand U.S. business industry alone losses $ 12-16 billion a year counterfeiting and totaling 40% of all Software revenue. Many regions experienced smaller dollar losses in 2000 compared to 1999. A combination of slow growth and somewhat lower prices for software slightly reduced the dollar losses due to piracy. Dollar losses rose in the Asia/Pacific region, growing to over $ 4 billion for the first time. In fact, it was the region with the highest dollar losses in 2000. Western Europe was second with slightly more than $ 3 billion in losses. There were no significant shifts in piracy in 2000. Eastern Europe, at 63% was the region with the highest piracy rate in every study since 1994. The North American region continued to be the area with the lowest piracy rates at 25% a slight decline over 1999. Western Europe continued as the region with the second lowest piracy rate at 34% and showed the smallest year-over-year change in piracy of any region. The Asia/Pacific region was the only region that increased its
rate of piracy in 2000, rising to 51%. Asia had a four-percentage point drop in the piracy rate. In 2000, it was 52% down from 56% in 1999. (See Table I & II)

Table I: 20 Highest Software Piracy Countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>99%</td>
<td>98%</td>
<td>97%</td>
<td>98%</td>
<td>97%</td>
</tr>
<tr>
<td>China</td>
<td>96%</td>
<td>96%</td>
<td>95%</td>
<td>91%</td>
<td>94%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>97%</td>
<td>93%</td>
<td>92%</td>
<td>85%</td>
<td>89%</td>
</tr>
<tr>
<td>Ukraine/Others CIS</td>
<td>95%</td>
<td>92%</td>
<td>93%</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td>Russia</td>
<td>91%</td>
<td>89%</td>
<td>92%</td>
<td>89%</td>
<td>88%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>88%</td>
<td>93%</td>
<td>93%</td>
<td>88%</td>
<td>83%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>92%</td>
<td>88%</td>
<td>86%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Bolivia</td>
<td>89%</td>
<td>88%</td>
<td>87%</td>
<td>85%</td>
<td>81%</td>
</tr>
<tr>
<td>Qatar</td>
<td>89%</td>
<td>87%</td>
<td>87%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>Bahrain</td>
<td>90%</td>
<td>89%</td>
<td>89%</td>
<td>82%</td>
<td>80%</td>
</tr>
<tr>
<td>Kuwait</td>
<td>89%</td>
<td>88%</td>
<td>88%</td>
<td>81%</td>
<td>80%</td>
</tr>
<tr>
<td>Thialan</td>
<td>80%</td>
<td>84%</td>
<td>82%</td>
<td>81%</td>
<td>79%</td>
</tr>
<tr>
<td>El Salvador</td>
<td>92%</td>
<td>89%</td>
<td>87%</td>
<td>83%</td>
<td>79%</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>89%</td>
<td>83%</td>
<td>81%</td>
<td>80%</td>
<td>78%</td>
</tr>
<tr>
<td>Oman</td>
<td>95%</td>
<td>93%</td>
<td>93%</td>
<td>88%</td>
<td>78%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>98%</td>
<td>93%</td>
<td>90%</td>
<td>80%</td>
<td>78%</td>
</tr>
<tr>
<td>Romania</td>
<td>86%</td>
<td>84%</td>
<td>86%</td>
<td>81%</td>
<td>77%</td>
</tr>
<tr>
<td>Guatemala</td>
<td>89%</td>
<td>86%</td>
<td>85%</td>
<td>80%</td>
<td>77%</td>
</tr>
<tr>
<td>Paraguay</td>
<td>89%</td>
<td>87%</td>
<td>85%</td>
<td>83%</td>
<td>76%</td>
</tr>
<tr>
<td>Jordan</td>
<td>83%</td>
<td>80%</td>
<td>80%</td>
<td>75%</td>
<td>71%</td>
</tr>
</tbody>
</table>

Source: www.bsa.org.

On the other hand, in past studies, IPR has recorded several reasons for the decline in the software piracy. These are as under:

i) As PC technology and the demand for software spread from the US to other countries during the 1990's, there was at times a lag between the demand for software and the effective distribution of legal software, This led to cases of piracy as an expedient way to use PCs. The software industry has worked hard to have a legitimate sales presence
in every country, making legal software sales and support easier to obtain;

ii) Software companies have increased the availability of user support for their products outside of the U.S. purchase of legal software;

iii) Prices for original software have declined over the past decade, making the benefits of original software more competing against the risks of software piracy;

iv) The BSA and other organizations have promoted the need to purchase legal versions of software and, the importance of intellectual property rights. This has included high-profile legal actions against companies suing illegal software;

v) In an increasingly global market place, a company's risk of being caught suing illegal software extends beyond the legal implications and includes their business practices and credibility;

vi) Effects to increase government cooperation to provide legal protection for piracy have also assisted in stemming the growth of piracy.

a) Indian Perspective: Software piracy committed in India is a complex problem. India has corporate piracy, individual piracy as well as in most of the cases government using pirated software. As per, software piracy in India 1 estimated at about 63% and increased in 2001 to 70%. However piracy is more prevalent amongst the small office, home office users and Training institutes about 61% of corporate Industries are using pirated software. In 1999, the Indian software Companies has lost more than $ 245 Million 2.

---

1 May 2000, NASSCOM has conducted the survey.

2 (See table -111) in 2001.
Table - II: Software Piracy and Revenue Losses in India 1995-2000

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Year</th>
<th>Software Piracy rate</th>
<th>Software Revenue Losses ($1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1995</td>
<td>78%</td>
<td>$155,645</td>
</tr>
<tr>
<td>02</td>
<td>1996</td>
<td>79%</td>
<td>$255,344</td>
</tr>
<tr>
<td>03</td>
<td>1997</td>
<td>69%</td>
<td>$184,644</td>
</tr>
<tr>
<td>04</td>
<td>1998</td>
<td>65%</td>
<td>$197,338</td>
</tr>
<tr>
<td>05</td>
<td>1999</td>
<td>61%</td>
<td>$214,557</td>
</tr>
<tr>
<td>06</td>
<td>2000</td>
<td>63%</td>
<td>$239,629</td>
</tr>
<tr>
<td>07</td>
<td>2001</td>
<td>70%</td>
<td>$245,000</td>
</tr>
</tbody>
</table>

An example can be cited in this regard. It was on a cold December morning that the battle was taken right into the fort of software pirates at Nehru Palace in South Delhi. Experts of Business Software Alliance, a global support group of software firms, formal that of the 625 CDs seized 583 were compilations of illegal Microsoft products valued at Rs. 3.1 crore. This was one of biggest pirated software hauls in the country, drove home the point that software piracy wouldn't be tolerated any longer. In December an elephant carrying the banners of BSA and NASSCOM (National Association of Software and Service Companies), With NASSCOM President Late Dewang Mehta perched on top, crushed about 300 counterfeit CDs heaped together for a photo-top at Nehru Palace. Nehru Palace happens to be the biggest software piracy center in India with shops selling software packages at unbelievable rates. Indian Software Industry employees 7.5 Lack programmers more than Germany and Italy. Software exports are expected to increase by more than 60% in 2002 because due to strong copyright protection and its effective enforcement.

b) Software Piracy in U.S.A.: Software piracy committed in the U.S. is a greatest challenge to existence of the computer Software sector and created several problems. In 1996. Software publishers suffering losses of more than $ 2.3 billions in retail sales. Since 1994 business software pirated in US Cost publishers $ 8.9 billion. That nearly 75% pirated rate in U.S and abroad seriously damages the American companies' abilities to compete successfully in the global market place and develop the next generation of next cutting edge software.
Chapter IV: Software Protection in Convergent Multimedia Environment

The U.S. the largest personal computer Software markets in the world, and also leads the world in piracy losses. It is estimated that $ 2.6 billion worth of personal computer business application software was pirated in the U.S. in 2000. This represents about 27% of the total losses, although the U.S. bye 46% of the world's packaged by Software. Japan's software piracy is much higher rate than U.S. In the United States 24% of all business Software is unlicensed it is fact that software piracy is damaging the economy of the country. In 1999 the U.S.A. suffered staging 107,000 job losses, $ 5.2 billion is in lost wages and 1.8 billion dollars in tax revenue losses due to piracy.

U.S.A. alone 62% of all business software in 1998 was illegal a reduction to 25% market would have generated and extra job in 1998 and 291,600 more by 2002. The government has generated $4.86 billion in tax revenue in 1999 and $ 8.6 billion by 2002.

c) Latin America: Latin America experienced a small decline in the average piracy rate in 2000. The piracy rates in Brazil and Mexico, the two largest economies in the region, remained unchanged, at 57.8% and 56% respectively. The piracy rate in Argentina, the third largest economy in the region, was also at 58% in 2000.

d) North America: Both the United States and Canada experienced declines in the piracy rate in 2000, with the U.S. at 24% the lowest in the world, and Canada at 38%. (Table III & IV).


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>26%</td>
<td>27%</td>
<td>27%</td>
<td>25%</td>
<td>25%</td>
<td>24%</td>
</tr>
<tr>
<td>Canada</td>
<td>44%</td>
<td>42%</td>
<td>39%</td>
<td>40%</td>
<td>41%</td>
<td>38%</td>
</tr>
<tr>
<td>Total</td>
<td>27%</td>
<td>28%</td>
<td>28%</td>
<td>26%</td>
<td>26%</td>
<td>25%</td>
</tr>
</tbody>
</table>
Table -IV: Revenue Losses from piracy in North America 1995-2000
($1000)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U. S. A.</td>
<td>2,940,294</td>
<td>2,360,934</td>
<td>2,779,673</td>
<td>2,875,185</td>
<td>3,191,111</td>
<td>2,632,438</td>
</tr>
<tr>
<td>Canada</td>
<td>347,085</td>
<td>357,316</td>
<td>294,593</td>
<td>320,636</td>
<td>440,101</td>
<td>304,999</td>
</tr>
<tr>
<td>Total</td>
<td>3,287,379</td>
<td>2,718,251</td>
<td>3,074,266</td>
<td>3,195,821</td>
<td>3,631,212</td>
<td>2,937,437</td>
</tr>
</tbody>
</table>

e) Asia Pacific Countries: Several large countries in Asia Pacific region experienced increases in their piracy rates in 2000 rising to 51%. For Example, Japan's rate increased to 37%, China's rate increased to 94% and Korea's rate increased to 56%.

Several other countries showed very little changes in their piracy rates in 2000. India had a 63% piracy rate, up from 61% in 1999 and in 2000 and increased in 2001 upto 70%. Hong Kong had a 57% piracy rate, up from 56% in 1999. Australia had a 33% piracy rate, up from 32% in 1999.

New Zealand, with a 28% piracy rate in 2000, continued as the country with the lowest piracy rate in the Asia/Pacific region. Vietnam, with the highest piracy rate in the region. China, with 94%, followed as the country with the second highest piracy rate.

In Asia pacific where domestic governments are investing billions of dollar in building technology infrastructures, such large investment go unprotected without substantially enhance education and enforcement campaigns to end the piracy problem.

This region was the only area that increased its piracy rate in 2000, to 51% from 47% in 1999, but Asia Pacific is also a region of vast economic developments.
The Japan has great economic strength as well as a high level of computer use and software piracy.

In addition, Asia pacific accounted for the largest piracy losses at nearly $4.1 billion or 35%. Japan's piracy rate increased in 2000. The countries with the highest piracy rates were Vietnam 97% Chine 94% and Indonesia 89%. The countries with the highest dollar losses were Japan $1.6 billion, China $1.1 billion and Korea $302 Million (See table V & VI). The decrease can be attributed to the fall of application prices rather than to increase policing or change in attitude.

Table- V: Asia-Pacific: Highest Piracy Rates 1995-2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
<td>97%</td>
<td>98%</td>
<td>97%</td>
</tr>
<tr>
<td>China</td>
<td>96%</td>
<td>96%</td>
<td>96%</td>
<td>95%</td>
<td>91%</td>
<td>94%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>98%</td>
<td>97%</td>
<td>93%</td>
<td>92%</td>
<td>85%</td>
<td>89%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>92%</td>
<td>92%</td>
<td>88%</td>
<td>86%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Thailand</td>
<td>82%</td>
<td>80%</td>
<td>84%</td>
<td>82%</td>
<td>81%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Table- VI: Asia Pacific Highest Rates of Revenue Losses 1995-2000 ($1000)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>35m</td>
<td>15.2m</td>
<td>10.1m</td>
<td>10.3m</td>
<td>13.1m</td>
<td>34.9m</td>
</tr>
<tr>
<td>China</td>
<td>443.9m</td>
<td>703.8m</td>
<td>1.4b</td>
<td>1.1 b</td>
<td>645.4m</td>
<td>1.1 b</td>
</tr>
<tr>
<td>Indonesia</td>
<td>150.9m</td>
<td>197.3m</td>
<td>193.2m</td>
<td>58.7m</td>
<td>42.1m</td>
<td>69.9m</td>
</tr>
<tr>
<td>Pakistan</td>
<td>14.2m</td>
<td>23.1m</td>
<td>20.3m</td>
<td>21.7m</td>
<td>19.6m</td>
<td>12.3m</td>
</tr>
<tr>
<td>Thailand</td>
<td>99.1m</td>
<td>37.0m</td>
<td>94.4m</td>
<td>48.6m</td>
<td>82.1m</td>
<td>53.0m</td>
</tr>
</tbody>
</table>
For combating the software piracy, there is a need for a "multifold approach" on following guidelines:

1. Effective and efficacious legislative program against software piracy is required.
2. Piracy Awakening Program through Public awareness, education, dissemination of information, advertisements on T.V., Radio, Website etc.
3. To educate the corporate users about the Indian Copyright law and its enforcements.
4. Periodic identification of the dimensions and devices involved in the software Piracy.
5. Awareness and Training of Police officers and Law enforcement Authorities.
6. Distribution of brochures explaining about software piracy and the Law.
7. Anti piracy billboards, stickers etc. are to be distributed and pasted.

In Russia, the IPR experts have an opinion that "The web is becoming an increasingly attractive bootleg distribution channel for pirated Music Originating in many part of Russia. About 95% of all Music sold in Russia is illegal. The reason pirates do so well is because of Russia's Tax-Law enforcement procedure. One of the worst offenders was a site called the Russian Music Portal at www.rmp.ni. Which Khodakaor said started providing the same music as Zvuki.ni. without paying the licensing fee."

Khodakov sued rmp.ni owner Alexander Antonor, under a Russian Statute that allows the plaintiff to collect up to $150,000 in damages. It is the first Internet piracy suit in the country. On the other hand the Russians have not acceded to digital copyright treaties, so computer piracy is ensuring as a great problem.

The Recording Industry Association of Japan Recent survey 2001 have revealed that at least 5.4% of Internet user in Japan use file-sharing software to illegal share Music files resulting in an estimated loss of 14.3 billion yen in revenue.
f) **Remedies:** The Indian Copyright Act, prohibits unauthorized duplication of digital music on Internet, making multiple copies, CDs for use by different users within an organization, and giving pirated songs, discs to another individual. If caught with pirated music discs, CDs etc, the copyright infringer may be tried under both civil and criminal law. The present copyright amendment Act 1999 makes a punishment more stringent.

In 1994 the criminal penalties have been substantially increased by an Amendment in Copyright Act 1957. Section 63B provides a minimum jail term of 07 days for copyright infringement. The Act further provides for fines up to Rs. 20,000 and Jail term up to three years or both.

In U.S.A the pirates may be liable under both civil and criminal law. In Civil cases the infringer liable for damages suffered by the copyright owner plus any profit of the infringer that are attributable to the copywriting or statutory damages up to $150,000 for each work infringed under section 504 D of Title 17 U.S. Code.

In Criminal cases the maximum sentence for piracy to infringe copyright is 5 years in prisons and $250,000 fine or both. The No Electronic Theft (NET) Act 1997 makes it easier to prosecute software pirates on the Internet. You can be prosecuted even if you do not make money from your infringement.

In Hong Kong, the Intellectual property department has announced that the use of pirated or unlicensed software, Music CDs and Cassettes will become a criminal offence from a HK$50,000 fine and four years imprisonment or both.

Recently the Taiwan’s Cabinet has approved a piracy law that makes Piracy a criminal offence. The law came in response to U.S.A. presume to protect.

Intellectual property, the Regulation will allow officials to impose penalties and criminal punishment.
[D] Software Patents

Different countries deal with patent issues in different ways. Indian Government has excluded the software patent\(^1\) by Patent amendment act 2005. The European Union, for example, adopts a very cautious approach to patents. In the USA, there is a significant interest in patent issues. It has been suggested that, following the change to US patent law by the Federal Court of Appeals in State Street Bank and Trust Corporation v. Signature Financial Group, many dotcoms and venture capitalists (among others) are rushing to register patents. The reason for this is that the SBTC v. SFG case allowed business methods to be patentable. In 1998, about 1 300-business method applications of this nature were filed. This number jumped to 2600 in 1999. There has been some debate over whether patent laws ever excluded business method or software. Interestingly, Article 27 of the Trade-Related Aspects of Intellectual Property agreement permits patents for inventions in all fields of technology.

Considering the extent to which computer programmes and communications software are growing in market size and economic value, the nature of protection to be provided is extremely important. Software is easily reproducible and can be copied cheaply. It can easily be converted from one computer language to another. In the absence of devices that inhibit copying, the cost of copying software packages for most systems is low. Even where direct copying is not possible, resourceful computer programmers and engineers can often reverse engineer the programmes.

In India, a copyright lasts for the life of the author, plus 60 years, whereas tenure of a patent may last for 20 years inline with the recommendations of TRIPS. Although, Indian software developers have a minimal presence in the area of software patenting, the total number of US patents granted to India in all fields till year 2000 is 743 as compared to 1337045 to USA assignees, which is

less than 0.03% of total patents. Even in those, drugs and pharmaceuticals are the prime contributors. 197

Again, in the case of software, the share of Indian patents filed in the US, or even in Europe is negligible. This is substantiated from the list given below which gives the list of US patents in electronic and IT granted in year 2000 to Indian assignees.

Table VII: Software Related Patent Statistics of USPTO

<table>
<thead>
<tr>
<th>Applicant Country</th>
<th>USA</th>
<th>Japan</th>
<th>Europe</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>62</td>
<td>64</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>Japan</td>
<td>28</td>
<td>25</td>
<td>22</td>
<td>26</td>
</tr>
<tr>
<td>Europe</td>
<td>07</td>
<td>07</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>Canada</td>
<td>1.5</td>
<td>1.5</td>
<td>02</td>
<td>02</td>
</tr>
</tbody>
</table>

The above figures indicate that the Indian scientists are still not in a position to take advantage of patents in area of software. Only when we become somewhat comparable to advanced countries in number of national/international patents filed, the country may gain from software patenting provisions in India. No doubt India to be a global player in the area of computer software patents. It is a high time to enhance its R & D investments and bring about changes in consonance with Developed Countries.

One of the consequences of software patenting may be flooding of foreign software patents in India. This may have an extra burden on our infrastructure and so the requisite infrastructure has to be emplaced first. Even in the US, those they have a well-established infrastructure with a large number of qualified patent

197 As regards S/W patents, a patent (US Patent No. 5,987,513) dated 16.11.1999 entitled "Network management using browser based technology" by Pritihi Raj et al. Wipro limited Cupertino based Indian as inventors. A few more such patents may be there.
examiners, many cases are challenged. Moreover, software patents may also result in increased litigation in India. The Indian legal system is, at present, inadequately equipped to handle such highly techno-legal cases. Also, delays in resolving patent related issues due to the legal system being overloaded will defeat the very purpose of patenting software, which has a very short life.

The Indian Information Technology industry, is at present, catering software services primarily to export markets. In this context, patent being territorial in nature, they will still have to file international patents for IP developed by them. The impact of permitting software patent in India needs to be examined mainly in this context.

The vexed question is how Software industry would be protected from the piracy? Without strong protection Internet piracy will be mushrooming.

Copyright works of many different kind appear on the Internet inter-alia information on internet web pages - these might be artistic works, drawings, and design, business brochures, product specifications; information which can be downloaded from web pages such as music or computer software or literary, artistic or other works, computer software which is protected by copyright itself and which enables the software and systems to work; and postings to bulletin boards and newsgroups by individuals.

The Copyright legislation in many countries did not cover the new digital frontier efficiently. The Indian Copyright Act was Amended in 1994 to cover electronic information still there is a need of further amendment.

In India, though the IT Act 2000 has been passed but Internet jurisprudence yet to emerge at par with the west. In England, all the information available on the Internet comes under the Copyright Designs and Patents Act 1988.

The IT Act empowers policeman to enter and search premises where they suspect a Cyber Crime is being committed or is being plotted. This is a carry over
from the IPC with a weak that only senior policeman under the Act-- a Dy. S.P. can investigate Cyber Crimes. This is too draconian. Most of police officers are not well versed with the computer literacy. It is necessary that the government should dilute the search and seizure clauses so that raids can only take place after complaints are lodged and to make it mandatory for investigators to produce a warrant. This will limit investigators powers.

**RECAPITULATION**

There is an urgent need to strike a balance whereby online copyright infringement is prevented without interfering the legitimate uses of software and computer programmes or limiting the opportunities offered by digital technology and the Internet, Combating software piracy in order to foster the growth of electronic commerce requires a multi faced strategy. Most people do not purposely break the law. They would never consider stealing a package of software from the shelf of a retail store. But those who copy software without authorization is also stealing intellectual property, and they should also understand the consequences of their action both under civil and criminal action. It is our submission that Indian government should amend the present copyright act


The technological measures to combat piracy are essential coupled with strong legal protections must be adopted and more importantly, vigorously enforced worldwide, if sufficient intellectual property incentives are to be upheld. The copyright laws do not appear to have developed adequately in line with technological advances. In the absence of suitable legal rules and regulation, digital technology has the potential to undermine the tenets of copyright and related rights.

Moreover, the adjustments that had to be introduced to update copyright rules, namely, the WCT and its implementing Acts, considerably strengthened copyright to such extent that right owners will now have stronger rights than ever
before and the rights of users are going to be confined to those for which they had specifically contracted and paid.

Surely, one may say that this reinforced right holder's position shall hardly counterbalance the threats of piracy. Provided this, the very challenge for copyright in the digital era shall be to maintain the delicate balance between the right owners' and authors' interests and the public interests that successfully contributed to progress in the analogue era.