Chapter I

COPYRIGHT IN THE DIGITAL MEDIA
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1.1 Introduction:

Intellectual Property Right is one of the important property rights granted to a person by a statute. The rapid economic and socio-cultural development of late medieval society in Europe created favourable intellectual and technological conditions for Gutenberg’s invention, the entrepreneurial spirit of emerging capitalism increasingly made its impact on medieval modes of production, fostering economic thinking and improving the efficiency of traditional work-processes. The sharp rise of medieval learning and literacy amongst the middle class led to an increased demand for books, which the time-consuming hand-copying method fell far short of accommodating. In this situation, the decentralised state of the medieval landscape allowed a certain freedom to pursue individual solutions beyond the restrictions imposed by political and religious authorities.\(^1\)

Subsequently, industrial revolution in the 18\(^\text{th}\) century led to the growth of intellectual property (herein after referred as IP) to a large extent. This has in fact recognised the intellectual creation or innovation as a property. The tremendous increase in the knowledge economy has played a key role in the development of technology and in turn the progress of human beings. The new and original knowledge of creative expressions of ideas has been increasingly responsible for the development and growth of the IP system. The IP system has gained astonishing importance due to the technological development enhancing the focus on IP putting the system under intense scrutiny from various angles worldwide.

The age of Internet has taken India to new heights of excellence in all the sectors either in providing goods or services. The information technology in India has carved a niche in the global economy. The global developments have impacted on all walks of life. The increasing use of digital media or internet has set a stage, where requirement of change in the existing laws is imminent. This is more

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\(^1\) Johannes G z L z Gautenberg was a German goldsmith and printer who introduced modern book printing. His invention of mechanical movable type printing started the Printing Revolution and is widely regarded as the most important event of the modern period. It played a key role in the development of the Renaissance, reformation and the scientific revolution and laid the material basis for the modern knowledge-based economy and the spread of learning to the masses. Gutenberg was the first European to use movable type printing, in around 1439, and the global inventor of the printing press.
specifically appropriate to the copyright laws. The dynamics of economic, social, cultural and political factors in a democratic dialogue and consensus driven environment invariably interface with and shape the future evolution of the IP system. Trade and industry are becoming more knowledge driven. Increasing internationalisation of corporate activities and the trade crossing over borders without any limitation and technology offer new challenges and new opportunities. IP protection for hitherto excluded areas and for outputs in new fields of human endeavour, including computer programs and computer software, technological knowhow, genetic resources and folklore, etc are trends that pose a great challenge with the opportunities it provides. Hence, knowledge component has become the predominant element in the economy. Protection of such new or original knowledge and/or creative expression of ideas have been considered by different competitors in the market place as a key to preventing others from free riding on the success and goodwill of individuals or enterprises. Businesses in the global economy have established that, today there are five fundamentals needed to prosper in the technology-enabled, borderless world, namely:

- innovation
- intelligent use of new tools
- strategic vision
- global reach, and
- networked communication

Any business will not be competitive nor will survive without the above said elements in today’s commercial world. Business shall in one or the other way related or deals with IP. There is no business which is not affected by the IP.

Today a person studying the IP law cannot afford to ignore the economic arguments for or against the maintenance of the rights. Copyright or patent or trade mark each has a different form of economic impact. The term IP is a set of intangible products of human activity. It refers to idea, expression of an idea or the expression of an identity that is capable of being ascribed to a person. IP right is a bundle of legally enforceable interests that a person may hold with respect to such

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The holder of an IP has the legally recognised capacity to authorise or prevent others from acting in certain ways with respect to that property. The rights granted are of a limited duration and in some cases it may also provide for an entitlement for unlimited duration. E.g. the moral right or special rights of the authors to prevent distortion or mutilation of the work is of indefinite duration. Hence, what rights with respect to IP are legally enforceable is the subject of IP law.

The IP has been equated to or analogous to tangible property and justifications used to support equating the intellectual creation to the physical creations can be advanced to these intangible rights. A common assertion used to justify providing property rights to intellectual works is that intangible creations require property protection because they are economically valuable works worthy of protection in their own right. This is essentially an economic justification, one premised upon overcoming market failure and market imperfections. Economic justification for creative work is premised on the very foundation that without proper protection authors would have insufficient incentives to write new works unless they are compensated with proprietary rights.

The IP law provides mechanism for importing some characteristics of tangible property to intangible assets. It provides the practical means for creators, innovators and industry to reap the benefits of intellectual assets. The digitalization and technological development has affected all forms of IP, be it patent, trademarks, copyright, trade secrets, etc. In the case of copyright, the literary work, artistic works, musical work, cinematograph or sound recording and all related rights have undergone a major change after the invention of computer and the internet. The computer program and computer software have entered into the digital environment in turn bringing in various issues relating to copyright which

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5 In Gramophone Co. v Birender Bahadur Pandey, Supreme Court of India held that "an artistic, literary or musical work is the brainchild of the author, the fruit of his labour and so, considered to be his property. So highly it is prized by all civilized nations that, it is thought worthy of protection by national laws and international conventions" AIR 1984 SC 667 at 676; R. Watt, Copyright and Economic Theory Edward Elgar Publishing Ltd UK, 2000, Ch 1: cited at Ciro, 'The Scarcity of Intellectual Property', 2005 (1) The Journal of Information, Law and Technology (JILT). <http://www2.warwick.ac.uk/fac/soc/law2/elj/jilt/2005_1/icro/>. Last visited 18th August 2010
have remained unanswered. The piracy happening in the internet or cyber space is widespread and the theft of IP has been occurring beyond territorial boundaries.

Infringement of IP is an issue that has probably been around since the human race began using language as a means of expression. Some cultures have traditionally been more tolerant of plagiarism than others. As Mikhail Atallah says, in Confucianism there was a tradition of believing that ideas belonged to everyone, something that can be interpreted simplistically as an encouragement to steal. The growth of digital piracy, in the wake of the technological revolution during the last few decades, is as inevitable as night following day. Where innovators have gone first, pirates and hackers have followed. Digital piracy is about questions of ownership and the right of developers to benefit from their creations, as well as the money.⁶

1.2 Technology and its Effect on Copyright Law:

The IP has migrated to the internet both in substance and as a concept which has become vital to the success of the commercial or business entity. The innovation or creativity as we all know is the basis for the IP system, so the promotion of innovation/creation of works and the protection of its end results is the goal of IP law which has become more imperative than ever before in the digital media.

With reference to copyright, the creators of literary, music, sound recording, cinematograph, software developers are exploring the internet media and making available their works in the digital form. The owners are seeking protection of their rights and intending to recouping investment of intellectual creation. Computer and internet is the easiest mode of getting on to the resources. There are number of online publications made available in digital form on almost any subject over the internet. There is a growing acceptance of digital literature and e-books. The authors are now making it available for a price and person utilising the resources are adapting to the mode of payment, either which is pay by

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order or pay per view of the works. The owners of copyright will make available the works when they are sure that their property is protected from being copied or pirated and may be willing to control the use before actually they are making it available in the digital media. The digital media has also affected the arts, crafts and arti-facts, museums and art galleries, as the collections have begun to be digitalised. The digital collections are made available for viewing which is considered to be a derivative work, which gets a protection of copyright. The artists today are using the digital technology to create works in the digital form on the internet.

It is difficult to determine how close the current copyright regime is efficient in balancing between private incentives and social benefits. Given society’s desire for creative works, as well as its endowments of talent, technology and other resources needed to generate and distribute those works. The question is whether current law and practice provide incentives for the greatest quantity and highest quality of original works to be created and consumed over time. Although the answer to that question is not straightforward, the magnitude of illicit consumption of copyright works in digital form today, for example music file shared in the Internet or movies illegally reproduced and distributed on CD-ROM suggests that potential efficiency gains can be realised by applying advances in digital technology to legal markets for creative works.

The cyber space is a place where anything is and can be available by a click of a button. The person visiting the internet has access to the material available and

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8 eBook Web (see http://www.ebookweb.org) reports traffic of 500,000 page views per month, while Palm Digital Media (http://www.palmdigitalmedia.com) reported sales of 180,000 titles in 2001. Cited at The Museum Computer Network at http://www.mcn.edu/resources/siteonline.com/) list more than 1,000 museums and museum related sites globally that maintain digital collections online. See www.wipo.int/export/sites/www/copyright/en/ecommerce/doc/survey.doc, Last visited 18th August 2010
9 Acronym for compact disc read only memory. A form of storage characterized by high capacity and the use of laser optics rather than magnetic means for reading data. Although CD-ROM drives are strictly read-only, they are similar to CD-R drives (write once, read many) optical WORM devices and optical read write drives. An individual CD, Anil Madaan & Davinder Singh Minhas, Dreamland’s Illustrated Computer Encyclopedia (An ultimate Book On Computer Terminology), Dreamland Publications, New Delhi, 2001.
may easily copy into the Random Access Memory (RAM). It has become easy not only for copying but also storing and distribution of copies. Unless the precautions are taken by the author, copying affords no identity of the person involved in the digital transaction. One reason for copying is, many users expected that information available on internet and downloading the same from internet is free or must be made available free of charge. This virtually was the reason why the researcher intended to make an attempt in understanding the challenges for the author, an Internet Service Providers (ISP) and the users and its legal implications.

1.3 Copyright- A brief overview:

The copyright law regulates the creation, use and exploitation of mental or creative labour. The rights are wide and diverse from literary, dramatic and musical works, computer programs, paintings, cinematograph work, broadcasts performances, sound recording, etc. The copyright law promotes the authors, composers, artists, etc in creation of original works making provision for an exclusive right to do certain acts. Copyright is a reward for a specific period of time during which the right is allowed to subsist. The economic right to exploit the work is given to the author with a grant of bundle of rights for his creative work. In economic terms the effect is to enable the creator to secure a return on investment. Any third party should not be unjustly enriched by reaping what they have not sown. There is divergent opinion that there may be less creative works of intellectual products without such right.

The law of copyright rests on a very clear principle that anyone who by his or her skill, capital and labour creates an original work of whatever character shall, for a limited period, enjoy an exclusive right to reproduce that work. Copyright exist not in ideas but which is put into some form or expression in tangible form though the work itself is said to be an intangible asset. Copyright however, requires originality in the work in some material form. However, owner of copyright has no right in restricting others to work independently on the same subject or area. Such work attains separate copyright though it may end up with the same result.

After the expiry of the term of copyright, the right of reproduction enters into the public domain. Until then, no other person may reproduce the work
without the permission or licence from the author. The copyright prevents others from copying or reproducing the work in question. When the right expires, copyright is said to lose its character as property, since it may no longer be owned or possessed or it becomes the common property of the public.

In *Computer Associates International Inc. v Altai Inc.*,\(^{11}\) the court stated that “The interest of the copyright law is not in simply conferring a monopoly on industrious persons, but in advancing public welfare through rewarding artistic creativity, in a manner that permits the free use and development of non-protectable ideas and processes.

In *Hanfstaengl v Empire Palace*\(^{12}\) the nature of copyright was examined in the following words:

“Copyright like patent right, is monopoly restraining the public from doing that which, apart from the monopoly, it would be perfectly lawful for them to do. The monopoly is itself right and just, and is granted for the purpose of preventing persons from unfairly availing themselves of the work of others, whether that work be scientific, literary or artistic. The protection of authors whether inventions, works of art, or of literary compositions, is the object to be attained by all patent and copyright laws. The Acts are to be construed with reference to this purpose. On the other hand, care must always be taken not to allow them to be made the instruments of oppression and extortion”

Hence, the copyright law has to balance between the individual interest and the public interest at large. For this purpose, there are certain acts, which are not considered to be infringement of copyright. They are treated as fair dealing or fair use of copyright work. The fair use doctrine permits portions of otherwise copyright works to be used for specific purposes. Copyright is not to be restricted to authors as it has to cater to many other industries like publication and production of literary works like books, magazines, newspaper, media and entertainment industries and in the current context, computer software industries.

According to Peter S Menell, digital uprising is the third of the technological invention which heralded considerable affect on copyright protection. The first was the printing press which brought in the methods of

\(^{11}\) 982 F.2d 693 (2d Cir. 1992)

\(^{12}\) (1894) 3 Ch. 109 at p. 128
mechanically storing and reproducing works of authorship, such as photography, motion pictures and sound recordings. Second was the advent of broadcasting, where it enabled to perform the work of an author at different locations. The "Digital Media" is the new mode of expressing the creative work. This is made possible by computer programming and digital sampling. This has empowered anyone with a computer and an internet connection to flawlessly, inexpensively and instantaneously copy or reproduce and distribute the work. This technological change is the greatest challenge to the copyright law.\textsuperscript{13}

The invention of printing press, tape recorders, video recorder, magnetic tapes and recently of the computers and internet have led to widespread piracy in copyright works. The reproduction of copyright work is simple and inexpensive and has become difficult to control. The technological development has affected all kinds of copyright works. It has gained international importance because any copyright work may be accessed easily and carried from one country to another without much of difficulty. The computer program and internet are the best examples of how copyright work can be reproduced or copied with a click of a button.

Copyright issues are to be debated with possibilities of finding solutions for some questions posed under the new technological regime. Thus, the "digital media" has made possible the transformation of expressive works into digital electronic format. This has greatly facilitated the reproduction, transmission and re-transmission of expressive works. The capacity for use of digital technology to reproduce and distribute expressive works is of great benefit to global society as knowledge information and culture can be shared widely. The same is also perceived as a threat to traditional interests of copyright holders who fear loss of control over the right to reproduce and therefore to derive income from their expressive works. The flow of digital information across national borders is less constrained than the flow of physical goods using traditional trade routes. Hence, computer program and invention of internet have made copyright issues, which arise from the digitalisation of information requiring extensive research faced with

challenges at the international level affecting large number of people across the world.

1.4 The Law of Copyright- National and International Legislations:

The national governments are free to define the scope of IP rights and the ways and means to enforce such rights, as a matter of domestic law. This has however, been within certain broad parameters imposed by international conventions to which national governments have agreed upon. The 19th century began to explore the possibilities of providing protection beyond the concerned territories. Protection of the author outside his own country was earlier governed by bilateral treaties, which later resulted in multilateral convention called the “Berne Convention for the Protection of Literary and Artistic Works” (Berne Convention), 1886. The convention is administered by WIPO at present. The last revision of the Berne Convention was at Paris, called the Paris Act 1971. Currently, Agreement on Trade Related Intellectual Property Rights (TRIPS) under the World Trade Organisation (WTO) incorporates the law relating IP. Hence, we may generally define the IP with some consistency, but there will be variations in the domestic laws relating to what qualifies as IPR protection. Function and description of IPR are largely common among developed legal systems. India being a developing country is to cope up with the recent development in the international arena.

India being a member of the Berne Convention, Universal Copyright Convention (UCC) and the TRIPS Agreement, copyright law is to be in consonance with the international Conventions or Treaties. The protection had to be in harmony with the international practices and hence, various amendments were brought into the IP regime. India provides protection by adopting the International Copyright Order, 1999 to members of the Berne Convention, UCC or the WTO Countries. The TRIPS Agreement does not give protection to ideas, procedures, methods of operation and mathematical concepts. It protects copyright in some form of expressions only. The TRIPS Agreement protects computer programs as literary works under the Berne Convention. It also protects the databases or other compilations whose arrangement or selection make them intellectual creations, even when individual elements are protected by copyright.
TRIPS also provides with a requirement to give authors of computer program and films, the right to authorise or prohibit commercial rental of their copyright works.

WIPO in view of the latest technological development had to deal with the affect on copyright and to provide an international solution to deal with the issues. WIPO Copyright Treaty, 1996 (WCT) protects the computer programs as literary works within the meaning of the Berne Convention. The member countries shall provide adequate legal protection and remedies against the circumvention and also imposes obligations concerning Rights Management Information. The WIPO Performances and Phonograms Treaty (WPPP) afford to protect the performers and phonogram right of an author in the digital era.

Copyright Act, 1957 (referred as “the Act”) is the governing law in India. Copyright law is national or territorial in nature, i.e. it operates within the territory where they are granted. The works protected are, the original literary, dramatic, musical and artistic works, cinematograph films and sound recording.\(^\text{14}\) It is pertinent to mention that, computer program or software is protected as a literary work under the Act.\(^\text{15}\) Copyright means where exclusive right is given to the author to do or authorise the doing of any of certain things.\(^\text{16}\) The Act also provides protection of significant right which is considered as authors special rights or popularly known as moral rights.\(^\text{17}\) The researcher will deal these issues in this study.

Copyright in any work shall be infringed when any person does anything the exclusive right to do is conferred upon the owner of copyright. The Act also deals with the fair use doctrine or defences available for using any creative work.\(^\text{18}\) This provision balances individual property rights of the owner of copyright and public right of making use of that work. An infringement of copyright entitles the owner with certain remedies. The owner has both civil and criminal remedies against the infringer. Where copyright in any work has been infringed, the owner of copyright work shall be entitled to all such remedies by way of injunction,

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\(^\text{14}\) Copyright Act, 1957, Section 13  
\(^\text{15}\) Ibid  
\(^\text{16}\) Ibid, Section 14  
\(^\text{17}\) Ibid, Section 57  
\(^\text{18}\) Ibid, Section 52
damages and accounts for profits. The owner of copyright may take proceedings for the recovery of possession of infringing copies.19

In the U.S Copyright Act, 1976 (herein after referred as USCA) and various other statutes including the Digital Millennium Copyright Act, 1998 (referred as DMCA) governs the copyright law. DMCA refers to "anti-circumvention" provision, which protect the works against infringement of copyright on the internet. The DMCA provides for legal protection and effective legal remedies against unlawful circumvention of technological measures to protect copyright. The DMCA imposes liability on both infringement of copyright and the technologies that facilitate infringement. However, there may be different ways of circumventing the work. The insecurity over this still haunts the right holders in posting their work on the internet of unlawful and unauthorised use of the work. The Act also provides the liability of service provider for online infringement of copyright. In the U.K law is dealt within the Copyright, Design and Patent Act, 1988 (CDPA). European Council Information Directive 1991 confers certain rights on the owner of copyright in computer program, including the right to control temporary reproduction, running of storage of the program, translation or adaptation, distribution or rental of programs as well as certain liabilities for secondary infringement.

1.5 Copyright in the Digital Media:

Digital use and developments taking place in the IP law and the extensive use of internet have to a great extent changed the thinking and application of the law. The copyright law has derived major economic and social importance. The rapid growth of the internet has made it difficult for the traditional legal system to cope up. Laws have been enacted throughout the world to face this digital revolution. It will be difficult for the legislature or judiciary to provide with sufficient remedies immediately. In the new copyright regime, scope of rights and liabilities of the parties, consequences of its breach or infringement, imposition of liabilities and implementation or execution of these rights and liabilities with the existing law will be a formidable task for authorities involved.
The technological development has created a challenging society of creative work in the digital media. The increase in consumption and enjoying creative work in different ways has put a challenge at the international level. Today ripping of music files from a CD and store on a computer or any portable music device has become common and easy. This could not have been done unless permission or licence is taken from the owner of that work. The work can be flawlessly and inexpensively copied which can be done in an instantaneous manner and distributed all over the internet. The issues concerning literary work, musical work, sound recording, cinematograph and all other work of author may directly apply to computer program or software. The licencing method used by the owners of copyright may have a great ramification of fair use of the work.20

The product of creativity and innovation by copyright owner has been changing in accordance with technological changes. The invention of printing press, phonograms, radio and television broadcasting, cable and satellite transmission, video cassette recorders, compact disc (CD) and digital versatile disc (DVD) technology and now, the internet has affected both the form and substance of copyright law.

The traditional way of protection of copyright is ‘analog’ methods of recording works of IP either on paper, film, on magnetic tape. But, with the introduction of computer, digitalisation of the same converts all words, images, sounds, graphics and films into binary numbers of 1’s or 0’s. These digitally stored works, as bits grouped in bytes, disassociated from their physical form are then transferred over the networks to be finally reconstructed into recognisable art by a reference to their binary values. The source, assembly and object code are protected as copyright.21

The authors are treating internet not only as an opportunity but, also as a threat for the work. The internet is thus, characterised as a giant copying machine facilitating extensive and undetectable copyright infringement. The internet is replacing conventional newspapers and television and phonograph records. In the beginning of internet era copyright owners dominated by film, music, television,


21 ibex Computers v Barclays Mercantile Highland Finance, 1994 FSR 275
computer programs and databases contended that, intellectual creative work would be taken or stolen from others and hence needed a safe protection of their work or they would fear making available the work on internet.\footnote{22}

The easy availability and accessibility of information contained in computer systems, combined with the practically unlimited possibilities for its exchange and dissemination, regardless of geographical distances, has lead to an explosive growth in copyright issues also. The ease with which unauthorised copies may be made due to digital technology and the scale of reproduction and dissemination in the context of electronic networks, a need has arisen, where the law has to afford protection from an infringer.

One major development was the World Wide Web (WWW) which transformed the internet into a network connecting different communities from all over the world. The Web became the place where people started exchanging and sharing idea and information. This expanded to buying and selling goods and services. From being in use for military and research purposes in the initial stages of development, has become precursor of ‘information age’ revolutionising by providing ready information on every conceivable area with advancement of digitalisation.\footnote{23} Products of IP like books, musical works and video titles are sold through internet. The digitisation of copyright works by a process that reduces text, visual images and sound to computer-readable binary code of ‘0’s and ‘1’s, grouped in bits and bytes that can travel over networks has enabled copyright work to transfer so efficiently to the Internet.\footnote{24}

The owners of copyright have some protection in the digital environment by technologies like encryption and watermarking, providing some practical solutions to them. In addition, the digital rights management are providing safeguard for owners of copyright. But, the apprehension still exists in owners which are not unfounded, as they are not sure as to the extent of protection.\footnote{25} It is

\footnote{24}Ibid.
also worth noting that, it is better to educate and persuade to buy legitimate products than a pirated copy in the market. However, there are circumstances where public may be in a habit instead of going for pirated copy seeks for an original work where wider numbers of compositions are made available by the owner. In that case, access even for free of the work may not be usable to the public. The owners are now providing subscription services which they feel secure with some monitoring, for e.g., downloads are made available by eMusic, MusicNet, Full Audio, Rhapsody, Liquid Audio, Inc and Pressplay etc. This has replaced the unauthorised online music sharing sites like Napster, KaZaA and Morpheus. This ‘Peer-to-peer’ network enables users to upload and share music and movie files through the digital media, which were amounting infringement of copyright. Napster used centralised server to process the transfer and hence was difficult to regulate resulting that, music industry had to face huge losses in this regard.

Today personal computers have CD burners which are used to compress and store movies on discs allowing downloading without significant loss in quality. The large data files are required to transmit video for its download and to some extend the lack of bandwidth prevented it from being copied. The systems have

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28 Refer As filed by the plaintiffs in an action brought by the Motion Picture Association of America (MPAA) and the Recording Industry Association of America (RIAA), against Kazaa, Musicity.com Inc., Musicity Networks Inc., and Grokster Ltd. in the U.S. District Court for the Central District of California, October 2, 2001. See “Kazaa Denies Copyright Infringement Claims; Developer Says P2P No Different Than HTTP,” 7 (5) Electronic Commerce and Law Report, (January 2002) at p.99, see www.wipo.int/copyright/en/ecommerce/ip...chap2.html. Last visited on 18th August 2010

facilitated access by video-on-demand and pay per view and are catching up in the films. However, more than 4-6 lakhs films are downloaded illegally every day.\textsuperscript{30}

The traditional form of radio is giving way to the introduction of internet radio and webcasting industry. Internet radio has taken traditional customers away luring them to access to thousands of global radio broadcasts. In the U.S. internet radio and webcasting were unregulated until the Digital Millennium Copyright Act, 1998 (DMCA), which now provides webcasters to pay royalties they play by acquiring compulsory licences taken from any recording company in the digital form.\textsuperscript{31}

In the field of copyright, vast number of works of literature, film and art and notably computer programs have already transferred to the digital environment. Software is protected as a form of IP by copyright law, underlies the operation of all digital technologies.\textsuperscript{32} Some non-proprietary software, called ‘open source’, has been developed based on a certification standard set by the Open Source Initiative that, requires the source code of a computer program to be made freely available to the public, relying on peer review to detect errors and encourage software development under a form of licence that allows modifications and derivative works.\textsuperscript{33}

There are some unresolved questions of copyright both at the domestic and international level. The fast pace of recent developments in copyright and related rights have some long term implications. The WCT and the WPPT provides some

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\textsuperscript{31} See “Webcasters of Radio Broadcasts Not Exempt from Paying Royalties to Record Companies,” Vol. 6(31), Electronic Commerce and Law Report, p.839 (August 8, 2001). Since January 2001, the total audience time spent listening to monitored Web radio stations increased by 749%. (Internet radio streaming audience size and demographic data provided by the MeasureCast Internet Radio Listening Index(TM), at http://www.measurecast.com. Last visited on 18th August 2010

\textsuperscript{32} Systems software, including utilities and operating systems, enable our computers to operate, while utilities software provides us with the programs that make the digital networks so useful. Much software is protected by intellectual property law, and its theft is endemic.

\textsuperscript{33} see http://www.opensource.org/ Last visited on 18th August 2010
guiding principles for the domestic legislature. There are some issues which are debated and discussed by legislation, judiciary both at the international and domestic level. Few countries have enacted legislation to ensure protection and enforcement of copyright in the digital era. The courts have been responding to the new challenges in protecting the newer types of copyright.

1.6 Objective of Research:

The sudden growth of technology and use of digital media in all sphere of life has made the IP to adapt to a new change and this is specifically true in relation to copyright law. The copyright law does not provide an answer to the issues which are now open to be answered by the legislature and judicial decisions. The development of a new legal regime to copyright is in store. The present research will focus with the following objectives:

- Identifying the copyright issues in the digital media in India.
- To study the effect of the technology on the issues of computer program and computer software related to copyright issues.
- To scrutinise and understand the national laws relating to computer program and software.
- To scrutinise and understand the issues of copyright relating to computer program and software in the international scenario.
- To identify, study and analyse the judicial approach towards the use of computer program and software as copyrightable property.
- To suggest possible changes required to take up this challenge in the new technological and knowledge economy.

1.7 Limitation of the Study:

Copyright in the digital media is different from the traditional analog copyright. The technological development taking place is so rapid that the technologies are becoming obsolete within a very short span of time. The case laws in India in this regard are now to be tested. Indian legislation is yet to take steps in this regard. We are now coming up with cases relating to computer program and software as copyright property, hence researcher has to refer to foreign judgments.

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34 For a discussion of the importance of the WPPT and the need for other protection for the recording industry interests, see presentation of J. Vacher and presentation of S. Perlmutter, both at the Second WIPO E-Commerce Conference (September 2001). See also presentation of H. Rosen, President and CEO, Recording Industry Association of America in the First WIPO E-Commerce Conference (September 1999). The Impact of the Internet on Intellectual Property Law, WIPO, www.wipo.int/export/sites/www/copyright/en/ecommerce/doc/survey.doc, Last visited on 18th August 2010
to suit the Indian law. The researcher also is handicapped with no specific legislation in India. Hence, the legislation of counties like United States, United Kingdom including European Union Directives and International Conventions are referred in this study so that some vital legal issues can be suggested for India.

1.8 Hypothesis:

In India the law relating to copyright in the “digital media” governing computer program and software are inadequate and ineffective and calls for more specific changes in the existing law. The players in the “digital media” have attained an important role and the law is once again inadequate in this aspect. This may be remedied by a sui generis law or amending the law, which have also to be in consonance with the international law.

1.9 Methodology:

The study is doctrinal in nature. The law existing in India in comparison to the laws in the U.S and the U.K, with case laws will be substantiated. This study will also consider the international treaties, the reports of national and international committees and the guidelines issued as a source of information. Articles, Commentaries, Seminar Papers, Newsletters, Journals and data will be analysed.

1.10 Scope of Research:

The major concern of the law makers and the judiciary in future development of copyright are listed below, which are however not exhaustive. The researcher will be dealing these issues relating to copyright law.

1) Extent of protection in the digital media as to literary work, musical work or cinematograph and sound recording
2) Extent of rights of performers
3) Extent of protection to digital broadcasters including webcasting and digital films and television online. Specifically dealing with online linking and framing
4) File sharing systems like peer-to-peer
5) Liability and responsibility of Online Service Provider
6) Exceptions and limitations to copyright

Before dealing in brief the issues in hand, copyright law provides with certain exceptions to author’s copyright. The author’s property rights which are exclusive right to use and control of a work has to be balanced with public use of copies of the work. The public good requisition is fair access to and use of such
work in question. The copyright law in almost all the countries provide for few exceptions to copyright keeping in mind the balancing act of the creator and public interest in utilising the creative work. However, “fair use” doctrine in the digital media has to be tested and looked into in view of the computer program being protected under copyright law. In the traditional copyright law access to work is provided without infringing the copyright for e.g. by issuing a book from the library. Where as in the present scenario where computer program is protected as literary work, balancing of owner’s rights and public good is a question which has to be answered by the legislature and the judiciary.

When a person visits a website, computer makes a temporary copy in the Random Access Memory (RAM), which on each access involves copying. Copyright works today are licenced with certain terms and conditions for a particular use rather than selling a work where a book or video cassette used to be sold. The work of owners is now generally governed by contract law in turn affecting the applicability of the exceptions in copyright law. The main challenge is in balancing the rights of owners and public at large.

Today, copyright works including performances, phonograms have become a major element of international e-commerce, where they are traded in the internet. If domestic legislation successfully provides a strong and effective rights to owners and also balancing public “fair use” aspects will create a positive impact on copyright law. The owners will have secured rights to sell and licence copyright work and make much more valuable works available through internet media. How far this result will be achieved is now left to the legislature and judiciary. The law makers have to consider the benefit of owners of copyright, consumers, service provider’s (rights and liabilities) and to economies of states as a whole.

The Copyright Act by amending the law has provided protection to computer programs as literary work. However, owner’s rights and limitations have yet to be tested. The exceptions provided for computer program are also in a

similar position without being tested. The internet has affected the nature of protection to be provided to literary work, musical work or cinematograph and sound recording. Hence, the researcher will study the law relating to protection of computer program and software under this heading.

1.11 The Copyright Issues and Challenges:

In the digital media, Internet Service Providers (ISP’s) or Online Service Providers (OSPs) are the entities who provide access to internet or making provision for use of online services. They participate in transmitting and making available the content of copyright material on internet. The question which arises is responsibility and liability of the ISPs. Any infringement taking place over internet related to IP should be thumped on the ISPs or should the person using copyright material should be solely liable are the questions which have come up before various jurisdictions including India. The copyright work when transmitted from one source to another or made accessible to the public there are various parties including the ISPs who are involved. The question of ISPs liability will be dealt by the researcher. The ISPs liability may be in question when they are engaging in reproduction or communication to the public of copyright work without the authorisation of an author. Similarly, they contribute or facilitate or make possible infringement of copyright work by any person.

The issue of imposing liability on the ISPs is not as simple as it looks to be. This involves greater implication in global perspective. The markets are global and internet has no boundaries or is borderless. In India, the Information Technology Act, 2000, (IT Act) to an extent makes provision for rights and liabilities of an ISP.36

The protection of performances of both live performances and fixed performances are protected both under the domestic laws and international instruments. The Berne Convention protects the performance of a creative work.37 The WPPT protects aural aspects of performances but, not audio-visual

37 Article 7, Rome Convention, 1971 provides for protection in respect of unfixed as well as fixed performances; Article 14, TRIPS also makes provision for protection of performers. Article 7, WPPT, 1996
performances. Same is the result of different countries adopting protection either based as a legal right or a contractual right. The domestic laws of almost all countries provides for protection of performances. As audio-visual performances are now made available in increasing numbers over internet through music videos or cinematograph work, the possible extension of protection may be provided in the international scenario. This has become necessary also due to possibility of manipulation and distortion of performer's images and voices in the digital technology, e.g. morphing which is nothing but transforming one image into another. Hence, protection of performer's has to be addressed in the present context of internet.

The webcasting and digital cinematograph and television online is a new mode of offering by copyright owners in making available a work on internet to the global market. Webcasting or streaming is a process of digitally transmitting musical recordings, radio and television broadcasts over the internet. However, the process does not allow to create a permanent copy to the end users computer hard drives, though software is available where it allows the users to convert streamed audio files into other formats, which can be then transferred via peer-to-peer (P2P) systems. The law makers have to respond to this new method of distribution of a creative work though few legislatures have made provisions for the same.

The distribution of film and television works has opened up in an unprecedented manner offering number of channels for distribution. This audio-visual industry though hesitant to get into digital environment has now entered the internet media. The piracy has become rampant in this segment of the internet

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38 Article 3, WPPT, 1996
39 Section 38, Copyright Act, 1957
41 See the Recording Industry Association of America (RIAA)'s Webcasting FAQ, at http://www.riaa.com/licensing-licen-3a.cfm. Last visited on 18th August 2010
42 Referred in sub-topic of peer-to-peer
scenario. The availability of pirated version of the movies before its official release is a cause of concern to the industry.\textsuperscript{43}

In the digital interactive television (iTV) there are new developments which have taken place. The use of personal or digital video recorders allowing viewers to digitally record shows by genre or actor and pause and rewind live TV; video-on-demand allowing viewers to choose which program to watch either by pay-per-view or by subscription; and the two-way-programming, enabling viewers to interact with other viewers.\textsuperscript{44} These issues have to be addressed in the new technology regime which the researcher seeks to make a study.

The internet permits certain information with a hyperlinked or hypertext reference linked\textsuperscript{45} facilities within the sites.\textsuperscript{46} The user activates the link by clicking on linked element, which is usually underlined or in a colour different from rest of the document to indicate that the element is linked. Hyperlinks are indicated in a hypertext document through tags in mark-up languages such as SGML\textsuperscript{47} and HTML.\textsuperscript{48} These tags are generally not visible to the user, also called as hot link, hypertext link or link.\textsuperscript{49} Thus, it is one website making provision to refer to another website linking to that site with icon or coloured text. The user of

\textsuperscript{43} It is said that 4,00,000 to 6,00,000 films a day are downloaded over file sharing networks and pirate video-on-demand. Research by Viant, at http://www.viant.com. The Motion Picture Association of America (MPAA) shut down a pirated video-on-demand site, Film 88, based in Tehran, which showed full length movie for US$1 without authorisation of the movie studios. A similar operation, Movie88.com was earlier shut down in Taiwan, Province of the People’s Republic of China. See Stefanie Olsen, “$1 Movie Site Finds Shelter in Iran,” ZDNet News, (June 5, 2002) at http://www.zdnet.com. The Impact of the Internet on Intellectual Property Lawwww.wipo.int/copyright/en/ecommerce/ip.../chap3.html, last visited on 18\textsuperscript{th} August 2010


\textsuperscript{45} Link text- A word or short phrase on a web page that provides the visual hypertext link to another page or to somewhere else on that same page; Link text is typically underlined. Anil Madaan & Davinder Singh Minhas, Dreamland's Illustrated Computer Encyclopedia (An ultimate Book on Computer Terminology), Dreamland Publications, New Delhi, 2001)

\textsuperscript{46} A connection between an element in a hypertext document, such as a word, phrase, symbol or image and a different element in the document, another document, a file or a script

\textsuperscript{47} Standard Generalised Markup Language that uses tags to mark elements, such as text and graphics in a document to indicate how web browsers should display these elements to the user and should respond to user actions such as activation of a link by means of a key press or mouse click. Supra n. 9; See generally, Ignacio Javier Garrote, “Linking and Framing: A Comparative Law Approach,” Issue 4, European Intellectual Property Review, pp.184-198 (2002).


software will be permitted to click that reference and content is made available on the hyper-linked website. Hence, user may search or linked to another material content when he/she is using a work in question. If it is within the websites home page, it is not major concern as it will be within the link provided, where user only views content on the linked site and has knowledge that it is derived from a different website.\textsuperscript{50}

Though, the linked work is created in RAM of a computer but, the process does not create a copy. In such a case, there is no need of permission for linking, as there is presumed to be used as fair use and hence an implied licence granted to view the content hyperlinked.\textsuperscript{51} The Deep-linking is linking the user directly to secondary material on another site, bypassing that site's home or front page, which may amount to copyright infringement in secondary material. "Embedded hyperlink" also known as in-line links\textsuperscript{52} creates a reference to content from another website such that, the secondary material appears to be content originating from the first site. Though, may not require a copy to be created of material content linked, may infringe the right to display or communicate the work to public.\textsuperscript{53}

Hence, copyright issues relating to these uses of work through hyperlinks may involve infringement issues which have to be looked into by the legislature and judicial response to this has to be seen. Framing is a practice of using browser software content from another online source.\textsuperscript{54} The user in this visualises the

\textsuperscript{50} In some jurisdictions, such as the United States of America, copyright infringement has been found as a result of the simple act of linking, if such links facilitate copyright infringement or piracy; see Intellectual Reserve Inc. v Utah Lighthouse Ministry Inc., United States District Court (C.D. Utah) 75 F. Supp. 2d 1290. A similar reasoning was followed by the Belgian court in IFPI v Beckers (Antwerp Court of First Instance, at http://www.jura.uni-tuebingen.de/~s-besl/text/ifpi_v_beckers.PDF). However, in Germany, this practice would seem not to give rise to legal liability, in accordance with §5(3) of the Teledienste-Gesetz, following court decisions in Pfälzer-Links (LG Frankenthal, Urt. vom 11.28.2000) and Swabedoo (OLG Schleswig-Holstein Urt vom 12.19.2000). See the discussion by Garrote (2002), supra note 140, at p.184, p.188 and pp.190-191. www.wipo.int/copyright/en/eCommerce/ip.../chap3.html, last visited on 18\textsuperscript{th} August 2010.


\textsuperscript{52} A link to a resource that is embedded within text or is associated with an image or an image map.

\textsuperscript{53} See Garrote (2002), Supra note 53, at p.184 and p.194. Cited at www.wipo.int/copyright/en/eCommerce/ip.../chap3.html, last visited on 18\textsuperscript{th} August 2010

\textsuperscript{54} Frame- A single screen-sized image that can be displayed in sequence with other, slightly different, images to create animated drawings; A rectangular section of the page displayed by a Web browser that is a separate HTML document from the rest of the page; Web pages can have multiple frames, each of which is a separate document. Associated with each frame are the same
The digitizing of works and ubiquity of the internet has brought with it increasing potential to organise what otherwise would be unorganised, making pirating cheaper, easier, and more widespread than ever before. This is what makes, the current copying crisis more significant than the “crisis” of video and audio taping, and should cause a serious examination of the issues even if copyright owners have cried “wolf” often in the past, as history shows that they have.

Current pirating-distribution technologies appear capable of destroying the value of copyright although recording industry failed to present evidence of such an impact in the *Napster* case. There are two slightly different technologies now in use to transfer files among users. Both systems essentially allow individuals to access and download music (MP3) or other files that reside on the computers operated by other members of the system, what are referred to as peer-to-peer systems, since the files transferred are all stored on standard, non-commercial capabilities as for an unframed Web page, including scrolling and linking to another frame or Web site; these capabilities can be used independently of other frames on the page. Frames which were introduced in Netscape Navigator 2.0 are often used as a table of contents for one or more HTML documents on a Website. Most current Web browsers support frames, although older ones do not.


57 Ibid

58 *A&M Records, Inc. v Napster*, 239 F.3d 1004 9th Cir. (2001)

59 Peer to Peer network or peer to peer architecture: a network of two or more computers that use the same program or type of program to communicate and share data. Each computer, or peer, is considered equal in terms of responsibilities and each act as a server to the others in the network. Unlike client/server architecture, a dedicated file server is not required. However, network performance is generally not as good as under client/server, especially under heavy loads. Peer to peer communication: interaction between devices that operate on the same communications level on a network based on a layered architecture.
PCs. One type of system, such as Napster, uses a central server to act as an intermediary in searches for particular songs or files. The other type of system, pure peer-to-peer systems usually based on Gnutella, the first of these programs forgoes the central server, allowing users to search for files (often audio, video or software program files) on other computers and download these files at will. The innovation of compression software like MP3 (mpeg3) in a move towards technological development enables music files to be stored in the digital form and easily made available for unloading and downloading freely from the Web or file transfer protocol sites. The music industry has been more vulnerable in the digital media relating to copyright issues as it is most suited for distribution over the internet.60

Copyright owners are creators involving labour, skill and capital hence, the law provides for a reward for this creativity. Any person intending to use such work must seek permission from the owner of copyright. Such person is thus, prohibited from using a work without authorisation or permission. The owners will normally grant permission with certain terms and conditions for an exchange referred as royalty or compensation for granting the right of use. Copyright owners enter into a contract in which they licence third party to use such work. Such agreement will come into existence with a one-to-one basis, e.g. software licence. However, it will be very difficult in all the circumstances to enter into such agreement. Hence, the collective digital management concept has come into existence where rights are given to the user with plurality of work to be used by way of a licence which has become more popular in the music industry or radio broadcasting rights.61 The DRM provides a person entitled for access and use of work with the terms and conditions specified, including the price, making of a copy, use in one or more times including use in multiple devices, right to make changes if any.

61 Digital Right Management is the application of information technology to facilitate the exploitation of rights. The system aims in enforcing business rules for the use of intellectual property content.
The WCT and WPPT make provision for DRM system. This technology promises owners of copyright in reducing widespread piracy and enforcement of their rights in the internet media. However, challenges remain as to show how far they will be successful in the digital media. The researcher will attempt to study these challenges and identify the key issues and way to find certain solutions. The researcher now looks into literature review in furthering his study to understand and pen this research work. The researcher acknowledges all the prior authors in this work for their inputs in various circumstances. The research would not be possible without certain prior ideas and expression already existing.

1.12 Literature Review:

The books are the bible for any research and researcher has taken full support of the existing works. The researcher has also referred to certain articles and reports in order to understand and make use of such work. The following are few articles, comments and notes in pursuing the research, which are put forth in the following paragraphs.


The author in this article explicitly analyses the cases and specifies fair use applicability. The author examines under what circumstances and the problems faced in granting fair use defence.


The author begins with a caveat that, the title of this essay does not mean there is no protection of IPR in the cyberspace. The need for change is because traditional copyright law simply cannot handle it in the cyberspace and copyright for digital works has gone beyond owners and users alike. According to some users sharing is not stealing and not a theft to multiply copies without consent in order to space and time-shift access to legitimately obtained music or video, or to share a

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62 Article 11 and Article 18 respectively are providing for obligations concerning technological measures and Rights Management Information Article 12 and 19 of WCT and WPPT respectively.
copy with a friend. In addition, many have entered the fray and use it as a kind of game, for the thrill of defeating technological efforts to thwart access or simply to challenge "greedy" copyright owners. The author has wonderfully described the strategies used in the Internet to disseminate content, which she divides into four categories. They are (a) Naysayers, (b) Locksmiths, (c) Subverters, and (d) "Explorers."

According to the author, first one has lost out, the Locksmiths and Subverters are having ascendence. Both using copyright selectively to adopt what is useful to them, but escape from those aspects of formal copyright that they deem troublesome or inconvenient. The author referring to "Explorers," in an internet

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64 In this article she does not refer to the activities of commercial pirates, or about persons who set up open peer-to-peer sites that facilitate massive uploading and downloading of unlicensed content, with or without commercial motivation.

65 Those who have decided pretty much to stay away from the Internet as a method of distributing content (although they may use it to advertise or to sell hard copies). For e.g. Beatles Music not being made available over internet up to this time, some books are made available only in hard copy or maximum with a CD-Rom.

66 They may actually like the strategic benefits of having copyright in their back pockets and the tool of last resort for protecting their IP. They put the faith on contract law and a variety of technology-based devices, like the shrink and click wrap licences. They also adopt Digital Rights Management technologies (DRMs) and were successful in bringing the Digital Millennium Copyright Act (DMCA). The author apprehends that, these approaches may simply bypass the limits on proprietors' rights imposed by copyright law, like the first sale and fair use doctrines even ignoring internet privacy. DRM may require users to be bound to specific platforms or equipment, to access and use the works. See also Universal City Studios, Inc. v Corley, 273 F.3d 429, 437 (2d Cir. 2001)

67 Unlike Locksmiths actually do "rely" on copyright in cyberspace, but, they turn the law on its head with the aim of disabling it. This has led to the concept of "copyleft." General Public License the various Creative Commons licenses allowing software designers and other kinds of creators not only to disclaim many of the traditional rights that attach to copyright works, but also to limit the ability of future creators to choose whether to enjoy those rights for themselves. Subverters tell user’s what they can and cannot do with digital copyright works by attaching machine-searchable and readable licenses to them rather than DRMs. It encourages users to create derivative works (that is, to make changes to and improvements in the software's code, they must make their own modifications freely available to others on the same terms) (GNU its meaning stands for "GNU's Not Unix" "GNU's Not Unix!" a Free Software, Free Society)

68 They see copyright as illogical barrier to achieving the full potential of the internet to further learning, creativity and communication. Explorers think copyright is simply unenforceable in cyberspace and they find DRMs as bad or impracticable alternative.

69 The Harry Potter books though not made available in digital copy, is found in the website

70 Esther Dyson and John Perry Barlow See generally Esther Dyson, Intellectual Value: A Radical New Way of Looking at Compensation for Owners and Creators in the Net-Based Economy, WIRED, July 1995, available at http://www.wired.com/wired/archive/3.07/dyson.html?pg-1&topic= (discussing the economics of free content and the business strategies that providers could use); Esther Dyson, Intellectual Property On The Net (n.d.), http://www.eff.org/Misc/Publications/EstherDyson/ip-onthenet.article (discussing the devaluation of content because of its wide-spread availability); See Also Esther Dyson, Release 2.0: A Design for Living in the Digital Age (1997); See generally Barlow, The Economy of Ideas, (discussing concerns over mass distribution of content and how to protect the content). Another, later iteration of the same ideas can be found in Barlow, Wine Bottles, cited at Diane L. Zimmerman, Living
distribution many traditional functions have become irrelevant and unnecessary. Copyright laws have failed in preventing rapid duplication and proliferation of copies that digitisation made possible. Hence, new business models and a different set of laws have to develop in this digital media. Author also refers to two well-known cryptographers,71 interested in a non-copyright-based system where the works are distributed in cyberspace. The author concludes suggesting that, legislation should not interfere as it did with DMCA and to nurture an environment that encourages experimentation until we have time to learn which models have the best chance to succeed. The models will ultimately have two fundamental characteristics. Firstly, they will not go to extremes to try to prevent all unauthorised copying and uses. Secondly, any devices to control what users do with digital copies once they get them will take account of what users-and not just the content owners-view as fair and equitable. Hence, any reform of IP law should aim for a decent level of congruence with public’s common sense and sense of fairness.


The author refers to three situations for the Copyright Office to become obsolete in the 21st Century. They are, registration and deposit provisions being repealed by U.S; even in case of voluntary registration of copyrights an automated registration will do away with the office; and improved technological protection of IPR’s in a digital networked environment. The author goes on to say that, if technology to protect IPR becomes very effective and anti-circumventing is made illegal, then not only the Copyright office but also copyright law itself might become obsolete. The contractual strategies will take over in protecting IPR in


71 They suggest that, authors could post samples of their work on line and accompany the sample with a “release” price that, if reached, would trigger distribution either of the full work, or the next section of it. Members of the public who want to contribute to the price asked for the work would deposit money into an escrow fund until either the target was reached, or it became clear that the project would fail to command sufficient support. If the project failed, donors would get their money back. If it succeeded, the author would post the work, free to anyone who wanted it. At its most generous, the plan contemplated a donation of the work, once paid for, to the public domain. See generally John Kelsey & Bruce Schneier, Electronic Commerce and the Street Performer Protocol, http://www.schneier.com/paper-street-performer.html, cited at Diane L. Zimmerman, Living Without Copyright in a Digital World, Hein Online, 70 Alb. L. Rev. 1375 2006-2007, last visited 28/11/2011
digital networked environments, for e.g. by “header contracts.”\textsuperscript{72} Header contracts appear to offer important protection to digital works, whether the contracts are employed separately or are used in conjunction with technological protection.\textsuperscript{73}

Distributing encrypted works in a digital networked environment would not threaten the economic interests of copyright owners because in order to consume or enjoy copyright works, a potential consumer would have to obtain a decryption “key.” A user would have to pay a specified fee to obtain the key, or would have to otherwise be eligible to receive it.\textsuperscript{74} He refers to circumstances where the possible step in U.S. would be takeover of Copyright Office by the Patent and Trade Mark Office or by the Federal Bureau of Investigation. Thus, concludes by stating that copyright law has historically promoted the dissemination of knowledge was instead becoming a law which served primarily to prevent information from being disseminated to anyone who has not paid the publisher.\textsuperscript{75}

\textsuperscript{72} For e.g. he illustrates: ‘A’ needs information on a particular subject. He knows that it must be available in the net but without knowing where that information exists and conditions for use. ‘A’ should call upon “knowbot” an intelligent search program that has been trained to be attentive to ‘A’s particular preferences send the “knowbot” out into cyberspace to search for the information ‘A’ needs. When it has located sources that contain the information, the “knowbot” sends messages about each source. The header for each source informs the conditions under which the information will be made available. After ‘A’ chooses the source from which he wish to order the information and reply to the source’s header. By replying, ‘A’ will have ordered the information and will have bound to the terms described in the header.

\textsuperscript{73} Header contracts are much more likely than shrink-wrap licences to be regarded as imposing meaningful contractual limitations on the ability of copyright owners to limit consumer uses of copyrighted works. Pamela Samuelson, \textit{Will the Copyright Office Be Obsolete In the Twenty-First Century?} Hein Online, 13 Cardozo Arts & Ent. L.J. 55 1994-1995, last visited 28/11/2011

\textsuperscript{74} One presentation featured a model for an Internet billing server that could carry out transactions for obtaining decrypted versions of digitised works on the Internet. Another promising technological strategy for protecting intellectual property in digital networked environments would be to distribute works with a program that could “rat” on abusive consumers. That is, such documents might be programmed to send a message to the owner of the copyright to inform the owner that too many copies had been made or that some digital manipulation of the contents had occurred. This, however, would not be foolproof either since users might construct programs to deactivate the ratting program, Pamela Samuelson, \textit{Will the Copyright Office Be Obsolete In the Twenty-First Century?} Hein Online, 13 Cardozo Arts & Ent. L.J. 55 1994-1995, last visited 28/11/2011

\textsuperscript{75} He refers to Jeffersons who always supported the dissemination of knowledge and can see from one of his statement: “If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it... He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature ....” Graham \textit{v. John Deere Co.}, 383 U.S. 1, 8 (1966) (quoting VI Writings of Thomas Jefferson at 180-81 (Washington ed. 1854)) Quoted at Pamela Samuelson, \textit{Will the Copyright Office Be Obsolete In the Twenty-First Century?} Hein Online, 13 Cardozo Arts & Ent. L.J. 55 1994-1995, last visited 28/11/2011

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The author comments that, the DMCA adds to the series of laws, which is the crusade by copyright industries to provide greater technological control over their content. And, this trend is part of a strategy to transform copyright from a legal concept to a technological concept in an effort to re-privatise copyright law. This would change the scenario where, courts would no longer be in a position to enforce these important limitations on copyright, and copyright owners will be able to use these extra-legal protection measures to expand their control over content beyond accepted constitutional limits. This actually affects the free speech because those users will not be able to get the tools to use protected contents. The DMCA now provides for non-copyright infringement action which is outside the limits of Sony ruling. The self help measure of DRM provide almost limitless opportunities for content control and takes away the role of copyright in this regard.

The author begins with a statement that copyright is dead in this cyberspace. The history of copyright and author’s rights essentially had been adaptation to new forms of creations and of new ways to disseminate copyright works. The copyright law emerged with bundle of “copyright rights,” with specific rights in respect of particular forms of exploitation of works, like, reproduction, public performance or communication to the public, and adaptation. Those were cases, where action was brought against professionals. There is a major fundamental shift because of digital technology. Copyright is now a legal tool that rights holders can use against end-users, including consumers. The author also

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76 Includes digital watermarks, encryption, anti-copying codes, pay-per-use systems, and verification systems that allow content to be viewed only on a particular machine.

77 Referring to Eben Moglen and John Perry Barlow “Copyright worked well because, Gutenberg notwithstanding, it was hard to make a book. Furthermore, books froze their contents into a condition that was as challenging to alter as it was to reproduce... For all practical purposes, the value was in the conveyance and not the thought conveyed... In other words, the bottle was protected, not the wine. Now, as information enters Cyberspace, the native home of Mind, these bottles are vanishing.” John Perry Barlow, The Economy of Ideas: A Framework for Patents and Copyrights in the Digital Age. (Everything you know about intellectual property is wrong.), Wired, 2.03, Mar. 1994, available at http://www.wired.com/wired/archive/2.03/economy.ideas_pr.html

78 The author says it is for two reasons: copyright holders ensuring that, end-users pay the fee for the material they use (which they see as including getting access through authorised sources), and preventing the transmission of the material by those end-users to other users (in other words preventing them from becoming intermediaries). This is nothing but, rightsholders wanted to ensure that end-users remain just that, end-users. The copyright was always used against the professionals.
refers to evolution of limitation and exceptions including “fair use”\textsuperscript{79} and “First Sale” doctrines. As to first sale doctrine, it is said that application of copyright exceptions in online access has replaced distribution of copies with licencing. Hence, the first-sale doctrine, perhaps one the most important “exceptions” to copyright, is fast disappearing.

The author says that, copyright legislation and international treaties including the Berne Convention and TRIPS Agreement, are expressed in terms of rights attaching to the nature of use, not to its effect. In the internet era, any content made available on a server is usually reproduced and performed/communicated having dual nature. Referring to WCT’s “making available right” where a single economic operation in that context may require three or more separate authorisations, possibly leading to over- or split payments (because often each rights holder will want to be paid for the entire economic value of the operation) and almost certainly to high if not insurmountable rights clearance processes and transaction costs. Referring to the fair use exceptions, author suggests for a “reverse three step test” to determine the scope of disallowed uses, that is, those to which the exclusive right of the copyright owner should apply stating that it is appropriate because it focuses on the effect of the use on rights holders and effects-based. It is powerful because it both solves the issues related to nature-based bundle now used in most national laws and will be TRIPS compliant.


The author examines IP’s objective is to protect ownership of intangible assets similar to the rights of owners in physical assets.\textsuperscript{80} The author says that, enforcement of this right is a concern in cyberspace. This may be due to the fact

\textsuperscript{79} Referring to the Canadian Supreme Court in \textit{Theberge v Galeries d'art du Petit Champlain, Inc.}, (2002) SCC 34, “Excessive control by holders of copyrights and other forms of intellectual property may unduly limit the ability of the public domain to incorporate and embellish creative innovation in the long-term interests of society as a whole, or create practical obstacles to proper utilization. This is reflected in the exceptions to copyright... such as fair dealing...”

\textsuperscript{80} Similar to the owner of a tangible asset who can solely decide on the exploitation of his good, the owner of an IP also has a somewhat monopoly position in respect of his right. This is important because it seeks to provide incentive for technological and literary progress. However, risk or tendency of misuse of this exclusive power must be balanced.
that, various laws and jurisdictions across the world make this right enforcement quite cumbersome and domestic laws do not properly address this new ownership issues in the world-wide networks.\textsuperscript{81} Author however says the death of IPR in cyberspace exaggerated. Because, the law provides both granting rights and preventive function and citizens usually comply with the law even if the risk of sanctions in case of a violation of law is remote. Secondly, the analysis that, IP has lost its intended function can be accommodated by bringing in an improved legal framework by enlarging the scope of IPR or creation of new IPR’s. The author refers to the WCT and WPPT at the international level, the Audio Home Recording Act (AHRA),\textsuperscript{82} No Electronic Theft (NET Act),\textsuperscript{83} Digital Millennium Copyright Act (DMCA) in U.S and the European Council Information Directive have brought in the new laws for IPR protection.

However, IP law has many challenges to this tide of technological progress and becoming difficult in cyberspace to overcome by additional and stricter “difficult-to-enforce” legal rules. The author also refers the direction in which technological measures are moving, viz. “Free Software”\textsuperscript{84} and “Trusted

\textsuperscript{81} The author refers to David Post who distinguished the three eras of publishing.

- “Monastic Manuscript: Copyright is not necessary in favour of authors and publishers because the copying is cumbersome and the information ‘owner’ is interested to increase the public attention.
- Gutenberg Press: Copyright is necessary to authors and publishers as means of protection of exploitation rights.
- Promiscuous Publication: Copyright enforcement, particularly in cyberspace, is doubtful.” See David Post, “New Wine, Old Bottles, The Evanescent Copy” Am. Law., May 1995, 103; “The recognition of a copyright and the practice of paying royalties emerged with the printing press. With the arrival of electronic reproduction, these practices become unworkable. Electronic publishing is analogous not so much to the print shop of the eighteenth century as to word-of-mouth communication, to which copy right was never applied” See Ithiel de Sola Pool, The Freedom of Technologies, Cambridge, Mass. (1983), 214, John Perry Barlowon “on the one hand “whatever the human mind may create can be reproduced and distributed infinitely at no cost” and that on the other hand the “global conveyance of thought no longer requires... factories to accomplish.” John Perry Barlow, A Declaration of Independence of Cyberspace, available at http://www.eff.org/pub/Misc/Publications/John-Perry-Barlow/barlow-0296.declaration. Cited at Rolf H. Weber, Does Intellectual Property Become Unimportant in Cyberspace? IL&IT 2001 9 (171), last visited 11/6/2008;

\textsuperscript{82} This Act provides for installation of a Serial Copyright Management System (SCMS) for certain kinds of digital audio recording devices as the basis for the payment of royalties. However, the Act does not completely prohibit copying of audio recording.

\textsuperscript{83} The Act is designed to increase the penalties for electronically copying any protected information. Hence, the Act moves towards criminalisation of IP infringement. Though it is doubtful of criminalisation, the NET Act, will prevent any open and notorious infringements.

\textsuperscript{84} This concept of free software is to develop software which can be applied by the users in an unrestricted way. This is also known as “open source software. The whole idea of free software is to provide an opportunity to each user to further develop or improve the software, keeping in mind the public benefit. Free software in no where is connected to the price but, is to provide software to run freely for any purpose with the power of modification according to the needs of the user. In
'Privication.'

However, author is apprehensive that, free software will play a more substantial role in future and therefore IP law will lose a part of its application scope. With reference to trusted systems, fair use or personal use doctrine may no longer apply and the law should look to weaken such privication. The author concludes by stating that, it would be more sense to add developed intangible values to other IP than to keep it as "material" to be conserved and confined. If not it may involve violation of human right of free access to knowledge. This protection is a risk as the freedom of information considered as a basic principle in an open society will be substantially jeopardised. And if control is turning to be a collusive behaviour or creation of a monopoly by owners, it will attract antitrust rules and a legal shift from IP law to competition law will foresee that there is a shift from producer oriented approach to user-oriented approach.


The authors examines copyright law been in transformation in tune with technological process. It may be printing press player pianos, perforated rolls of music, introduction of radio and more recent technology, such as photocopiers, VCRs, CD burners, and new file sharing software. These devices increased the public's ability to copy the material without the owner's consent. The article refers to few cases like, University of NSW v Moorhouse,96 Sony-Betamax97 and Napster98 addition, it also allows redistribution of copies and the modified version of the computer program without any cost or fee.

95 This in contrast to free software enables distribution of the information and still having control by way of technical barriers. The technology is referred to as "trusted systems" that tames the information by installation of special gatekeepers, which disallows any unauthorised uses. The technology is enabled to structure the IPR into a calculable framework which gets enforced automatically through the technology. Jonathan Zittrain used the term "privication" for this scheme of trusted systems which allows the owners to control the content of their work and allowing authorised flow of contents but blocking unauthorised use of such contents. See, Cf. Jonathan Zittrain, "What the Publisher can teach the Patient: Intellectual Property and Privacy in an Area of Trusted Privication," 52 Stan. L. Rev. 1201, 1203 (2000)

96 (1975) 133 CLR 1, (a photocopying machine in a library facilitating for copying the work, no notice to exonerating the liability of the university was put. Hence, the court held the University library liable for copyright infringement holding "The fatal weakness in the case for the University is the fact that no adequate notice was placed on the machines for the purpose of informing users that the machines were not to be used in a manner that would constitute an infringement of copyright" p 23); Staniforth Ricketson and Christopher Creswell, The Law of Intellectual Property: Copyright, Designs & Confidential Information 2nd edition revised (Law Book Co: Sydney 2002) cited at Margaret Jackson & Marita Shelly, Black Hats and White Hats: Authorisation of Copyright Infringement in Australia and the United States. International Journal of Law and Information Technology, 2006 14 (28) last visited 11/6/2008
Grokster\textsuperscript{59} Kazaa,\textsuperscript{90} in which owners of copyright have fought legal battle against the manufacturers of technology having the potential to infringe copyright. The authors seek to examine the possible liability of the manufacturers of technology when it is used by purchasers or other users to infringe copyright. The author also studies the impact of laws in Australia and the United States in this regard. They make a comparative reference to the fair use doctrine in both countries. Australia had accepted the fair use defence to extend to cover the digital environment by an amendment.\textsuperscript{91} They hold that, the U.S fair use defence is wider than the Australian Counter part. The U.S law provide for direct copyright infringement liability, contributory liability and vicarious liability which, Australian Copyright Act has not provided but has developed by courts in holding the infringer liable.

Authors concludes by saying that the cases above had two approaches to the issue of authorisation of copyright infringement, the Australian approach concerned with the terms of the invitation, and the American approach concerned with the capacities of the technology and the knowledge of the supplier. The Napster case had applied both approaches in considering the issue of authorisation. The question of control over the actions of users of technology and software has become the crucial issue in these cases. Thus, mere fact of providing the means to infringe is not the concern of the courts; it is the extent of the control over the user’s actions, the terms of the invitation to use something, in fact, which will determine liability for authorisation of copyright infringement.

\textsuperscript{87} Sony Corporation of America v Universal City Studios, Inc, et al (1984) 464 US 417, 78 LEd2d 574, 104 S Ct 774 (holding that, the sale of copying equipment, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes. Indeed, it need merely be capable of substantial non-infringing uses, p 592)

\textsuperscript{88} A & M Records, Inc v Napster, Inc 239 F 3d 1004 (9th Cir 2001), (Napster’s defence of Sony decision was not accepted holding in Sony, it had only constructive knowledge that their customers might use the VCRs to make unauthorised copies of television shows whereas in Napster it was shown had actual knowledge of infringements. However, held that, following the Sony decision, contributory liability could not be proved if a manufacturer was merely supplying the means to accomplish an infringing activity and that the software was capable of commercially significant non infringing use, p 4256)

\textsuperscript{89} Metro-Goldwyn-Mayer Studios, Inc, et al. v Grokster Ltd. et al. (2005) 545 U.S. 1, The Supreme Court of US finding “Grokster’s and Streamcast’s intention in facilitating the unlawful use of the software though such activities as streaming advertising of their software program onto computer screens of users using Napster compatible programs; sending electronic newsletters promoting the software’s ability to provide popular copyrighted music; assisting users (when requested by users to help) in locating and playing copyright material, and marketing to possible advertisers the potential to capture former Napster users.” P 20

\textsuperscript{90} Universal Music Australia Pty Ltd v Sharman License Holdings Ltd (2005) FCA 1242

\textsuperscript{91} Digital Agenda Copyright Amendments, 2001 in S. 1030
The author referring to some substantive provisions of the TRIPS Agreement brings in the logic behind TRIPS having two reasons. The capacity of traditional markets in penetrating their goods into the international market, leading the developed countries to seek greater protection on the comparative advantage over goods and secondly, the knowledge based growth radically altering the nature of competition and disrupted the equilibrium that, had resulted from more traditional comparative advantages. The author states that, the standard of protection has increased in TRIPS in comparison to the Berne Convention, Paris Convention and other Conventions prior to this.\cite{92}

The author specifically examines the TRIPS opting for copyright and trade secret protection of computer programs and not patent protection. This is because the TRIPS provisions do prohibit field-specific exclusions of patentable subject matter. However, suggesting that, domestic patent laws must recognise some program related inventions if they meet other criteria of eligibility, including the non-obviousness standard.\cite{93} The computer programs and electronic information tools have further strained international intellectual property relations. The author examines the difficulty of application to computer programs.\cite{94} Treating computer programs as literary works remains inherently ambiguous because, in actual practice, no state or group of states has simply applied the mature copyright paradigm to computer programs without tailor-made adjustments of considerable significance. The TRIPS provision can thus be read to permit domestic variants on

\cite{92} The author examines the national treatment and most-favored-nation (MFN) provisions, enforcement mechanism and compulsory dispute settlement arrangement. The author discusses the substantive principles of patent, limits of the patentee's exclusive rights, compulsory licences including the nontraditional subject matters like biotechnology and plant varieties and computer programs. He also refers to trademarks, geographical indications of origin, anti-counterfeiting, integrated circuit designs, industrial designs, trade secrets and confidential information.

\cite{93} Thus, TRIPS “leaves both developed and developing countries free to determine the level of patent protection to be afforded program-related inventions within their domestic jurisdictions, but not free to impose their . . . respective decisions on other member countries.” See, e.g., J.H. Reichman, \textit{The TRIPS Component of the GATT's Uruguay Round: Competitive Prospects for Intellectual Property Owners in an Integrated World Market}, 4 Fordham Intell. Prop., Media & Ent. L.J. 171, 173-78, 254-66 (1993)

\cite{94} by illustrating the U.S. courts in limiting copyright protection to wholesale duplication of computer programs lest inadvertently protecting functional components as such, \textit{Gates Rubber Co. v Bando Chem. Indus., Ltd.} 9 F.3d 823 (10th Cir. 1993); \textit{Computer Associates Int'l, Inc v Altai, Inc.} 982 F. 2d 693 (2d Cir. 1992)
eligibility and scope of protection like those adopted at various times in the developed countries. This, in turn, could eventually give rise to a subcategory of "applied literature" parallel to that of applied art. However, states inclined to move in this direction must take pains to respect the fifty-year minimum term and the rental rights that the TRIPS Agreement guarantees. The world’s IP system is not equipped to deal with the real problem of how to protect "incremental innovation bearing know-how on its face" in the twenty-first century technological development. This gap in TRIPS exists even in the domestic IP laws. Hence, until these make-weight solutions are reinforced or displaced at the domestic and international levels by an integrated liability regime capable of protecting embodiments of technical know-how that do not qualify for classical trade secret protection, the expectation of the long-term benefits of the TRIPS will fail to be established.


The author begins with the scope of copyright law in the new technological world. He examines the new technology, by creating an environment of rapid and unpredictable change, establishes legal delay and legal uncertainty that have a profound effect on copyright law. Legal adaptation of copyright law always lags behind technological change. The author says technological change is characterised by a high rate of innovation and with an inherently unpredictable outcome. He also gives illustration of audio cassette, VCR, CD, Digital Audio Tape (DAT), DVD, BBS boards, MP3 format with multimedia systems and legal delay in analysing the same with judicial decisions. He finds advantage in delay

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95 There are two arguments, one supporting a stronger legal regime to protect the works as they fear that the industry will not survive unless intellectual property laws are strengthened to meet the threat of new technologies and the widespread theft that occurs over the Internet. On the other hand arguing that, the new technology presents opportunities for unprecedented cultural exchange, suggesting that existing legal and institutional arrangements reduce economic welfare by strangling technological progress.

96 The author examines the four factors for the legal delay, namely,

- the creation of new legal rules takes time.
- the dynamic and unpredictable nature of technological innovation makes it difficult for lawmakers to predict or anticipate forthcoming inventions.
- the unpredictability of innovation necessitates the deployment of open-ended standards in copyright law.
- the initial ambiguity as to the potential social and economic implications of a novel technology.
because, it may be premature and error cost may be high which, may lead to future benefits. But, on the other hand, waiting increases legal uncertainty and postpones the realisation of any short-term gains. Striking a balance, lawmakers should consider the opportunity costs of immediate investments in new legal rules in addition to the potential benefits of waiting. He says that, technological maturation is a process that runs its own course and legal experimentation in this process might simply delay maturation of the technology and the revelation of its true social and economic impact. The author then refers to the legal uncertainty where, copyright law constantly needs to respond to issues raised by technological advances that are often more erratic and more difficult to predict. Also, many of the legal ambiguities created by novel technologies go to the very heart of the balance of rights in copyright law, such as issues of copyright subject matter, the scope of rights, and the boundaries of the public domain.

The author examines the behaviour of the public in such legal uncertainty and many assume for e.g. that file sharing is not an infringement of copyright. Further, the author refers to a position of arms race between the copyright owners and the user. The owners come out with the Digital Right Management System (DRM) with anti-circumventing devices. However, even this has not succeeded as hacking exists. The author suggests copyright must have rules rather than standards as it exists now. The judicial discretion has to reduce and bright line rules have to be adopted. The handling of technical cases must be from administrative bodies similar to how environmental issues were taken up in 1960. Technocratic

97 See Metro-Goldwyn-Mayer Studios, Inc v Grokster Ltd., 380 F. 3d 1154, 1167 (9th Cir. 2004), Judge Thomas cautioning the fast adaptation of law to newer technologies: “as we have observed, we live in a quicksilver technological environment with courts ill-suited to fix the flow of internet innovation. The introduction of new technology is always disruptive to old markets, and particularly to those copyright owners whose works are sold through well-established distribution mechanisms. Yet, history has shown that time and market forces often provide equilibrium in balancing interests, whether the new technology be a player piano, a copier, a tape recorder, a video recorder, a personal computer, a karaoke machine, or an MP3 player. Thus, it is prudent for courts to exercise caution before restructuring liability theories for the purpose of addressing specific market abuses, despite their apparent present magnitude.”

98 The introduction of file-sharing software, high-level bandwidth access to the Internet, and advanced compression technology vastly expanded individual’s opportunities to exchange music See Stan J. Liebowitz, File Sharing: Creative Destruction or Just Plain Destruction?, 49 J.L. & Econ. 1 (2006) (identifying file sharing as the cause of declining record sales); see also RIAA, For Students Doing Reports, http://www.riaa.com/faq.php (last visited Apr. 15, 2009) (“One credible analysis by the Institute for Policy Innovation concludes that global music piracy causes $12.5 billion of economic losses every year, 71,060 U.S. jobs lost, a loss of $2.7 billion in workers’ earnings, and a loss of $422 million in tax revenues, $291 million in personal income tax and $131 million in lost corporate income and production taxes.”).
regulatory agencies may be better suited for such cases. The body may issue guidelines relating to any technology and its copyright implications. These measures will reduce the legal delay and legal uncertainty.


The author deals with the pre-TRIPS position specifically referring to the Paris Convention and the Berne Convention. He refers briefly to the basic principles of both the Conventions. He discusses ineffectiveness of IP protection under these Conventions as existed prior to TRIPS. He refers two important cases of McDonald and Reebok cases where IP protection was found weak. Thus, there was lack of harmonization, disparate national treatment, and deficient enforcement and dispute resolution provisions. The IP protection and trade under the WTO had tremendous implications globally. The critics of TRIPS states that IP protection (though according to the western countries) is human right but, was not universal. For e.g. the contention is that, TRIPS will take control of agricultural products, like neem seeds, away from local communities and give it to large, often foreign, corporations. The author further examines the utility analysis of IP protection and hold that developing countries feared there would be devastating economic implications by giving wide powers to the owner of IP. Placing IP within the rubric of international trade agreements, nations now may protect IP through trade sanctions against infringing countries. Critics of TRIPs, including many developing countries, have argued that stronger international protection of intellectual property will benefit only those countries which produce the greatest amounts of IP, namely Western developed nations, but supporters of TRIPS maintain that developing countries will ultimately profit from increased IP protection due to incentives it will create for domestic creativity and foreign investment. One of the features of TRIPS is the dispute resolution mechanism, offering additional evidence of the likely effectiveness of the Agreement.\textsuperscript{100} Author

\textsuperscript{99} McDonald's Corp. v Joburgers Drive-Inn Restaurant (Pty), Ltd, 1997 (1) SA 1 (A) (Supreme Court of South Africa, App. Div

\textsuperscript{100} the parties must attempt to resolve their differences through consultations

- The parties may request conciliation and mediation services if consultations fail.
- A panel may be established to hear the dispute, panel members are selected and the panel's responsibilities are established the panel hears the dispute and issues a report to a Dispute
also refers to the dispute between US and India, the first intellectual property case to go through the entire WTO dispute resolution process, demonstrating "the willingness of the WTO to take swift action to enforce TRIPs."\textsuperscript{101} The author concludes that, the TRIPS had benefited the developing countries and IPR are complimentary and in order to develop, nations must recognize and employ IP protection.\textsuperscript{102}


This comment examines the fact that, every attempt to put the computer software to be governed by patent or copyright. Protection was granted by the international treaties like the Berne Convention, Paris Convention without covering computer software. Then, the TRIPS for the first time recognised the computer programs to be treated as literary works and simultaneously providing for new technological inventions under the patent law. The author then refers to the European Union Software Directive, wherein the computer program is protected as literary work under the copyright law. It requires only originality and no further conditions to fulfil the test of protection. It goes on to provide the exclusive rights to the owner of the work and also with exceptions of fair use and back-up copies. The author comments on how the different countries have treated copyright and patent protection, taking the case of France, Germany, UK or US. Then the author comments on the database protection. The database with sufficient creativity stands...

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\textsuperscript{101} WT/DS50/R (Sept. 5, 1997)

\textsuperscript{102} "Technological advances in key sectors have become the sine qua non for all countries if they are to unleash the creativity and entrepreneurship essential to their success in achieving further economic and social progress. And for technology-poor nations, development and transfer of know-how particularly suited to their needs depends on the nature of incentives and protection they are ready to offer both foreign and local owners of intellectual property." See, e.g., Griffith B. Price, Jr., \textit{Protecting Intellectual Property: How New Democracies Stand to Gain}, 3 Economic Reform Today (1995), available in <http://www.cipe.org/e17/ip3_95.html>, cited at Robert J. Gutowski, The Marriage of Intellectual Property and International Trade in the Trips Agreement: Strange Bedfellows or a Match Made in Heaven? Buffalo Law Review 1999, last visited 8/2/2010
protected under copyright law. The database not protected as copyright gets *sui generis* protection under the EU Database Directive.

The author then concludes by stating that there must be *sui generis* law in this regard. The author suggests it can be similar to the database law which has come into existence in Europe. Under this new law, protection of "new" and "inventive step" remains and industrial application shall not be necessary to grant such right. There must be lesser protection as to time of two to five years because the technology becomes obsolete. Then, make provision for compulsory licencing. Provide for exception of reverse engineering and derivative work for interoperability.


The author begins with an illustration of how an intermediary could escape the clutches of law in shifting its business to a country with lenient laws relating to secondary liability. There is not much of an issue regarding direct copyright infringement but, lacks in its ability to bring legal action against secondary copyright infringers. Similarly, technological solutions and national solutions have failed to curb rampant file-sharing. For copyright law to continue to be effective and for copyright infringement through file-sharing to be stopped, secondary liability must be implemented on an international level in the form of a multilateral treaty. If secondary copyright infringement is not adequately addressed, there are broader potential consequences, including the death of effective copyright protection. The author takes the example of Bit Torrent technology which facilitates a specific form of file-sharing.

The author further examines the Berne

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103 "It involves a few important pieces: a music/movie/software file, the BitTorrent software client, "seeders" and "leechers" (combined, referred to as "peers"), torrent files, and trackers. A person seeking a song, for instance, must have a BitTorrent software client installed on his computer and then must search for a torrent file on a website. The user downloads the torrent file and opens it using the BitTorrent client. The client then uses the tracker to locate "seeders," which have either the entire song file or pieces of the song file. The client proceeds to download pieces of the song file from the "seeders" until the entire song is downloaded. The client also simultaneously uploads pieces of the file already downloaded to other "peers" seeking that file. In this way, the technology is extremely efficient because there is a large swarm of peers simultaneously transmitting pieces of the file, instead of one central server sending the entire file to each individual downloader." Scott Burger, *Eradication of a Secondary Infringer's Safe Havens: The Need for a*
Convention, TRIPS Agreement and the WCT though, provides for protection of copyright, do not deal with secondary liability issues and thus the website programmers still escape the liability. These Treaties do little to provide a cause of action against torrent distribution websites. This is because torrent distribution websites do not traffic any works of copyright directly. Author also takes examples from Sweden and Spain where the laws in those countries are lenient enough not to hold the website programmers liable for secondary infringement. The author thus suggests for a need of international harmonization and minimum standards for substantive secondary liability (specifically contributory liability) law.


The author examines the changes taking place due to the digital communication, where the owners of copyright and certain intermediaries are losing control and websites and P2P networking allowing public to have access to copyright works. The websites provide a forum for copyright infringement and if it is done with an intentional profit motive, such intermediaries should be held liable for secondary infringement. This article mentions the evolution of the secondary liability for copyright infringement, and the possible emergence of an obligation of good faith efforts to avoid infringement. The author examines the vicarious and contributory liability. Referring to Sony\textsuperscript{104} (Betamax case), Napster\textsuperscript{105} and Grokster\textsuperscript{106} cases the author elaborately refers to the implication of law on the intermediaries. The Grokster case distinguishing Sony case had held that, Sony standard does not even come into play when the defendant is “actively inducing” copyright infringement. The reason of “inducement” and “substantial non infringing use” becomes legal conclusions and hence, the author states “separating the Sony (good technology) sheep from the Grokster (evil entrepreneur) goats.” The author refers to the recent announcements of inter-industry “Principles for User Generated Content Services” and of complementary “Fair Use Principles for

\textsuperscript{104}Sony Corp. of Am. v Universal City Studios, 464 U.S. 417 (1984)
\textsuperscript{105}A&M Records, Inc. v Napster, Inc. 239 F.3d 1004 (9th Cir. 2001)
\textsuperscript{106}MGM Studios, Inc. v Grokster, Ltd., 545 U.S. 913 (2005)
User-Generated Video Content” and suggest that proactive avoidance measures may become a matter of “best practice.” The author then examines the legal scenario of safe harbors provided for the ISPs and considering whether the statute insulates entrepreneurs who would have been held derivatively liable under common law norms. Lastly, a comparative analysis of cases from French decision with reference to ECD are referred holding the operators of “user-generated content” and “social networking” liable for their customers’ unauthorised posting of copyright works.


The author examines the fair use doctrine in the digital domain and why analog fair use rubric need not and should not be applied to the digital content distribution arena. After a brief introduction of the copyright law, including the rights granted, remedies for infringement and analyses the fair use doctrine. The author then examines the four situations where fair use plays an important role, like time shifting, space shifting, educational use and critical use. The first sale doctrine creates an exception to the copyright holder's exclusive right of distribution. First sale doctrine works hand-in-hand with fair use right. He goes on to examine the applicability of fair use in the said circumstances to the digital content and concludes that the same rules of fair use will not suit.107 The author finally concludes by stating that in the analog media, the fair use defence arose out of necessity and hence, remains as an affirmative defence without there being an independent cause of action and user cannot sue the copyright owner for fair use.

107 The author says that fair use doctrine shall not be help, if the work is a digital content. In case of time shifting, the pay-per-view are encoded as “copy never” because of the DRM being applied. The users can use the content at different times now depends completely on the conditions of the use. For e.g. permitted to watch only once or as many times within a fixed period. Thus, making it imperative that, now it is the copyright owner who decides the usage of his work. Similarly, where user likes to space shift their content from one device to another over a Wi-Fi connection or the Internet under a DRM regime are fully governed by the terms and conditions of the licence. In case of critical uses there may not be much change under DRM, however, it may not be easy to have a copy of content to watch or listen again and again. For e.g in an eBook, a setting does not allow to cut and paste the content. As to the first sale doctrine the author states “Digital technologies offer an unprecedented means for perfecting the pricing of creative works.” According to the author, the user will only purchase a licence to use and not a copy of the content. Though, copyright owners could preserve the first sale doctrine by providing for transfer of licence, the owner may get a greater benefit by taking control of the content.
Whereas, fair use in the digital world, stands as an artificially created set of rights. A licencee cannot sue the copyright owner for failing to permit time-shifting but only assert a fair use, if there was copying and suit for infringement. However, DRM does not allow a licencee to copy the content outside the licence and either user does not need nor has ability to invoke fair use. Thus, digital content copy and access control methods eliminate the need for a fair use doctrine.


The author provides insight in the application, enforceability and logic of anti-circumvention provisions under international copyright law. There must be enforcement of digital copyrights internationally through anti-circumvention measures prohibiting international trafficking in circumvention technologies. The need did not arise at the time of TRIPS to put in this measure. But later the WCT and the ECD Copyright Directive and the DMCA have provided piece meal legislation and there is no consensus at the international level. The author suggests that there must be an amendment to the TRIPS providing for international copyright law in this regard. The enforcement capacity under TRIPS makes it convenient as neither Berne Convention nor WCT provide any such provision.


The author begins with examining the traditional copyright work, the rights granted and the protection it affords. He then explains the fair use doctrine and the courts role in examining the four factors which determines such fair use. The author referring to few cases writes that, courts have taken these factors as base and there may be external factors taken into account while considering the case. The same becomes blurred or difficult to apply in the case of digital domain and now revolves around the Digital Rights Management (DRM). The DRM has unsettled these expectations and the scope of fair use becomes dim. In the beginning the encryption system was adopted which became vulnerable and the after the “Internet Treaties” providing for the DRM, the US enacted the DMCA. The DRM makes the infringement impractical or costly. The author gives the example of Sony in using its DRM for CD but though failed had harmed the
The author gives few examples where the DRM provided permissive uses which become a huge success. However, if the DRM breaks, the copyright material can be circulated and thus was considered DRM as a futile exercise. The author examines the fair use and the DRM under the DMCA. The prohibition provides both DRM circumvention and the creation of circumvention devices and thus, potentially erodes the protections allowing fair use of copyright works. A digital content protected by DRM and none of the exceptions apply, a circumvention of DRM would violate DMCA even though the use of the accessed content was protected under the fair use doctrine.\footnote{Timothy K. Armstrong, \textit{Digital Rights Management and the Process of Fair Use}, Harvard Journal of Law and Technology, 2006; last visited 10/4/2010} Further, the author analyses the difficulty in adopting the fair use doctrine and the factors in considering it, in a computer program. Concludes by stating that the technological measures always one sided protecting the owners of copyright and no scope for the users. The balancing of both owner’s economic interest and the public interest shall be protected. When such balancing happens will it worth to have its name “Digital Rights Management.”


The author states that historically internet is the hotbed for copyright infringement. Before the DMCA, ISP could be made liable for direct and contributory infringement. The copyright owners also were willing and convenient to proceed against the ISP’s. The DMCA provides for “notice and take down” and limits the liability of an ISP. The statute provides intermediaries with safe harbors from monetary copyright liability for essential internet functions such as routing, system caching, providing search tools, and hosting user content. Then the ISP shall take down the infringing material which the author calls the “safety dance” where each party moves to avoid stepping on the other’s toes. The author states it’s unfortunate that the DMCA fosters overreaching claims that ignore user’s fair use. The take down notices have been unreasonably issued by copyright owners without looking into the fair use or other non-infringing use. Though there is a provision for misrepresentation and consequent damages for such notice, rarely the parties have come to court. Similarly, there is a counter notice provision to put the
material back if no infringement is involved. The author critically analyses the law that, it provides copyright owners an upper hand against the user/subscribers. The user may file a case for declaration of non-infringing material or because of financial constraints may not at all sue, this actually curtail the freedom of user his speech. Thus, the author suggest that before a notice of take-down, shall verify the fair use and non-infringing material aspects.


This comment examines the role of technology in copyright context, a conflict between two groups, the content owners having right to profit in creation of the work and the individual users of internet and the technology companies providing infrastructure and online services with the intention of providing fast, efficient and convenient content delivery. The content today can be easily copied and almost every act involves copying including an innocent copying. There are two types of service some deliver content provided directly from the content owners and secondly, where others leave the content to the users, who provide the content on the service, referred to as “User Generated Content” (UGC). This new form can be found to be providing a chance of misuse, for e.g. YouTube. In a case where Viacom filed an infringement under the DMCA against You Tube (owners are Google). The question for consideration is that, can YouTube claim lack of “actual knowledge” of infringing content located on neither its system nor the “red flag” test. The second issue is the YouTube’s actions in response to copyright content, the removal of allegedly infringing videos-adequate to satisfy not merely the letter of the law, but the spirit of the DMCA as well.

The comment discusses the nuances of the DMCA safe harbor provisions and the pattern of deference to online service providers shown by the courts interpreting the provisions development of U.S. copyright law and its current substantive provisions. It also examines the interests of the service providers, the content owners, and the everyday users, and attempt to evaluate how the DMCA fits into the mix. Further, it will give an in-depth description of the protections under the Copyright Act and the safe harbor provisions of the DMCA. It also discusses the functions and purposes of YouTube, as well as outlines the potential
problems inherent in its user. Furthermore, analyses the two key issues, i.e. knowledge of infringement and "expeditious" removal of infringing material. And finally, it discusses the view points from both social and business angle. The solution may be for the content owners to create new business models that can capitalise on the development and popularity of the Internet, satisfying the desires of both users and content owners.


The author begins with stating the speed in which the internet has grown but which the law cannot move this fast. Today, research can be done sitting at home. However, the other side of the coin is that, it has led to jurisdictional issues and trade secret disputes to a large extent. One of the most challenging tasks for court and law maker is the copyright infringement. Pirating of movies, introduction of MPEG\(^{109}\) has been rampant with copyright owners losing huge revenue. Obviously, the liability of an ISP comes into picture, rather than a pirate who may not have a deep pocket. The author examines the existence of copyright in works, essentials for such copyright and computer programs treated as literary works. Copying involves infringement of the exclusive rights of an author. The infringement may be direct, vicarious or contributory in nature. The author states that proving copyright infringement over internet is not a difficult task. It can be identified easily through the technology involved. However, ISP’s have been made liable and the law is not too favouring for any act of infringement occurring over internet. The possibility of an ISP having knowledge of infringing copies is not always possible. Hence the Online Copyright Infringement Liability Act (OCILA) DMCA provides the remedy to an ISP in limiting the liability. The DMCA limits the liability of a service provider who qualifies for such exemption. Provision makes ISP to discontinue the services to the subscriber and steps to be taken for repeat infringers. Limitation of liability comes into play when an ISP is engaged in

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"Transitory Digital Network Communications," engages in "system caching," stores information on its system or network at the direction of its user's and is information location tools. The author critically analyses few cases relating to an ISP's liability. The courts holding for a direct infringement there must be some direct action or participation of an ISP in holding them liable. The author concludes by holding that DMCA is lengthy, complex and too formalistic.


The author examines the Amazon Kindle book online, stating that the End User Licence Agreement (EULA) though in promotion speak of sale but in disguise are only licencing. The books as we know are tangible goods and can be further sold, loaned or to do anything relating to it. But, e-book according to Amazon will not have such characteristics. They are restrictive licence agreements and similar to downloaded software. The author says that the promotions of this offer customers to “buy” but it actually only licences which he says it is buried under the “browse wrap” agreement. The author explains how this e-book is made available online. The author distinguishes the “transaction in goods” and “transaction in information” referring to the Universal Commercial Code. Transactions that involve information come within the purview of IPR, which governs rights in information and transfer of rights, including assignments of copyrights. However, e-book purchases and similar transactions in information centric goods rarely involve outright transfers of IPR, such as publication rights, instead they only grants of limited rights in the form of licences.

The author briefly refers to copyright law and examines the “First Sale Doctrine,” where resale of the first copy is permitted. However, the difficulty of applying the first sale principles to the digital content has been of much debate. Then the author examines the licencing of electronic content and the EULA. The author specifies that this kind of licencing was with a purpose to circumvent the first sale doctrine and prevent rental. The author then moves on to DMCA and refers to the anti-circumventing provision. It is said that, the protection for such information actually depends on the characteristics of the transaction in
The author further finds that the copyright owners can hold control over their work with licencing and thus circumvent the first sale doctrine. The author elaborately deals with the decisions by the courts as to how the software has been treated with reference to the first sale doctrine and the effect in terms of licencing. The author concludes by suggesting that e-books should be considered as complete sale or some ownership style rights have to be provided to the buyers, by options of transfer and then first sale doctrine coming into play.


The authors states that the risk of an Internet Service Provider/Online Service Provider (ISP/OSP) is high and the DMCA was enacted so as to provide safe harbour protection to these ISP’s. The DMCA provides for four safe harbour protections to an ISP, under which, they cannot be held liable for monetary damages for direct, contributory, and vicarious infringement and with some restrictions on the injunctive relief.

The authors examine the types of safe harbour available to an ISP:

1. ISP’s storing of material on its system at the request of a user (such as material posted on a message board, in a chat room, or on a user’s personal webpage).

The classification for transactions depends on the amount and importance of the information contained therein, which can be divided into five:

- a) Transactions that involve goods which have no information content whatsoever; for example, a transfer of an unmarked piece of wood.
- b) Transactions where information is present but unimportant, or plays little role in the deal; for instance, the banana with its label, or a toaster with embedded software controlling its functions.
- c) Transactions where information and tangible goods are present, symbiotic, and equally important: the examples given are a necktie (tangible, but clearly valued for aesthetic reasons, such as its printed, copyright-protected design) and a cellular telephone (which contains software essential to the phone’s function, yet is of little use when separated from the handset).
- d) Transactions where information is the predominant commodity, though tangible goods are transferred as well; this category includes music CDs as well as computer software and downloaded MP3 files.
- e) Pure information transactions with no physical component is also rare; lectures and live performances are given as examples.

Classes one and five are “pure” transactions, involving goods or information only, whereas classes two, three and four are “mixed” transactions. The author suggests that books falls under the fourth class of transaction disagreeing with Agin & Kumis’s principles. Similarly, e-book transactions may at first blush look like a class five, information-only exchange. But in fact they too are properly classed along with traditional books, music CDs, and downloadable software as class four transactions: the information is the focus of the transaction, but a tangible embodiment nonetheless exists.
2. Covers circumstances where an ISP refers users to material at other online locations, for example, by means of a search engine or a hyperlink.

3. Applies to an ISP that is temporarily storing on its servers (or "caching") online materials from other websites.

4. Covers cases where an ISP provides conduit service to users, such as delivering e-mail between parties, without content.

The authors then examine the steps to be taken by the owner of copyright and the ISP's, the mode of issuing notice and counter notice. The authors also examine the various types of liability including direct, contributory and vicarious liability that an ISP will incur. In case of direct and vicarious liability, the mental element (knowledge) will not be taken into consideration but, in case of a contributory liability, the participation of an ISP in the infringing activity is substantially taken by the courts in establishing liability. The authors conclude that, there are arguments for and against the DMCA. The DMCA provides a compromise between copyright holders and ISP's. This will also promote the use of internet and e-commerce by limiting the liability of an ISP. On the other hand, it is argued that the copyright owners have been burdened with the cost of monitoring the website and also give undue advantage to ISP's with non-ISP. However, the DMCA has come into force completely and will be for some time.


The author discusses the recognition of computer program as literary work under U.K. Copyright law and adopting the European Community Software Directive. The principles governing the traditional literary works are applied to computer programs. Any literal copying of computer code which is substantial will be entailing action for infringement. However, the difficulty lies when the non-literal copying of a computer program takes place. This includes its "look and feel", its structure, sequence and organisation, and its input and output routines. Author disagrees to accept that, if the idea/expression dichotomy is applied according to Software Directive strictly, may amount to infringement. The author further discusses cases developed in UK. The non-literal computer programs will be protected as it involves innovative utilitarian works containing expressions. But,

111 Directive 91/250 ("Software Directive")
non-protectable technical expressions shall not be protected and will remain in the public domain to freely create their own works. The author referring to the judgments states that if a substantial part of the programmer’s skill, labour and judgment has gone into them, the algorithms or sequences behind a computer program (as well as its architecture) are potentially protected by copyright in addition to the copyright in the source code and object code. This is by analogy to literary copyright which will protect the plot of a novel or a play even where the precise words used are not copied. And to the extent that any interfaces and any logic, algorithms and programming languages comprise ideas and principles they are not protected. It is not the place of copyright law to protect the functionality produced by running code where the code has itself not been copied.

The author concludes that, law has to set boundaries between what is copyright infringement and what is not, i.e. go too far one way and innovation is stifled because the public domain of ideas is encroached upon; go too far the other way and copyright creators may be disinclined to create copyright works if the law does not adequately protect their works. The role of judges will be to balance these two elements.


The author begins with the controversy over protection of computer software i.e. the existing copyright law is sufficient or should there be a new law because of its distinctive characteristics. The author states that, historically Berne Convention has adapted to the technological changes and similarly the existing copyright law can protect the computer software. Suggestion is that the municipal copyright law should become strong and supported by strengthening the international conventions. Software program\textsuperscript{112} can be divided into two types of

\textsuperscript{112} The term "computer software" is defined as "detailed sequences of instructions that, when executed by a computer, solve a problem or bring about a desired result." Note, Copyright Protection of Computer Program Object Code, 96 Harvard L. Rev. 1723, 1724 (1983) cited at Marla R. Bloch, The Expansion of the Berne Convention and the Universal Copyright Convention to Protect Computer Software and Future Intellectual Property, Brooklyn Journal of International Law, 1985, last visited 18/10/2010
The classification of these programs into one of these categories will determine the method of legal protection. As to patent protection is concerned the U.S where patent protection is granted to computer program has different modalities to be fulfilled. But even there the primary protection of computer software is protected under copyright law. The author goes on to explain under what circumstances patent can be granted to computer software and its effect in international scenario. However, cross-border acceptance of patent protection is unlikely. As to trade secret protection, the author states that it is not advantageous in the larger market but would be helpful only in limited distribution through agreements.

Many domestic copyright laws now protect computer software as original works of authorship as software programs are treated as expression of programmer’s original ideas put in a particular form. Author explains how

113 A systems program may take one of three forms: operating systems programs which control and allocate the computer resources of main memory, input and output peripheral devices, and the execution of programs; assembler programs which translate symbolic (human intelligible) programs into machine language programs; and compiler programs which translate higher level source code programs into machine language programs. Stout, supra at 229 (citing Prasinos, Legal Protection of Software via Copyright, 8 A.P.I.A. Q.J. 252, 255 (1980)); Systems programs that make “statements in machine language are referred to as written in object code.” Apple, 714 F.2d at 1243; Object code consists normally of a sequence of recorded binary bits (zeros and ones) that a computer can execute directly. Unlike source code programs which have been granted protection under copyright law, much confusion and debate has surrounded the protection of object code programs. See, e.g., Note, supra note 13. Recent decisions in the United States, however, have granted copyright protection to programs written in object code. See Apple, 714 F.2d at 1251 (“There is . . . no reason to afford any less copyright protection to the instructions in an operating system program than to the instructions in an application program.”).

114 Application programs are designed to perform specific tasks for computer users. Examples of such tasks include word processing, checkbook balancing, inventory control, and bookkeeping. Apple, 714 F.2d at 1243. Unlike systems programs, application programs are written in higher-level computer languages (such as BASIC, COBOL, FORTRAN, or PASCAL) that employ English-like words and syntax and therefore are intelligible to human beings. Programs written in higher-level languages are referred to as “source code.” Note, supra note 13, at 1725. Source code programs are accepted as proper subject matter for copyright protection. Note, supra note 16, at 331; Note, supra note 13, at 1724. See also Apple, 714 F.2d at 1240-41 (a source code program is a “literary work” within the meaning of the Copyright Act of 1976 and is protected from unauthorized copying); Stern Electronics, Inc. v. Kaufman, 669 F.2d 852, 855 n.3 (2d Cir. 1982) (noting that “written computer programs are copyrightable as literary works.”)

115 West Germany- See, e.g., Visicorp v Bases Software, GungH, Regional Court of Munich, Dec. 21, 1982; Sud-Westdeutschen Inkasso KB v Bappert & Burkner Computer, GmbH, Higher Regional Court of Karlsruhe, Feb. 9, 1983). Japanese Copyright Law- K.K. Taito v Makato Electronic Indus., 1081 Hanrei Jiho (Judicial Review) 125 (Mar. 30, 1983) held that the object code version of the Space Invaders program was entitled to copyright protection and that the object code version of the same program was a reproduction of the source code. France- held computer programs to be intellectual creations and that the act of the creator in selecting a certain form of expression represents the manifestation of his originality, See Apple Computer Inc. v Segemex S.A.R.L., Civil
computer software can be protected under copyright law; this may be either through legislation or by interpretation of existing law by courts. The article examines how the development took its turn in international scenario through the WIPO. It also specifies what the future course of action may be relating to protection of computer software under copyright law. The author suggests that instead of going for a treaty, there should be a protocol to the Berne Convention and Universal Copyright Convention. The advantage to developing countries in adapting to this new change is feasible. Article also examines the compulsory licencing and its advantages and disadvantages.


The article begins by stating that, it is the programmers who want protection of their intellectual creation. The computer program have become unique because of the speed and in which it can be copied and manipulated and also inexpensively done without taking the "lead time" (non-existent) for creation of such work. The author says though the statutes have started protecting under copyright law, it should not be protected in the manner of traditional works. He suggests that the traditional works were involving aesthetic nature but, computer programs are made to work for specific functions. In order to protect computer programs, the courts have adopted various tests in the context of idea/expression dichotomy. Author examines the protection of computer programs in U.S. and U.K. The copyright protection of literal and non-literal elements of a computer program has been discussed with the decided cases.

The author says that the differential treatment of protection afforded to computer program in U.S and U.K has created an obstacle to bring consensus to treaties like the Berne Convention. The article further discusses in the context of "reverse engineering" the computer program as a fair use. It is further stated there is a minor shift in U.S granting patent protection to computer programs. This shift had the effect on the European Union. However, it is now accepted that computer
program gets protected under copyright law. Copyright in computer programs should be limited to protecting the industry from pirates who would digitally copy programs to market commercially or use privately. The industry is a technology, not an art. Consequently, it is not copyright's role to protect its ideas and thereby promote development. The author concludes by stating that copyright law should adopt a restrictive approach to the protection of ideas, the philosophy adopted and reflected in the U.S Case law.


The major issue concerning computer program is the non-literal copying, such work can be reproduced without actually copying the computer program. They examine both the literal (source and object code) and non-literal elements of computer program. They evaluate the broad parameters in protection the computer program and the defences that can be taken, like the idea/expression dichotomy, merger doctrine and scenes a faire. The distinction between idea/expression is most difficult and can never be settled and this is more in cases concerning computer programs, which are both functional and expressive and where ideas are closely intermingled with the expression thereof. They make a comparative analysis of treatment of literal and non-literal elements of computer program in U.S., U.K, Australia and South Africa. The authors conclude that the Altai test of "Abstraction-Filtration-comparison" has been accepted as a good test to determine the protection for a computer program.


The author makes a study of U.S copyright law in comparison of some Commonwealth Countries relating to computer software. He starts with explaining the purpose of the copyright law including the reason for such protection and balancing public interest as a whole. The protection is given to any "original work" which has been independently created. The US courts have held that, mere "Sweat of the brow" does not afford protection of copyright. Similarly, discovery of facts are not protectable works under copyright law. In Commonwealth countries, the skill, labour, capital and judgment put into a work will be considered including a
work of compilations. Then the author refers to idea/expression dichotomy under both jurisdictions holding that mere ideas are not protected and there must be expressions of thought in order for a work to be protected. However, author states that determining the distinction of idea and expression is difficult task. The author further refers to the “merger doctrine” adopted by the courts, holding that if idea and expression of an author cannot be distinguished or it can be expressed only one way or limited ways, then the work will not entail protection unless it is an identical copying. The reason being that copyright law does not intend to create monopoly which, the patent law does. However, in IBCOS case in UK it was held that, if the idea in a work has been detailed will have a right and if taken will infringe the copyright, thus not following the US and other Commonwealth countries. Then he examines the doctrine of “Scenes a Faire”, where some elements of computer program dictated by certain external factor\textsuperscript{116} are excluded to be copyrighted. However, the author says that, the commonwealth countries may no follow the same as holding that would actually curtail the interpretation while considering the “substantial similarity” element in order to identify any copying. Finally the author discusses the methodology of determining an infringement. The three step test adopted in Altai case is discussed. However, the author is of the opinion that, this methodology addresses the analysis required to assess substantial similarity as a matter of law. But, it does not specifically address the separate and equally important analysis required for determining whether copying is the reason for any similarities between the two works at issue in the action. Here also there are no similarities in approach by US and Commonwealth countries, but the author says the end result of holding infringement for piracy will not be affected in close cases.


In this article, the author says that the copyright in the digital scenario was

\textsuperscript{116} such as technical, conceptual, or efficiency constraints, hardware standards and mechanical specifications of the computer on which a particular program is intended to run, software standards and compatibility requirements of other programs or hardware with which the program is designed to operate, computer manufacturers design standards, the speed and power of the computer with which software is used, or environmental and ergonomic factors which limit the range of possible expression
more controversial and computer program later was accepted as literary work. The
TRIPS Agreement or the European Economic Council Directive also accepted
recognizing computer program as literary work under copyright law. The author
however, articulates that there are problems in computer program under copyright
law. Such protection has shifted the boundaries of protection to industrial property
and which was not envisaged under the Berne Convention.

The author points out three negative impact of such protection.
1. The problem for cultural archivist preventing archiving or earliest programs
   which have become obsolete.
2. Fair use has become meaningless in the digital scenario as it is impossible
to use a computer program without making a copying.
3. The judges have gone into a field in which they are not experts and hence
   interpretations have been based on recipe book analogies

The author argues there should not be any copyright for object code
(comparing with preparing a rabbit pie) as it involves the functional features of a
computer program. The author also question the full term of copyright to computer
program because it has a short commercial life. The author takes the view that the
object code of a computer program should be protected either by patent law or by
way of a sui generis law similar to Layout Design Statute. However, does not
support for patent protection as it does not provide fair use.

1.2 Plan of the Research:
The researcher has divided the study into eight chapters in an attempt to understand
the technological changes (digital era) and its implication on copyright law with
specific reference to computer software/program. The Chapters are devoted to
reach certain conclusions and suggestion with the following plan:

In Chapter I, the researcher takes an overview of the copyright law and the
change and affect of technology and its relevance. The chapter identifies reasons
for copyright protection to computer software/program. The Chapter also presents
the objective of this research, limitation of the study, hypothesis of the research,
methodology adopted, scope of research and identification of issues and challenges
in the digital era. The chapter finally look into the literature review, for which the
researcher owes gratitude without which this research would not have been
possible.
In Chapter II, the researcher intends to study the general principles of copyright law, like the meaning of copyright, nature of copyright, effect of registration. Further, the essential requirement of copyright like the originality, idea/expression dichotomy and fixation of the work in the digital media are dealt with specific reference to computer program.

In Chapter III, the study attempts to know the basic understanding and meaning computer software/program with an overview of technological development. The researcher makes the distinction between the “Analog” and “Digital” Media. The study considers the growth, definition and nature of computer and computer software and its protection under copyright law. The researcher makes a study of copyright protection of computer software under the U.S and the U.K law in order to understand the possible application to Indian scenario.

Chapter IV is referring to the nature and various exclusive rights granted to the author of a creative work. The reproduction, distribution, adaptation, communication and performance to the public including broadcasting rights, rental and display rights granted under the copyright law in the U.S and the U.K and its adaptability to India are examined. The study also captures the “First Sale Doctrine” and “On Demand Availability rights” and its applicability to computer software/program.

In Chapter V, the researcher delves upon the concept of infringement including the primary, contributory and vicarious infringement and its implication and applicability in digital era. The study reveals the necessary elements for considering an infringement action, like substantial, subconscious copying etc, and the applicability to computer program. The researcher further studies the role and liability of ISPs in the internet era with specific reference to DMCA and its adaptability to India. The researcher also refers to fair use doctrine and its applicability in the digital environment. Furthermore, the study reveals the technological measures, which an author can adopt to prevent copying and exceptions referred as the Digital Right Management.
In Chapter VI the research is considering the copyright protection of creative works in the international scenario. The Berne Convention, UCC, TRIPS, WCT and WPPT are specifically referred to understand the position of copyright protection to computer software/program. The WCT and WPPT were agreed upon to suit the digital media.

In Chapter VII, the researcher provides and overview of copyright protection under the Copyright Act, 1957 with specific reference to India. The study identifies data available to show the need for copyright protection of computer software. The study refers to the nature of rights like, the reproduction, distribution, adaptation, communication and performance to the public including broadcasting rights, rental and display rights under Indian law. The researcher also specifically refers to “moral rights” and “performers rights.” The researcher refers to elements of infringement, fair use and remedies under the copyright Act. The author refers to the jurisdictional issues in the digital era and its adaptability in India.

Finally, in Chapter VII the researcher after considering all the above issues and challenges, identifies the possible adaptability to suit the Indian scenario and provides his conclusions and suggestions.

1.13 Contribution from the researcher:

The copyright in the digital media is a grey area in the present technological environment. The laws are yet to take a proper shape. The law in India in this regard is still in its infancy. Though the law relating to traditional copyright is in consonance with the international law and treaties, the present situation demands laws to be enacted or amended so that India has to go along with the technological development taking place in a rapid pace. The Copyright Amendment Bill 2010 seeks to address these issues. However, the way in which the technological growth is taking place the existing laws may not be a substitute or sufficient to the ever growing copyright law. The liability of ISP is also an issue which has to be addressed at present. The law in this regard needs a re-look of the existing law. The study of copyright in digital media may help at this stage in...
doing further research in this ever growing area. The researcher also intends to bring in vital suggestions in this present scenario.

The greater responsibility lies with the law makers in balancing copyright owners and the public benefit. The fairness, in which the legislation will provide, is a question which has to be answered. However, it should not be based on the analysis of whether the owners should gain or the society should gain. It may be truly said that, it should enable the society to be made available any creative works of the owners and reciprocal benefit may be provided to the owners in the form of royalties.\textsuperscript{117} The existing law of copyright hence is not absolutely providing for all the remedies. The traditional method of assessing and affording protection to copyright work may not be feasible in the present context of technological development. The diverse nature of creative works, requiring different degree of expression e.g. a literary work to musical work, sound recording and cinematograph work, photograph and architectural work, which is completely different from works of technical nature such a computer programme or software. Hence the legislation as well as judiciary shall be cautious in bringing in the law and interpreting the law respectively. The researcher will study as to how this balancing can be done and provide suggestion as to the changing digital world.

Thus, digital technology has enabled new modes of expression (including computer programming, synthesized music, video games, multi-media works), dramatically reducing the costs for artists and authors to compose new works (for example, recording artists today can record and mix professional quality recordings using relatively inexpensive recording equipment and software), and opened up vast networks for the distribution of expressive works. The 1990s redefinition of use was by introduction of World Wide Web, which revolutionised the content of work to flow. In the mean time the developments in storage capacity of a computer, speed of processor, data compression, electronic products like MP3 players and digital video recorders, network software including peer-to-peer architectures and the bandwidth have transformed the nature of content distribution. The most of this development has profusely influence the sound recording, film and television industries.

\textsuperscript{117} A Congressional Budget Office paper, Copyright in the Digital Media, The Congress of the United States, 2004
The law makers have to take care of the future development in this area of law which is still in its infancy. Further, technological development may have a far reaching impact on copyright and related rights in the digital media. The copies through internet get transferred within minutes throughout the world resulting in the effect on the traditional sale of copies of any copyright works. The legal system should quickly respond to this new development applying the existing law and adapting to the change in the legal system. The balancing acts, of providing reasonable exceptions with limitations are necessary keeping in view the public interest.

There are various questions in the present context of copyright law which have to be answered as early as possible. The commercial or business world with this fast growing speed needs the answers very quickly. The legislature and the judiciary’s role in this is a major concern. The development of legal system in India relating to digital media is at a very nascent stage. The researcher makes an attempt to answer these issues and challenges, which may lead to pursue further research in this vast growing area.