"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 everyone, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole 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, when she made them, like fire, expansible over all space, without lessening their density at any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property."

Thomas Jefferson

(Third President of US, 1801-1809)

5.1 Introduction

Thomas Jefferson view of invention or creation cannot be a subject matter of property was rarely acknowledged in the civilized world and US Constitution itself made a provision to empower the inventors and creators by conferring exclusive rights on them. Intellectual Property (IP) can be loosely defined as creations of human mind. The impetus for the development of intellectual property law, at its inception, was to ensure that sufficient incentives exist to lead to innovation and the creation of new and original works and products. The physical world has been relatively successful at erecting barriers to prevent acts that would limit this

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664 Art.1 Sec.8 of US Constitution states that “Congress has power ………..To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;”

innovation, in the form of copyright, trademark and patent regulations. This enabled Intellectual Property Rights (IPR) owners to use or disclose their creations without fear of loss of control over their use, thus helping their dissemination. It is generally assumed that IPR help encourage creative and inventive activity and make for orderly marketing of proprietary goods and services. But with the advent of internet, copying has become so simple and easy that rampant violation of intellectual property is taking place affecting the rights of IPR owners.

When intellectual property laws were first drafted, computer technology did not exist. At that time, it was not foreseen that it would be necessary to protect information stored by digital means, nor was it foreseen that information would become such a sought after commodity. The Internet, Software, Business methods for e-commerce applications & electronic databases are relatively new territories where innovators have created an environment in which information exists in plentiful quantities and available to many people.

Human rights and intellectual property, two bodies of law that were once strangers, are now becoming increasingly intimate bedfellows. For decades the two subjects developed in virtual isolation from each other. But in the last few years, an explosion of international standard setting activities that beginning to map previously uncharted intersections between intellectual property law on the one hand and human rights law on the other.

Human rights concerns have been asserted in a number of contexts as counterweights to the expansion of intellectual property rights. Human rights issues are relevant in a range of issues that intersect with intellectual property protection, including: freedom of expression; public health; education and literacy; privacy;

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666 Watal Jayashree, Intellectual Property Rights in the WTO and Developing Countries, Oxford University Press, New Delhi, 2001 at p 1
agriculture; technology transfer; rights of indigenous peoples. At the same time, creators of intellectual property are asserting human rights bases for the protection and expansion of intellectual property rights.\textsuperscript{669}

International Covenant on Economic, Social and Cultural Rights (ICESCR) and UDHR\textsuperscript{670} guarantees everyone the right to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.\textsuperscript{671} With the advent of Information Communication Technologies (ICTs), the relationship between human rights and intellectual property assumes greater significance as the traditional balance between intellectual property holders and users is slightly imbalanced in favour of users.

What distinguishes digital media\textsuperscript{672} from conventional media are six characteristics that will make it difficult for existing categories of intellectual property law to adjust to the protection of works in digital form. They are:\textsuperscript{673}

1) the ease with which works in digital form can be replicated,
2) the ease with which they can be transmitted,
3) the ease with which they can be modified and manipulated,
4) the equivalence of works in digital form,
5) the compactness of works in digital form, and
6) the capacity they have for creating new methods of searching digital space and linking works together.

\textsuperscript{669} ibid
\textsuperscript{670} Art.27(2), Universal Declaration of Human Rights
\textsuperscript{671} Art.15(1)(c), International Covenant on Economic, Social and Cultural Rights
\textsuperscript{672} “digital media,” means intellectual products made available in digital/electronic form, whether operational in computers or other machines capable of “reading” works in digital form.
5.2 Philosophy of Intellectual Property

The theory of intellectual property has not, until recently, attracted much philosophical interest or been the subject of deep controversy. Utilitarian theorists generally endorsed the creation of intellectual property rights as an appropriate means to foster innovation, subject to the caveat that such rights are limited in duration so as to balance the social welfare loss of monopoly exploitation. Non-utilitarian theorists emphasized creators’ moral rights to control their work. With the increasing importance of intellectual property in society and the development of particular new technologies, most notably digital technology and the decoding of genetic structure, the theory of intellectual property has attracted huge interest. Economists and policy analysts have greatly enriched our understanding of the complex relationship between intellectual property protection and innovation and diffusion of technological advances. Non-utilitarian theories of intellectual property have proliferated in recent years, as philosophers and legal scholars have applied traditional and novel philosophical perspectives to the realm of intellectual property.674.

5.2.1 Locke’s Theorem: Labour + Nature = Property675

For Locke, property was a foundation for an elaborate vision that opposed an absolute and irresponsible monarchy. Locke's theory676 of property is itself subject to slightly different interpretations. One interpretation is that society rewards labor with property purely on the instrumental grounds that we must provide rewards to

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675 Expression suggested by Peter Drahos in his Book 'a Philosophy Of Intellectual Property', Applied Legal Philosophy Series, Dartmouth, 1996,
676 Although Locke was concerned with the notion of property and paid scant attention to intellectual property, his general theory has been of such overwhelming importance that it is an appropriate starting point for any of us for the analysis of modern theories of property and intellectual property.
get labor. In contrast, a normative interpretation of this labor theory says that labor should be rewarded.

Locke describes a state of nature in which goods are held in common through a grant from God. God grants this bounty to humanity for its enjoyment but these goods cannot be enjoyed in their natural state. The individual must convert these goods into private property by exerting labor upon them. This labor adds value to the goods, if in no other way than by allowing them to be enjoyed by a human being.

Locke proposes that in this primitive state there are enough unclaimed goods so that everyone can appropriate the objects of his labors without infringing upon goods that have been appropriated by someone else. The nature also imposes a limitation on human capacities on how much each individual may appropriate through labor.

A society that believes ideas come to people as manna (something of value a person receives unexpectedly) from heaven must look somewhere other than Locke to justify the establishment of intellectual property. The labor theory of property does not work if one subscribes to a pure "eureka" theory of ideas. Therefore, the initial question might be framed in two different ways. First, one would want to determine if society believes that the production of ideas requires labor. Second, one might want to know whether or not, regardless of society's beliefs, the production of ideas actually does require labor. This second question is the metaphysical one; in its shadow, society's belief may appear superficial. It is not. We are concerned with a


679 ibid

justification of intellectual property, and social attitudes -"understandings" as Justice Stewart said may be the only place to start.681

Some writers begin with the assumption that ideas always or usually are the product of labor. For example, Professor Douglas Baird assumes that although one cannot physically possess or occupy ideas, property in ideas is justified because people "have the right to enjoy the fruits of their labor, even when the labors are intellectual." He believes the great weakness in this justification is that others also need free access to our ideas. In Lockean terms, this is an "enough and as good" problem. Baird, however, never considers the prospect that idea making may not involve labor.682

One commentator has observed that this concept of labor is more likely the product of experience than logical rigor:

Comparing labor and property is complicated by an equivocation about the idea of labor, which is dominated by the metaphor of sweat on the brow. Hence it is that the least imaginative work counts most securely as labor. The squires and merchants of the seventeenth century were far from idle men, but administration and entrepreneurship do not so obviously qualify for the title of labor as the felling of trees and the planting of corn.683

We can justify propertizing ideas under Locke's approach with three propositions: first, that the production of ideas requires a person's labor; second, that these ideas are appropriated from a "common" which is not significantly devalued by the idea's removal; and third, that ideas can be made property without breaching the non-waste condition.684 Many people implicitly accept these propositions. Indeed, the

681 ibid
682 ibid
683 ibid
684 According to Locke this condition prohibits the accumulation of so much property that some is destroyed without being used. Limited by this condition, Locke suggests that even after the primitive state there sometimes can be enough and as good left in the common to give those without property the opportunity to gain it. Spain and America, he says, illustrate the continuing applicability of this justification of property.
Lockean explanation of intellectual property has immediate, intuitive appeal: it seems as though people do work to produce ideas and that the value of these ideas - especially since there is no physical component - depends solely upon the individual's mental "work."\textsuperscript{685}

\textbf{5.2.2 Utilitarian/Economic Theories of Intellectual Property}

Not surprisingly, the principal philosophical theory applied to the protection of utilitarian works - that is, technological inventions - has been utilitarianism. The social value of utilitarian works lies principally if not exclusively in their ability to perform tasks or satisfy desires more effectively or at lower costs. It is logical, therefore, that society would seek to protect such works within a governance regime that itself is based upon utilitarian precepts. Furthermore, inventions, new processes, machines, manufactures, or compositions of matter – unlike artistic or literary expression do not generally implicate personal interests of the creator\textsuperscript{686}.

The United States Constitution expressly conditions the grant of power to Congress to create patent and copyright laws upon a utilitarian foundation under Art.1 Sec(8): ‘to Promote the Progress of Science and useful Arts’.

Economic theory, a particular instantiation of utilitarianism, has provided the principal framework for analyzing intellectual property. In addition, the utilitarian perspective has relevance to other forms of intellectual property. Trade secret law often protects utilitarian works. Trademark law is principally concerned with ensuring that consumers are not misled in the marketplace and hence is particularly amenable to economic analysis. Even copyright law, which implicates a broader array of personal interests of the creator than patent law, may benefit from the


\textsuperscript{686} Peter S. Menell, Professor of Law and Co-Director, Berkeley Center for Law and Technology University of California at Berkeley, Intellectual Property: General Theories at p 23, available at \url{http://www.dklevine.com/archive/ittheory.pdf}, visited 23 Dec 2005
application of the utilitarian framework to the extent that society seeks the production and diffusion of literary and artistic works.

The utilitarian framework has been particularly central to the development of copyright law in the United States. The Congressional Committee reporting on the 1909 Copyright Act stated: ‘the enactment of copyright legislation by Congress under the terms of the Constitution is not based upon any natural right that the author has in his writings, ... but upon the ground that the welfare of the public will be served ... by securing to authors for limited periods the exclusive rights to their writings’.

5.2.3 Personhood Theory

The personhood justification for property derives from Kant’s Philosophy of Law and Hegel’s Philosophy of Right and has been elaborated in modern legal discourse in the work of Radin. The premise underlying the personhood perspective is that to achieve proper development an individual needs some control over resources in the external environment. The necessary assurances of control take the form of property rights. The personhood justification for property emphasizes the extent to which property is personal as opposed to fungible: the justification is strongest where an object or idea is closely intertwined with an individual’s personal identity and weakest where the ‘thing’ is valued by the individual at its market worth.

Netanel traces the rich heritage of Continental copyright law and its moral rights tradition to the personality theory developed by Kant and Hegel, pointing out nuances distinguishing the various strains within the theory. For example, Kant viewed literary work as part of the author’s person and hence is not alienable.

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687 ibid
689 ibid
690 ibid
Hegel, by contrast, distinguished between mental ability as an inalienable part of the self, but not the act of expression. Netanel presents a multifaceted argument for alienability restrictions upon copyright interests\(^692\).

Personhood theory has been particularly central to the emerging debate, brought to the fore by advances in biotechnology, over property rights in body parts, cell lines and other body products\(^693\).

### 5.2.4 Libertarian Theories

Palmer\(^694\) constructs a libertarian argument against intellectual property rights by critiquing the dominant philosophical perspectives used to justify intellectual property protection. Coming from a different intellectual tradition, but reaching a similar conclusion, Barlow\(^695\) argues that intellectual property rights threaten to undermine free exchange of ideas over the Internet and enable corporate interests to exercise substantial control over cultural and political expression. Netanel\(^696\) suggests that these concerns can be addressed better through reworking rather than discarding copyright law. More generally, Waldron\(^697\) points out that autonomy as ideal cuts both for and against intellectual property rights. Authors may claim that the integrity of their self-expression requires that they control the use and adaptation of their works. Social commentators may argue, however, that they are denied the

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\(^{692}\) ibid  
ability to express themselves if they cannot parody the works of others or for fair use purposes.

**5.2.5 Democratic Theories**

Copyright law promotes political expression by encouraging expression, but it also potentially inhibits dissemination of works by prohibiting, subject to some limitations, the copying of expression. In its early history, copyright was used by the English Crown to regulate the press (and censor seditious expression) through bestowing selective royal grants of privilege. Although copyright no longer functions directly to censor political expression, it nonetheless has the potential to inhibit the free flow of information. Goldstein discusses how the principles of copyright law— including the idea-expression dichotomy, the fair use doctrine and a misuse doctrine—harmonize this body of law with constitutional protections of freedom of speech and the press. Coombe offers a post-modernist critique of intellectual property law, arguing that the expanding domain of intellectual property protection limits the ability of individuals to express themselves. Netanel (1996) suggests that copyright plays an increasingly important role in modern democratic societies because of the ease with which expression can be disseminated through the use of digital technology. He argues that existing theories of intellectual property rights may undermine larger democratic principles and articulates a new model for the interpretation of copyright in the digital age which seeks to promote a democratic civil society.

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699 Ibid


5.2.6 Radical/Socialist Theories

A radical critique of some basic assumptions underlying intellectual property - most notably, the romantic concepts of ‘the author’ and ‘the inventor’ – has developed in recent years, building upon the work of deconstructists in the field of literary criticism. These scholars suggest that the concept of authorship and inventorship is so malleable, contingent and ‘socially constructed’ that we should be wary about identifying a creative work too closely with a particular person or entity.702

According to this view, all creations are the product of communal forces to some extent. Dividing the stream of intellectual discourse into discrete units, each owned by and closely associated with a particular author or inventor, is therefore an incoherent exercise subject more to the political force of asserted authors’ or inventors’ groups than to recognition of inherent claims of natural right, personhood, or other justifications.

5.2.7 Relevance of Theories – Future of IPR

Intellectual property is rarely justified on one theory, although patents’ grounding in utilitarianism comes to the closest. Consensus about philosophical perspective, however, has not produced consensus about what that perspective prescribes. Economic theorists have produced multiple plausible models for which empirical distillation will remain elusive and unlikely to be of much general predictive value due to the heterogeneity of inventive activity, the diversity of research environments, the complexity of technological diffusion, the richness and changing nature of real world institutions and the obvious measurement problems in conducting empirical research of this type.703


703 Peter S. Menell, Professor of Law and Co-Director, Berkeley Center for Law and Technology
As technology advances, the system continues to evolve, sometimes by new legislation, more often by the stretching and bending of existing rules. New technology commercialized in the past two decades, most notably the advent and diffusion of digital technology and new advances in the life sciences, portend deepening interest in the intellectual property system and scrutiny, reconsideration and re-conceptualization of the theories justifying intellectual property. Even within the existing theories of intellectual property, these technologies pose significant analytical challenges as a result of the ways in which they change key factors on which existing institutional rules and structures are based - for example, the nature of personal and liberty interests of creators and users, network dimensions, transaction costs etc. As intellectual property and technology have gained importance over the past two decades, the philosophical debates have melded with broader social and political discourse bearing upon the very foundation of modern society. One can expect that intellectual property will continue to press these frontiers as the information age progresses.

5.3 Impact of the Internet on Intellectual Property

The internet has driven many changes in the intellectual property community. As a data and resource access tool, it has expanded the reach of every user localized, regional resources, to true global information access.

Today the largest segment of business-to-consumer e-commerce involves intangible products that can be delivered directly over the network to the consumer’s computer. While these intangible products, by their very nature, are difficult to measure, an increasing amount of the content that is being offered is subject to

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intellectual property rights. This commerce in intangible products raises a number of issues for intellectual property in addition to those that would arise in respect of physical goods. There is a growing need to adopt technological measures in protecting the rights of intellectual property owners. In addition to this, questions of the scope of rights and how existing law applies, jurisdiction, applicable law, validity of contract and enforcement have become more complex and needs to be addressed in an appropriate way.

Some of the positive impacts of internet on intellectual property community are

(a) It has increased affordable access to intellectual property resources globally;

(b) It has enhanced the ability of patent prior art search;

(c) It has increased business, political and society awareness of the growing importance of all types of intellectual property;

(d) It has shortened the data access time, that is, days or weeks have been shortened to minutes or hours;

(e) There has been a geometric increase in the amount of accessible data and collections relative to intellectual property;

(f) It has provided access to an expanding number of web-based software and intellectual property management tools;

(g) It has provided a path for developing countries to catch up with world developments with regard to intellectual property data access, management etc;

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706 Ryder, Rodney, Intellectual Property and the Internet, LexisNexis, New Delhi, 2002, at p 13
707 ibid
708 ibid
709 ibid
710 ibid
711 ibid
712 ibid
Notwithstanding the positive impact the internet has had on the intellectual property community, it has simultaneously created an alarming list of shortcomings. Although we can accept the benefits with complacency, we can not allow detrimental impacts to continue unchecked. Some of the negative impacts of the internet on intellectual property community are

(a) It has exacerbated the ‘poor patent quality’ and provided means to discover invalidating art. This negatively impacts shareholder value, intellectual property value and the overall economy;713;

(b) Further, it has increased demands on patent office examiners to expand prior art search. The examiners must search not only the field in which the invention classified, but also analogous arts. This results in increasing pendency, decreases time available to prosecute any particular patent and decreases overall intellectual property validity;714.

(c) It has spawned new intellectual property problems, infringement possibilities and enforcement challenges, such as cybersquatting, trademark infringement etc;715;

(d) It has failed to bridge the chasm between industry and intellectual property creators and has not significantly increased the adaptation of intellectual property by companies;716.

5.4 Copyright Protection in Cyberspace

The observation of Peterson J., in University of London Press V University of Tutorial Press717 that ‘What is worth copying is prima facie worth protecting’ is probably the best saying in relation to copyright protection in all ages industrial or information.

714 ibid
715 ibid
716 ibid
The purpose of copyright law is to improve society through advancement of knowledge. The philosophy underlying Copyright law is to encourage the creators and innovators by granting monopoly rights to them to exploit their works commercially for a definite period and in return it requires the work to be disclosed to the public. The copyright law aims at balancing the rights of copyright owners with the rights of the public for access to and use of creative works. It provides incentive to authors or creators and limits the author’s rights to control and exploit works. If society wants to induce creativity and entrepreneurship, it must provide financial protection for intellectual property so that inventions and the fruits of artistic creativity are forthcoming.\footnote{Bowie E Norman, Digital Rights and Wrongs: Intellectual Property in Information Age, Business and Society Review 110:1 77–96}

Sec.14 of the Copyright Act, 1957 empowers authors of original literary, dramatic, musical, artistic works, computer programmers etc with various rights in relation to their works. They have exclusive right to reproduce their work, make copies, perform their work in public or display, make translation of their work, adaptation of work etc.

History demonstrates that the Copyright law is the most affected one with the introduction of new technologies. Advances in printing and telecommunication technologies have promoted the process of reproduction, distribution and use of copyrighted material for the betterment of the society but at the same time they have posed several problems for the right holders. While the shape of copyright law has always been drawn by the developments in the technological world, the emergence of digital technologies towards the concluding decades of the 20th century as the defining paradigms of new age communications have raised a whole new set of challenges to copyright regimes. All works can now be digitalized whether they comprise texts, images, sound, animation, photograph and once digitalized the various elements are all equal and can be merged, transformed, manipulated or mixed to create an endless variety of new works. Earlier rights of reproduction and distribution affected only tangible physical copies of a work.
The ease with which works in digital form can be replicated and transmitted poses a difficult problem for the law to handle. In the existing copyright regime, there is a general perception that making copies for personal or private use is considered fair use and lawful. While the technology of reprography has improved dramatically, in digital domain, “perfect” multiple copies can be generated by the same technology which is employed for the use of digital product. Hence it has become more difficult for the copyright owners to exercise control over replication of their works and to obtain compensation for unauthorized replication. Although the copyright system in the print world has generally focused on sales of copies of copyrighted works, in the digital world the trend is to reap the financial rewards for creating and disseminating intellectual products by charging for access to and use of digital works and limiting rights to use and copy these products. The older technologies of photocopying and taping allowed only mechanical copying by individual consumers, but in limited quantities, requiring considerable time, and of a lower quality than the original. Moreover, the copies were physically located in the same place as the person making the copy. On the internet, in contrast, one can make an unlimited number of copies, virtually instantaneously, without any degradation in quality. The result could be the disruption of traditional markets for the sale of copies of computer software, music, art, books, movies etc.

5. 5 Computer Mediated phenomenon – Software Patents

Modern society relies heavily on computer technology. Without software, a computer cannot operate. Software and hardware work in tandem in today’s information society. So it is no wonder that intellectual property protection of software is crucial not only for the software industry, but for other businesses as well. While software has been specifically identified by the Parliament and the courts as deserving of copyright protection, the scope of copyright protection afforded to software has been in flux in recent years. The Copyright Act, 1957

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719 A concept in copyright law that allows limited use of copyright material without requiring permission from the rights holders, eg, for scholarship or review, education, research etc
specifically state that copyright protection does not "extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery". Copyright protection extends only to specific expression, and not to the ideas behind this expression - commonly referred to as the “idea-expression” dichotomy.

5.5.1 Understanding Computer Software

Sec.2(i) of the Information Technology Act, 2000 defines ‘Computer’ as any electronic, magnetic, optical or other high speed data processing device or system which performs logical, arithmetic and memory functions by manipulation of electronic, magnetic or optical impulses and includes all input, output, processing, storage, computer software or communication facilities which are connected or related to the computer in a computer system or computer network.

According to Sec.2(ffb) of Copyright Act, 1957 ‘Computer’ includes any electronic or similar device having information processing capabilities.

A computer basically consists of electronic components which are supported by electrical devices and mechanical systems. All these electronic, electrical and mechanical components used in a computer are called Computer Hardware. Computer Hardware components are actuated and controlled with the help of computer programs called Computer Software.

Computer software is classified into two categories:

1) Application Software – programs used to solve specific problems (tasks) like railway reservation, banking etc;

2) System Software – programs used to handle the computer hardware and to execute the application programs. Examples include operating systems (Windows, Linux etc), compilers, assemblers etc;

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722 ibid at p23
723 ibid at p23
5.5.2 Computer Languages

To communicate with the computer following three languages are used:

1) Machine Language: writing instructions to computer using 0’s and 1’s (binary numbers) is referred as machine language programming\(^{724}\).

2) Assembly Language: writing instructions using mnemonics like ADD, SUB etc is referred as Assembly Language programming\(^{725}\).

3) High Level Language: here, instructions are written using English like language with symbols or digits. Commonly used high level languages are FORTRAN, BASIC, COBOL, PASCAL, C, C++ etc\(^{726}\).

The complete instruction set written in one of these languages is called Computer Program or Source Code.

In order to execute instructions, (as computer can understand 0’s and 1’s only), the source code is translated into binary form by a compiler or interpreter. A compiler is also used to translate source code written in High Level Language into an object program.

5.5.3 Developing Software

For developing software the given task is divided into sub-tasks and algorithms and flow charts are used draw up the blue print (to design the software) for developing the actual source code.

Algorithm is a step-by-step procedure for solving a problem or accomplishing some end especially by a computer\(^{727}\).

Flowchart is a graphic representation of a program in which symbols represent logical steps and flow lines define the sequence of those steps. These are used to design new programs, and to document existing programs\(^{728}\).

\(^{724}\) Subramanian N, Introduction to computer Fundamentals, Tata McGraw-Hill, New Delhi, 1993

\(^{725}\) ibid

\(^{726}\) ibid

\(^{727}\) Rajaraman V, Fundamentals of Computer, Prentice Hall of India, New Delhi, 1997

\(^{728}\) ibid
5.5.4 Legal Definition of Computer Program (Software)

WIPO Model provisions on the protection of computer software, Geneva, 1978 defines ‘Computer Program’ as follows;
“A set of instructions capable, when incorporated in a machine readable medium of causing a machine having information processing capabilities to indicate, perform or achieve a particular function, task or result.”

The US Copyright Law at Section 101 defines a computer program as ‘a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.’

Sec.2(ffc) of Indian Copyright Act, 1957 defines ‘Computer Program’ as a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result. This definition seems to be based on WIPO definition. Computer Program and Computer databases are considered as literary works under Sec.2(o) of Copyright Act, 1957.

Explanation (b) to Section 80 HHE of the Income Tax Act, 1961 defines “computer software” to mean any computer programme recorded on any disc, tape, perforated media or other information storage device and includes any such programme or any customised electronic data which is transmitted from India to a place outside India by any means.

From the above it can be concluded that a computer program should be considered as a set of statements or instructions which is capable of causing a machine having information processing capabilities (a computer) to perform a set of functions to achieve a result.
5.5.5 Copyright Protection for Computer Programs

Computer programs or software plays a vital role in the architecture of Internet. It is the software that determines various functional aspects of Internet. Early in the development of the art of software writing, the originators thereof feared that traditional forms of protection such as patents and copyrights would not give them sufficient protection and relied upon trade secret law. It soon became clear, however, that this was not the best solution to the problem since to establish trade secret protection, one must take some steps to impose a confidential relationship on those who have access to the secret. In a free flowing industry such as the computer software business, this is difficult. Attention has, therefore, returned to the traditional protection of patents and copyrights. However, patent protection cannot be obtained for inventions in this field that do not meet the current test for patentable subject matter. Furthermore, to be patentable the program must be "not obvious". This can be a difficult requirement to fulfill. Furthermore, patent protection requires a fairly prolonged examination by the Patent Office before any rights arise and is thus not the ideal way of dealing with copyists who may be extremely quick off the mark.

When a computer program is written out on a piece of paper, it is quite clear that copyright exists in this work in the same way as it would in respect of any other literary work. The first problem with which the courts had to grapple was whether copyright law could be extended to cover computer programs which exist merely in magnetic or electric form or as specific circuits etched on to a silicon chip.

In Sega Enterprises V Richards, it was held that under the provisions relating to literary works in the Copyright Act, copyright subsisted in the assembly program code of a video game and that the machine code derived from it was either a reproduction or adaptation of the copyright work.

730 ibid
731 ibid
732 English case reported in Copyright & Industrial Designs by P.Naryanan, 3rd edition, Eastern Law House, 2002
In Apple computer Inc. V Computer Edge Pvt Ltd\textsuperscript{733}, it was held that a computer program consisting of source code is original literary work. A source code is a program written in any of the programming languages employed by computer programmers. An object code is the version of a program in which the source code language converted or translated into the machine language of the computer with which it is used. It was further held that an object code is an adaptation or mechanical translation of the source code within the meaning of the copyright law and copying of the object code was an infringement of the copyright in the source code.

In United States also it has been held that an object code is entitled to copyright protection in Apple Computer V Fraklin Computer\textsuperscript{734}.

In India, the words ‘schemes or in any other forms’ used in Sec.2(ffc) would seem to indicate that the source code and object code of a computer program are entitled to copyright protection.

Copyright Act, 1957 of India provided copyright protection for original works of authorship in literary works. It was the amendment made in 1994 that inserted Sec.2(o), making Computer Programs expressly recognized for copyright protection.

\subsection*{5.5.6 Rise of Software Patents}

US was the first country to establish the practice of granting patents to computer programs. The first decision by the Supreme Court on the question of software patenting was called Gottschalk V Benson\textsuperscript{735}, decided in 1972. Benson developed a method of converting binary coded decimals with which a number can be represented by one or more groups of four zeros and ones, to pure binary notation, which allows any number to be written by a single collection of zeros and ones. The

\textsuperscript{733} Australian case reported in Copyright & Industrial Designs by P.Naryanan, 3rd edition, Eastern Law House, 2002.


court noted that any existing computer could carry out Benson’s procedures and that they could be performed without a computer. Looking back on cases it had decided decades earlier, the Court concluded that Benson’s program involved only mathematical calculations and mental steps, and that it did not constitute a patentable process.636

Six years later, the Court looked at another software program in Parker v. Flook.637 Flook had devised a mathematical algorithm that allowed equipment monitoring of an industrial process to determine whether the temperature and pressure indicated some problem had arisen, that is, whether an “alarm limit” had been reached. Because acceptable temperature and pressure varied depending on the stage of the process, Flook’s algorithm varied the alarm limit. The Court refused to grant the patent, determining that Flook’s program was an abstract or phenomenon of nature, outside the patent domain.

Not until its third software patent case, Diamond v. Diehr638 in 1981, would the Supreme Court move toward the patenting of computer programs. The patent application in Diehr involved a process for curing rubber within a molding process. Diehr created a system that would constantly measure the temperature inside. This data was sent to a computer that used a well-known mathematical equation to recalculate the time necessary for the rubber to cure based on the temperature readings. When calculated optimum curing time equaled the actual time elapsed, the computer would open the press. This time the Court did not dismiss the invention as a mathematical algorithm. Instead, the Court concluded that Diehr had developed a patentable process.639 The fact that the process utilized a mathematical algorithm was only part of the relevant inquiry.640 The similarity between the inventions in Flook and Diehr, and the different results, illustrate the complexity involved in interpreting software patent questions.

636 ibid
639 ibid
640 ibid
5.5.7 Computer Program : Copyright V Patents Debate

The dichotomy and the debate in relation to the protection of computer program by patent or copyright regime seems to never ending. In US, the decision of the US court in Diamond V Diehr\textsuperscript{741} set the stage for granting patents to computer programs. European Council has relaxed its initial position by granting patents to computer software by issuing directive on computer-implemented inventions.

5.5.8 Arguments for inclusion of Computer Program under Patents

a) One of the main arguments is that a good idea behind software is not protected as it is in a copyright regime and hence it is easy to create new software with altering the expression part of it. Hence there is no incentive in creating a ‘big idea’, which is left unprotected\textsuperscript{742}.

b) The period of software under copyright is around 60 years (now 70 years) and the author’s lifetime in most regimes is anachronistic with the productive life of software ranging from couple of years to additional couple of year. It would be prudent to give a shorter but stricter monopoly, which will benefit the creators\textsuperscript{743}.

c) On the enforcement of the IP regime, copyright regime allows criminal proceedings, which would not be in case of the classification as patent regime where there are only civil proceedings.

d) The copyright of any work is instant and there is no professional or inventive proof needed makes it easy for many to do reverse engineering


\textsuperscript{742} Stokes, Simon, Digital Copyright : Law and Practice, Butterworths, UK, 2002

of a source code and keep flooding the market with products and may not be a viable proposition of a sustained business model for the industry.\footnote{ibid}

e) Many a software in the high-end application in the sectors of satellite communication, aviation, nuclear physics are done at huge costs with no commercial returns per se in the short run. These programmes if not protected by Patents may end up exploited by commercial programmers who can create programmes with alternate expressions without investing in the ‘idea’.\footnote{ibid}

f) Physical invention has been replaced with digital mode of software and hence one need to revamp the existing patent jurisprudence to accommodate software in the patent regime.

### 5.5.9 Arguments against Computer Program patenting

a) Patenting of software will lead to a monopoly of ‘few ideas’ which will not allow the new software to come in as it is happening under the ‘copyright regime’.\footnote{ibid}

b) Patenting of software will lead to defensive portfolios of patents, which will block new entrepreneurship and applications and creativity.

c) Placing software in patenting will result in inordinate delay for products to come to the market as the procedural hurdles and other issues will block products.

d) With the software life very short it any way will not benefit by a patents regime giving monopoly for 14 or twenty years. In fact by the time patent is granted the utility of the product may be outdated\footnote{ibid}.

e) With the rapid application of software in hitherto unknown fields, speed and adaptations is the key to sustain the industry and hence copyright is more

suited as it allows products to be in the market than waiting for patents to be granted.

f) Mathematical algorithms are not inventions and cannot be considered as inventions but rather a creative use of a subject and hence copyright regime is best-suited one for software\textsuperscript{748}.

g) As a product which is intangible and can be copied with ease by even a computer illiterate, civil remedies will only throw the baby out of the bath water and hence copyright regime and criminal remedy could only be the deterrent.

h) Software has assumed a mass movement with the advent of open source code model like Linux, which allows more creative minds to be part of the movement, and this will be stopped by the quagmire of patent portfolios and litigations.

\textbf{5.5.10 Software Patents V Freedom of Speech and Expression}

Anyone who has ever written both a program and an essay knows how similar these complex endeavors are. Both require use of all one's skill and knowledge. Both involve continual invention and creativity. Both require constant revision. Both evolve with time, as one's knowledge grows. Both are written in a language which has a vocabulary that can be used in an infinite variety of ways. Although software is often a less direct method of communication than prose, in that there may be many intermediaries between a particular programmer and the end-user of an application which uses a piece of his or her code, the same is true for other forms of expression. Theater goers, for example, don't directly read theater scripts, but see and hear them acted by intermediaries (actors); nonetheless, the scripts are writings\textsuperscript{749}.

\textsuperscript{748} ibid
\textsuperscript{749} Phil, Salin, Freedom of Speech in Software, \url{http://www.philsalin.com/patents.html} visited on 2 Mar 05
Although a program has to be run to be used, before it can be run it has to be written. There are now millions of individuals all over the world who know how to write a computer program. It is an absurdity to expect those millions of individuals to perform patent searches or any other kind of search prior to the act of writing a program to solve a specific problem. If others wish to purchase a program, as with the sale of written prose and written music, absolutely no patent restrictions should be placed on the ability of authors to sell or publish their own writings. Suppression of free thought and speech in software (writing, or publishing) is an evil, even when only a small number of individuals recognize that speech is being restricted, or what the costs will be if this harmful censorship-by-another-name, viz "patent licensure", is now allowed to expand unchecked.\(^ {750}\)

In the case of Universal City Studios v. Reimerdes\(^ {751}\) the US court has held that source code of the computer program constitutes Free speech and would be protected under first amendment\(^ {752}\).

### 5.6 Digital Music: Problems and Prospects

Almost all music is distributed today in digital, rather than analog, form. Until recently, most digital music was sold in containers called Compact Discs (CD). Developed and refined between 1965 and 1985, CD technology swept the consumer market during the late 1980s and the early 1990s, displacing almost completely long-play vinyl albums. In the past few years, a new method of distributing digital music has become increasingly popular: transmission of container less files via the internet, followed by storage on home computers. Music distributed in this manner

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\(^{750}\) ibid


\(^{752}\) Halpern E Stevens, Harmonizing The Convergence Of Medium, Expression, And Functionality: A Study Of The Speech Interest In Computer Software, Harvard Journal of Law & Technology, Volume 14, Number 1 Fall 2000
typically is replayed either through stereo systems attached to the home computers or through portable devices analogous to the ‘walkman’.\textsuperscript{753}

Widespread adoption of the techniques of distributing digital music via the internet either in MP3 format or in some other form would give rise to five important social and economic advantages. They are

(1) Cost saving associated with disintermediation- currently, most of the retail price paid by a consumer for a compact discs goes to the manufacturer of the disc itself, the distributor of the disc, the retail store where she purchased it, or the record company that produced the recording. The composer and the recording artist rarely receive more than 16\% of the purchase price. If the music were distributed over the internet by the artist himself, almost all of costs associated with making and distributing discs could be eliminated. The result is that the musicians could earn more or consumers could pay less or both\textsuperscript{754}.

(2) Elimination of overproduction and underproduction- Under the current system, the record companies must guess how many copies of each CD consumers will demand. Distribution of container less digital files over the internet would eliminate this problem\textsuperscript{755}.

(3) Convenience and Precision- The many annoyances associated with buying music in retail stores ( travel time, the disappointment when the CDs are out of stock etc) would all be eliminated by internet distribution. The less substantial annoyances associated with mail-order purchases of CDs (waiting for delivery, being forced to purchase an entire CD when one is only interested in a few tracks) would also be eliminated. Consumers would get exactly the music they wanted instantly\textsuperscript{756}.

(4) Increase in the number and variety of musicians- The set of musicians who would like to make their music available to the public and the set that significant numbers of consumers would like to hear are both much larger than the set hired by the recording companies. The opportunities available to new artists and to bands


\textsuperscript{754} ibid

\textsuperscript{755} ibid

\textsuperscript{756} ibid
that appeal to niche markets would increase rapidly through widespread adoption of the new technology.\(^{757}\)

(5) Semiotic democracy- In most modern capitalist countries, the power to make meaning, to shape culture, has been concentrated in relatively few hands. One of the great cultural benefits of the internet in general lies in its tendency to decentralize this semiotic power. In two respects, internet distribution of digital music would contribute to that decentralization. The first consists of the expansion of the set of musicians who can reach wide audiences and the associated diminution of the cultural power of the record companies. The second of the ease with which consumers of digital music manipulate it, recombine pieces of it, blend it with their own material can become producers.\(^{758}\)

5.6.1 MP3 Music- Delight for Music Consumers, Nightmare for Music Producers

The technology that has made distribution of music over internet convenient and simple is MP3\(^{759}\), an audio compression file format. Musical files compressed using MP3 occupy approximately 1/12 of the disk space occupied by uncompressed files, enabling them to be transmitted faster and stored more easily. Two groups have embraced MP3 technology especially enthusiastically. First, musicians unable to obtain recording contracts with the major record companies have found that, at modest cost, they can record their material in MP3 format and then make it available over the internet. Second, the net users have discovered that they can obtain on the internet MP3 copies of most of the songs of their favorite musicians. A high percentage of the MP3 recordings available in this manner were prepared without the permission of the owners of the copyrights in the music.\(^{760}\)

\(^{757}\) ibid
\(^{758}\) ibid
\(^{759}\) An abbreviation of MPEG Audio-Layer 3. This is a compression algorithm developed by the Fraunhofer Institute in Germany and later standardised by the MPEG (Motion Picture Experts Group) that permits audio files to be highly compressed and yet retain excellent levels of quality. available at www.futuremark.com/community/hardwarevocabulary/, visited on 10 Jan 2006
\(^{760}\) ibid
The music and recording industry in US has waged war against unauthorized copying on four fronts; against the manufacturers of the machines used to play MP3 files; against the operators of pirate websites; and against the growing group of intermediaries that assist users in locating and obtaining MP3 files. To date, none of these struggles has been decisively resolved. On the first two fronts, the forces embracing the new technology are currently winning; on the third and fourth, the forces seeking to limit uses of the new technology are currently winning. But the outcomes of all four campaigns remain in doubt.

One of the earliest cases to be decided by US courts in relation to distribution of illegal MP3 files is A&M Records, Inc., et al. v. Napster, Inc. The court denied Napster Inc.'s ("Napster") motion for partial summary judgment, in which motion Napster sought to limit the damages and other relief that could be awarded against it for alleged direct or contributory copyright infringement by application of the safe harbor provisions of 17 U.S.C. Section 512(a) of the Digital Millennium Copyright Act ("DMCA"). Section 512(a) limits a service provider's liability for copyright infringement by reason of the service provider's "transmitting, routing or providing connections for material through a system or network controlled or operated by or for the service provider ..."

The court held that Napster's role in the transmission of MP3 files by and among the various users of its system was not entitled to protection under Section 512(a) because such transmission does not occur through Napster's system. Rather, although Napster informs the user's computer of the location of a computer on which MP3 files the user seeks are stored, and its willingness to permit the user to download such files, all files transfer directly from the computer of one Napster user through the Internet to the computer of the requesting user. Similarly, any role that Napster plays in providing or facilitating a connection between these two computers

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763 Ibid
does not occur through its system. "Although the Napster server conveys address information to establish a connection between the requesting and host users, the connection itself occurs through the Internet."\(^{764}\)

The court also held that issues of fact existed as to whether Napster was entitled to any protection under the DMCA at all. To be entitled to such protection, a service provider must meet the requirements of section 512(i) of the DMCA, which, among other things, obligates the service provider to "adopt and reasonably implement and inform subscribers and account holders of the service provider's system or network of a policy that provides for the termination in appropriate circumstances of subscribers and account holders of the service provider's system or network who are repeat infringers ...". The court held that issues of fact existed as to whether Napster had appropriately adopted and informed its users of such an effective policy which precluded at this time any relief to Napster under the DMCA\(^{765}\).

5.6.2 Peer-to-Peer Networking (P2P)

Commentators and courts have universally hailed the Internet as an abundantly fertile field for self-expression and debate. But this acclamation masks sharp disagreement over whether certain Internet activity should be lauded or deplored. A prime example is the unlicensed use of copyright protected material. The explosion of sharing and remixing of popular songs and movies over Internet based peer-to-peer ("P2P") networks like Napster, KaZaA, and Morpheus has evoked sharply discordant reactions. Some commentators embrace the collection, exchange, and transformation of existing works as part and parcel of the individual autonomy, self-expression, and creative collaboration for which we celebrate the Internet. Others denounce those activities as massive piracy of intellectual property. They fear that P2P file swapping poses a mortal threat to the copyright system that sustains

\(^{764}\) ibid  
\(^{765}\) ibid
The P2P controversy has degenerated into a steadily intensifying war of words and legal action. The copyright industries have successfully shut down a number of P2P networks — most famously, Napster — and continue to bring lawsuits against others. They have also sought to compel telecommunications and consumer electronics companies to disable unlicensed P2P sharing of copyright protected works. The industries are now targeting individuals who trade large numbers of files as well. Yet, despite this three pronged attack, unlicensed P2P file swapping continues apace.

P2P networks are those networks where communication between computers takes place directly without help of the central server. In MGM V Grokster, the question before the court was under what circumstances the distributor of a product capable of both lawful and unlawful use is liable for acts of copyright infringement by third parties using the product. Respondents, Grokster Ltd and StreamCast Networks Inc. used to distribute a piece of software which enabled computer users to share electronic files through peer-to-peer networks. The advantage of peer-to-peer networks over information networks of other types shows up in their substantial and growing popularity. Because they need no central computer server to mediate the exchange of information or files among users, the high bandwidth communications capacity for a server may be dispensed with, and the need for costly server storage space is eliminated. Since copies of a file (particularly a popular one) are available on many users' computers, file requests and retrievals may be faster than on other types of networks, and since file exchanges do not travel through a server, communications can take place between any computers that

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767 ibid


769 ibid
remain connected to the network without risk that a glitch in the server will disable the network in its entirety. Given these benefits in security, cost, and efficiency, peer-to-peer networks are employed to store and distribute electronic files by universities, government agencies, corporations, and libraries, among others.\textsuperscript{770} MGM argued that Respondents are liable for copyright infringement – direct infringement, contributory infringement and vicarious infringement. Respondents pleaded their actions does not amount to copyright infringement and relied on the principle laid down in Sony Corp. \textit{v.} Universal City Studios.\textsuperscript{771} Further MGM contended that holding of Ninth Circuit Court, which held that Respondents are not vicariously liable, would upset a sound balance between the respective values of supporting creative pursuits through copyright protection and promoting innovation in new communication technologies by limiting the incidence of liability for copyright infringement. The more artistic protection is favored, the more technological innovation may be discouraged; the administration of copyright law is an exercise in managing the trade-off.\textsuperscript{772}

The tension between the two values is the subject of this case, with its claim that digital distribution of copyrighted material threatens copyright holders as never before, because every copy is identical to the original, copying is easy, and many people (especially the young) use file-sharing software to download copyrighted works. This very breadth of the software’s use may well draw the public directly into the debate over copyright policy, and the indications are that the ease of copying songs or movies using software like Grokster's and Napster's is fostering disdain for copyright protection. As the case has been presented to us, these fears are said to be offset by the different concern that imposing liability, not only on

\textsuperscript{770} ibid

infringers but on distributors of software based on its potential for unlawful use, could limit further development of beneficial technologies.\textsuperscript{773}

The Court referring to In re Aimster Copyright Litigation\textsuperscript{774}, 334 F. 3d 643, 645-646 (CA7 2003) observed that the argument for imposing indirect liability in this case is, however, a powerful one, given the number of infringing downloads that occur every day using StreamCast's and Grokster's software. When a widely shared service or product is used to commit infringement, it may be impossible to enforce rights in the protected work effectively against all direct infringers, the only practical alternative being to go against the distributor of the copying device for secondary liability on a theory of contributory or vicarious infringement. One infringes contributorily by intentionally inducing or encouraging direct infringement, and infringes vicariously by profiting from direct infringement while declining to exercise a right to stop or limit it. Although "the Copyright Act does not expressly render anyone liable for infringement committed by another, as laid down in Sony Corp. v. Universal City Studios\textsuperscript{775}, these doctrines of secondary liability emerged from common law principles and are well established in the law.

In Sony Corp. v. Universal City Studios\textsuperscript{776}, the Court addressed a claim that secondary liability for infringement can arise from the very distribution of a commercial product. There, the product, novel at the time, was what we know today as the videocassette recorder or VCR. Copyright holders sued Sony as the manufacturer, claiming it was contributorily liable for infringement that occurred when VCR owners taped copyrighted programs because it supplied the means used to infringe, and it had constructive knowledge that infringement would occur. At the trial on the merits, the evidence showed that the principal use of the VCR was for "time-shifting" or taping a program for later viewing at a more convenient time,

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\textsuperscript{773} ibid
\textsuperscript{776} ibid
which the Court found to be a fair, not an infringing, use\textsuperscript{777}. There was no evidence that Sony had expressed an object of bringing about taping in violation of copyright or had taken active steps to increase its profits from unlawful taping\textsuperscript{778}. Although Sony's advertisements urged consumers to buy the VCR to "record favorite shows" or "build a library" of recorded programs\textsuperscript{779}, court found that neither of these uses was necessarily infringing\textsuperscript{780}.

On those facts, with no evidence of stated or indicated intent to promote infringing uses, the only conceivable basis for imposing liability was on a theory of contributory infringement arising from its sale of VCRs to consumers with knowledge that some would use them to infringe. But because the VCR was "capable of commercially significant non-infringing uses," court held the manufacturer could not be faulted solely on the basis of its distribution\textsuperscript{781}.

This analysis reflected patent law's traditional staple article of commerce doctrine, now codified, that distribution of a component of a patented device will not violate the patent if it is suitable for use in other ways. The doctrine was devised to identify instances in which it may be presumed from distribution of an article in commerce that the distributor intended the article to be used to infringe another's patent, and so may justly be held liable for that infringement. "One who makes and sells articles which are only adapted to be used in a patented combination will be presumed to intend the natural consequences of his acts; he will be presumed to intend that they shall be used in the combination of the patent."\textsuperscript{782}

In sum, where an article is "good for nothing else" but infringement, the Court held there is no legitimate public interest in its unlicensed availability, and there is no injustice in presuming or imputing intent to infringe. Conversely, the doctrine absolves the equivocal conduct of selling an item with substantial lawful as well as unlawful uses, and limits liability to instances of more acute fault than the mere

\textsuperscript{777} ibid
\textsuperscript{778} ibid, at p 438
\textsuperscript{779} Ibid at, p at 459 (Blackmun, J., dissenting)
\textsuperscript{780} ibid
\textsuperscript{781} ibid
\textsuperscript{782} ibid
understanding that some of one's products will be misused. It leaves breathing room for innovation and a vigorous commerce.

The Court did draw the distinction between direct infringement, indirect or induced infringement and vicarious infringement but decided to determine the matter only on induced infringement. The classic case of direct evidence of unlawful purpose occurs when one induces commission of infringement by another, or "entices or persuades another" to infringe, as by advertising (Black's Law Dictionary 790 (8th ed. 2004)). Thus at common law a copyright or patent defendant who "not only expected but invoked infringing use by advertisement" was liable for infringement "on principles recognized in every part of the law.

The rule on inducement of infringement as developed in the early cases is no different today. Evidence of "active steps ... taken to encourage direct infringement," Oak Industries, Inc. v. Zenith Electronics Corp., 697 F. Supp. 988, 992 (ND Ill. 1988)783, such as advertising an infringing use or instructing how to engage in an infringing use, show an affirmative intent that the product be used to infringe, and a showing that infringement was encouraged overcomes the law's reluctance to find liability when a defendant merely sells a commercial product suitable for some lawful use.

Based on the above analysis the Court held that one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, going beyond mere distribution with knowledge of third-party action, is liable for the resulting acts of infringement by third parties using the device, regardless of the device’s lawful uses.

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5.7 Linking, Framing and Caching

Some of the copyright issues involved in cyberspace are related to the interaction between websites, service providers and consumers for the purpose of e-business. These include Linking, Framing and caching. In this section how these internet specific activities would infringe copyright are discussed.

In the past several years, the World Wide Web has seen two significant changes:

(1) its popularity and use have exploded, and
(2) it has become a place of substantial commercial activity.

These two characteristics have made the Web a place of increasing legal turmoil. Certain practices by authors of Web sites and pages have been attacked as violative of others' intellectual property rights or other entitlements. These practices include “linking,” “framing” and “caching”.

5.7.1 Linking

Internet links may create legal liability. Despite the internet’s initial ‘free linking’ ethos, links can be unlawful when they are designed to confuse viewers, to evade court orders or clear statutory prohibition, or promote illegal conduct by others.

Linking law, which began with Shetland Times head-line linking case in Scotland in late 1996, now includes several precedents as well as developing worldwide body of opinions on various subjects. 

"Linking" allows a Web site user to visit another location on the Internet. By simply clicking on a "live" word or image in one Web page, the user can view another Web page elsewhere in the world, or simply elsewhere on the same server as the original page. This technique is what gives the Web its unique communicative power. At the same time, however, linking may undermine the rights or interests of the owner of

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the page that is linked to\textsuperscript{785}. A website consists of several pages. By linking it is possible to transfer the control of browser to the web page of another website. Suppose, for example, that X sets up a homepage for her site. On the homepage she places some advertisements, from which she hopes to make some money. The homepage also contains links to various subordinate pages, which contain content that X believes consumers wish to see. Y then creates his own Web site, which contains links to X's subordinate pages. The net result is that visitors to Y's site will be able to gain access to X's material, without ever seeing X's advertisements which are placed on the Home page. This type of activity is called "deep linking." Other problems arise when one site contains links to copyrighted materials contained in another site against the wishes of the copyright owner. Though the person who provides the link may not be making copies himself or herself, judicial view has been that the link provider partially responsible for ensuing copyright infringement\textsuperscript{786}.

Section 51 of the Copyright Act, 1957 lists the circumstances under which a copyright is said to be violated\textsuperscript{787}. Sec.51 (b) (iii) provides that if any person exhibits copyrighted work without authorization in public by way of trade has violated the rights of the owner. This provision of the law would affect deep linking.

\textsuperscript{785} ibid

\textsuperscript{787} Sec.51. When copyright infringed- Copyright in a work shall be deemed to be infringed- (a) when any person, without a licence granted by the owner of the copyright or the Registrar of Copyrights under this Act or in contravention of the conditions of a licence so granted or of any condition imposed by a competent authority under this Act-

(i) does anything, the exclusive right to do which is by this Act conferred upon the owner of the copyright; or (ii) permits for profit any place to be used for the communication of the work to the public where such communication constitutes an infringement of the copyright in the work, unless he was not aware and had no reasonable ground for believing that such communication to the public would be an infringement of copyright; or

(b) when any person- (i) makes for sale or hire, or sells or lets for hire, or by way of trade displays or offers for sale or hire, or (ii) distributes either for the purpose of trade or to such an extent as to affect prejudicially the owner of the copyright, or (iii) by way of trade exhibits in public, or (iv) imports into India, any infringing copies of the work:
Deep linking definitely involves communication to the public of unauthorized work as provided under Sec.2 (ff) of the Copyright Act, 1957. According to Sec.2(ff) Communication to the public means making any work available for being seen or heard or otherwise directly or by any means of display or diffusion other than by issuing copies of such work regardless of whether any member actually sees, hears or otherwise enjoys the work so made available. Thus, we can see an act of deep linking constitutes infringement of copyright. But without deep linking, the internet as we know it today would collapse. One could not have a search engine, for example\textsuperscript{788}. Hence these grey areas do need to be addressed.

5.7.2. Legal Issues involved in Linking

It is no surprise that the absolute “free linking” ethos of Berners-Lee\textsuperscript{789} and other Internet pioneers have not been adopted by the law. The real business world operates differently than the world of academics, technology enthusiasts, and information-loving individuals. Businesses care about what information is shared, with whom, and in what context—especially when the communications involved interfere with their sales or marketing. They also care about how they are portrayed in relationship to others, especially competitors. Hence, in the context of business and advertising, Internet links may raise issues of, among other things, unfair competition, trademark or copyright infringement, tarnishment, and misappropriation\textsuperscript{790}.

The laws of unfair competition and intellectual property provide the backdrop for most hyperlink disputes. In particular, the law of unfair competition an umbrella


\textsuperscript{789} Sir Timothy John Berners-Lee is an English developer and inventor of the World Wide Web in March 1989. With the help of Mike Sendall, Robert Cailliau, and a young student staff at CERN, he implemented his invention in 1990, with the first successful communication between a client and server via the Internet on December 25, 1990. He is also the director of the World Wide Web Consortium (which oversees its continued development), and a senior researcher and holder of the 3 com Founders Chair at the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL).

\textsuperscript{790} Sableman, Mark, Linking law Revisited : Internet Linking Law At Five Years, Berkely Technology Law Journal, Volume 16 (2001), Issue 16:3 (Fall 2001) at p 18
term that embraces trademark infringement and dilution, passing off, and false or deceptive advertising provides the legal context for many linking disputes. Several other legal areas—copyright, data protection, and misappropriation have figured in several important Internet linking disputes. This section briefly describes the basic principles of the legal fields on which most unauthorized linking claims are based.791

5.7.3 Direct Linking

Link law began with a hyperlinked headline on an electronic newspaper in the Shetland Islands of Scotland. The ensuing copyright lawsuit between rival newspapers brought little enlightenment to the concept of links as copyright infringement. A few years later, a parallel lawsuit in California792, concerning thumbnail photographs as links, brought the copyright theory of link law into sharper focus.

In Shetland Times Ltd., V Dr. Jonathan Wills and another793, the plaintiff, the Shetland Times operated a web site through which it made available many of the items in the printed version of its newspaper. The defendant also owned a website and operated a web site on which they published a news reporting service. Defendants reproduced verbatim a number of headlines appearing in the Shetland Times. These headlines were hyperlinked to the plaintiff’s site. Clicking on the headline took the reader to the internal pages in the plaintiff’s site on which related story was found. The Judge agreed that the plaintiff had presented at least a prima facie case of copyright infringement based upon the United Kingdom’s law governing cable television program providers. He found that the articles were being sent by the Shetland Times but through the web site maintained by the defendants.

791 ibid at 19
793 Cited in Legal Dimensions of Cyberspace (edt by S K Verma and Ram Mittal), Indian Law Institute, New Delhi, (2004) at p 119
In the process, the home page of the Shetland Times site was bypassed, significantly diminishing the value of the site to potential advertisers. The court issued an interim interdict barring defendants, without the plaintiff consent, from copying headlines from the plaintiff’s newspaper on to their website, and creating hyperlinks from those headlines to the location on the plaintiff’s site on which the article described in the headline appears.

A much different approach and answer to a similar question came with the decision of a California federal district court in Kelly v. Arriba Soft Corp. This case presented essentially the picture equivalent of the Shetland Times headline as hyperlink claim. The defendant, Arriba Soft, offered a specialized Internet search engine for photography on its website. On that site, Arriba Soft provided a traditional search engine with a photographic twist. As the court explained, like other Internet search engines, Arriba Soft’s search engine: “allows a user to obtain a list of related Web content in response to a search query . . . . Unlike other Internet search engines, Defendant’s retrieves images instead of descriptive text. It produces a list of reduced, ‘thumbnail’ pictures related to the user’s query”. Leslie Kelly, a professional photographer, offered his photographs for sale through an Internet website, and Arriba Soft indexed his site along with other professional photographers’ sites. That meant that when searchers used Arriba Soft’s “visual search engine” and the search results included Kelly’s photographs, the images of those photos would be made available in thumbnail form on the search results page. The thumbnail images in turn linked to Kelly’s own website, and hence potentially increased Kelly’s business traffic. Kelly claimed in a similar way as the Shetland Times had claimed about use of its headlines—that use of his work in the thumbnail link constituted copyright infringement. The thumbnail images in question were, admittedly, copies of Kelly’s photographs. The issue was thus posed: Did use of


795 ibid
Kelly’s photographs as thumbnail markers of links to Kelly’s website constitute copyright infringement?\textsuperscript{796}

The thumbnails presented a credible case of infringement. While a few words of a headline do not qualify alone as copyrightable material in United States law, the photo thumbnails were simply reduced versions of Kelly’s copyrighted photographs. As such, the thumbnails contained all (or at least most) of the creative elements of the photos, such as subject, composition, lighting, and so forth. The only question was whether Arriba Soft’s use of the photographs in its visual search engine constituted fair use under section 107 of the Copyright Act of US. Judge Gary Taylor analyzed each of the statutory fair use factors, as well as the “transformative use” factor, and found Arriba Soft’s use to be fair\textsuperscript{797}.

Initially, Judge Taylor found that while Arriba Soft’s search engine was commercial, the search engine’s commercial purpose was “of a somewhat more incidental and less exploitative nature” than normal. Arriba Soft’s website did not exist to exploit the visual impression of the indexed photographs; rather, it served a library like function, as it “cataloged and improved access to images on the Internet.” Thus, the first fair use factor—focusing on the commercial or noncommercial use of the copyrighted work favored Arriba Soft. The second factor— the nature of the work favored Kelly, because photographs are artistic works at the core of copyright protection. On the third factor focusing on the amount and substantiality of the copyrighted work used— the court found the use of indexing thumbnails generally fair, because thumbnails are necessary on a visual search engine, and the size reduction mitigates any damage. Because Arriba Soft’s search engine had also displayed a larger version of the indexed photographs (a practice it had eliminated by the time of the court’s decision), however, the court found the “amount and substantiality” factor to favor Kelly somewhat. Finally, in considering the fourth fair use factor—the effect on the market for plaintiff’s products the court found no evidence of harm, and a logical conclusion that the

\textsuperscript{796} ibid
\textsuperscript{797} ibid
search engine would increase traffic to the websites of professional photographers such as Kelly. Thus, the court found that this factor favored fair use. With the fair use score a two-two tie, the Court relied on the “transformative use” analysis of Campbell v. Acuff-Rose Music, Inc, to make its final conclusion that Arriba Soft’s use was fair. Essentially, the court recognized the usefulness of search engines and their contribution to users and web publishers (like Kelly) alike, and found that Arriba Soft’s “visual search engine” had transformed Kelly’s images into something new. The court held that the photo cataloging and thumbnail displaying functions of Arriba Soft’s visual search engine, which “swept up” plaintiff’s images along with two million other photographs in its ordinary operation, fulfilled an “inherently transformative” function. This transformative aspect of the visual search engine—“a new use and a new technology” weighed more heavily with the court than the fact that Arriba Soft copied the photographs. In essence, the usefulness of Internet search engines was the determinative factor in the fair use analysis in Kelly, leading to the court’s conclusion that Arriba Soft could use thumbnail images of copyrighted works in its search results display.

Although the Kelly analysis could be questioned or confined to the unique facts of that case, the decision provides guidance for other copyright linking cases. The decision wisely permits use of the content indexes and links that are typically used and needed in Internet searching and navigation. This result seems consistent with fair use principles, since the indexing material does not replace the full copyrighted works and it usually facilitates navigation to the owners of those works. It also accords with precedent, such as long established acceptance of catalogs, summaries, and reviews as fair use. If Kelly is followed when future linking claims based on copyright are asserted, the fair use doctrine is likely to protect normal indexing and summarizing use of Internet content as hyper-links.

798 ibid
800 Supra Note 794
801 Supra Note 794
5.7.4 Deep Linking

Perhaps the most curious of all anti-linking theories is the one that holds “deep linking” unlawful. While this theory seems to loom large in popular discussions, it does not yet have legal support in the United States, and courts have addressed the theory with skepticism.\(^{802}\)

Most websites have a central “home” page to which all subsidiary pages are linked. Website publishers probably expect users to visit their site through this home page “front door,” and to move around the website using the website’s own links to subsidiary pages. With this expectation, many website publishers post introductory material—possibly including third party paid banner advertisements, and special teasers and highlights relating to their own site on that home page. Website publishers expect that most website visitors will encounter those advertisements or special highlights before going further into the website’s subsidiary pages.\(^{803}\)

In practice, however, anyone who reaches a subsidiary page may record the URL of that page and use it as a hyperlink, thus enabling others to bypass the website’s front door and go to the subsidiary page of interest. Such links are known as “deep linking” because they link directly to a subsidiary page “deep” within a website. Is such linking unlawful? The Ticketmaster ticket selling agency asserted that such linking was unlawful in two highly publicized cases.\(^{804}\)

In Ticketmaster Corp V Microsoft Corp\(^{805}\), the plaintiff, Ticketmaster Corporation sued Microsoft’s practice of linking, without permission, deep within its site rather to the home page, and claimed, inter alia, that Microsoft effectively diverted advertising revenue that otherwise would have gone to the plaintiff. Ticketmaster Corporation had also entered into contract with other firms whereby those firms had agreed to pay link to the Ticketmaster site. Free linking by Microsoft to the

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\(^{802}\) Sableman Mark, Linking law Revisited : Internet Linking Law At Five Years, Berkely Technology Law Journal, Volume 16 (2001), Issue 16:3 (Fall 2001) at p 20

\(^{803}\) ibid at p 21

\(^{804}\) ibid

\(^{805}\) Legal Dimensions of Cyberspace (edt by S K Verma and Ram Mittal), Indian Law Institute, New Delhi, (2004 ) at p 119
plaintiff’s site could have devalued those contractual relationships. Ticketmaster had also contracted to give MasterCard prominence at its site. Microsoft’s bypassing of the home page threatened the ability of Ticketmaster to comply with that contract. Allowing such a free link undercut Ticketmaster’s flexibility both in designing its site and in its marketing efforts and arrangements with other sites. During the pendency of the court proceedings the parties entered into a settlement agreement whereby Microsoft agreed not to link to pages deep within the Ticketmaster site and agreed that the links will point visitors interested in purchasing tickets to the ticketing service’s home page.\(^{806}\)

Ticketmaster was back in court a few years later, when it learned that a rival agency, Tickets.Com, Inc., was also linking to Ticketmaster’s subsidiary pages. In *Ticketmaster Corp. v. Tickets.Com, Inc*\(^{807}\), Ticketmaster claimed that deep linking constituted both copyright infringement (because the information derived from Ticketmaster’s website) and unfair competition (because customers would associate Tickets.com with Ticketmaster). In a preliminary decision, the court explained that Tickets.com simply linked to Ticketmaster (or some other exclusive ticket broker) for events for which Tickets.com could not itself sell tickets. Since this interior page contained the Ticketmaster logo, the court concluded that a customer must know he or she was dealing with Ticketmaster, not Tickets.com. In granting, in part, Tickets.com’s motion to dismiss the complaint, the court expressed strong skepticism about the deep linking theory. First, the court expressly rejected the copyright theory. Ticketmaster alleged that Tickets.com copied facts and used a deep linking hyperlink. Facts are not protected

\(^{806}\) ibid


\(^{808}\) ibid

\(^{809}\) ibid
by copyright, and the hyperlink simply transferred the user to the plaintiff's page. Next, although the court did not dismiss the unfair competition claims, it brushed off the possibility that merely posting a deep link could itself constitute unfair competition: “The court concludes that deep linking by itself (i.e., without confusion of source) does not necessarily involve unfair competition.” Perhaps most significantly, in dicta the court analogized hyperlinks to traditional indexing techniques, thus suggesting that they are benign and indeed helpful, and thus hardly tortious. The court stated: “The customer is automatically transferred to the particular genuine webpage of the original author. There is no deception in what is happening. This is analogous to using a library’s card index to get reference to particular items, albeit faster and more efficiently.”

From the above two cases the law of linking may seem to be confusing, but I am of the opinion that to protect the interest of cyberspace entities, especially their rights in copyright and trademark, deep linking should be prohibited and it should amount to circumvention when web sites deep link into others.

5.7.5 Framing & In-lining

Framing is a way of constructing a web page. The related practice of "framing" may also serve to undermine the rights of Web site owners. The use of "frames" allows a Web page creator to divide the Web browser window into several separate areas. The programmer of the Web page can dictate what goes into each frame. Commonly, a Web site designer creates a page that at all times displays one frame containing the name of the Web site and other identifying information. The other frames are then controlled by the user. For example, a Web site employing frames might always show the original Web site's graphic logo on the top of the page while allowing the user to view the other Web site in a different frame. The legal implications of this are complex. In the example just given, a Web surfer might easily be confused concerning the relationship between the actual site (victim) and

810 ibid
the framing site. Moreover, the framing site might be unfairly deriving traffic from the actual site (victim) legally protected work.\footnote{Ryder, Rodney, “Intellectual Property and the Internet”, LexisNexis, New Delhi, (2002), at p 128}

In Washington Post Co., V Total News Inc\footnote{No. 97 Civ. 1190 (PKL) (SDNY), available at \url{http://www.issuesininternetlaw.com/cases/washington.html}, visited 23 Jan 2006.}, the Washington Post filed a complaint against an online news site, Total News, the publisher of the web site \url{www.totalnews.com}. Total News, an aggregator of web news sources, employed frame technology to display news sites from around the web. Total News had created pages with frames that contained hyperlinks to other news web sites, such as Washington Post, CNN, USA Today etc. Web users, therefore, could use \url{www.totalnews.com} to access articles from various sources. The Total news web site generated its revenue from advertising, which it placed in a static border frame. Clicking hyperlink to ‘Washington Post’ within the Total News Web Page displayed the content of the Washington Post page within a frame that was surrounded by Total News’ URL, logo, banner, advertisements and information. Plaintiff claimed that defendants’ action of framing was the internet equivalent of pirating copyrighted material. They also alleged that misappropriation, trademark infringement and trademark dilution. The plaintiff complained that Total News has designed a parasitic web site that republishes the news and editorial content of others web sites in order to attract both advertisers and users resulting in infringement of their copyright. But the matter was finally settled out of court between the parties.

Under Indian Copyright Act, 1957, Sec.14 (a) (vi), the right of adaptation is conferred on the owner of the copyrighted work. The framing site could take some elements from the framed site’s multimedia settings and create its own, thereby affecting the right of making a derivative work of the framed site since taking some elements from the multimedia setting and combining them with some other could well fit into the definition of adaptation. Hence, we can say that framing using internet technology infringes the rights of the creators.
5.7.6 Caching

Caching involves the storing of Web pages either in a computer's local RAM (Random Access Memory), or at the server level. Caching web pages on a computer's local memory allows us to navigate back and forth through pages we have visited in the past without having to download the pages each time we return to them. Caching at the server level, also known as "proxy caching," is used by several of the more popular Internet service providers such as AOL (America on Line), Prodigy, and Compuserve. This kind of caching may amount to copyright infringement. But it is impossible to have web page operations without caching and technically may not be feasible. Therefore there is a need to declare expressly that caching of web pages do not constitute copyright infringement.

5.8 Resolving Link Law Disputes – Some Principles

New technologies always lead to predictions of dire technological harm, and corresponding cries for new legal controls. It happened with the telegraph, the so-called “Victorian Internet” of the late nineteenth century. It happened with radio and television. It happened even quite recently with such benign technologies as the telephone and the facsimile.

Accordingly, we need focus on the early Internet link law cases, especially to the extent that they appear to restrict or prohibit use of Internet linking technologies without adequate policy justification. If the history of broadcasting is any guide, a new communications technology is most likely to blossom in the absence of strict regulation. Just as hard cases make bad law, cutting-edge cases, decided when a technology appears new and mysterious, can make questionable precedents. Moreover, the truism that courts many times reach the right result for the wrong


814 However, Section 512(b) of DMCA limits the liability of service providers for the practice of retaining copies, for a limited time, of material that has been made available online by a person other than the provider, and then transmitted to a subscriber at his or her direction. The service provider retains the material so that subsequent requests for the same material can be fulfilled by transmitting the retained copy, rather than retrieving the material from the original source on the network.
reason is often borne out in novel situations, where judges must proceed to decision points without the comforting aid of many precedential pointers, or even a firm grip on the technology and how it may develop. In developing sound link law policies, we need to heed early link law cases, without being tied to all of their narrow conclusions.

Against this background, several principles for Internet linking controversies may be suggested:

(1) Recognize a presumptive right to make reference links: HREF\textsuperscript{815} links seem presumptively allowable in almost all situations. A hyperlink is, in one analyst’s words, “an automated version of a scholarly footnote or bibliographic reference; it tells the reader where to find the referenced material.” While such links were held actionable in the initial Shetland Times decision, that decision seems wrong as a matter of United States copyright law. It also appears unnecessary to vindicate the unfair competition interests that seemed to trouble the trial court. Where there is concern that a reference link threatens to confuse consumers or appropriate business opportunities, these perils can usually be avoided by adequate disclosures and non-deceptive practices by the linking party. A fair, adequate disclosure by the Shetland News that its link will take the reader to the Shetland Times website should have been sufficient in that case\textsuperscript{816}. Fair disclosure still may not cover the losses that may happen due to linking.

Sometimes even reference hyperlinks may lead to liability. One may easily use a simple hyperlink to libel another, or to tarnish a trademark, for example, and hence there can be no immutable rule that hyperlinks are always allowable. The principle should simply be that a linkage itself is presumptively all right, and restrictions should be imposed only when the circumstances show a clear abuse that would be actionable in a non-Internet situation.

(2) Study actual consumer understandings and recognize web user intelligence and sophistication as appropriate:- Trademark and unfair competition laws focus on

\textsuperscript{815} A hyperlink (often referred to as simply a link), is a reference or navigation element in a document to another section of the same document; available at \url{www.en.wikipedia.org/wiki/Href}, visited on 3 Nov 2005

\textsuperscript{816} Sableman Mark, Linking law Revisited : Internet Linking Law At Five Years, Berkely Technology Law Journal , Volume 16 (2001), Issue 16:3 (Fall 2001) at p 60
consumer understandings. Whether a particular use of a mark constitutes infringement depends on how consumers will react; specifically, whether they are likely to be confused. Even dilution laws, which protect trademarks beyond the area of “confusion,” focus essentially on states of mind: whether use of a mark will “blur” or “tarnish” the image of the mark in the minds of the relevant consumers. False advertising and unfair competition law also depend on how consumers understand certain information put forth by one competitor about another. In such cases, consumer surveys are often needed to determine consumer perceptions and how consumers’ overall knowledge and instincts interact with the advertising or statements at issue.

While the law’s focus should be on actual consumer understandings, courts have become accustomed to assume at times that, at least in the general product marketplace, consumers do not use a terrible amount of thought or intelligence. The image of unthinking and simplistic consumer behavior is widespread, and goes back at least to Judge Learned Hand’s observation that buyers tend to quickly glance at package labels without carefully studying them. Some of the key link law cases can be seen as hinging on somewhat paternalistic views of Internet users. The metatag cases that found infringement, for example, are premised on Internet users as being easily confused about sponsorship and associations. Courts should not assume any particular level of sophistication of Internet users. Rather, they need to require litigants to develop specific evidence about the understandings and behavior of Internet users. Internet users may well turn out to be far more sophisticated and capable of understanding the significance of links than many courts have thus far credited. After all, they have the ability to turn on a computer and the daring to attempt to navigate the world’s largest collection of information. Actual evidence of consumer understandings may be especially important in instances, such as framing and inlined links, where at present one can only speculate as to typical user perceptions. So far, although some litigants have

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attempted to survey Internet users, there is a paucity of empirical evidence regarding
the psychology and understanding of Internet users.818

(3) Recognizing the unique nature and value of information linking technologies:
Lawyers and judges live by the analytical tools of precedent and analogy, and where
precedents are lacking, as in the case of new technologies, they rely on analogies.
The Internet, for example, has been analogized to everything from a New England
town meeting to a dance hall to a dark alley. So, not surprisingly, linking
technologies have been analogized to various kinds of non-technological links and
associations, including the familiar links, endorsements, and associations known to
the law of unfair competition. While the term “link” suggests these analogies, they
may not be the proper analogies. If indeed an Internet “link” is no more than an
automated footnote or a digitized Dewey decimal reference, then the unfair
competition analogy is not valid, and such an analogy inhibits sound analysis.819

Internet linking technologies need to be examined afresh, without the prejudgment
of forced analogies. In particular, courts need to examine the unique benefits and
possibilities of these new technologies, as well as offenses alleged to have been
committed with them. In such a “big picture” examination, perhaps even new
terminology is needed. Professor Dan Burk has aptly characterized the issue in
many link law disputes as that of “control over information referencing.” Perhaps
not surprisingly in view of this characterization of the issue, Professor Burk has
suggested that “intellectual property law should optimally be interpreted so as to
forestall future monopolization of information tagging systems.” Whatever the
ultimate policy—or, more likely, policies—relating to linking disputes, we will all
be better served if courts undertake to understand and consider the overall
potentialities and benefits of the technology under examination.820

(4) Recognizing the right to create, use and exploit electronic searching of an open
electronic network: Just as telephone technology led to the telephone book, the
Internet has caused the creation of search engines. As a practical matter, navigation
of the web would be difficult or impossible without search engines. Yet just as

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818 ibid at p 361
819 ibid at p 362
820 ibid at p 363
telephone directories could conceivably be faulted as invasions of privacy, search engines and how they are used and exploited can be, and have been, faulted on numerous grounds. As we have seen, linking claims can arise from website owners’ use of metatags to attract search engines, and from search engine operators’ own sale of banner advertisements\textsuperscript{821}. These acts of use and exploitation of electronic searching capabilities should not be viewed in isolation. The Internet is an electronic network, where electronic searching—and hence electronic tagging is necessary and expected. Because of the vastness of the Internet, and its decentralized openness allowing practically anyone to add new content, effective computer based search tools are needed. No one who enters into an open computer network ought to be surprised by the existence, capabilities or use of electronic searching. Nor should anyone, even one who remains outside the network, be shocked that words of trade and commerce, including trademarks, show up in Internet communications as targets and outputs of search engines. In other words, a web user’s utilization of search technology should be no more suspicious than a sign painter’s use of a paintbrush; what matters is not the technology but what is done with it. Mere search engine use of the trademarks of another—as metatag targets or banner advertisement prompts, for example should not be verboten any more than use of trademarks in labels, coupons, or comparative print advertisements. Abuses, if they occur, can always be distinguished and dealt with appropriately\textsuperscript{822}. Just as media are treated more deferentially than other speakers, and just as common carriers like telephone companies are given immunity from content restrictions, courts may need to provide special protections for search engines. Certainly an automatically generated search engine list of links to illegal content should be treated differently than a list of links created by a party that deliberately seeks to direct traffic to the illegal sites. While this problem may be handled in part by the application of the traditional element of contributory infringement that requires knowledge by the alleged contributory infringer, it may be necessary to create a

\textsuperscript{821} ibid at p 363
\textsuperscript{822} ibid at p 364
search engine exemption or privilege in some situations. Courts already seem cognizant of the critical need for search engines, indexes, and links associated with such search tools.\textsuperscript{823}

(5) Use technology rather than law to close doors on any open network:- Where web publishers desire to control access to their otherwise unrestricted websites such as by prohibiting deep links legal barriers should not be the preferred method. Rather, web publishers should be expected to utilize all practical and available technological tools to achieve their objectives before they seek innovative legal rulings, which will inevitably carry broad effects.\textsuperscript{824}

Deep linking, for example, can be addressed with the help of technology by various means, including requiring password access, blocking requests or links except from certain pre-approved sites, use of dynamic (i.e., frequently changing) URLs for subsidiary pages. If web publishers use these rather than legal methods to control or restrict deep links, they can satisfy their objectives without causing distortions to the law or hardships or restrictions on the broad Internet community. The same principles ought to apply to problems besides deep linking as well.\textsuperscript{825}

(6) Study issues raised by framing or inlining, and encourage licensing where websites incorporate off-site materials:- Framing and inlining technologies raise more concerns than simple reference hyperlinks. Both techniques raise serious issues of the creation of derivative works under copyright law. In image inlining, when A takes B’s copyrighted image and places it on A’s website—perhaps as an integrated element of a composite design such as a collage—A seems to have adapted B’s work and hence violated B’s exclusive right to make derivative works. When A uses framing technology to frame portions of B’s web content on A’s website, the derivative work issue may arise, although one does not create a derivative work by putting a frame (e.g., a picture frame) around a copyrighted work.\textsuperscript{826}

\textsuperscript{823} ibid
\textsuperscript{824} ibid at p 365
\textsuperscript{825} ibid
\textsuperscript{826} ibid at p 366
The non-copyright issues arising from framing and inlining need more study. The Total News complaint artfully highlighted some serious potential legal concerns with framing, but due to the particular relative sizes of the litigants (major media companies against a small web pioneer) and the early settlement utilizing a linking license, these innovative theories never underwent real testing. In particular with respect to the unfair competition theories in such a case, the facts regarding consumer perceptions are all important. Do consumers believe when they view a framed site that the framed site is associated with the framing site? Or do viewers see a framed site for what it is, and easily navigate directly to the framed site when they so desire? Similarly the issues of advertising expectations and losses need factual development before we settle on legal policies for these situations.827

(7) Consider Internet consequences in analyzing proposed legislation: Just as the Shetland Times case foreshadowed linking disputes in the United States, foreign link law disputes continue to preview the kind of disputes and legal claims that may develop in the United States. Several recent European cases, for example, warn that we may see future deep linking claims based on database rights if the United States enacts database protection legislation similar to that in the European Union. For that the possibility of opening up more deep linking claims in connection with proposed legislation like database protection. As our society walks down the path of greater recognition of proprietary rights, it must take care that it does not in so doing unduly restrict useful tools and techniques like Internet linking.828

(8) Maintain flexibility to permit adaptation to technological advances: Laws must be adaptable to evolving technologies. The Internet is changing and evolving rapidly and consequently courts need to be careful not to promulgate doctrines narrowly tailored to today’s technology, which may be gone tomorrow. HTML, today’s “language of the web,” may be replaced before long with eXtensible Markup Language (‘XML’), a new computer language that could dramatically affect the way links operate, and which might empower both linker and linkee alike to deal more directly with the links of concern to them. Courts should be particularly

827 ibid at p 366
828 ibid at p 367
cautious about intervening in areas where new technology may empower private problem solving.\(^{829}\)

### 5.9 Digital Millennium Copyright Act (DMCA)

One of the earliest attempts made in the history of cyberspace to protect the interest of the copyright holders in the digital era can be traced to the enactment of DMCA by US. On October 12, 1998, the U.S. Congress passed the Digital Millennium Copyright Act (DMCA), ending many months of turbulent negotiations regarding its provisions. The Act is designed to implement the treaties signed in December 1996 at the World Intellectual Property Organization (WIPO) Geneva conference,\(^{830}\) but also contains additional provisions addressing related matters.\(^{831}\)

Some of the important features of the DMCA are as follows

a) Makes it a crime to circumvent anti-piracy measures built into most commercial software.\(^{832}\)

b) Outlaws the manufacture, sale, or distribution of code-cracking devices used to illegally copy software.\(^{833}\)

c) Does permit the cracking of copyright protection devices, however, to conduct encryption research, assess product interoperability, and test computer security systems.\(^{834}\)

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\(^{829}\) ibid at p 368

\(^{830}\) WIPO has made two treaties for the protection of copyright holders - Two treaties were concluded in 1996 at the World Intellectual Property Organization (WIPO) in Geneva. One, the **WIPO Copyright Treaty (WCT)**, deals with protection for authors of literary and artistic works, such as writings and computer programs; original databases; musical works; audiovisual works; works of fine art and photographs. The other, the **WIPO Performances and Phonograms Treaty (WPPT)**, protects certain "related rights" (that is, rights related to copyright): in the WPPT, these are rights of performers and producers of phonograms.

\(^{831}\) The UCLA Online Institute for Cyberspace Law and Policy, The Digital Millennium Copyright Act available at [http://www.gseis.ucla.edu/iclp/dmca1.htm](http://www.gseis.ucla.edu/iclp/dmca1.htm), visited 10 Jan 2005

\(^{832}\) Sec.1201, Digital Millennium Copyright Act, 1998

\(^{833}\) ibid

\(^{834}\) Sec.1201(c)(1), Digital Millennium Copyright Act, 1998 (Title I)
d) Provides exemptions from anti-circumvention provisions for nonprofit libraries, archives, and educational institutions under certain circumstances\textsuperscript{835}.

e) In general, limits Internet service providers from copyright infringement liability for simply transmitting information over the Internet\textsuperscript{836}.

f) Service providers, however, are expected to remove material from users' web sites that appears to constitute copyright infringement.

g) Limits liability of nonprofit institutions of higher education, when they serve as online service providers and under certain circumstances for copyright infringement by faculty members or graduate students\textsuperscript{837}.

h) Requires that "webcasters" pay licensing fees to record companies\textsuperscript{838}.

i) Requires that the Register of Copyrights, after consultation with relevant parties, submit to Congress recommendations regarding how to promote distance education through digital technologies while "maintaining an appropriate balance between the rights of copyright owners and the needs of users."\textsuperscript{839}

j) States explicitly that "nothing in this section shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use..."

Digital networked environments pose particularly severe challenges for owners of intellectual property rights because digital networks make it so simple for members of the public to make multiple copies of those works and distribute them to whomever they choose at virtually no cost. Left unregulated, this activity would undermine the incentives of authors and publishers to invest in the creation and distribution of creative works, for the first distribution of a digital copy to the public

\textsuperscript{835} Sec.1201(d), Digital Millennium Copyright Act, 1998 (Title I)

\textsuperscript{836} Sec.1201(c)(2), Digital Millennium Copyright Act, 1998 (Title I)

\textsuperscript{837} Sec 512 (e) Title II of Digital Millennium Copyright Act, 1998

\textsuperscript{838} Title IV, Sec.112, Digital Millennium Copyright Act, 1998

\textsuperscript{839} Title I, Sec.104, Digital Millennium Copyright Act, 1998
would enable those who receive it to set themselves up as alternative publishers of the work, able to undercut the first publisher's price because they need not recoup any development costs.\footnote{Samuelson, Pamela, “Legally Speaking: The NII Intellectual Property Report”, available at \url{http://www.eff.org/IP/?f=ipwg_nii_ip_report_samuelson.comments.txt}, visited on 21 Dec 2005}

\subsection*{5.10 Trademarks and Domain Names in Cyberspace}

A trademark is a name, word, symbol, or device used by a manufacturer of goods or a supplier of services to designate products sold and to distinguish them from goods or services sold by others. In the case of goods, the mark must be affixed to the goods, or to packaging or point of sales displays. In the case of services, the mark must be used so as to designate the services, usually in advertising referring to the services.

The problem with trademarks on the Internet often is whether trademark use has occurred or not. In the "real" world, we can slap a label on a product or put a sign on a building, but in the on-line context, the use of the trademark may be as ephemeral as a momentary appearance on a computer screen.\footnote{Jere M. Webb, Trademarks, Cyberspace, and the Internet, available at \url{http://www.gseis.ucla.edu/iclp/jmwebb.html}, visited on 7 Jul 05.}

In Playboy Enterprises v. Frena\footnote{The Internet Law Page, Playboy v Frena available at \url{http://floridalawfirm.com/iplaw/playb2.html}}, 839 F Supp 1552 (MD Fla 1993), the court found trademark infringement when a subscription computer bulletin board owner distributed Playboy photographs owned by Playboy Enterprises, Inc., that contained the "PLAYBOY" and "PLAYMATE" trademarks. The court also found unfair competition and violation of trademark law based upon the bulletin board owner obliterating some Playboy trademarks and putting its advertisement on Playboy photographs. The court found that these acts of the defendant made it appear that Playboy had authorized use of the photographs on the bulletin board.\footnote{ibid}
Similarly, in Sega Enterprises, Ltd. v. Maphia\textsuperscript{844}, 857 F Supp 679 (ND Cal 1994), the court enjoined a computer bulletin board owner, based on copyright and trademark infringement, from uploading and downloading unauthorized copies of Sega's video games. Sega's trademarks appeared on the copied games and on file descriptions on the bulletin board\textsuperscript{845}.

The expanded usage of the Internet for commercial purposes has resulted in greater importance and significance of name recognition on the Internet. An identifying address on the Internet, the "domain name", creates an expectation about who and what is located at that address. Because a domain name may suggest identity, quality and content, it may be closely related to or function as a trademark\textsuperscript{846}. A domain name is the human friendly address of a computer that is usually in a form easy to remember or identify – www.abc.com.

The Internet domain name registration policy of first come/first served has resulted in hundreds of controversies surrounding ownership of a particular name\textsuperscript{847}, including a number of well-known instances where individuals have registered names based on a corporation's trademark or where corporations have registered names based upon a competitor's trademark\textsuperscript{847}.

Controversy and confusion result especially where well-known trademarks have been registered by unrelated third parties for the purpose of re-selling them to the rightful owner or using them for their own purposes. This has been come to known as “Cybersquatting”. That is, deliberate registration of trade names or trademarks of another company or individual in bad faith.

Panavision International V Deniss Toeppen\textsuperscript{848}, a case filed in United States of America, is a classical case of cybersquatting. When Panavision, the owner of

\textsuperscript{844} David Loundy’s E-law, Available at http://www.loundy.com/CASES/Sega_v_MAPHIA.html
\textsuperscript{845} ibid
\textsuperscript{847} ibid
several federally registered trade mark including ‘Panavision’ attempted to establish a website under its own name, it discovered that Toeppen had registered ‘panavision.com’ as its domain name. Therefore, the company was unable to register and use its trademark as an internet domain. When Panavision notified Toeppen, he demanded $13,000 to discontinue his use of the domain name. Panavision refused Toeppen’s demand and filed an action for infringement. The court granted an injunction order restraining Toeppen from using ‘panavision’ for business purposes and further directed him to transfer the domain name to Panavision International.

In India too, there have been two reported cases of domain name/trademark disputes so far. In the case of Yahoo Inc V Akash Arora\textsuperscript{849}, the Delhi High Court protected the international reputation of Yahoo and restrained Arora from using ‘Yahooindia.com’. The Mumbai High Court went a step further and in the case of Rediff Communication V Cyber Booth\textsuperscript{850}, held that a domain name is a valuable corporate asset requiring protection.

In India, we do not have a specific legislation which prevents cybersquatting as in US, where cybersquatting is regulated by Anti-cybersquatting Consumer Protection Act, 1999. But the definition of “mark” and “trademark” given by Trademarks Act, 1999 under Sec.2 (1) (m) and Sec.2 (1) (z) are wide enough to cover the issues of domain name. It may be noted that a “mark” is used, rightly or wrongly, if it is used in printed or other visual representation as per Se.2 (2) (b). It can not be doubted that a domain name corresponding a mark is definitely used both in the printed form (electronic form) and by the visual representation. Thus, the provisions of the Trademark Act, 1999 can be safely invoked to fix the liability in cases involving domain names.

\textsuperscript{849} 1999 PTC 201
\textsuperscript{850} 2000 PTC 209
5.10.1 Metatags – Use of Indexing Words

Meta tag misuse may generate less obvious but equally serious problems to trademark holders. Web sites are written in the HTML (Hyper Text Markup Language) language. This language is nothing more than a list of "tags" that can be used to format and arrange text, images, and other multimedia files. "Meta tags" are tags that have no visible effect on the Web page. Instead, they exist in the source code for a Web page to assist search engines (for example Google search engine) in ascertaining the content of the page. Problems arise when companies include in their own Web sites Metatags containing the names or descriptions of other companies. Suppose, for example, that Coca Cola used the keyword "Pepsi" in its Metatags. Web surfers who used search engines to obtain information about "Pepsi" would then be directed to Coca Cola's Web site\(^{851}\).

5.11 ICANN and UDRP

Internet Corporation on Assigned Names and Numbers (ICANN) has taken up the responsibility of resolving domain name disputes. The ICANN’s domain name resolution policy has sought to address the issue of cybersquatting through a mechanism of online arbitration. The World Intellectual Property Organization’s (WIPO) Arbitration center has passed orders in more than a hundred cases directing cybersquatters to transfer the disputed domain names to their true owners. Bennet and coleman was the first in India to have got back its trademarks and the well known names “thetimesoindia.com” and the “theeconomictimes.com” from the cybersquatters. It may be noted here that the online dispute resolution mechanism is limited in its scope to cybersquatting.

\(^{851}\) Berkmen Center for Internet and Society, Harvard Law School, Intellectual Property in Cyberspace (2000), [http://cyber.law.harvard.edu/property00/metatags/main.html](http://cyber.law.harvard.edu/property00/metatags/main.html), visited 10 Jan 2005
Uniform Domain Name Resolution Policy\(^\text{852}\) (UDRP) has laid down three substantive conditions which define what the complainant must show in case cybersquatting:

(1) The domain name must be identical or confusingly similar to a trade mark in which the complainant has rights;

(2) The respondent must have rights or legitimate interest in the domain name; and

(3) The domain name must have been registered and be used in bad faith.

While these principles are a reflection of a shared approach in most legal systems to deliberately wrongful misrepresentation of indications of source, it does not follow the precise rules of any one legal system. Fundamentally that is because the comparison which has to be made is in essence different. In a dispute over the use of trade marks or names, the claimant is usually concerned to show misrepresentation relating to the defendant’s use of the mark on the same or similar goods or services. But a domain name is not tied to trade in anything in particular or indeed to any obligation to use it.

The boldest cyber-squatters offer no apology for acquiring the domain name simply in order to sell it to the enterprise or person whose name is being taken in vain. Others may offer an excuse from a range of ingenious justifications. Deciding how far these must be treated as genuine is a recurrent reason how UDRP adjudication can be far from straightforward\(^\text{853}\).

First, the claimant’s right to a mark and confusion with it. It is accepted that the right may arise through protection of a trading reputation as well as by registration. But a panel may look carefully at claims where the mark is, for instance, descriptive. Evidence for this, which complainant may be unwilling to reveal, may

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\(^{852}\) See Internet Corporation for Assigned Names and Numbers for complete document, available at http://www.icann.org/udrp/udrp.htm, visited 20 Jan 2005

appear from the fact that applications to register the mark have not been made or not progressing. The claimant may succeed where a case of unfair competition or passing off can be shown to exist, for example, from unfair competition or passing off can be shown to exist, for example, from long established or heavily advertised trade or other activity. It is over such matters that the scheme is at its most eclectic: the result is supra-national body of precedent which is rapidly burgeoning\textsuperscript{854}.

It is also accepted that such “common law rights” may be those of celebrities, such as pop stars, authors and sportsmen, since they will at least have rights in the primary goods or services which they are involved in offering. It is sometimes said that this goes further than, for instance, English law, which has been reluctant to protect a celebrity’s ability to endorse the goods or services of others. But that is to forget that a domain name is not tied to the making and marking of particular goods and services. Most of the celebrities who have succeeded under the UDRP have a “trade” connection with the primary goods (books, records, films) or services (signing, modeling, footballing) which make them famous. Whether the same can be said of municipal authorities or other public bodies which claim rights in the name of their town or region is much more questionable, even if they hold a mark registration. One issue is who should be allowed to succeed (particularly in securing a transfer of the domain name) when there are several potential complainants\textsuperscript{855}.

As to probability of confusion, the global character of the Internet poses various problems. Who are the public who are likely to be confused by a domain name? It has been held to be any group of substantial size within a country as well as a region or language group. The issue has arisen particularly over “gripe sites” for airing complaints about well-known enterprises and individuals. Any American knows that “walmartsucks.com” is unlikely to lead to an official Walmart site, but will Greeks, Ethiopians or Phillippinos?\textsuperscript{856}

\textsuperscript{854} ibid at p 818
\textsuperscript{855} ibid at p 819
\textsuperscript{856} ibid
Secondly, a right or legitimate interest of the respondent in the name. The UDRP states that the respondent can make this out by showing (i) that he has used the domain name, or made genuine preparations to use it, for a genuine website; (ii) that he or it is commonly known by the name; or (iii) that he is making a legitimate non-commercial or fair use of the domain name, without intent, for commercial gain, to divert Internet users or tarnish the complainant’s mark. Justifications under one or other of these heads play prominent parts in contested UDRP cases, but they need to be more than unsupported assertions. Some of the submissions are dismissed as disingenuous or fantastic. This may well be the fate of assertions that the name is the nickname of the respondent or a family member, or is the name of some event, individual or character associated somehow with them. The same may happen when a claim to be running a business is not shown to have any substance\(^{857}\).

Where the respondent asserts an intention to set up a site commenting on the complainant by way either of adulation (a fan club) or of criticism (a commercial gripe site, political opposition), it is particularly important to recognize any genuine claim to freedom of expression, given its status as a human right. Claims of that kind deserve very careful attention. They can scarcely be sustained where a respondent has collected an array of domain names, which he is offering to be targeted enterprises in order to save them from the domain falling into the hands of someone else that might actually set up a site for spoofs, parodies, complaints, exposes or denunciations\(^{858}\).

Thirdly, bad faith both in registering and using the name. Here the policy makes explicit that “use” has a broad meaning. It covers situations where (i) the domain name has been obtained primarily for the purpose of selling it to the complainant or a competitor for a sum exceeding out-of-pocket costs; (ii) where the registration is in order to prevent the complainant from reflecting its mark in that domain name or to disrupt its business; and (iii) where it was registered in order to try to divert

\(^{857}\) ibid at p 820
\(^{858}\) ibid
Internet users to the respondent’s website by creating a likelihood of confusion. Each of these types of use has in turn been read inclusively. Under (i) advertising the domain as being for sale on an auction website can satisfy the condition. Under (ii) it is not necessary to show that the complainant has been deprived of all possible domains. Evidence that it has appropriated many of them merely reinforces the proof of mala fides\textsuperscript{859}.

Under (iii) there is a difficult question: when, in the process of discovering a website, then clicking on to it and scrolling its pages, can sufficient probability of confusion be said to arise? A search engine looking for the main word in the gTLD may produce a great splay of sites. Internet users soon learn that many of them will not be an “official” site. Their true nature will generally be clear from the home page at the site itself, or sometimes only by moving further into the site. If users are led by the name to what turns out to be a comment site which is judged to be a legitimate outlet for opinion, this cannot be a bad faith holding of the name. On the other hand, if the site proves to be a sales outlet for other goods than the complainant’s, the temporary uncertainty between finding the site and perusing it is likely to be treated as showing bad faith. Here too there are uncertainties and inconsistencies at work\textsuperscript{860}.

UDRP jurisdiction has been heavily used in its early years: WIPO alone has handled some 20,000 cases in just over three years. Across the world established businesses have readily accepted the results. Of a handful of critical analyses, some raise issues of real concern particularly that some panelists have been unduly ready, either to accept the complainant’s account of the situation or to stretch the terms of the policy beyond any acceptable limits. It is true that the only means of questioning a decision is to bring proceedings in an appropriate national court, and that has happened only on a handful of occasions. The phenomenon of “reverse high jacking” has been acknowledged as a hazard: inevitably some complaints will

\textsuperscript{859} ibid at p 821
\textsuperscript{860} ibid
turn out to be illegitimate attempts, based on fabricated evidence or wholly unjustified assertions, to oblige domain holders to pay up or suffer transfer. Panels have been given power to declare against a complainant. Respondents rarely seek to have them exercise their powers and much more rarely still is a finding against a complainant successful\textsuperscript{861}.

On balance, however, the confidence which the policy has generated seems justified. The jurisdiction deserves comparison with the other “internal” solution to disputes which the Internet is generating: the Notice and Take Down procedures for controlling improper content on the Internet by requiring site closure or changes through the intervention of the Host Service Provider. In the US at least this is proving one method of mass action against copyright and other infringement which is affecting the balance of power between right-owners and their opponents. It too is capable of over-enthusiastic application: for instance where a site is closed down even through it makes legitimate material available as well as material that infringes copyright (or is defamatory or pornographic, etc)\textsuperscript{862}.

The two schemes use the Internet to police its operation, with effects for the system across the globe. Both open prospects of mass action which cannot be expected of litigation through national court systems. They affect very different sorts of Internet operator: Notice and Take Down is typically aimed at free sharing: the P2P site which provides access to music, films and the like without having to pay the right-owner’s subscription to an authorized service. The root intention is not to make money (though that may become an indirect motivation). Many free sharers find it simplest to submit to the take down and to set up again under a new name. The domain name appropriator, on the other hand, is in the business of selling particular names and will have no chance of regaining his asset if it is transferred away to a person entitled to object to a bad faith operation. That is why the UDRP and like jurisdictions are in practice so much more contentious and why the need to oversee

\textsuperscript{861} ibid at p 822
\textsuperscript{862} ibid
the fairness of the adjudicative process will remain important as long as this form of name squatting persists\textsuperscript{863}.

5.12 Patent Misuse in Cyberspace

Internet is software driven. Software enables the networking of computers and the actual transmission of data. Controversy as to whether computer software should be protected under copyright law or patent law is not yet resolved and still remains as an elusive concept for intellectual property lawyer.

Patents are granted to inventions which are new, novel and useful\textsuperscript{864}. Traditionally, patents have been associated with more industrial or scientific innovations, such as machinery, manufacturing process, computer chips and pharmaceuticals. A patent grants its owner the right to exclude others from making, using, selling, or offering to sell the patented invention. However, as technology changes, so do the patent laws available to protect it.

Two important issues concerned with patents and have created controversy over the cyberspace are software patents and business method patents. Sec.3 (k) of the Indian Patent Act, 1970 expressly excludes patenting of business methods and computer programs per se from the subject matter of patentability. Hence in India patents are not available to computer programs per se and business methods either in the real word or in the cyberspace. But countries like United States of America and Japan have already started granting patents for business methods and granting patents for computer software has become well established practice in these countries.

\textsuperscript{863} ibid

\textsuperscript{864} Art.27.1, WTO Agreement on trade Related Aspects of Intellectual property Rights- patents shall be available for any inventions, whether products or processes, in all fields of technology, provided they are new, involve an inventive step and are capable of industrial applications.
In Amazon.com V Barnesandnoble\textsuperscript{865}, Amazon.com filed a patent application with USPTO (United States Patent and Trademark Office) for a business method; “Method and system for placing a purchase order via a communications network”. In its patent application, Amazon.com claimed as its invention a business methodology for placing an order, whereby in response to only a single action performed by a consumer (such as click of a mouse), a requested item may be ordered. Additional information necessary to complete the order, such as credit card number and shipping address, is obtained from information previously received from the consumer and stored in a database by the vendor. This patent was dubbed as “1-click” patent because users of the invention need click only once with the mouse on a hyperlink to complete the purchase of an item. When BarnesandNobel, followed the same method for its operations, the court granted interim injunction and restrained the BarnesandNobel from using the “1-click” method of operation\textsuperscript{866}.

Some commentators have criticized the “1-click” patent as an example of a patent system gone astray. These critics contend that the patent system has been stretched too far with the allowance of business method\textsuperscript{867} patents, and that even if business methods are worthy of patent protection, the US patent and Trademark Office is not equipped to handle the examination of patent applications for this type of innovation. At the same time, others herald the patenting of business methods as a natural progression in an ever changing technology driven world. As it so often happens, the truth probably lies somewhere between\textsuperscript{868}.

Regardless, few will dispute that business method patents, as well as software patents in general, are having a profound impact on how software and internet companies are conducting business. Technology companies that just a few years go


\textsuperscript{867} Sec.3(k) of the Patent act, 1970 excludes patenting of business methods in India.

would not have ever considered the impact of patent protection – either offensively or defensively- are now devoting many resources to ensuring they are protected, and minimizing the possibility of infringing third party patent rights

5.13 Conclusion

Information and Communication Technologies gives rise to a variety of legal problems. The problems themselves are not novel in their character. But they deserve special treatment, because of the environment in which they take their birth and the nature of the machinery used in the environment and the means employed for recording the information in question.

The digital dilemma is that the information technology that is making more current information available more quickly and completely also has the potential to demolish the balancing of public good and private interest that has emerged from the evolution of intellectual property law.

The relationship of copyright to new technologies that exploit copyrighted works is often perceived to pit copyright against progress. Historically, when copyright owners seek to eliminate a new kind of dissemination, and when courts do not deem that dissemination harmful to copyright owners, courts decline to find infringement. However, when owners seek instead to participate in and be paid for the new modes of exploitation, the courts, and law making bodies, appear more favourable to copyright control over that new market. Today, the courts and the legislatures regard the unlicensed distribution of works over the internet as impairing copyright owners; ability to avail themselves of new markets for digital communication of works; they accord control over those markets to copyright owners in order to promote wide dissemination. Copyright control by authors, particularly those excluded by traditional intermediary-controlled distribution

869 ibid at p113
systems, may offer the public an increased quantity and variety of works of authorship.\textsuperscript{870}

Legal, economic and public policy research should be undertaken to determine the extent to which intellectual property rights have to be protected in cyberspace. Appropriate modifications in existing intellectual property law have to be made and if necessary new legislations must be enacted to meet the challenges posed by this new technology. Internet being a borderless medium is responsible for the ‘death of distance’\textsuperscript{871} among nations which has created international jurisdictional problems, international conventions/treaties seem to be more appropriate to protect and promote the interest of the cyberspace entities.

\textsuperscript{870} Ginsburg c Jane, Copyright and Control over New Technologies of Dissemination, Columbia Law Review, Vol.101, N0.7 (Nov.2001), p 1613-1647
\textsuperscript{871} Cairncross Frances, Death Of Distance, Harvard Business Review Publications, 1997