ABSTRACT

This article tells about the protection of computer software under Intellectual Property Rights. .Traditionally, the concept of intellectual property right has been categorized into two category i.e. industrial property and another one is copyright. Industrial property includes patent, trademark, industrial design and geographic indication of source. Copyright include the protection relates with literary, musical and artistic work. The concept of computer software was not the part of IPR. As per the growth and development of internet in the society, computer software became the part of IPR and started to get protection under the regime of IPR.

Computer software gets protection under copyright as well as patent law. Copyright protection granted to computer software if the work of software is original and does not relate with technical effect. Though the patent can be grant to the computer software if that software followed the inventive step and capable for industrial use.

"India doesn't dishearten the transformation,

And transformation is always good for better development."

SOFTWARE IS PROTECTED UNDER WHICH REGIME OF IPR.

Human beings are the most intellectual animals among the other animals and have the capacity to think and communicate their thoughts through various modes. Civilization and advanced technology have made man to create new things so as to make his work easier. This has led man through his labor. As a result, man has come out with many legal norms or systems for the protection of intellectual property worldwide.

Computer is one of the inventions of man created to live comfortably in the society. Originally computers were created to make mathematical problems and make the work faster. But the new innovation in the field of the computer has made man to depend on the computer for everything in the routine works. Nowadays life without computer is unimaginable. It is estimated that there are over a billion personal computers in the world at present. In United States of America (USA) alone there are about 300 million computers.[1]

In the entire world approximately more than 2000 large companies have involved in the computer industries. Out of this, nearly 35 major companies have involved in software and services. According to the Probe Magazine,[2] IBM company is on the top in the field of software and services in the world having sales in a year of 95.76 billion dollars (B$), profits of 13.43 B$, assets of 109.02 M$, and market value is of 167.01 B$. In India, the Tata Consultancy Services having software and services business

is on the top having 5.41B$ of sales in a year, 1.02 B$ of profits, 4.45 B$ of assets and 32.31 B$ of market value. The total number of Personal Computers (PCs) shipped to Brazil, India and China in 2008 is 7.3 million and it was raised to 8.4 million in 2009.[3] Every day the investment in the field of research in software and its development is growing. On the other hand, theft of the software in the form of piracy is increasing enormously despite various controls. In order to understand the protection extended to software and the enforcement of various provisions, the present study is undertaken. The 2016 BSA report reveals that, in India there are 58% of the software used in India is pirated software. [4] There is two-point decrease compared to the previous year study. The Software Alliance President and CEO *Victoria A. Espinel* is of the view that, '*Many CIOs don't know the full extent of software deployed on their systems or if that software is legitimate.'* According to the *CEO, 'Where unlicensed software is in use, the likelihood of encountering malware dramatically goes up. And the cost of dealing with malware incidents can be staggering. In 2015 alone, for example, cyber attacks cost businesses over $400 billion.*'

Human Rights and Intellectual Property

Existing Intellectual Property Rights (IPR) framework have generally had little direct connection with human rights or fundamental rights. [5] Universal Declaration of Human Rights, 1945 (UDHR) has given protection for IPR. Article 27(2) of UDHR states that, 'Everyone has the right for protection of moral and material interest resulting from any scientific, literary or artistic production of which he is the author.' This article denotes that, any person who creates new thing out of his intellectual labour, which is useful for human beings, is the owner of that work and he has the moral and material interest on such creation or invention.

This right is again supported by the International Covenant on Economic, Social and Cultural Rights 1996(ICESCR) under Article 15(1). This Article was not there in the original draft. It was pointed by the Costa Rica and Uruguay. These States argued that, there is a need to protect authors against improper action on the part of publishers.[6]Uruguay argued that, due to the lack of International protection, piracy of literary and scientific works by foreign countries are more rampant who did not pay royalties to the authors. But this was strongly objected by the USA and UK. They argued that the protection of Intellectual Property Rights (IPR) should not be included in UDHR and it has to be dealt in other International agreements. This objection was also supported by the United State of Soviet Russia.

Philippe Cullet opined that, Article 15 of UDHR focuses on science and culture, provides an interesting departure point to analyze the place of individual or collective intellectual contributions in the human rights context. It seeks to ensure that the States provide an environment within which the development of science and culture is undertaken for the greater good of society while recognizing the need to provide specific incentives for this to happen. Article 15(1) is more concerned with the balance between individual and collective rights of all individuals to take part in culture and enjoy the fruits of scientific development, and the rights of individuals and groups making specific contributions to the development of science or culture.[7]

International Covenant on Economic, Social and Cultural Rights Draft Committee in 2004, mainly focuses on:

a) Individual right to Intellectual Property protection is a human right and that can be deemed to be inherent in human beings. IPR rights are derived from the right of inherent dignity and worth of all persons.
b) The word 'Scientific production' includes scientific invention and the word 'authors' includes 'inventors'. It is argued that, the trade mark does not have personal link so it has to be excluded in this context.
c) It is needed to address the tensions between the recognitions of individual claims to Intellectual Property Rights (IPR) protection and the fact that in practice, individuals are today not the main benefits of Intellectual Property Rights (IP) Protection.

Finally, the Committee comes to the conclusion that protection of IPR is a facet of Human Rights and finally it was added to the Universal Declaration of Human Rights. The above argument is based on the human rights regime denotes that, the protection of IPR is very important from the point of view of Right to Life and Property. A person who creates something by using his intellectual or physical skill is the absolute owner of that property+

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Benefits of Software Industry

The innovation in field of software and development in the software industry gives greater benefits to business and to the economy.[8] The direct contribution of industry so far is hardly impressive and needs to be put in perspective by comparing it with other export-oriented industries. The BSA in its recent report held that,[9]

d) The software industry was responsible for a total $1.07 trillion of all US value-added GDP in 2014, and directly drove $475.3 billion of that amount.

e) The software industry directly employed 2.5 million people in the US in 2014. When including indirect and induced impacts, research shows that the software industry supports a total of 9.8 million jobs.

f) Software developers' average annual wage in 2014 was $108, 760 more than twice as much as the $48,320 average annual wage for all US occupations.

g) R&D expenditures in support of software development accounted for more than $52 billion in 2012. Domestic Research & Development (R&D) paid for and performed by software companies' accounts for 17.2% of all domestic business R&D.

The constitution bench of the Supreme Court in *Tata Consultancy Services v. State of AP* [10] held that, notwithstanding the fact that, computer software is an intellectual property, where computer software is conveyed in diskettes, floppies, magnetic tapes or Compact Disc ROMs, whether canned/shrink-wrapped or uncanned/customized, whether it comes with the computer or separately, whether it is tangible or intangible, branded or unbranded, it is a commodity which is capable of being stored, processed, transmitted, transferred, delivered and therefore, it is considered as 'goods' liable to sales tax. So there will be benefits though sales tax, income tax and other kinds of taxes that can be imposed on software industries.

The World Trade Organization (WTO) published the International Trade Statistics (ITS) on an annual basis to provide a comprehensive overview of world trade. According to ITS, information technology was the most resilient services sector during the global economic crisis, due to constant demand for cost-efficent technologies, the development of innovative software especially in manufacturing, finance, insurance and healthcare, and the rising need to address IT security concerns. The highlights of the ITS are as follows:

- 18% Average annual growth of world exports of computer and information services during 1995-2014.
- Asia's share in computer and information service was 8% in 1995 and it was raised to 29% in 2014.
- India placed in second position in exports of Computer Services, 2013 and 2014. In 2013, India exported computer services of rupees 50,520 million dollars and it was raised to 53,261 million dollars in 2014.

As per the ESC Statistical Year Book, Computer Software / Services and ITs

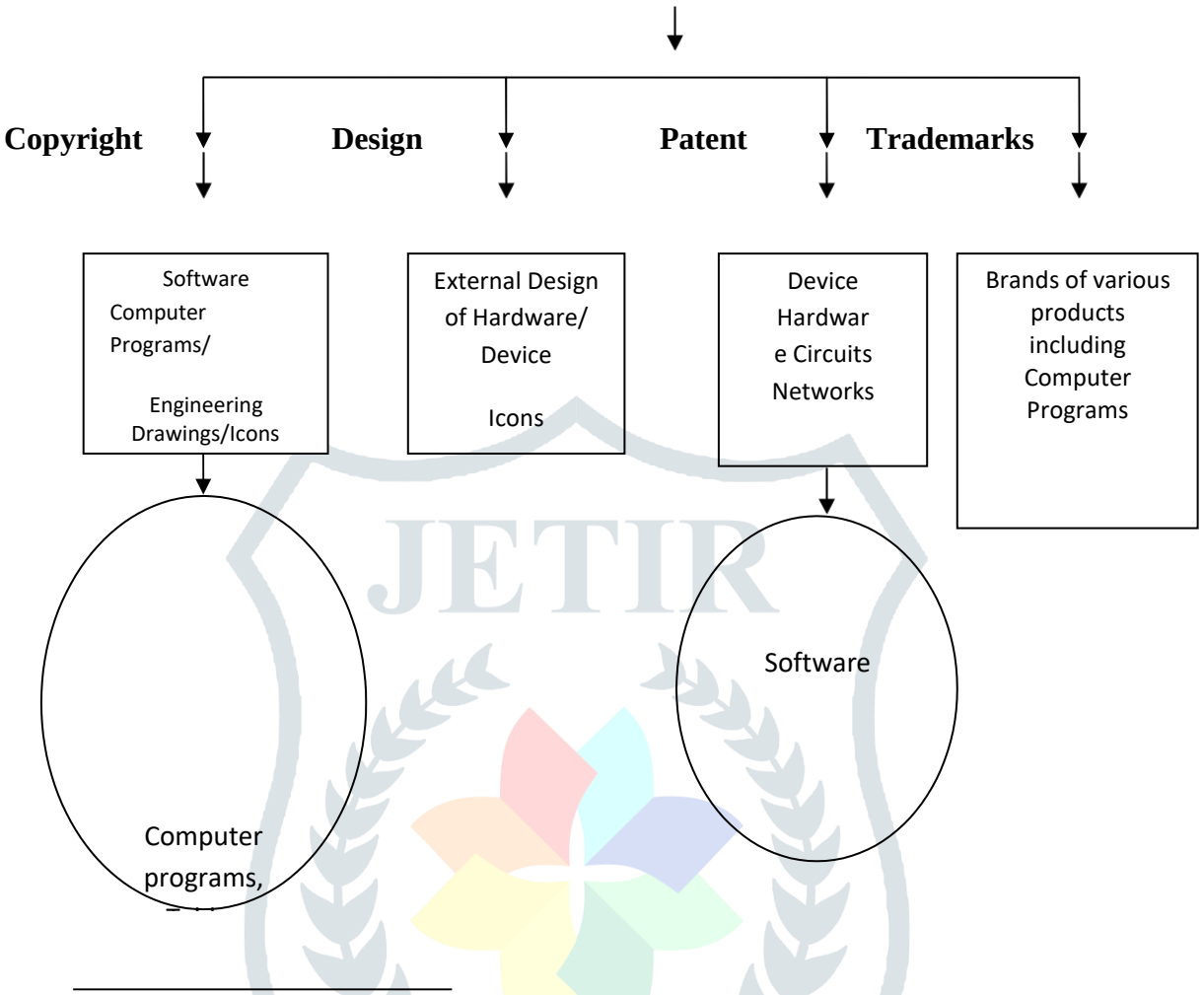
Exports Report 2010-11,[11] production of Computer Software and services during the year 2010-11 was Rs. 3,41,200 Crore (US$74.89 Billion) registering a growth of 11 percent (15% in US$ terms) over the year 2009-10. As per the report, the production of Computer Software/Services has been growing at an annual average growth rate of 20.44%.[12] Indian Software Industry is having an export of US$75B in 2014-15 and continuously registering double digit annual growth.[13]

Software and Intellectual Property Rights

Computer is a device created by man by using his intellectual capacity to solve various problems. The basic idea behind the creation of the computer was to solve the difficult mathematical problems. Thereafter, the human invention in the field of the computer technology has made the computer a part of human being. Today computers have entered into all the fields of human activities. It is proved that nowadays it is not possible to carry on the daily work without the help of computers.[14]

Basically, computer works with the help of Hardware and Software. Hardware is seeable or visible things, which includes the keyboard, hard disk printer etc. Software is a program which is invisible in nature but it is very important to a computer to function. Software is invisible, encoded, electrical instruction stored inside the computer. It is defined as a program or language which is used for the functioning of computer. Computer programs are the set of instructions for controlling a sequence of operations of a data processing system. It resembles the mathematical method. It can be expressed in various forms viz. a series of verbal statement, a flowchart, an algorithm, or other coded form and may be presented in the form suitable for direct entry into a particular computer or may required transcription into a different format computer language. *Gregory A. Stobbs* opined that, the software is the soul of the computer.[15] Inventor of the computer is having a set of IPR. The IPR right on computer can be understood in the following chart.

Computer and Intellectual Property Rights Computer and Intellectual Property Rights



The above chart denotes that the software can get protection under the Patent as well as Copyright Software and Patent

Traditionally, the computer is protected through patent. Patent is an exclusive or monopoly right granted to the true and first inventor.[16] The concept of patenting a software has not received a grand welcome in most of the patent offices around the world as computer programs have been looked upon as literary works that can be protected by copyright.[17]

Rajiv Jain and *Rakhee Biswas* are of the opinion that, 'USA has adopted a liberal approach for patenting of software. Software which demonstrably control and configure some computer hardware is patentable regardless whether they include mathematical algorithms. Patent protection is available for databases in combination with some form of computer readable memory'.[18] They also opine that, the patent protection if available would be superior to copyright since it would recognize broader protection for the basic concepts of the program and would also protect against later independent development.

The first case which is decided by the Supreme Court of America with respect to patenting of software was *Gottschalk v. Benson.*[19] In this case, the court held that, the method of converting signals from Binary Coded Decimal form into Binary is not patentable. The court held that, the method claimed was so abstract as to cover both known and unknown uses of the Binary Coded Decimal to Binary conversion. It ended with the prohibition of many software patents. But after six years of the judgment in Gottschalk case the Supreme Court in *Parker v. Flook*,[20] has given some relaxation to the patentable subject matter of software. The court held that, only the improved method of calculation, even when tied to a specific end use, is patentable subject matter. But these cases have not given the clarity on patenting of software.

Thereafter, in *Diamond v. Chakrabarty*, [21]the court held that, the new thing which is created by men which is not there in nature is patentable. For the first time the US Supreme Court in *Diamond v. Diehr*, has given the clear picture atentable of software. In this case, patenting of a method of operating a rubber- molding press for precision molded compounds with the aid of a digital computer, comprising was in question. The invention eliminates the need to make assumptions about how long the mold has been opened and how much it has cooled. The inventors used temperature sensors to read continuously the temperature inside the mold cavity. These sensors automatically feed information about the mold cavity temperature to a digital computer. The computer constantly recalculates the cure time, based on the Arrhenius Equation. The computer then gives signals precisely when to open the mold. This process involved the significant calculation step. The calculation step in each involves solving a mathematical formula. In each the mathematical formula represents some principles of nature. Each purports to include at least one additional method step. Finally, the court came to the conclusion that, except the things which are against the laws of nature, natural phenomena and abstract ideas, and all others can be patentable.

As per the Indian Patent Act, 1970, patent is available to innovation which is fulfilling the quality of novelty, non-obviousness, utility and industrial application. An invention involves technical development as compared to the present existing knowledge or economic significance or both which makes the innovative inventions non-obvious to the persons having ordinary skills in the art which can be patentable under the Act. The Act also puts restriction on the 17 types of non-patentable entities.

The patentee is having an absolute right over the patented subject matter. Unless and otherwise permission is granted by the patentee or by the government no one could

produce or use the patented subject for any purpose except for the education and research work.[22] If any person misuses the patented subject matter without any authority he is subjected to punishment. The patentee is entitled to get the Right of Injunctions, Damages or Account of Profit and other remedies in India.

B.L. Wadehra is of the opinion that, the Indian Patents Act, 1970, does not recognize patent protection for computer programs. The only mechanism of protection for computer programs and computer data is under Section 2(o) of the Copyright Act of 1957, which recognizes computer programs and computer data as creative work entitled to copyright protection, because Indian Law is based on British aw. Section 1(2) of the U.K. Patents Act of 1977, provides that a computer program is not a patentable invention.[23] But at the same time, he opinioned that, in certain circumstances even the U.K. Law allows the patent to be registered for computer program along with the computer. He had given two cases as an example to his argument. In the first case of *IBM Corporation Application*,[24] the court allowed for the patent of computer program which is meant to carry out a system to produce a required result as an apparatus modified or program to operate in a novel way which can be protected by a patent. In the second case, *Borough's Corporation Application*,[25] a computer program capable of controlling computers and directing modified or program it to operate in a new way was allowed to get the patent.

P. Narayan has also given the same opinion. He opined that, the computer program is not considered as a patentable invention.[26] From the above discussion, it is evident that there is no unanimous opinion regarding the patenting of Software in USA, UK & India. The USA gives patent protection and India and UK gives copyright protection to the software.

Software and Copyright

Copyright is a kind of intellectual property protection which is granted under Indian law to the creators or owners of original works of authorship viz. literary works which includes computer programs, algorithms, flowcharts, tables and coding compilations including computer databases which may be expressed in English words, codes, schemes, digits or in any other form which a computer understands medium of communication). Software may includes dramatic, musical and artistic works, cinematographs, films and also sound recordings. [27] Computer may also includes any electronic or similar device having information processing capabilities.[28] Normally, a computer works through the computer programs installed inside the computer. Computer program means a set of instructions expressed.[29]

Computer software programs are protected under Copyright Law as literary works. The Copyright Act, 1957 specifically protects computer programs as 'literary works'. Section 13(1) of the Act, gives a list of items which get the copyright protection under the Act. The term 'literary work', has been given an inclusive definition in Section 2(o) of the Act.[30]

The software programs are written in the computer codes with letters or in binary numbers (0 and 1). This feature provides the basic necessity to get the copyright protection under the Copyright Act. [31] The software manufacturers are entitled to have the rights like the author of a book for use, sale and to give permission to sell etc. Even though it is not necessary to compulsorily register the software but the registration of it provides for authenticity for prime facie proof in the case of copyright disputes. In copyright disputes, it is not necessary to prove the ownership of copyright of the disputed work, but the production of the registered copy of the copyright is enough to claim the rights before the court. Copyright owner has the exclusive right to do or authorize to do any of the following in respect of the work in relation to software:

a) To reproduce the work in any material form including the storing of it in any medium by electronic means;
b) To issue copies of work to the public not being copies already in publication;
c) To perform any work in public or communicate to the public;
d) To make any translation of the work;
e) To recording of his work;
f) To make any adaptation of the work.
g) To do, in relation or adaptation of the work, any of the acts specified in relation to the work specified in 1 to 6;
h) To sell, or give to hire, or offer for sale or hire a copy of the computer program, regardless of whether such copy has been sold or given on hire in earlier occasions;

Conclusion

Software developer invests their time and money to develop software but in India there is no sufficient law which can provide them economic as well as social protection to their work. Computer software is not patentable under The Patent Act 1970. Though, the patent can be grant to the computer software if that particular software is followed the inventive step and capable for industrial use. If the software is inventive and capable for industrial use then patent controller can grant patent to the software developer for twenty years. Where copyright law gives protection to the original work, software is grant as copyright only when no technical effect relate with that particular software. Generally computer software which does not have any relation with technical effect gets copyright protection. If the software is result of original work and there is no relation with technical effect then software developer can get the

copyright over that software.