

**“Software Patent in National and International Arena”**

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**ABSTRACT**

The Intellectual Property regime in India is in the process of evolution. It is multidisciplinary subject. It attracts attention from all fields irrespective of specialisations for instances, biotechnology, medicine and Software etc. Protection of computer software is one of the most contentious issues in the field of Intellectual Property Rights (IPR).

In the early days of computer industry the software came integrated with hardware. However, initially the patent remains confined to hardware. The software has not been considered for Patents. In India Sec.3(k) of the Patent Act 1970 clearly excludes the patentability of computer programmes per se.

This paper shall discuss the issues related to software patenting in national and International Arena. Further, the paper shall explain the implication of exclusion of Software patenting from the regime of Patent Laws in India. The paper shall also elucidate the pros and cons of denial or granting of Patent to software.

**INTRODUCTION**

The Patent system endeavors to achieve a balance between promoting the creation and funding of new products. In doing so it always tries not hamper innovation or delay the development of future products so as to provide the maximum benefit to the citizens. With change in technology, there is a need to maintain a balance between the law and technology in order to provide competitive market and growth in innovation. The world is experiencing a paradigm shift in technology from the use of Software to Mobile Apps Applications to integration with Cloud Computing, which has resulted in the emerging field of IoT, or Internet of Things.

Innovation has become keyword in all kinds of industries. In recent years, the Government of India, through its ‘Make in India’ campaign, is further promoting innovation in Indian Industries. The speed of innovation in the fields of computer software, telecommunications and internet based services in last ten years has been increasing at a fast pace. Revolution in the information technology has changed life, working habits and the living conditions of humans. Therefore, to protect the innovation and promote an innovative environment it is important to ensure that the patent system is capable of facing the challenges posed by these new innovative technologies.

Information Technology can be claimed as the most effective media of mass communication in the modern day. Continuous research in the field of information technology guaranteeing

effective communication has resulted in new and novel inventions. Though, this technology is not tangible.

Patenting of tangible or physical inventions in the field like computer, computer equipments and the like could be done on the satisfaction of regular requirements of patentability.<sup>1</sup> However, Patenting non-physical inventions like computer programs and software is a new phenomenon and is the issue for concern. Computer programs and Software are equally protected under copyright law as a form of literary work. However, there is growing demand for patenting of computer programs and software.

### **Software: Conceptualization**

Computer functions on the basis of programs which are written using mathematical algorithms. Software is a set of programs put together to instruct the computer to perform an intended task. It can be defined as a combination of programs written with the help of algorithms to perform special tasks. Algorithm is defined as a set of rules for solving a problem in a finite number of steps. In general, software can be defined to mean a set of rules or instructions designed and combined through mathematical algorithms in order to generate an intended output on computer.<sup>2</sup>

The history of development of intellectual property regime demonstrates the complexity of the issue of protecting novel technologies.<sup>3</sup> But Patenting of computer programs or software, the lifeblood of information technology was not encouraged for Patenting.<sup>4</sup>

Patents were granted on computer related inventions like computer equipments, computer hardware and other computer related physical objects. It was presumed that computer related objects do satisfy the requirement of Patentability. But computer programs and software were not considered patentable.

The machine/computer under the influence of software may act in a novel manner. In such cases, software patents are granted by many countries. Software is, however, different in many respects from the conventional technology. It is more complicated than any other product. It is observed that in most of the industries, a product could contain 22-25 parts.

A major computer programme may contain up to 10,000 million lines of code. Therefore, unlike other products, which contain a few parts, software product contains a larger number of factors leading the complete inventions. Secondly, software is more abstract. A software product depends on different computer technologies. One cannot make distinction between

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<sup>1</sup>Sreenivasulu N.S, *New Face of Patent of patent law: Impact Information technology and biotechnological revolutions*, MIPR, March 2007, Volume:1, Pg 135.

<sup>2</sup>Sreenivasulu N S *Law Relating to Intellectual Property*, 2<sup>nd</sup> edition, 2018 Universal Law Publishing, Gurgaon, Pg.272.

<sup>3</sup>Prabudha Ganguli, *Intellectual Property Rights: Unleashing the Knowledge economy*, 1<sup>st</sup> edition 2000, Tata McGraw Hill Publishers, New Delhi, Pg.379.

<sup>4</sup>Sreenivasulu N S *Law Relating to Intellectual Property*, 2<sup>nd</sup> edition 2018 Universal Law Publishing, Gurgaon, Pg.272.

these technologies. Thirdly, unlike the conventional industry, which generates a new product in a very long span of time, the software industry product changes its greater much faster. Therefore, the application of patent regime for the protection of software invention when compared with the conventional industry is found to be incapable of achieving any of its desired goals.

Unlike the other manufacturing set-ups with their capital intensive work orientation, the software industry is not only labour intensive but also has low barriers to entry. However, in due course of time the new approach and innovative interpretation of patent law made computer software as patentable.

Title 35 of U.S Code in section: 101 gave a wide definition of patentable subject and as a request U.S post 1981 started allocating patent protection to software. Earlier, there were instances when patents were rejected on software under the existing patent laws.<sup>5</sup> The scenario was different in pre 1981 era where U.S. Supreme Court in various decisions like *In re Freeman*, *In re Tanner*, *In re Abele*, *In re Pardo* and *In re Meyer* discouraged patenting of software.

Copyrights Protection the form of expression and not the idea itself. However, United States Supreme Court in *Gottschalk v Benson* observed that phenomenon of nature, though just discovered, mental processes and abstract intellectual concepts are patentable as they are the basic tools of scientific and technological work. To assess the patentability of the invention one should look at the invention as a whole and not just at what was novel about it.

In *Gottschalks v. Benson*<sup>6</sup> the U.S Supreme Court held that a computer program whose sole objective is to generate numerical values according to an algorithm would not be patentable. The Court considered algorithm as a mental act and held mental acts as not patentable. Since, software a set of computer programs that involves using of algorithms to make the computer function it was considered as not patentable. However for the first time in *In re Toma*<sup>7</sup> the US Patent Office Board of Appeals taking a complete departure from the earlier practices and the decision of the Supreme Court in the earlier case held a software that translate one language into another language as patentable. Further in *Diamond v. Diehr*<sup>8</sup> inspired by the above decision of the US Patent office to Patent software, held a computer controlled process, which involved certain algorithm to perform an intended task as patentable. Here, the Court for the first time viewed algorithm as patentable. The Court considered algorithm as a defined process or set of rules that leads and assures the development of a desired output from a given input.

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<sup>5</sup> Sreenivasulu N.S, *New Face of Patent Law: Impact of information technology and biotechnology revolutions*, MIPR, March 2007, Volume: 1, Part: 3, P. A-137.

<sup>6</sup> *Gottschalks v. Benson*, (1972) 409 U.S 63.

<sup>7</sup> *In re Toma* (1978) 575 F. 2d 872 at note 4 C.C.P.A.

<sup>8</sup> *Diamond v. Diehr* (1981) 450 US 175: 209 USPQ 97.

Once the Courts started considering software as patentable the picture started becoming clear. In *Arrhythmia Research Technology Inc v. Carasonix Corp*<sup>9</sup> a computer process for diagnosing heart attacks was given patent. As through the process data pertaining to electro cardiac signals can be transferred to computer for determining patient's vulnerability to heart attacks. The approach of judiciary can be said that a novel computer program, which makes a technical contribution to the society, is patentable. Computer programs or software prima facie is not patentable however software along with its specific function is patentable. It is a prerequisite under the Patent law that an invention must have a specific function, which is useful in order to patent it.<sup>10</sup>

### Software Patenting In India

The intellectual property regime in India is in the process of evolution. The domestic laws are modified to suit the various needs of people which are changing in according to the international markets. To be patentable, the invention must be new product or process; useful and capable of industrial application. Another feature of an invention to be granted patent is that it should involve technical advance as compared to the existing knowledge or have economic significance or both. The invention must be non-obvious to a person possessed of average skill in the art.

In *Garware Wall Ropes Ltd. v. A.I. Chopra, Engineers & Contractors*<sup>11</sup>, it has been held that the involvement of technical advance as compared to the existing knowledge or having economic significance is an inventive step and consequently, even assuming that new and useful improvement was made in the systems the same would be invention.

Indian Patents Act, 1970 governs all aspects of the patent in India, including what can and cannot be patented, guidelines for obtaining a patent, procedure for obtaining a patent, tenure of a registered patent, etc. **Section 3(k) of the Indian Patents Act, 1970** reads that 'mathematical or business method or a computer programme per se or algorithms' do not fall under the category of items that can be patented in India. Therefore, the Patent Office has been rejecting the majority of patent applications for software patent in India, even though they are high on innovation.

The term Computer Programme is not defined under the patent laws in India, but the Copyright Act 1957 defines CP under Sec. 2(ffc). Copyright registration is commonly used to protect software in India. Computer software and programs can be registered as a literary work as per **Section 2(o) of the Copyright Act, 1957**. However, the copyright law in India protect only the 'specific code' and does not provide any protection to the idea behind that code. A software copyright in India does not restrict the creation of a different code with similar functionality and idea, which is protected by obtaining a patent for the programme. It

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<sup>9</sup> *Arrhythmia Research Technology Inc v. Carasonix Corp* (1992) 958 F. 2d 1053, Federal Circuit.

<sup>10</sup> Section 101 of US Patent Law.

<sup>11</sup> *Garware Wall Ropes Ltd. v. A.I. Chopra, Engineers & Contractors*, (2009) AIHC 3230.

is not that all computer programs fall under the category which cannot be patented in India. Hence, there are some kinds of software that can indeed be patented in India.

Computer software which is new, useful and non-obvious process or product combined with a physical device or physical element used to process, operate, or implement a function can be patented in India.

With regards to a software patent, following types of Computer-Related Inventions can be patented in India:

1. Method to compress or process data, video, image or audio.
2. An equipment-controlling system.
3. A method of improving a machine or memory operation.
4. A Method of improving physical, chemical, biological or electric properties of an object.
5. A Graphical User Interface controlling system.
6. A Mobile Unit positioning method.

However, an invention which is obvious and comes under the ambit of any of the following cannot be patented in India:

1. An abstract idea, computer programme or code.
2. An arbitrary arrangement.
3. A Mathematical formula.
4. A simple algorithm.

Previously, there has been a lot of debate about the interpretation of the term 'per se'. The term "per se" is not defined in Indian statutes including the Patents Act, 1970. In 2015, the Delhi High Court in *Telefonaktiebolaget Lm Ericsson v. Intex Technologies*<sup>12</sup>, stated that "any invention which has a technical contribution or has a technical effect and is not merely a computer program per se" is patentable.

Recent patent grants to computer related inventions by the Indian Patent Office indicate that such inventions are patentable under Section 3(k) if they provide technical solution to a technical problem by providing a practical application or an improved technical effect of the underlying software.

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<sup>12</sup>*Telefonaktiebolaget Lm Ericsson v. Intex Technologies*, I.A. No. 6735/2014 in CS(OS) No.1045/ 2014.

In *Yahoo v. Controller of Patents & Rediffcom India Limited*<sup>13</sup> case Section 3(k) was discussed in great detail in this case. The patent application was rejected owing to a business model being embodied via technology. It was implied that the business model disguised as technological innovations would not meet the criteria for the patents being granted in India.

In the case of Yahoo, the patent claims included features of a software tool targeting search terms relevant to Yahoo's business. Accordingly, the IPAB concluded that the technical advance proposed by Yahoo was simply a method of doing business, even if it was a technically smarter way of doing business and, therefore, cannot be patented in accordance with provisions of Section 3(k) of the patents act. In this case it was also pointed out by Appellate board that there was no uniformity among the four Patent offices (Kolkata, Mumbai, Delhi and Chennai) in India on the issue of grant of software patents. In the absence of any guideline for patents on computer related inventions, it was found that while some patent office's refuse to grant patent others were inclined to grant patents on software.

In *Accenture global service GMBH v. the assistant controller of Patents & Designs*<sup>14</sup> case patent application was initially refused for patent registration by patent office under the provisions of Section 3(k) of the Indian patents act.

However, the patent applicant appealed before the IPAB, and as per the Controller's decision, it was held that the instant invention as claimed is not software per se but, a system is claimed which is having the improvement in web services and software. Accordingly, it was held that the invention since not falling into the category of section 3(K), viz software per se, corresponding objection was waived and the patent was granted.

In *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries*<sup>15</sup> case the Supreme Court of India discussed about inventive step and obviousness of the invention. The Court held that the fundamental principle of Patent Law is that a patent granted only for an invention which is new and useful. That is to say, it must have novelty and utility. It is essential for the validity of a patent that it must be the inventor's own discovery as opposed to mere verification of what was already known before the date of patent. The question of inventive steps involves mixed questions of law and facts and it has to be decided mainly on the facts of the case.

In a case *M/S Aditi Manufacturing Co. v M/S Bharat Bhogilal Patel*<sup>16</sup> the intellectual property appellate board (IPAB) of India revoked the granted patents stating that it is lacking inventive step and all claims and specification are based on the known inventions. The Board stated that in this invention, prior arts have features of invention and there is nothing new in the features that have been claimed as new. The invention was already known and there is neither any novelty nor any inventive step.

<sup>13</sup>*Yahoo v. Controller of Patents & Rediffcom India Limited*, IPAB, OA/22/2010/PT/CH, 8th December 2011.

<sup>14</sup>*Accenture global service GMBH v. the assistant controller of Patents & Designs*, IPAB, OA/22/2009/PT/DEL, 28th December, 2012.

<sup>15</sup>*Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries* (1979) 2 SCC 511.

<sup>16</sup>*M/S Aditi Manufacturing Co. v M/S Bharat Bhogilal Patel*, W.P. Nos.18565 & 18566 Of 2012.



Patents are increasingly the protection of choice; as a consequence, international software patent laws are of growing importance to software vendors in the past, industrial countries had their own patent laws and offices. Those seeking protection in a specific country had to apply for a national patent and obey local laws.

With increasing globalization, international agreements were made and organizations founded to reconcile regional differences: The 1883 Paris Convention<sup>17</sup> was based on the principle of reciprocal national treatment and therefore dealt more with international comity than the unification of patent laws. The 1970 Patent Cooperation Treaty (PCT)<sup>18</sup> finally implemented international one-stop patents. Both treaties are administered by the World Intellectual Property Organization (WIPO).

### Arguments for and Against Software Patenting

- Software as an Abstract Idea

Under Section 101 of the Patent Act, one may receive patent protection for any process, machine, manufacture, or composition of matter. Precedent provides three exceptions to these generally accepted subject matter: laws of nature, physical phenomena, and abstract ideas. As software is an abstract idea so it can't be patented. Abstract idea has not been defined anywhere. It is also different to define it in particular set of words.

- Copyright is Sufficient

Patent ineligibility doesn't leave software without protection. Software can be protected through copyright. "Copyright, a form of intellectual property law, protects original works of authorship including literary, dramatic, musical, and artistic works, such as poetry, novels, movies, songs, *computer software*, and architecture."

- Software Patents Hinder Innovation

The patent system, as it pertains to software development, is no longer a defense against infringement but rather a weapon in the arsenal of non-practicing entities (NPEs) and large corporations. In fact, it's the increase in software patents that has caused NPEs to grow in number and power.

For the promotion of software production there shall be some incentives from the government side. Promoters of Science and technology deserve protection in the form of monopoly over invention for a limited period of time. From the societal perspective also, protecting software

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<sup>17</sup> *The Paris Convention for the Protection of Intellectual Property* was enacted on March 20, 1883. It has been amended most recently in 1970. <http://www.wipo.int/clea/docs/en/wo/wo020en.htm>.

<sup>18</sup> *The Patent Cooperation Treaty (PCT)* was adopted on June 19, 1970 in Washington, D.C., and has been encoded in 35 U.S.C. §§ 351-76 (2000). 28 U.S.T. 7645. It has been modified most recently in October 2001. <http://www.wipo.org/pct/en/index.html>.

by means of patent law sounds good, since after the temporary monopoly period of 20 years the invention fall into public domain and as well the inventions benefit the society at large in every respect.

The following are some inferences on why software should be protected under patent law:

- Patenting software inventions promotes investment in research development of information technology.
- The basic principles of patent law were developed before computers were invented and have served for many years. The principle of Patent laws is to promote the development of science, technology and useful arts. Supporters of patent argue that the invention of software are arts, are useful to modern life and therefore deserve the same incentive provided for inventions in other useful arts, to promote investment in research and development.
- Patent discloses the invention and so educate the public and advance the state of the art of the invention. Thus patents accelerate software development by making previously unknown and not obvious software inventions public.
- Patents disclose how to make and use an invention in sufficient detail so that other persons of ordinary skill in the art of the invention can make and use the invention without undue experimentation.
- Granted patents can be revoked if found to be invalid. Development of new ideas is therefore not blocked by bad patents.
- Some aspects of software are also covered by copyright law, but those are largely different than the protection of ideas and innovation in the useful arts provided by patent law.
- Speaking from the societal perspective software protected under the patent law will be in the clutches of the inventor or private individual or company only for a period of 20 years compared to copyright protection which lasts for life plus 60 years. Therefore, patenting of software serves real public purpose in quick time than copyright protection of software.
- International law on Patents (TRIPS and other conventions) provides that an invention in any fields of technology can be protected by patents. Therefore, it is required that we provide patent protection to software as it is required under the international law.

## **Conclusion**

Many large corporations both of Indian and foreign origins started expanding their base and started growth rapidly after liberalization of economy, Not only giant companies but Micro, Small and Medium Enterprises (MSMEs) form the economic backbone of the Indian economy. There is no separate classification for software technology. Therefore, applications related to computer technology which mainly considers inventions related to software are considered for understanding of the empirical analysis. Even according to international Patent Classification there is no specific classification of software inventions.



Software can be divided in different groups like commercial, shareware, freeware and public domain software and it can be protected with different laws according to their industrial application. Commercial software is protected through copyright and a user needs to buy the software. Shareware software is available at cheaper rates. Software is more or less connected to mathematical methods algorithm can be categorized into software with specific hardware, systems software and application software. Just because the software is a code doesn't mean it should not be patented in present era. The present era is of internet which is based on code.

Thus, traditionally software can be protected as copyright but with the growth of industry and advance application it can also be protected under patent system. To protect the technological innovations and to promote it, it is imperative that even codes should be patented.

As the importance of the software and computer technology is in creation of revenue of companies is growing. Therefore, it is important to hold right over the technology by promoting the innovative environment and culture.